EUCLID CHEMICAL

The Euclid Chemical Company

CONCRETE & MASONRY

CONSTRUCTION PRODUCTS

2019 - 2020

EUCLID CHEMICAL

PROVEN. CONCRETE. SOLUTIONS.

A WORLD OF QUALITY CONCRETE PRODUCTS

For over 100 years, The Euclid Chemical Company has manufactured top quality products formulated to meet the demands of the ever changing concrete and masonry construction industry. Marketed under the Euco, Eucon, Dural, Speed Crete, Increte, Vandex, Sentinel, Tuf-Strand, PSI Fiberstrand and Tamms brand names, Euclid Chemical serves the global building market as an ISO 9001:2008 supplier of specialty products and support services.

The Euclid Chemical Company philosophy of "demonstratively better" is the foundation upon which Euclid Chemical serves and supports its customers. Cutting edge research and development, technical support and service, and an education-driven specification effort along with ongoing customer training provides Euclid Chemical customers with the best products and support in the industry.

Marketed through a network of over 1,200 distributors, ready-mix producers and masonry suppliers, Euclid Chemical products are recognized as the industry standard throughout the world.

As part of our commitment to helping promote sustainable design, Euclid Chemical has many products which contribute to Leadership in Energy and Environmental Design (LEED™) certification. Yet this commitment does not stop at the manufacturing level. Our employees constantly strive to improve the social and environmental impact of company activities while achieving an economic balance.

The technical information contained on these data sheets is subject to change. Visit our website for the most up-to-date information on these products.

For information regarding domestic and international availability, call 800-321-7628 or visit euclidchemical.com.

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CONCRETE & MASONRY CONSTRUCTION PRODUCTS

EUCLID CHEMICAL

ALPHABETICAL INDEX

CATEGORY INDEX

LIQUID DENSIFIERS

PENETRATING SEALERS

REPAIR - HORIZONTAL

Cementitious

Epoxy

Urethane

Self-Leveling Underlayments

REPAIR - VERTICAL & OVERHEAD

Cementitious

Shotcrete

REPAIR - UNDERWATER

Cementitious

Epoxy

CATHODIC PROTECTION

WATERPROOFING & DAMPPROOFING

Cementitious

Crystalline

Asphaltic

VANDEX WATERPROOFING

Cementitious

Crystalline

Joint & Crack Tape

MISCELLANEOUS PRODUCTS

Form Release Agents

Cleaners

Colorant

Evaporation Retarder

Surface Retarder

Slip-Resistant Additive

Mortar Admixtures

Rebar Coating

MASTER FORMAT INDEX

DIVISION 3: CONCRETE

03 01 00 MAINTENANCE OF CONCRETE

Concrete Cleaners

Concrete Repair - Horizontal

Concrete Repair - Vertical & Overhead

03 05 00 COMMON WORK FOR CONCRETE

Bonding Agents and Adhesives

03 35 00 CONCRETE FINISHING

Liquid Densifiers

Dry Shake Floor Hardeners

03 10 00 CONCRETE FORMING & ACCESSORIES

Form Release Agents

Cathodic Protection & Rebar Coatings

Surface and Evaporation Retarders

03 50 00 UNDERLAYMENTS

03 60 00 GROUTING

03 37 00 SPECIALTY PLACED CONCRETE

03 39 00 CONCRETE CURING

MASTER FORMAT INDEX

DIVISION 4: MASONRY

04 05 13
MASONRY MORTARING

Mortar Admixtures

DIVISION 7: THERMAL AND MOISTURE PROTECTION

07 10 00
DAMPPROOFING & WATERPROOFING

07 16 00
CEMENTITIOUS AND REACTIVE WATERPROOFING

07 18 00
VEHICULAR TRAFFIC DECK COATINGS

07 19 00
WATER REPELLENTS

07 92 00
JOINT SEALANTS

DIVISION 9: FINISHES

09 05 00
MOISTURE MITIGATION

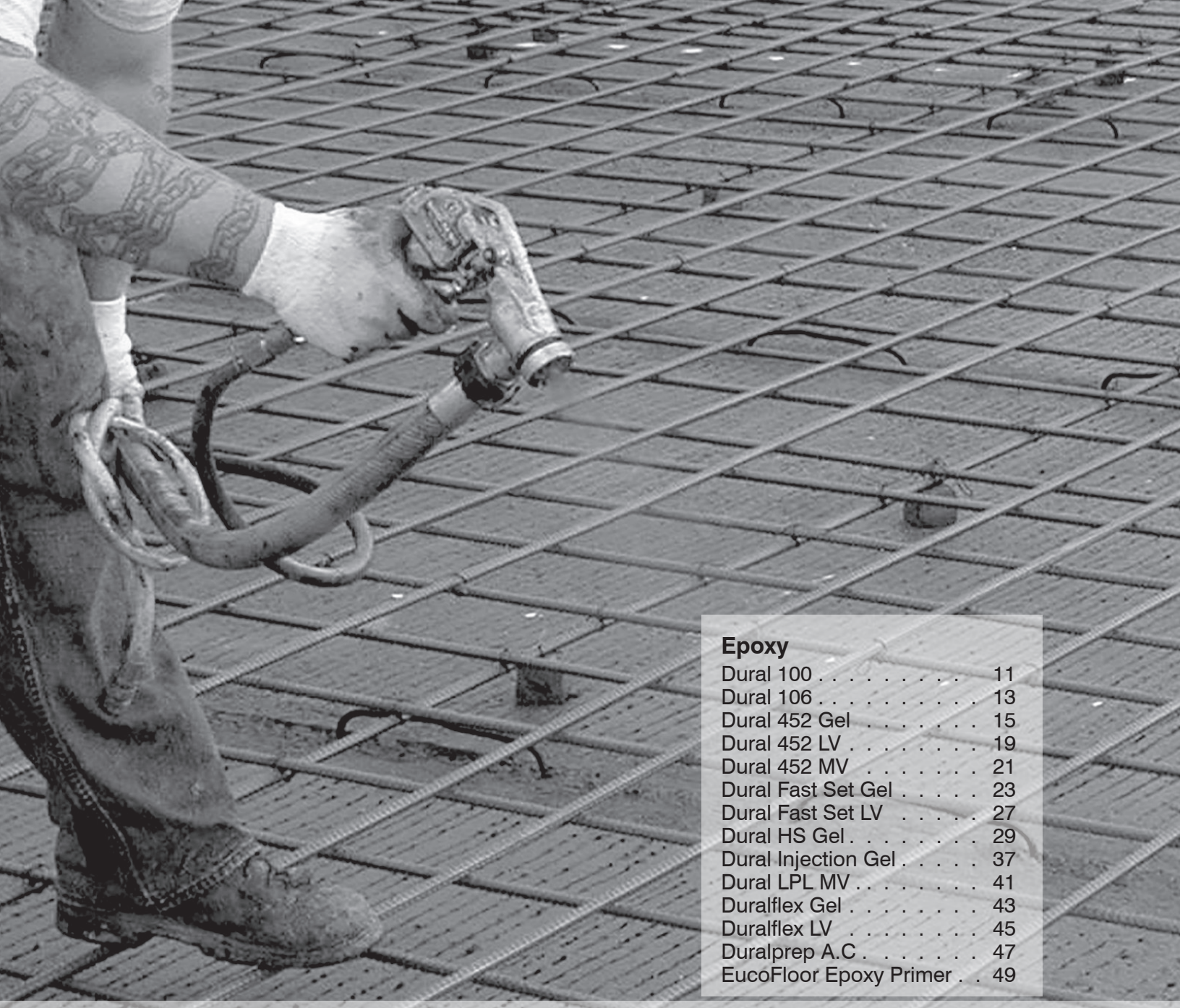
09 90 00
PAINTING & COATING

Decorative Floor Finishing

High Performance Coatings

Primers

Wall Coatings



BONDING AGENTS AND ADHESIVES

Epoxy

Latex

Hybrid

DURAL 100

PRECAST SEGMENTAL EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL 100 is a two-component, moisture insensitive, 100% solids epoxy adhesive used as a bonding agent for precast segmental box girders, bridge and other segmental construction. DURAL 100 is a non-sag paste which is available in 3 formulations that cover a wide range of temperature applications.

Class	Temperature Application Range
D	40 - 65°F (4 - 18°C)
E	60 - 90°F (16 - 32°C)
F	85 - 115°F (29 - 46°C)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	CLASS D	CLASS E	CLASS F
Temperature Range	40 - 65°F (4 - 18°C)	60 - 90°F (16 - 32°C)	85 - 115°F (29 - 46°C)
Sag Resistance at High Temperature	< 1/4" (6.4 mm)	< 1/4" (6.4 mm)	< 1/4" (6.4 mm)
Gel Time at High Temperature	49 minutes	70 minutes	38 minutes
Compressive Yield, psi (MPa) ASTM D695	24 hours: 3,205 (22.1) 48 hours: 6,826 (47.1)	24 hours: 4,998 (34.5) 48 hours: 6,529 (45.0)	24 hours: 3,245 (22.4) 48 hours: 9,216 (63.5)
Heat Deflection Temperature, Minimum ASTM D648	143°F (61°C)	138°F (58°C)	153°F (67°C)
Open Contact Time at High Temperature	60 minutes	60 minutes	60 minutes
Compressive Shear Strength at low temperature at high temperature	1,120 psi (7.7 MPa) 1,300 psi (9 MPa)	1,270 psi (8.7 MPa) 1,620 psi (11 MPa)	1,170 psi (8 MPa) 1,450 psi (10 MPa)
Bond Strength, psi (MPa) ASTM C882	2 days: 1,275 (8.8)	2 days: 2,320 (16.0)	2 days: 3,230 (22.3)
Contact Strength, psi (MPa) ASTM C882	2 days: 1,464 (10.1)	2 days: 1,425 (9.8)	2 days: 3,130 (21.6)

PACKAGING

DURAL 100 (all formulations) is available in 3 gal (11.4 L) units. DURAL 100 Class E and F are also available in cases of 1 gal (3.78 L) units (4 per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Meets the requirements of ASTM C881 Type VI, Grade 3, Classes D, E, and F

COVERAGE RATES

12 - 13 ft^2/gal (0.29 - 0.32 m^2/L) at 1/8 inch (3 mm) thickness

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be dry and structurally sound. The substrate must also be free of all dust, dirt, grease, oil, coatings, laitance and other contaminants that would interfere with proper adhesion. The surface should be lightly sand blasted, shot blasted or water blasted with a minimum pressure of 5,000 psi (34.5 MPa). Wet surfaces must be dried. Remove all visible water with a heater and/or oil-free air compressor. Any dust that may have accumulated between cleaning and application of DURAL 100 should be removed by an oil-free air compressor.

Mixing: Do not begin mixing until the segment is prepared for installation. Mix DURAL 100 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine all of Part A with all of Part B, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Use a trowel, brush, mop or gloved hand to apply DURAL 100 on both segments to be joined. Apply at minimum and uniform thickness of 1/16 inch (1.6 mm). A visible bead line must be observed on all exposed contact areas. DURAL 100 should be applied completely around the pre-stressing ducts but not within 3/8 inch (9.5 mm) of the ducts. Use DURAL 100 Class D, E or F depending on the temperature range prevailing at the time of installation. DURAL 100 should be applied within the first half of its gel time (approx. 15 minutes). Erection, assembly and temporary post tensioning must be completed within the contact time of DURAL 100, which is approximately 60 minutes from the time the epoxy is mixed. The segments should be joined with a minimum provisional stress of 30 psi (0.21 MPa) across the entire cross section. If the segments have not been joined within 70% of the contact (open) time, the operation should be discontinued, the DURAL 100 removed and fresh DURAL 100 applied. After the segments have been joined, excess DURAL 100 should be removed from the joints, where accessible. Tendon ducts should be swabbed immediately after stressing to remove or smooth out any epoxy in the conduit and to seal any pockets or air bubble holes that may have formed at the joint.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 100 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 100 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 40°F and 115°F (4°C and 46°C). This range covers all three classes of DURAL 100 epoxy, and the proper class must be chosen based on the prevailing temperature at the time of installation.
- Material temperatures should be at least 40°F (4°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 100
- DURAL 100 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- Apply DURAL 100 to dry concrete surfaces only
- DURAL 100 is not intended for use in areas that are subject to prolonged and/or strong chemical attack
- Do not apply to frozen or frost-filled substrates, or when the temperature is below 40°F (4°C) or expected to fall below that temperature within 24 hours of application
- In all cases, consult the product Safety Data Sheet before use

Rev. 02.19

DURAL 106

SLOW-SETTING PRECAST SEGMENTAL EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL 106 is a two-component, moisture insensitive, 100% solids epoxy adhesive for use as a bonding agent for precast segmental box girders, bridge and other segmental construction. DURAL 106 is a non-sag paste which provides a 6 hour contact time before joining.

Class	Temperature Application Range
D	40 - 65°F (4 - 18°C)
E	60 - 90°F (16 - 32°C)
F	85 - 115°F (29 - 46°C)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	CLASS D	CLASS E	CLASS F
Temperature Range	40 - 65°F (4 - 18°C)	60 - 90°F (16 - 32°C)	85 - 115°F (29 - 46°C)
Sag Resistance at High Temperature	< 1/4" (6.4 mm)	< 1/4" (6.4 mm)	< 1/4" (6.4 mm)
Gel Time at High Temperature	4 hours	3 hours 40 minutes	5 hours
Compressive Yield, psi (MPa) ASTM D695	7 days: 11,390 (78.5) 14 days: 12,350 (85.1)	7 days: 6,023 (41.5) 14 days: 8,510 (58.7)	7 days: 3,220 (22.2) 14 days: 6,150 (42.4)
Heat Deflection Temperature, Minimum ASTM D648	> 140°F (60°C)	> 140°F (60°C)	154°F (67°C)
Open Contact Time at High Temperature	6 hours	6 hours	6 hours
Bond Strength, psi (MPa) ASTM C882	14 days: > 3,710 (25.6)	14 days: > 5,065 (34.9)	14 days: > 3,810 (26.3)
Contact Strength, psi (MPa) ASTM C882	2 days: 1,100 (7.6)	14 days: 3,623 (24.9)	14 days: 1,380 (9.5)

PACKAGING

DURAL 106 (all formulations) is available in 3 gal (11.4 L) units.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Type VI, Grade 3, Classes D, E, and F

COVERAGE RATES

12 - 13 ft^2/gal (0.29 - 0.32 m^2/L) at 1/8 inch (3 mm) thickness

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be dry and structurally sound. The substrate must also be free of all dust, dirt, grease, oil, coatings, laitance and other contaminants that would interfere with proper adhesion. The surface should be lightly sand blasted, shot blasted or water blasted with a minimum pressure of 5,000 psi (34.5 MPa). Wet surfaces must be dried. Remove all visible water with a heater and/or oil-free air compressor. Any dust that may have accumulated between cleaning and application of DURAL 106 should be removed by an oil-free air compressor.

Mixing: Do not begin mixing until the segment is prepared for installation. Mix DURAL 106 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine all of Part A with all of Part B, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Use a trowel, brush, mop or gloved hand to apply DURAL 106 on both segments to be joined. Apply at minimum and uniform thickness of 1/16 inch (1.6 mm). A visible bead line must be observed on all exposed contact areas. DURAL 106 should be applied completely around the pre-stressing ducts but not within 3/8 inch (9.5 mm) of the ducts. Use DURAL 106 Class D, E or F depending on the temperature range prevailing at the time of installation. DURAL 106 should be applied within the first half of its gel time (approx. 15 minutes). Erection, assembly and temporary post tensioning must be completed within the contact time of DURAL 106, which is approximately 60 minutes from the time the epoxy is mixed. The segments should be joined with a minimum provisional stress of 30 psi (0.21 MPa) across the entire cross section. If the segments have not been joined within 70% of the contact (open) time, the operation should be discontinued, the DURAL 106 removed and fresh DURAL 106 applied. After the segments have been joined, excess DURAL 106 should be removed from the joints, where accessible. Tendon ducts should be swabbed immediately after stressing to remove or smooth out any epoxy in the conduit and to seal any pockets or air bubble holes that may have formed at the joint.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 106 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 106 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 40°F and 115°F (4°C and 46°C). This range covers all three classes of DURAL 106 epoxy, and the proper class must be chosen based on the prevailing temperature at the time of installation.
- Material temperatures should be at least 40°F (4°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 106
- DURAL 106 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- Apply DURAL 106 to dry concrete surfaces only
- DURAL 106 is not intended for use in areas that are subject to prolonged and/or strong chemical attack
- Do not apply to frozen or frost-filled substrates, or when the temperature is below 40°F (4°C) or expected to fall below that temperature within 24 hours of application
- In all cases, consult the product Safety Data Sheet before use

Rev. 02.19

DURAL 452 GEL

ASTM C881 COMPLIANT, NON-SAG, HIGH MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL 452 GEL is a two-component, 100% solids, DOT non-corrosive, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This high modulus, structural gel is perfect for bonding applications that require a non-sag adhesive.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry, steel, or wood
- Anchoring bolts, dowels, or pins
- Pick-proof sealant for jails/prisons and kennels
- Seals cracks and sets ports prior to injection
- Mix with sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Perfect for vertical and overhead applications
- Easy to use 1:1 mix ratio by volume
- Moisture insensitive
- Superior strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Consistency ASTM C881	1/8" (3.2 mm)
Gel Time, minutes ASTM C881	30
Bond Strength, psi (MPa) ASTM C882	2 days: 2,500 (17.2) 14 days: 3,250 (22.4)
Water Absorption ASTM D570	24 hours: 0.2%
Heat Deflection Temperature ASTM D648	120°F (50°C)
Linear Coefficient of Shrinkage ASTM D2566	0.002
Compressive Yield, psi (MPa) ASTM D695	7 days: 10,250 (70.7)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 600,000 (4,137)

REINFORCING STEEL				THREADED ROD			
Rebar Diameter	Hole Diameter	Embedment Depth	Pull-Out Strength*	Rod Diameter	Hole Diameter	Embedment Depth	Pull-Out Strength*
#4: 1/2"(13 mm)	5/8"(16 mm)	4.5"(11.4 cm)	16038 lbf (71.3 kN)	3/8" (10 mm)	1/2" (13 mm)	3.5" (8.9 cm)	6388 lbf (28.4 kN)
#5: 5/8"(16 mm)	3/4"(19 mm)	5.5"(14.0 cm)	27378 lbf (121.8 kN)	1/2" (13 mm)	5/8" (16 mm)	4.5" (11.4 cm)	13103 lbf (58.3 kN)
#6: 3/4"(19 mm)	7/8"(22 mm)	6.5"(16.5 cm)	34504 lbf (153.5 kN)	5/8" (16 mm)	3/4" (19 mm)	5.5" (14.0 cm)	26665 lbf (118.6 kN)
#7: 7/8"(22 mm)	1"(25 mm)	7.5"(19.1 cm)	45771 lbf (203.6 kN)	3/4" (19 mm)	7/8" (22 mm)	6.5" (16.5 cm)	34180 lbf (152.0 kN)
#8: 1"(25 mm)	1 1/8"(29 mm)	9"(22.9 cm)	55625 lbf (247.4 kN)	7/8" (22 mm)	1" (25 mm)	7.5" (19.1 cm)	42914 lbf (190.9 kN)
--	--	--	--	1" (25 mm)	1 1/8" (29 mm)	9.5" (24.1 cm)	57794 lbf (257.1 kN)

*Direct tension pull-out strengths were obtained at 7 days, in accordance with ASTM E488.

PACKAGING

DURAL 452 GEL is packaged in 0.66 gal (2.5 L), 2 gal (7.6 L), 4 gal (15 L), and 10 gal (38 L) units, and in cases of 22 oz. (600 mL) cartridges (12 cartridges per case). The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I, II, IV, and V, Grade 3, Class C

Meets the requirements of AASHTO M 235

COVERAGE/YIELD

For anchoring, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURAL 452 GEL epoxy mixed with 1 gal (3.8 L) of dry 20/40 mesh silica sand will yield approximately 368 in^3 (6,030 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix bulk units of DURAL 452 GEL using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURAL 452 GEL mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL 452 GEL epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 1 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Bonding fresh concrete to hardened concrete: Apply by brush, roller, or squeegee to the prepared, existing concrete substrate. Place fresh concrete onto the DURAL 452 GEL while it is still tacky. The open time is typically 3 to 4 hours at 75°F (24°C). The open time is reduced at warmer temperatures. If the DURAL 452 GEL loses tackiness or exceeds open time, abrade the surface of the epoxy, wipe surface clean, re-apply DURAL 452 GEL, and proceed. DO NOT PLACE CONCRETE OVER DRIED EPOXY. **Bonding hardened concrete to hardened concrete:** Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURAL 452 GEL. For optimum results, the bond line should not exceed 1/8” (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Anchoring bolts, dowels, pins:** DURAL 452 GEL can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate) or horizontally-aligned anchors (into a vertical substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16” (1.6 mm) annular space (1/8” (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL 452 GEL neat as a primer coat to the prepared concrete surface. Mix the DURAL 452 GEL into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

Setting ports & sealing cracks: Place a small amount of mixed DURAL 452 GEL on the back of the port and carefully place it centered over the crack. Be careful to not fill the hole of the injection port. Place neat DURAL 452 GEL over the face of the cracks to be pressure injected, and around each injection port. Allow DURAL 452 GEL to sufficiently harden before injecting, to prevent blowouts. **Pick-proof sealant:** Apply a bead of DURAL 452 GEL to the joints and areas being sealed. Strike off the epoxy with a rounded spatula, or similarly rounded tool, to finish.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 452 GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 452 GEL indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Install cartridges of DURAL 452 GEL with a high quality, professional grade gun with a gear ratio of at least 26:1 for ease of application and best results
- Do not thin DURAL 452 GEL
- DURAL 452 GEL will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL 452 GEL is not to be used as a finished/aesthetic coating
- Do not use DURAL 452 GEL for overhead anchoring
- Maximum application thickness of DURAL 452 GEL mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL 452 LV

ASTM C881 COMPLIANT, LOW VISCOSITY, HIGH MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL 452 LV is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This high modulus, low viscosity epoxy resin is the perfect solution for general bonding applications and for injecting cracks in concrete and a variety of other substrates.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry or wood
- Injection resin for cracked, structural substrates
- Gravity feed or pressure inject cracks in concrete slabs
- Anchoring bolts, dowels, or pins
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Low viscosity penetrates deep into cracks
- Easy to use 2:1 mix ratio
- Moisture insensitive
- Tenacious bond strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mixed Viscosity, cp ASTM D2556	450
Gel Time, minutes ASTM C881	34
Bond Strength, psi (MPa) ASTM C882	2 days: 1,300 (9.0) 14 days: 1,750 (12.1)
Water Absorption ASTM D570	24 hours: 0.1%
Heat Deflection Temperature ASTM D648	120°F (50°C)
Linear Coefficient of Shrinkage ASTM D2566	0.003
Compressive Yield, psi (MPa) ASTM D695	7 days: 15,500 (106.9)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 600,000 (4,137)
Tensile Strength, psi (MPa) ASTM D638	7 days: 7,250 (50.0)
Elongation at Break ASTM D638	1.5%

PACKAGING

DURAL 452 LV is packaged in 0.75 gal (2.8 L), 3 gal (11.4 L), and 15 gal (56.8 L) units. The mix ratio is 2:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I and IV, Grade 1, Class C

Meets the requirements of AASHTO M 235

COVERAGE/YIELD

For injection, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURAL 452 LV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in^3 (10,537 cm^3) of mortar.
Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL 452 LV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURAL 452 LV mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL 452 LV epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Pressure injecting vertical cracks: Attach injection ports and seal the face of the crack with DURAL 452 GEL or DURAL FAST SET GEL. Allow the sealing gel to sufficiently harden before injecting, to prevent blowouts. Pump DURAL 452 LV into the crack via the injection ports, using two-component pressure injection equipment. Start at the bottom of the crack and work upwards from port to port. Cap off ports as you proceed up the crack to ensure that DURAL 452 LV is kept contained within the crack. DO NOT INJECT IF WATER IS LEAKING FROM THE CRACK. **Horizontal cracks:** Open cracks by mechanical means and ensure that the prepared crack is free of all debris and standing water. If pressure injecting, instructions are the same as for vertical cracks. If gravity feeding, pump DURAL 452 LV until cracks are completely filled. If working on an elevated slab, ensure the bottom of the slab is sealed prior to injecting or gravity feeding the crack, to ensure epoxy does not leak through. **Anchoring bolts, dowels, pins:** DURAL 452 LV can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16" (1.6 mm) annular space (1/8" (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL 452 LV neat as a primer coat to the prepared concrete surface. Mix the DURAL 452 LV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1" to 1-1/2" (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 452 LV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 452 LV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 452 LV
- DURAL 452 LV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL 452 LV is not to be used as a finished/aesthetic coating
- Do not use DURAL 452 LV for horizontally-aligned anchors (into a vertical substrate)
- Do not use DURAL 452 LV for overhead anchoring
- Maximum application thickness of DURAL 452 LV mortar is 1.5" per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL 452 MV

ASTM C881 COMPLIANT, MEDIUM VISCOSITY, HIGH MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL 452 MV is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This high modulus, medium viscosity epoxy resin is the perfect solution for bonding new, plastic concrete to existing concrete slabs and steel.

PRIMARY APPLICATIONS

- Bonding fresh concrete to hardened concrete
- Anchoring bolts, dowels, or pins
- General adhesive for concrete and masonry
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Provides exceptional adhesion
- Easy to use 1:1 mix ratio
- Moisture insensitive

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mixed Viscosity, cp ASTM D2556	4,400
Gel Time, minutes ASTM C881	35
Bond Strength, psi (MPa) ASTM C882	2 days: 2,300 (15.9) 14 days: 2,590 (17.8)
Water Absorption ASTM D570	24 hours: 0.2%
Heat Deflection Temperature ASTM D648	120°F (50°C)
Linear Coefficient of Shrinkage ASTM D2566	0.002
Compressive Yield, psi (MPa) ASTM D695	7 days: 12,500 (86.2)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 625,000 (4,309)
Tensile Strength, psi (MPa) ASTM D638	7 days: 7,500 (51.7)
Elongation at Break ASTM D638	1.2%

PACKAGING

DURAL 452 MV is packaged in 0.66 gal (2.5 L), 2 gal (7.6 L), 4 gal (15 L), and 10 gal (38 L) units. The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I, II, IV and V, Grade 2, Class C

Meets the requirements of AASHTO M 235

COVERAGE/YIELD

For bonding, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. The coverage rate as a bonding agent is approximately 60 to 80 ft^2/gal (1.5 to 2.0 m^2/L), depending upon the texture of the existing slab. 1 gal (3.8 L) of neat DURAL 452 MV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in^3 (10,537 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL 452 MV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURAL 452 MV mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL 452 MV epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Bonding fresh concrete to hardened concrete: Apply by brush, roller, or squeegee to the prepared, existing concrete substrate. Place fresh concrete onto the DURAL 452 MV while it is still tacky. The open time is typically 3 to 4 hours at 75°F (24°C). The open time is reduced at warmer temperatures. If the DURAL 452 MV loses tackiness or exceeds open time, abrade the surface of the epoxy, wipe surface clean, re-apply DURAL 452 MV, and proceed. DO NOT PLACE CONCRETE OVER DRIED EPOXY. **Bonding hardened concrete to hardened concrete:** Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURAL 452 MV. For optimum results, the bond line should not exceed 1/8” (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Anchoring bolts, dowels, pins:** DURAL 452 MV can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16” (1.6 mm) annular space (1/8” (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL 452 MV neat as a primer coat to the prepared concrete surface. Mix the DURAL 452 MV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 452 MV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 452 MV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 452 MV
- DURAL 452 MV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL 452 MV is not to be used as a finished/aesthetic coating
- Do not use DURAL 452 MV for horizontally-aligned anchors (into a vertical substrate)
- Do not use DURAL 452 MV for overhead anchoring
- Maximum application thickness of DURAL 452 MV mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL FAST SET GEL

RAPID-SETTING, NON-SAG, HIGH MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL FAST SET GEL is a two-component, 100% solids, moisture insensitive, rapid-setting epoxy adhesive and binder for numerous applications. This high modulus, structural gel is perfect for bonding applications that require a quick turn-around. DURAL FAST SET GEL can be used in temperatures as low as 40°F (4°C) and rising.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry, steel, or wood
- Anchoring bolts, dowels, or pins
- Rapidly seal cracks and set ports prior to injection
- Mix with sand to create a repair mortar
- Pick-proof sealant for jails/prisons and kennels

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Perfect for vertical and overhead applications
- Easy to use 1:1 mix ratio
- Moisture insensitive
- Rapid strength gain in a wide temperature range

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Consistency ASTM C881	1/8" (3.2 mm)
Gel Time, minutes ASTM C881	8
Bond Strength, psi (MPa) ASTM C882	2 days: 2,600 (17.9) 14 days: 3,000 (20.7)
Water Absorption ASTM D570	24 hours: 0.3%
Heat Deflection Temperature ASTM D648	145°F (62°C)
Linear Coefficient of Shrinkage ASTM D2566	0.001
Compressive Yield, psi (MPa) ASTM D695	7 days: 12,500 (86.2)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 450,000 (3,103)
Tensile Strength, psi (MPa) ASTM D638	7 days: 7,250 (50.0)
Elongation at Break ASTM D638	1.5%

REINFORCING STEEL				THREADED ROD			
Rebar Diameter	Hole Diameter	Embedment Depth	Pull-Out Strength*	Rod Diameter	Hole Diameter	Embedment Depth	Pull-Out Strength*
#4: 1/2"(13 mm)	5/8"(16 mm)	4.5"(11.4 cm)	20513 lbf (91 kN)	3/8" (10 mm)	1/2" (13 mm)	3.5" (8.9 cm)	8722 lbf (39 kN)
#5: 5/8"(16 mm)	3/4"(19 mm)	5.5"(14.0 cm)	30591 lbf (136 kN)	1/2" (13 mm)	5/8" (16 mm)	4.5" (11.4 cm)	20851 lbf (93 kN)
#6: 3/4"(19 mm)	7/8"(22 mm)	6.5"(16.5 cm)	42912 lbf (191 kN)	5/8" (16 mm)	3/4" (19 mm)	5.5" (14.0 cm)	33072 lbf (147 kN)
#7: 7/8"(22 mm)	1"(25 mm)	7.5"(19.1 cm)	55180 lbf (245 kN)	3/4" (19 mm)	7/8" (22 mm)	6.5" (16.5 cm)	42092 lbf (187 kN)
#8: 1"(25 mm)	1 1/8"(29 mm)	9"(22.9 cm)	67395 lbf (300 kN)	7/8" (22 mm)	1" (25 mm)	7.5" (19.1 cm)	59520 lbf (265 kN)
--	--	--	--	1" (25 mm)	1 1/8" (29 mm)	9.5" (24.1 cm)	71117 lbf (316 kN)

***Direct tension pull-out strengths were obtained at 7 days, in accordance with ASTM E488.

PACKAGING

DURAL FAST SET GEL is packaged in 4 gal (15 L) and 10 gal (38 L) units, in cases of 22 oz. (650 ml) cartridges (12 cartridges per case), and in cases of 10 oz. (300 ml) cartridges (24 cartridges per case). The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I and IV, Grade 3, Classes B and C

Meets the requirements of AASHTO M 235

Canadian MTQ

COVERAGE/YIELD

For anchoring, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURAL FAST SET GEL epoxy mixed with 1 gal (3.8 L) of dry 20/40 mesh silica sand will yield approximately 368 in^3 (6,030 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix bulk units of DURAL FAST SET GEL using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 minutes.

To make DURAL FAST SET GEL mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL FAST SET GEL epoxy and mix thoroughly for 1 to 2 minutes. The mix ratio of aggregate to mixed epoxy is approximately 1 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 and #P2 as found in ICRI Guideline 320.5R-2014.

Application: Bonding hardened concrete to hardened concrete: Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURAL FAST SET GEL. For optimum results, the bond line should not exceed 1/8" (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Anchoring bolts, dowels, pins:** DURAL FAST SET GEL can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate) or horizontally-aligned anchors (into a vertical substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16" (1.6 mm) annular space (1/8" (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL FAST SET GEL neat as a primer coat to the prepared concrete surface. Mix the DURAL FAST SET GEL into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1" to 1-1/2" (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts. **Setting ports & sealing cracks:** Place a small amount of mixed DURAL FAST SET GEL on the back of the port and carefully place it centered over the crack. Be careful to not fill the hole of the injection port. Place neat DURAL FAST SET GEL over the face of the cracks to be pressure injected, and around each injection port. Allow DURAL FAST SET GEL to sufficiently harden before injecting, to prevent blowouts. **Pick-proof sealant:** Apply a bead of DURAL FAST SET GEL to the joints and areas being sealed. Strike off the epoxy with a rounded spatula, or similarly rounded tool, to finish.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL FAST SET GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL FAST SET GEL indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 40°F and 90°F (4°C and 32°C)
- Material temperatures should be at least 40°F (4°C) and rising
- Install cartridges of DURAL FAST SET GEL with a high quality, professional grade gun with a gear ratio of at least 26:1 for ease of application and best results
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL FAST SET GEL
- DURAL FAST SET GEL will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL FAST SET GEL is not to be used as a finished/aesthetic coating
- Do not use DURAL FAST SET GEL for overhead anchoring
- Maximum application thickness of DURAL FAST SET GEL mortar is 1.5" per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL FAST SET LV

RAPID-SETTING, LOW VISCOSITY, HIGH MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL FAST SET LV is a two-component, 100% solids, moisture insensitive, rapid-setting epoxy adhesive and binder for numerous applications. This high modulus, low viscosity epoxy resin is the perfect solution for general bonding applications and for injecting cracks in concrete and a variety of other substrates. DURAL FAST SET LV can be used in temperatures as low as 40ºF (4ºC) and rising.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry or wood
- Injection resin for cracked, structural substrates
- Gravity feed cracks in concrete slabs
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Low viscosity penetrates deep into cracks
- Easy to use 1:1 mix ratio
- Moisture insensitive
- Tenacious bond strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mixed Viscosity, cp ASTM D2556	800
Gel Time, minutes ASTM C881	6
Bond Strength, psi (MPa) ASTM C882	2 days: 2,300 (15.9) 14 days: 2,600 (17.9)
Water Absorption ASTM D570	24 hours: 0.1%
Heat Deflection Temperature ASTM D648	135°F (57°C)
Linear Coefficient of Shrinkage ASTM D2566	0.001
Compressive Yield, psi (MPa) ASTM D695	7 days: 15,500 (106.9)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 575,000 (3,964)
Tensile Strength, psi (MPa) ASTM D638	7 days: 10,000 (68.9)
Elongation at Break ASTM D638	1.9%

PACKAGING

DURAL FAST SET LV is packaged in 4 gal (15 L) and 10 gal (38 L) units, in cases of 22 oz. (650 ml) cartridges (12 cartridges per case), and in cases of 10 oz. (300 ml) cartridges (24 cartridges per case). The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I and IV, Grade 1, Classes B and C

Meets the requirements of AASHTO M 235

Canadian MTQ

COVERAGE/YIELD

For injection, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURAL FAST SET LV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in^3 (10,537 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix bulk units of DURAL FAST SET LV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 minutes.

To make DURAL FAST SET LV mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL FAST SET LV epoxy and mix thoroughly for 1 to 2 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Pressure injecting vertical cracks: Attach injection ports and seal the face of the crack with DURAL 452 GEL or DURAL FAST SET GEL. Allow the sealing gel to sufficiently harden before injecting, to prevent blowouts. Pump DURAL FAST SET LV into the crack via the injection ports, using two-component pressure injection equipment. Start at the bottom of the crack and work upwards from port to port. Cap off ports as you proceed up the crack to ensure that DURAL FAST SET LV is kept contained within the crack. DO NOT INJECT IF WATER IS LEAKING FROM THE CRACK. **Horizontal cracks:** Open cracks by mechanical means and ensure that the prepared crack is free of all debris and standing water. If pressure injecting, instructions are the same as for vertical cracks. If gravity feeding, pump DURAL FAST SET LV until cracks are completely filled. If working on an elevated slab, ensure the bottom of the slab is sealed prior to injecting or gravity feeding the crack, to ensure epoxy does not leak through. **Anchoring bolts, dowels, pins:** DURAL FAST SET LV can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16” (1.6 mm) annular space (1/8” (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL FAST SET LV neat as a primer coat to the prepared concrete surface. Mix the DURAL FAST SET LV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL FAST SET LV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL FAST SET LV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 35°F and 90°F (2°C and 32°C)
- Material temperatures should be at least 35°F (2°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL FAST SET LV
- DURAL FAST SET LV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL FAST SET LV is not to be used as a finished/aesthetic coating
- Do not use DURAL FAST SET LV for horizontally-aligned anchors (into a vertical substrate)
- Do not use DURAL FAST SET LV for overhead anchoring
- Maximum application thickness of DURAL FAST SET LV mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL HS GEL

HIGH STRENGTH EPOXY GEL FOR ANCHORING AND DOWELING

EUCLID CHEMICAL

DESCRIPTION

DURAL HS GEL is a two component, 1:1 mix ratio, structural epoxy system that offers exceptional strength in anchoring and doweling applications and can be installed from 40°F to 110°F (4°C to 43°C). DURAL HS GEL has been tested in accordance with ASTM E488 and ASTM E1512 for its ability to resist static, dynamic, seismic and wind loads in uncracked concrete for both threaded rod and rebar.

PRIMARY APPLICATIONS

- Anchoring threaded rods, bolts and rebar dowels into uncracked concrete
- Short and long term tensile anchoring
- Grouting dowel bars and tie bars
- Pick-proof sealant for jails/prisons and kennels
- Bonding agent for fresh to hardened concrete, and hardened to hardened concrete

FEATURES/BENEFITS

- Moisture insensitive - allowing installation and curing in damp environments
- Withstands freeze-thaw conditions
- Little to no odor
- High modulus
- Service temperature range between 35°F (2°C) and 180°F (82°C)
- DOT Not Regulated (non-corrosive)

PACKAGING

DURAL HS GEL is packaged in cases of 21.2 oz (627 mL) cartridges (12 cartridges per case) and cases of 53 oz (1.6 L) cartridges (6 cartridges per case). The mix ratio is 1:1 by volume.

SHELF LIFE

28 months when stored in unopened containers in dry conditions.

Store between 40°F (4°C) and 95 °F (35°C).

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881-14 Types I, II, IV, and V, Grade 3, Classes A, B, and C

Meets the requirements of AASHTO M 235

U.S. DOT Not Regulated (non-corrosive)

COVERAGE/YIELD

One 21.2 oz (627 mL) cartridge yields 38.3 in^3 (627.6 cm^3) of epoxy

One 54 oz (1.6 L) cartridge yields 97.6 in^3 (1,600 cm^3) of epoxy

PERFORMANCE OF DURAL HS GEL TO ASTM C881-14

PROPERTY	RESULT AT CONDITIONING TEMPERATURE		
	Class A 38°F (3°C)	**Class B 50°F (10°C)**	**Class C 75°F (24°C)**
Consistency ASTM C881	< 1/4" (6.4 mm)		
Pot Life ASTM C881	13 min		
Gel Time (60g mass), minutes ASTM C881	38	20	14
Bond Strength, psi (MPa) ASTM C882	2 days: 2,850 (19.7)	2 days: 3,300 (22.8)	2 days 3,580 (24.7)
	14 days: 2,790 (19.2)	14 days: 4,090 (28.2)	14 days 3,940 (27.2)
Water Absorption ASTM D570	14 days: 0.53%		
Heat Deflection Temperature ASTM D648	7 days: 132°F (56°C)		
Linear Coefficient of Shrinkage ASTM D2566	0.002		
Compressive Yield, psi (MPa) ASTM D695	7 days: 10,860 (74.9)	7 days: 10,490 (72.3)	1 day: 11,430 (78.8) 2 days: 11,480 (79.2) 3 days: 11,440 (78.9) 7 days: 11,410 (78.7)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 209,000 (1,441)	7 days: 211,000 (1,455)	7 days: 244,000 (1,682)

1. Results are based on testing conducted on a representative lot(s) of product. Results will vary according to the tolerances of the given property
2. Results may vary due to environmental factors such as temperature, moisture and type of substrate
3. Pot life is measured as the workable time of 1 gallon (3.8 L) of DURAL HS GEL when mixed at 75 °F (24 °C)

DURAL HS GEL CURE SCHEDULE

SUBSTRATE TEMPERATURE	WORKING TIME	FULL CURE TIME
40°F (4°C)	36 min	72 hr
75°F (24°C)	20 min	24 hr
110°F (43°C)	12 min	18 hr

1. Working and full cure times are approximate and may be linearly interpolated between listed temperatures
2. Substrate and ambient air temperature should be from 40 - 110 °F (4 - 43 °C)
3. When ambient or substrate temperature is below 70 °F (21°C), condition the DURAL HS GEL to 70-75 °F (21-24 °C) prior to use

DURAL HS GEL IN-SERVICE CHART

BASE MATERIAL TEMPERATURE, °F (°C)	ALLOWABLE LOAD CAPACITY REDUCTION FACTOR
35 (2)	1.00
70 (21)	1.00
110 (43)	0.91
135 (57)	0.80
150 (66)	0.80
180 (82)	0.66

Reduction factors may be linearly interpolated between listed temperatures

DURAL HS GEL ULTIMATE AND ALLOWABLE TENSION LOADS FOR THREADED ROD IN NORMAL WEIGHT CONCRETE

THREADED ROD DIAMETER, IN	Nominal Drill Bit Diameter, in	Embedment Depth, in (mm)	TENSION LOAD BASED ON BOND STRENGTH/CONCRETE CAPACITY				ALLOWABLE TENSION LOAD BASED ON STEEL STRENGTH		
			f'c ≥ 2,000 psi (13.8 MPa)		f'c ≥ 4,000 psi (27.6 MPa)		ASTM F1554 GRADE 36 LBS. (KN)	ASTM A193 GRADE B7 LBS. (KN)	ASTM F593 304/316 SS LBS. (KN)
			Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)			
3/8	7/16	3 3/8 (86)	9,248 (41.1)	2,312 (10.3)	9,248 (41.1)	2,312 (10.3)	2,114 (9.4)	4,556 (20.3)	3,645 (16.2)
1/2	9/16	4 1/2 (114)	17,076 (76.0)	4,269 (19.0)	22,328 (99.3)	5,582 (24.8)	3,758 (16.7)	8,099 (36.0)	6,480 (28.8)
5/8	3/4	5 5/8 (143)	23,865 (106.2)	5,966 (26.5)	29,950 (133.2)	7,488 (33.3)	5,872 (26.1)	12,655 (56.3)	10,124 (45.0)
3/4	7/8	6 3/4 (171)	31,371 (139.5)	7,843 (34.9)	39,278 (174.7)	9,820 (43.7)	8,456 (37.6)	18,224 (81.1)	12,392 (55.1)
7/8	1	7 7/8 (200)	39,532 (175.8)	9,883 (44.0)	53,862 (239.6)	13,466 (59.9)	11,509 (51.2)	24,804 (110.3)	16,867 (75.0)
1	1 1/8	9 (229)	48,299 (214.8)	12,075 (53.7)	62,697 (278.9)	15,674 (69.7)	15,033 (66.9)	32,398 (144.1)	22,030 (98.0)
1 1/4	1 3/8	11 1/4 (286)	67,500 (300.3)	16,875 (75.1)	88,594 (394.1)	22,149 (98.5)	23,488 (104.5)	50,621 (225.2)	34,423 (153.1)

1. Allowable bond strength/concrete capacity was calculated using a safety factor of 4.0
2. Load adjustment factors for edge distance, spacing distance and in-service temperature should be applied if applicable
3. The lower value of either the adjusted allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design
4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $0.33*F_u*A_{nom}$
5. Linear interpolation may be used for intermediate concrete compressive strengths

DURAL HS GEL ULTIMATE AND ALLOWABLE SHEAR LOADS FOR THREADED ROD IN NORMAL WEIGHT CONCRETE

THREADED ROD DIAMETER, IN	NOMINAL DRILL BIT DIAMETER, IN	EMBEDMENT DEPTH, IN (MM)	SHEAR LOAD BASED ON BOND STRENGTH/CONCRETE CAPACITY		ALLOWABLE SHEAR LOAD BASED ON STEEL STRENGTH		
			f'c ≥ 2,000 psi (13.8 MPa)				
			Ultimate lbs (kN)	Allowable lbs (kN)	ASTM F1554 GRADE 36 LBS. (KN)	ASTM A193 GRADE B7 LBS. (KN)	ASTM F593 304/316 SS LBS. (KN)
3/8	7/16	3 3/8 (86)	7,189 (32.0)	1,797 (8.0)	1,089 (4.8)	2,347 (10.4)	1,878 (8.4)
1/2	9/16	4 1/2 (114)	12,863 (57.2)	3,216 (14.3)	1,936 (8.6)	4,172 (18.6)	3,338 (14.8)
5/8	3/4	5 5/8 (143)	22,855 (101.7)	5,714 (25.4)	3,025 (13.5)	6,519 (29.0)	5,216 (23.2)
3/4	7/8	6 3/4 (171)	32,304 (143.7)	8,076 (35.9)	4,356 (19.4)	9,388 (41.8)	6,384 (28.4)
7/8	1	7 7/8 (200)	36,214 (161.1)	9,054(40.3)	5,929 (26.4)	12,778 (56.8)	8,689 (38.7)
1	1 1/8	9 (229)	52,151 (232.0)	13,038 (58.0)	7,744 (34.4)	16,690 (74.2)	11,349 (50.5)
1 1/4	1 3/8	11 1/4 (286)	69,011 (307.0)	17,253 (76.7)	12,100 (53.8)	26,078 (116.0)	17,733 (78.9)

1. Allowable bond strength/concrete capacity was calculated using a safety factor of 4.0
2. Load adjustment factors for edge distance, spacing distance and in-service temperature should be applied if applicable
3. The lower value of either the adjusted allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design
4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Shear = $0.17*F_u*A_{nom}$

DURAL HS GEL ULTIMATE AND ALLOWABLE TENSION & SHEAR LOADS FOR REBAR IN NORMAL WEIGHT CONCRETE

REBAR SIZE	NOMINAL DRILL BIT DIAMETER, IN	EMBEDMENT DEPTH, IN (MM)	TENSION LOAD BASED ON BOND STRENGTH/ CONCRETE CAPACITY		SHEAR LOAD BASED ON BOND STRENGTH/ CONCRETE CAPACITY		ALLOWABLE LOAD BASED ON STEEL STRENGTH			
			f'c ≥ 2,000 psi (13.8 MPa)		f'c ≥ 2,000 psi (13.8 MPa)		TENSION		SHEAR	
			Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	ASTM A615 GRADE 60 LBS. (KN)	ASTM A615 GRADE 75 LBS. (KN)	ASTM A615 GRADE 60 LBS. (KN)	ASTM A615 Grade 75 lbs. (kN)
#4	5/8	4 1/2 (114)	17,076 (76.0)	4,269 (19.0)	11,240 (50.0)	2,810 (12.5)	4,800 (21.4)	6,000 (26.7)	3,060 (13.6)	3,400 (15.1)
#5	3/4	5 5/8 (143)	23,865 (106.2)	5,966 (26.5)	21,024 (93.5)	5,256 (23.4)	7,440 (33.1)	9,300 (41.4)	4,743 (21.1)	5,270 (23.4)
#6	7/8	6 3/4 (171)	31,371 (143.6)	7,843 (34.9)	32,288 (139.5)	8,072 (35.9)	10,560 (47.0)	13,200 (58.7)	6,732 (29.9)	7,480 (33.3)
#7	1	7 7/8 (200)	39,835 (177.2)	9,959 (44.3)	35,434 (157.6)	8,859 (39.4)	14,400 (64.1)	18,000 (80.1)	9,180 (40.8)	10,200 (45.4)
#8	1 1/8	9 (229)	48,299 (214.8)	12,075 (53.7)	38,580 (171.6)	9,645 (42.9)	18,960 (84.3)	23,700 (105.4)	12,087 (53.8)	13,430 (59.7)

1. Allowable bond strength/concrete capacity was calculated using a safety factor of 4.0
2. Load adjustment factors for edge distance, spacing distance and in-service temperature should be applied if applicable
3. The lower value of either the adjusted allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design
4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $(Fy*A_{nom})/2.5$, Shear = $0.17*F_u*A_{nom}$
5. Values for bond strength of #7 rebar were linearly interpolated from #6 & #8 data

DURAL HS GEL REDUCTION FACTORS FOR EDGE DISTANCE IN TENSION

DIAMETER	IN	3/8	1/2	5/8	3/4	7/8	1	1 1/4
EMBEDMENT DEPTH	IN (MM)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)	11 1/4 (286)
CRITICAL EDGE DISTANCE	IN (MM)	5 1/4 (133)	6 3/4 (171)	8 1/2 (216)	10 1/4 (260)	11 3/4 (298)	13 1/2 (343)	17 (432)
MIN. EDGE DISTANCE	IN (MM)	1 3/4 (44)	2 1/4 (57)	2 3/4 (70)	3 1/2 (89)	4 (102)	4 1/2 (114)	5 3/4 (146)
EDGE DISTANCE		ALLOWABLE LOAD CAPACITY REDUCTION FACTOR						
IN	MM							
1 3/4	44	0.63						
2 1/4	57	0.68	0.64					
2 3/4	70	0.73	0.68	0.66				
3	76	0.76	0.70	0.67				
3 1/2	89	0.81	0.74	0.70	0.67			
4	102	0.87	0.78	0.73	0.70	0.71		
4 1/2	114	0.92	0.82	0.76	0.72	0.73	0.74	
5	127	0.97	0.86	0.79	0.75	0.75	0.75	
5 1/4	133	1.00	0.88	0.81	0.76	0.75	0.76	
5 3/4	146		0.92	0.84	0.78	0.77	0.78	0.77
6 1/4	159		0.96	0.87	0.81	0.79	0.79	0.78
6 3/4	172		1.00	0.90	0.83	0.81	0.81	0.79
7 1/2	190			0.94	0.87	0.84	0.83	0.81
8 1/2	216			1.00	0.92	0.88	0.86	0.83
9 1/2	241				0.96	0.92	0.88	0.85
10 1/4	260				1.00	0.94	0.91	0.86
11	279					0.97	0.93	0.88
11 3/4	298					1.00	0.95	0.89
12 1/2	318						0.97	0.91
13 1/2	343						1.00	0.93
15	381							0.96
16	406							0.98
17	432							1.00

DURAL HS GEL REDUCTION FACTORS FOR EDGE DISTANCE IN SHEAR

DIAMETER	IN	3/8	1/2	5/8	3/4	7/8	1	1 1/4
EMBEDMENT DEPTH	IN (MM)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)	11 1/4 (286)
CRITICAL EDGE DISTANCE	IN (MM)	5 1/4 (133)	6 3/4 (171)	8 1/2 (216)	10 1/4 (260)	11 3/4 (298)	13 1/2 (343)	17 (432)
MIN. EDGE DISTANCE	IN (MM)	1 3/4 (44)	2 1/4 (57)	2 3/4 (70)	3 1/2 (89)	4 (102)	4 1/2 (114)	5 3/4 (146)
EDGE DISTANCE		ALLOWABLE LOAD CAPACITY REDUCTION FACTOR						
IN	MM							
1 3/4	44	0.31						
2 1/4	57	0.41	0.29					
2 3/4	70	0.51	0.37	0.28				
3	76	0.56	0.41	0.31				
3 1/2	89	0.66	0.49	0.37	0.26			
4	102	0.75	0.57	0.44	0.32	0.26		
4 1/2	114	0.85	0.65	0.50	0.37	0.31	0.26	
5	127	0.95	0.73	0.56	0.43	0.35	0.30	
5 1/4	133	1.00	0.76	0.59	0.45	0.38	0.32	
5 3/4	146		0.84	0.65	0.51	0.43	0.36	0.25
6 1/4	159		0.92	0.72	0.56	0.47	0.40	0.29
6 3/4	172		1.00	0.78	0.62	0.52	0.44	0.32
7 1/2	190			0.87	0.70	0.59	0.50	0.37
8 1/2	216			1.00	0.81	0.69	0.59	0.44
9 1/2	241				0.92	0.78	0.67	0.50
10 1/4	260				1.00	0.86	0.73	0.55
11	279					0.93	0.79	0.60
11 3/4	298					1.00	0.86	0.65
12 1/2	318						0.92	0.70
13 1/2	343						1.00	0.77
15	381							0.87
16	406							0.93
17	432							1.00

1. Minimum slab thickness equals 1.5 x embedment depth
2. Linear interpolation may be used for intermediate edge distances

DURAL HS GEL REDUCTION FACTORS FOR SPACING DISTANCE IN TENSION

DIAMETER	IN	3/8	1/2	5/8	3/4	7/8	1	1 1/4
EMBEDMENT DEPTH	IN (MM)	3 3/8 (86)	4 1/2 (114)	5 5/8 (143)	6 3/4 (171)	7 7/8 (200)	9 (229)	11 1/4 (286)
CRITICAL SPACING DISTANCE	IN (MM)	5 1/4 (133)	6 3/4 (171)	8 1/2 (216)	10 1/4 (260)	11 3/4 (298)	13 1/2 (343)	17 (432)
MIN. SPACING DISTANCE	IN (MM)	1 3/4 (44)	2 1/4 (57)	2 3/4 (70)	3 1/2 (89)	4 (102)	4 1/2 (114)	5 3/4 (146)
SPACING DISTANCE		ALLOWABLE LOAD CAPACITY REDUCTION FACTOR						
IN	MM							
1 3/4	44	0.69						
2 1/4	57	0.73	0.69					
2 3/4	70	0.76	0.72	0.69				
3	76	0.78	0.73	0.70				
3 3/8	86	0.81	0.75	0.72	0.69			
4	102	0.85	0.79	0.74	0.71	0.69		
4 1/2	114	0.89	0.81	0.77	0.73	0.71	0.69	
5 5/8	143	1.97	0.88	0.82	0.77	0.74	0.72	0.69
6	152	1.00	0.90	0.83	0.79	0.75	0.73	0.70
6 1/2	165		0.92	0.85	0.80	0.77	0.75	0.71
7 1/4	184		0.97	0.89	0.83	0.79	0.77	0.73
7 7/8	200		1.00	0.91	0.85	0.81	0.78	0.74
8 1/2	216			0.94	0.88	0.83	0.80	0.75
9 7/8	251			1.00	0.93	0.87	0.84	0.78
10 1/2	267				0.95	0.89	0.86	0.80
11 7/8	302				1.00	0.94	0.89	0.83
12 1/2	318					0.96	0.91	0.84
13 7/8	352					1.00	0.95	0.87
14 1/2	368						1.97	0.88
15 3/4	400						1.00	0.91
17	432							0.94
18 1/2	470							0.97
19 3/4	502							1.00

1. Minimum slab thickness equals 1.5 x embedment depth
2. Linear interpolation may be used for intermediate edge distances

DIRECTIONS FOR USE

Drilling and Cleaning Holes: Using a rotary hammer drill, and a bit that conforms to ANSI B212.15 and is the appropriate size for the anchor diameter to be installed, drill the hole to the specified embedment depth. Always wear appropriate personal protection equipment (PPE) for eyes, ears & skin and avoid inhalation of dust during the drilling and cleaning process. Refer to the Safety Data Sheet (SDS) for details prior to proceeding.

Remove any standing water from hole prior to beginning the cleaning process. Using oil free compressed air with a minimum pressure of 80 psi, insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 4-5 seconds.

Select the correct wire brush size for the drilled hole diameter, making sure that the brush is long enough to reach the bottom of the drilled hole. Reaching the bottom of the hole, brush in an up & down and twisting motion. The brush should contact the walls of the hole. If it does not, the brush is either too worn or small and should be replaced with a new brush of the correct diameter. Blow the hole out once more to remove brush debris using oil free compressed air with a minimum pressure of 80 psi. Visually inspect the hole to confirm it is clean. If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

Preparing Cartridges: Remove the protective cap from the DURAL HS GEL cartridge and insert the cartridge into the dispensing tool. Before attaching static mixer, balance the cartridge by dispensing a small amount of material until both components are flowing evenly. Only after the cartridge has been balanced, attach the static mixer to the cartridge. Take note of the air and base material temperatures and review the working/full cure time chart prior to starting the injection process.

Dispense the initial amount of material from the mixing static mixer onto a disposable surface until the product is a uniform gray color with no streaks, as adhesive must be properly mixed in order to perform as published. Dispose of the initial amount of adhesive prior to injection into the drill hole. When changing cartridges, never re-use static mixers. A new static mixer should be used with each new cartridge.

Installation and Curing: Insert the static mixer into the bottom of the hole and fill from the bottom to the top approximately two-thirds full, being careful not to withdraw the nozzle too quickly as this may trap air in the adhesive. When using a pneumatic dispensing tool, ensure that pressure is set at 90 psi maximum. Do not disturb, torque or apply any load to the installed anchor until the specified full cure time has passed. The amount of time needed to reach full cure is base material temperature dependent. Refer to the Cure Schedule table for the full cure time.

Prior to inserting the threaded rod or rebar into the hole, make sure it is clean and free of oil and dirt and that the necessary embedment depth is marked on the anchor element. Insert the anchor element into the hole while turning 1-2 rotations prior to the anchor reaching the bottom of the hole. Excess adhesive should be visible on all sides of the fully installed anchor. For horizontal installations, wedges should be used to center and support the anchor while the adhesive is curing. Use extra care with deep embedment or high temperature installations to ensure that the working time has not elapsed prior to the anchor being fully installed.

Setting ports & sealing cracks: Place a small amount of mixed DURAL HS GEL on the back of the port and carefully place it centered over the crack. Be careful to not fill the hole of the injection port. Place neat DURAL HS GEL over the face of the cracks to be pressure injected, and around each injection port. Allow DURAL HS GEL to sufficiently harden before injecting, to prevent blowouts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL HS GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Install DURAL HS GEL with a high quality, professional grade gun with a gear ratio of at least 26:1 for ease of application and best results
- Do not thin DURAL HS GEL as this may affect cure and performance
- DURAL HS GEL will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting
- Not recommended for any overhead application where there may be a sustained tensile load
- For anchoring applications, concrete must be a minimum of 21 days old prior to anchor installation
- Performance characteristics, such as seismic and long term load resistance, were tested in accordance with ASTM E488-96 (2003) & E1512-01 (2015) provisions and not that of ACI 355.4, and are therefore not applicable in the concrete tension zone. Always consult with a design professional prior to use to ensure product applicability
- In all cases, consult the product Safety Data Sheet before use

Rev. 09.18

DURAL INJECTION GEL

HIGH MODULUS STRUCTURAL INJECTION ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL INJECTION GEL is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive designed for crack sealing projects. This high modulus, non-abrasive, epoxy resin is formulated to be injected into cracks and remain there, when the back of the crack can't be sealed. Ideal for automated injection equipment.

PRIMARY APPLICATIONS

- Unique injection gel for cracked, structural substrates
- Seals cracks and sets ports prior to injection
- Anchoring bolts, dowels, or pins
- General adhesive for concrete, masonry, steel, and wood
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to concrete
- Enhanced lubricity allows deep crack penetration
- Easy to use 1:1 mix ratio
- Moisture insensitive for cracks that "can't dry"
- Seals backside of crack during injection
- All-in-one product: sets ports, seals, injects

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Consistency ASTM C881	1/16" (1.6 mm)
Gel Time, minutes ASTM C881	33
Bond Strength, psi (MPa) ASTM C882	2 days: 2,500 (17.2) 14 days: 2,500 (17.2)
Water Absorption ASTM D570	24 hours: 0.2%
Heat Deflection Temperature ASTM D648	145°F (62°C)
Linear Coefficient of Shrinkage ASTM D2566	0.001
Compressive Yield, psi (MPa) ASTM D695	7 days: 10,000 (68.9)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 400,000 (2,758)

PACKAGING

DURAL INJECTION GEL is packaged in 2 gal (7.6 L), 4 gal (15 L) and 10 gal (38 L) units. The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Types I, II, IV and V, Grade 3, Class C

Meets the requirements of AASHTO M 235

COVERAGE/YIELD

For injection, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURAL INJECTION GEL epoxy mixed with 1 gal (3.8 L) of dry 20/40 mesh silica sand will yield approximately 368 in^3 (6,030 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL INJECTION GEL using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURAL INJECTION GEL mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL INJECTION GEL epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 1 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Setting ports & sealing cracks: Place a small amount of mixed DURAL INJECTION GEL on the back of the port and carefully place it centered over the crack. Be careful to not fill the hole of the injection port. Place neat DURAL INJECTION GEL over the face of the cracks to be pressure injected, and around each injection port. Allow DURAL INJECTION GEL to sufficiently harden before injecting, to prevent blowouts. **Pressure injecting cracks:** Attach injection ports and seal the face of the crack according to the above instructions. Allow the sealing gel to sufficiently harden before injecting, to prevent blowouts. Pump DURAL INJECTION GEL into the crack via the injection ports, using two-component pressure injection equipment. Start at the bottom of the crack and work upwards from port to port. Cap off ports as you proceed up the crack to ensure that DURAL INJECTION GEL is kept contained within the crack. DO NOT INJECT IF WATER IS LEAKING FROM THE CRACK. **Bonding fresh concrete to hardened concrete:** Apply by brush, roller, or squeegee to the prepared, existing concrete substrate. Place fresh concrete onto the DURAL INJECTION GEL while it is still tacky. The open time is typically 3 to 4 hours at 75°F (24°C). The open time is reduced at warmer temperatures. If the DURAL INJECTION GEL loses tackiness or exceeds open time, abrade the surface of the epoxy, wipe surface clean, re-apply DURAL INJECTION GEL, and proceed. DO NOT PLACE CONCRETE OVER DRIED EPOXY. **Bonding hardened concrete to hardened concrete:** Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURAL INJECTION GEL. For optimum results, the bond line should not exceed 1/8” (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Anchoring bolts, dowels, pins:** DURAL INJECTION GEL can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate) or horizontally-aligned anchors (into a vertical substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16” (1.6 mm) annular space (1/8” (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL INJECTION GEL neat as a primer coat to the prepared concrete surface. Mix the DURAL INJECTION GEL into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL INJECTION GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL INJECTION GEL indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL INJECTION GEL
- DURAL INJECTION GEL will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL INJECTION GEL is not to be used as a finished/aesthetic coating
- Do not use DURAL INJECTION GEL for overhead anchoring
- Maximum application thickness of DURAL INJECTION GEL mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL LPL MV

EXTENDED WORKING TIME, HIGH MODULUS EPOXY BONDING AGENT

EUCLID CHEMICAL

DESCRIPTION

DURAL LPL MV is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This high modulus, medium viscosity epoxy resin is the perfect solution for bonding new, plastic concrete to existing concrete slabs and steel. DURAL LPL MV (Long Pot Life) provides extended working time versus conventional epoxy bonding agents.

PRIMARY APPLICATIONS

- Bonding fresh concrete to hardened concrete
- Anchoring bolts, dowels, or pins
- General adhesive for concrete and masonry
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Provides exceptional adhesion
- Easy to use 2:1 mix ratio
- Moisture insensitive
- Longer working time, even in warm conditions

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mixed Viscosity, cp ASTM D2556	4,200
Gel Time, minutes ASTM C881	34
Bond Strength, psi (MPa) ASTM C882	14 days: > 2,000 (13.8)
Water Absorption ASTM D570	24 hours: 0.25%
Heat Deflection Temperature ASTM D648	136°F (57°C)
Linear Coefficient of Shrinkage ASTM D2566	0.001
Compressive Yield, psi (MPa) ASTM D695	7 days: 10,000 (68.9)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 170,000 (1,172)
Tensile Strength, psi (MPa) ASTM D638	7 days: 3,000 (20.7)
Elongation at Break ASTM D638	4.0%

PACKAGING

DURAL LPL MV is packaged in 1 gal (3.8 L) and 3 gal (11.4 L) units. The mix ratio is 2:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Type II, Grade 2, Class C

COVERAGE/YIELD

For bonding, 1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. The coverage rate as a bonding agent is approximately 50 to 100 ft^2/gal (1.2 to 2.5 m^2/L), depending upon the texture of the existing slab. 1 gal (3.8 L) of neat DURAL LPL MV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in^3 (10,537 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL LPL MV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURAL LPL MV mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURAL LPL MV epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Bonding fresh concrete to hardened concrete: Apply by brush, roller, or squeegee to the prepared, existing concrete substrate. Place fresh concrete onto the DURAL LPL MV while it is still tacky. The open time is typically 5 to 6 hours at 75°F (24°C). The open time is reduced at warmer temperatures. If the DURAL LPL MV loses tackiness or exceeds open time, abrade the surface of the epoxy, wipe surface clean, re-apply DURAL LPL MV, and proceed. DO NOT PLACE CONCRETE OVER DRIED EPOXY. **Bonding hardened concrete to hardened concrete:** Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURAL LPL MV. For optimum results, the bond line should not exceed 1/8" (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Anchoring bolts, dowels, pins:** DURAL LPL MV can be used neat or as a mortar to grout vertically-aligned anchors (into a horizontal substrate). The anchor hole should be free of all debris before grouting. The optimum hole size is 1/16" (1.6 mm) annular space (1/8" (3.2 mm) larger diameter than anchor diameter). Depth of embedment is typically 10 to 15 times anchor diameter. **Patching and repairs:** Apply DURAL LPL MV neat as a primer coat to the prepared concrete surface. Mix the DURAL LPL MV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1" to 1-1/2" (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL LPL MV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL LPL MV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 60°F and 90°F (16°C and 32°C)
- Material temperatures should be at least 60°F (16°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL LPL MV
- DURAL LPL MV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURAL LPL MV is not to be used as a finished/aesthetic coating
- Do not use DURAL LPL MV for horizontally-aligned anchors (into a vertical substrate)
- Do not use DURAL LPL MV for overhead anchoring
- Maximum application thickness of DURAL LPL MV mortar is 1.5" per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALFLEX GEL

NON-SAG, LOW MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURALFLEX GEL is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This low modulus, non-sag epoxy resin is the perfect solution for general bonding applications.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry or wood
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Easy to use 1:1 mix ratio
- Moisture insensitive
- Tenacious bond strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Consistency ASTM C881	< 1/4" (6.4 mm)
Gel Time, minutes ASTM C881	25
Bond Strength, psi (MPa) ASTM C882	2 days: > 2,000 (13.8) 14 days: > 2,300 (15.9)
Water Absorption ASTM D570	24 hours: < 0.5%
Compressive Yield, psi (MPa) ASTM D695	7 days: > 5,000 (34.5)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 300,000 (2,068)
Tensile Strength, psi (MPa) ASTM D638	7 days: > 2,000 (13.8)
Elongation at Break ASTM D638	> 30%

PACKAGING

DURALFLEX GEL is packaged in 4 gal (15 L) units. Each 4 gal (15 L) unit consists of two 2 gal (7.6 L) kits. The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Type III, Grade 3, Classes B and C

COVERAGE/YIELD

1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURALFLEX GEL epoxy mixed with 1 gal (3.8 L) of dry 20/40 mesh silica sand will yield approximately 368 in^3 (6,030 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALFLEX GEL using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURALFLEX GEL mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURALFLEX GEL epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 1 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: General bonding: Apply by spatula, brush, or trowel. Ensure the surfaces to be joined have uniform coatings of DURALFLEX GEL. For optimum results, the bond line should not exceed 1/8” (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Patching and repairs:** Apply DURALFLEX GEL neat as a primer coat to the prepared concrete surface. Mix the DURALFLEX GEL into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALFLEX GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALFLEX GEL indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALFLEX GEL
- DURALFLEX GEL will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURALFLEX GEL is not to be used as a finished/aesthetic coating
- Do not use DURALFLEX GEL for anchoring
- Maximum application thickness of DURALFLEX GEL mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALFLEX LV

LOW VISCOSITY, LOW MODULUS EPOXY ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURALFLEX LV is a two-component, 100% solids, moisture insensitive, high strength epoxy adhesive and binder for numerous applications. This low modulus, low viscosity epoxy resin is the perfect solution for general bonding applications.

PRIMARY APPLICATIONS

- Bonding of concrete, masonry or wood
- Mix with dried silica sand to create a repair mortar

FEATURES/BENEFITS

- Exceptional adhesion to construction materials
- Easy to use 1:1 mix ratio
- Moisture insensitive
- Tenacious bond strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mixed Viscosity, cp ASTM D2556	1,800
Gel Time, minutes ASTM C881	25
Bond Strength, psi (MPa) ASTM C882	2 days: > 2,000 (13.8) 14 days: > 2,300 (15.9)
Water Absorption ASTM D570	24 hours: < 0.5%
Compressive Yield, psi (MPa) ASTM D695	7 days: > 5,000 (34.5)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 300,000 (2,068)
Tensile Strength, psi (MPa) ASTM D638	7 days: > 2,000 (13.8)
Elongation at Break ASTM D638	> 30%

PACKAGING

DURALFLEX LV is packaged in 4 gal (15 L) units. Each 4 gal (15 L) unit consists of two 2 gal (7.6 L) kits. The mix ratio is 1:1 by volume.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C881 Type III, Grade 1, Classes B and C

COVERAGE/YIELD

1 neat gal (3.8 L) yields 231 in^3 (3,785 cm^3) of epoxy. 1 gal (3.8 L) of neat DURALFLEX LV epoxy mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 643 in^3 (10,537 cm^3) of mortar.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALFLEX LV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURALFLEX LV mortar, gradually add clean, dry, 20/40 mesh silica sand to previously mixed DURALFLEX LV epoxy and mix thoroughly for 3 to 5 minutes. The mix ratio of aggregate to mixed epoxy is approximately 3 to 1 by volume, but can be modified depending on the desired consistency of the mortar.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: General bonding: Apply by roller, brush, or squeegee. Ensure the surfaces to be joined have uniform coatings of DURALFLEX LV. For optimum results, the bond line should not exceed 1/8” (3.2 mm). Join surfaces and hold or clamp firmly until the epoxy gels. Ideally, a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky. **Patching and repairs:** Apply DURALFLEX LV neat as a primer coat to the prepared concrete surface. Mix the DURALFLEX LV into an epoxy mortar and apply to the area by trowel or spatula in lifts of 1” to 1-1/2” (25 to 38 mm) before the neat primer coat becomes tack free. Allow each lift to reach initial set before applying subsequent lifts.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALFLEX LV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALFLEX LV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALFLEX LV
- DURALFLEX LV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- DURALFLEX LV is not to be used as a finished/aesthetic coating
- Do not use DURALFLEX LV for anchoring
- Maximum application thickness of DURALFLEX LV mortar is 1.5” per lift.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALPREP A.C.

BONDING AGENT AND ANTI-CORROSION COATING

EUCLID CHEMICAL

DESCRIPTION

DURALPREP A.C. is a three-component bonding agent and anti-corrosion coating for reinforcing steel. It is a pre-proportioned kit that contains a water-based epoxy, combined with portland cement that can be used as a bonding agent for placing fresh concrete and repair mortars to existing concrete substrates. DURALPREP A.C. contains a corrosion inhibitor which protects reinforcement when used as an anti-corrosion coating for steel. DURALPREP A.C. has a long open time, is non-flammable, VOC compliant, and does not form a water vapor barrier after cure.

PRIMARY APPLICATIONS

- Bonding agent for fresh concrete to existing concrete
- Vertical & overhead concrete repairs
- Anti-corrosion coating for steel reinforcement
- Exterior or interior
- On grade or above grade applications

FEATURES/BENEFITS

- Long open time
- Contains a corrosion inhibitor
- Ease of application (brush/spray)
- Non-flammable
- Does not form a vapor barrier

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mix Ratio (A:B:C)	1 gal:1 gal:36 lbs (3.8 L:3.8 L:16 kg)
Contact Time	Up to 24 hours depending on temperature
Pot Life (2 gal (7.6 L) unit), minutes	35 to 40
Compressive Strength, psi (MPa) ASTM C109	3 days: 2,900 (20.0) 7 days: 4,100 (28.3) 28 days: 4,500 (31.0)
Flexural Strength, psi (MPa) ASTM C348	28 days: > 1,280 (8.8)
Shore D Hardness ASTM D2240	90 to 95
Bond Strength, psi (MPa) ASTM C882	7 days (w/ 1 hr open time): 2,480 (17.1) 7 days (w/ 24 hr open time): 2,700 (18.6)
Split Tensile Strength, psi (MPa) ASTM C496	28 days: > 600 (4.1)
Water Vapor Transmission ASTM E96	0.16 grains/hr•ft^2
Appearance/Color	Concrete Gray

PACKAGING

DURALPREP A.C. is packaged in 3.75 gal (14.2 L) kits and in cases of 1 gal (3.8 L) units (2 units per case).

SHELF LIFE

2 years in original, unopened package

COVERAGE

One 3.75 gal (14.2 L) kit of DURALPREP A.C. will cover approximately 250 ft^2 (23.2 m^2), per coat.

One 1 gal (3.8L) unit will cover approximately 65 ft^2 (6.0 m^2), per coat.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The substrate should be saturated, surface-dry (SSD) prior to application, with no standing water/puddles. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM D4541, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALPREP A.C. using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine all of Part A with all of Part B, then mix thoroughly for 30 to 45 seconds. After the 30 to 45 seconds have elapsed, gradually add all of Part C (powder) into the mixed epoxy, then mix thoroughly for 3 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Bonding agent: Apply **one** coat, between 20 and 27 mils thick, of DURALPREP A.C. to the SSD surface using a stiff bristle brush, or spray with a hopper gun at a rate of 60 to 80 ft^2/gal (1.5 to 2.0 m^2/L). Allow to fully dry (approximately 1 hour) before placing concrete or repair mortars. DURALPREP A.C. has an open time from 1 to 24 hours at 75°F (24°C). **Anti-corrosion coating:** Coat the exposed reinforcing steel, making sure to coat the underside portion of the steel as well. Apply **two** coats, at 20 mils thick each, of DURALPREP A.C. to the properly prepared steel using a stiff bristle brush, or spray with a hopper gun at a rate of 80 ft^2/gal (2.0 m^2/L). Allow 3 to 6 hours between applications. Place subsequent concrete or repair mortars within the open time of the second coat of DURALPREP A.C. (1 to 24 hours at 75°F (24°C)).

Note: If the applied DURALPREP A.C. exceeds its open time (see times in "Precautions/Limitations" below) before the subsequent application of concrete or repair mortar, lightly sand the existing DURALPREP A.C., wipe the surface clean, and apply a fresh coat of DURALPREP A.C. to the area.

CLEAN-UP

Clean tools and application equipment immediately with water. Clean spills or drips with water while still wet. Hardened DURALPREP A.C. will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALPREP A.C. indoors, protected from moisture, at temperatures between 65°F and 80°F (18°C and 27°C)
- Surface and ambient temperature during applications should be between 45°F and 90°F (7°C and 32°C)
- Material temperatures should be at least 45°F (7°C) and rising
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not use DURALPREP A.C. as a surface bonding agent for toppings less than 3.5 inches (8.9 cm) thick
- Do not thin DURALPREP A.C.
- DURALPREP A.C. is not to be used as a finished/aesthetic coating
- Do not mix DURALPREP A.C. for longer than 3 minutes
- Protect applied DURALPREP A.C. from wind and excessive heat. These conditions will shorten open time.
- Maximum open times: 12 hours at 90°F (32°C), 24 hours at 75°F (24°C), 30 hours at 45°F (7°C)
- In all cases, consult the product Safety Data Sheet before use

Rev. 02.19

EUCOFLOOR EPOXY PRIMER

EPOXY PRIMER AND BONDING AGENT FOR CONCRETE TOPPINGS

EUCLID CHEMICAL

DESCRIPTION

EUCOFLOOR EPOXY PRIMER is a two component, medium viscosity epoxy used for bonding concrete floor toppings and underlayments.

PRIMARY APPLICATIONS

- Bonding underlayments and toppings to hardened concrete
- Broadcast or “seeded” with sand to create a rough surface in preparation for bonding

FEATURES/BENEFITS

- Provides excellent adhesion of toppings and underlayments to the concrete substrate
- Easy to use 2:1 mix ratio
- Medium viscosity ensures fast and easy application

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Gel Time (200g mass), minutes ASTM C881	22
Pot Life, minutes	20
Open Time (20 mil (0.50 mm) film)	1 hour 45 minutes
Approximate Drying Time (20 mil (0.50 mm) film) ASTM D5895	Tack Free: 2 hours Thin Film Set (neat): 2.5 hours Thin Film Set (sand seeded): 3.25 hours
Viscosity, cp	Part A: 4,790 Part B: 450 Mixed: 1,345
Tensile Strength, psi (MPa) ASTM D638	7 days: 7,780 (53.6)
Elongation at Break ASTM D638	7 days: 2%
Tensile Modulus, psi (MPa) ASTM D638	7 days: 385,000 (2,654)
Compressive Strength, psi (MPa) ASTM D695	7 days (neat): 10,500 (72.4) 7 days (3:1 mix with 20/40 sand): 10,300 (71.0)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 220,000 (1,517)
Bond Strength (Sand Saturated), psi (MPa) ASTM C882	2 days: 2,400 (16.5) 14 days: 2,700 (18.6)
Water Absorption ASTM D570	7 days: 0.37%

PACKAGING

EUCOFLOOR EPOXY PRIMER is packaged in 3 gallon (11.3 L) contractor kits: 2 gallons of Part A and 1 gallon of Part B both contained inside a 3 gallon pail

SHELF LIFE

2 years in original, unopened containers

COVERAGE/YIELD

The coverage rate is approximately 90 to 120 ft^2/gal (2.2 to 2.9 m^2/L) to provide a uniform wet film thickness of 16 to 20 mils (0.40 to 0.50 mm). At this rate one 3 gallon (11.3 L) unit will cover 270 to 360 ft^2 (25 to 33 m^2).

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, dry, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, to a CSP of 2-3 in accordance with ICRI Guideline 310.2. After mechanical preparation, thoroughly remove all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used to neutralize the substrate. Allow substrate to dry before application. Route cracks and blow dust/debris from them with oil-free compressed air. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C 1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Mixing: With a low-speed drill, pre-mix Part A and Part B separately for approximately 1 minute each. After pre-mixing, pour Part B into Part A and mix thoroughly for 3 to 5 minutes until the mixture is homogeneous.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not mix at high speeds or aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Immediately empty the entire contents of the mixed EUCOFLOOR EPOXY PRIMER onto a properly prepared substrate, spreading it carefully in order to achieve a uniform wet film thickness of 16 to 20 mils (0.40 to 0.50 mm). EUCOFLOOR EPOXY PRIMER will build excessive heat if left to react in the mixing pail.

Spread EUCOFLOOR EPOXY PRIMER over the substrate with a 1/8 inch (3 mm) squeegee and back-roll with a roller equipped with a 1/4 inch (6 mm) nap roller cover. Use a quality paintbrush for edges, corners, and hard-to-reach areas. Make sure that all voids and pinholes are filled/sealed to eliminate substrate outgassing. In some cases on rough surfaces, a longer-nap roller may be required to ensure complete surface coverage.

Immediately after spreading EUCOFLOOR EPOXY PRIMER, broadcast 16-30 mesh dry aggregate over the surface of the wet epoxy at a rate of approximately 1 lb per ft^2 (4.88 kg per m^2), until there are no wet spots. Follow NIOSH safety guidelines when broadcasting aggregate.

At 75°F (24°C), allow aggregate-seeded EUCOFLOOR EPOXY PRIMER to cure for 4-6 hours before removing excess aggregate, by sweeping and vacuum. Allow more time if temperatures are below 75°F (24°C). Less time is required if temperatures are above 75°F (24°C).

If after removing excess aggregate, areas of glossy, cured epoxy are observed, reapplication of EUCOFLOOR EPOXY PRIMER and rebroadcast of the aggregate is required. Glossy, cured areas of un-seeded epoxy will act as a bond breaker with the subsequent installation of underlayment or topping products. Before reapplication, ensure that all dust from aggregate and any other surface contamination is removed. Reapplication must be made within 24 hours of the original application of the EUCOFLOOR EPOXY PRIMER and aggregate broadcast.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened EUCOFLOOR EPOXY PRIMER will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store EUCOFLOOR EPOXY PRIMER indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C). Condition material to 70°F (21°C) for at least 24 hours before using
- Surface and ambient temperature during applications should be between 50°F and 90°F (10°C and 32°C)
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

AKKRO-7T

ACRYLIC LATEX LIQUID BONDING ADMIXTURE

EUCLID CHEMICAL

DESCRIPTION

AKKRO-7T is a non-redispersable, liquid bonding admixture used to produce polymer modified concrete and mortar. AKKRO-7T is a milky white, water-based emulsion of high solids acrylic polymers and modifiers. AKKRO-7T is non-yellowing and has excellent resistance to ultraviolet degradation, heat and most common chemicals. AKKRO-7T does not alter the color of the mixture.

PRIMARY APPLICATIONS

- Cement based coatings, toppings, patching mortars, leveling compounds, stucco, and terrazzo
- Mixing liquid for TAMOSEAL, CONCRETE FINISHER, TAMMS SBC and TAMMS STUCCO FINISH

FEATURES/BENEFITS

- Increases flexural and tensile strength
- Improves bond strength
- Reduces shrinkage
- Resists water penetration
- Protects against freeze-thaw damage
- Non-yellowing
- Does not re-emulsify when exposed to water

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	UNMODIFIED SAND-CEMENT	SAND-CEMENT WITH AKKRO-7T
Compressive Strength, psi (MPa) ASTM C109	3 days: 1,640 (11.3) 7 days: 2,345 (16.2)	3 days: 2,890 (19.9) 7 days: 3,410 (23.5)
Flexural Strength, 7 days, psi (MPa) ASTM C78	410 (2.8)	1,096 (7.6)
Bond Strength, 7 days, psi (MPa) ASTM C321	56 (0.4)	486 (3.3)
Tensile Strength, 7 days, psi (MPa) ASTM C190	246 (1.7)	510 (3.5)

PROPERTY OF AKKRO-7T	VALUE
Solids Content (by weight)	29%
Unit Weight, Specific Gravity	8.65 lbs/gal, 1.04
VOC Content	≤ 10 g/L

PACKAGING

AKKRO-7T is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C1059, Type II

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, clean, free of dust, dirt, oil, curing or form release compounds, paint, laitance, efflorescence and other contaminants. New concrete and masonry surfaces must be cured for at least 7 days. Provide an absorptive surface on smooth precast or formed concrete by abrading the surface. Follow the surface preparation directions for the product in which AKKRO-7T is being used as an admixture.

Mixing: Stir AKKRO-7T slowly and thoroughly using slow speed mixing equipment and a clean container. Do not aerate the AKKRO-7T.

Recommended Mixtures:

Bonding Slurry: Dry mix 1 part portland cement with 3 parts dry sand and add undiluted AKKRO-7T to produce a pourable slurry coat. Brush mixture thoroughly into voids and pores of surface to eliminate air pockets. Before slurry coat dries, follow immediately with patching materials that are compatible with portland cement.

Patches, Overlays And Toppings: For depths 1/2 in (12.7 mm) or greater, mix 1 part AKKRO-7T with 3 parts potable water. Proportion dry sand, cement, aggregate and add measured amount of mixing liquid. Featheredging and repairs less than 1/2 in (12.7 mm) deep will require additional AKKRO-7T in the mix.

Terrazzo: Make up a mixing liquid of 1 part AKKRO-7T to 3 parts potable water.

Thin Coat Wall Applications: Manufactured wall coatings including TAMOSEAL, CONCRETE FINISHER, TAMMS SBC, and TAMMS STUCCO FINISH; mix 1 part AKKRO-7T to 3 parts potable water for mixing liquid, or as directed in instructions for mixing coating.

Field Mixed Stucco: Mix 1 part AKKRO-7T to 3 parts potable water.

Cement Plaster Coatings: Applications 3/8 in (9.5 mm) or less; use 1 part AKKRO-7T to 2 parts potable water. Applications over 3/8 in (9.5 mm); use a 1:3 mixture.

Pointing Mortars: Manufactured tuckpointing mortars and other special mortars for thin applications; mix 1 part AKKRO-7T to 3 parts potable water for mixing liquid.

Application: Use only light pressure on trowel and finish with as few strokes as possible. Keep trowel clean and wet to prevent sticking. Do not over trowel. Mixes with AKKRO-7T do not normally require curing, but on hot, dry or windy days, it is advisable to cover with moist burlap for 24 hours or as recommended. Air-cure the surface for 2 to 4 days for normal use, and 4 to 7 days for heavy traffic areas. Refer to “PRECAUTIONS,” for curing water containment structures.

CLEAN-UP

Clean tools and equipment with detergent and water immediately following use. Clean drips, spills and smears while mix is still wet. Mixes containing AKKRO-7T are extremely difficult to remove if allowed to dry before cleaning.

PRECAUTIONS/LIMITATIONS

- Do not apply mixes modified with AKKRO-7T when the temperature is below, or expected to fall below 40°F (4°C) within 48 hours.
- Do not use with air entrained cement-based products.
- Do not use AKKRO-7T by itself as a bonding agent. It must be mixed with cement.
- Excessive moisture and high humidity will slow curing time.
- Provide adequate ventilation when using AKKRO-7T in enclosed tanks, reservoirs or other areas where air circulation is limited.
- Air-cure cisterns, tanks or pools for minimum 7 to 10 days before filling with water.
- Concrete mix designs using AKKRO-7T should be evaluated and tested for performance and application properties prior to use.
- Store between 40°F to 90°F (4°C to 32°C). Protect from freezing.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

FLEX-CON

ACRYLIC LATEX LIQUID BONDING ADMIXTURE

EUCLID CHEMICAL

DESCRIPTION

FLEX-CON is a water dispersion of an architectural grade acrylic latex specifically designed for modifying portland cement compositions. Mortar modified with FLEX-CON has improved physical strength, and superior adhesion to old concrete, masonry, brick, and many other surfaces.

PRIMARY APPLICATIONS

- Admixture for overlays, repair mortars and leveling materials
- Thin sets, terrazzo, stucco and bond coats
- Repairs utilizing spray or fill coats
- General reconstruction work
- Repairs to precast structural members
- Architectural panels, bridge decks and highway repairs

FEATURES/BENEFITS

- Improves bond strength
- Increases durability under freeze/thaw cycling
- Reduces cracking through increased mortar flexural strength
- Increases mortar wear resistance under rubber wheeled traffic
- Increases mortar tensile strength
- Repair mortar offers greater impact resistance
- Does not re-emulsify when exposed to water

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Solids Content (by weight)	24%
Unit Weight, Specific Gravity	8.4 lbs/gal, 1.01
VOC Content	< 10 g/L
Compressive Strength of FLEX-CON Modified Repair Mortar ASTM C109, 2 in (50 mm) cubes	3 days: 3,000 psi (21 MPa) 7 days: 4,000 psi (28 MPa) 28 days: 5,000 psi (34 MPa)
Flexural Strength ASTM C348	28 days: 1,300 psi (9 MPa)
Bond Strength ASTM C1042	14 days: 1,300 psi (8.9 MPa)
Appearance	White Liquid

PACKAGING

FLEX-CON is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C1059, Type II.

FLEX-CON is classified by The American Concrete Institute as a non-reemulsifiable bonding admixture.

Canadian MTQ

COVERAGE

Cement Bond Coat Coverage*	ft²/gal (m²/L) Cement	Sand	Flex-Con
600 to 800 (56 to 74)	94 lb (43 kg)	—	7 to 8 gal (26 to 30 L)

Repair Mortar	Cement	Sand	Flex-Con
110 to 120 @ ½" (10 to 11 @ 13 mm)	94 lb (43 kg)	300 lb (136 kg)	5 to 6 gal (19 to 23 L)

* Projected coverage is an estimate only, and is highly dependent upon concrete texture.

DIRECTIONS FOR USE

Surface Preparation: If using this product as a cement bond coat, the base concrete must be a minimum of 3 days old. The concrete must be clean of all oil, dirt, debris, paint, curing/sealing compounds and unsound concrete must be removed. The surface must be prepared mechanically using a scabbler, bushhammer, shotblaster or scarifier, so that the minimum surface profile is 1/8" (3 mm) and exposes the large aggregate of the concrete. NOTE: Acid etching is not acceptable. Finally, clean the concrete of all residue with a vacuum cleaner or pressure washer. Allow the concrete surface to begin drying, and do not place the cement bond coat on standing water. Bond coat should be on a concrete substrate that is saturated surface dry (SSD) to reduce moisture loss.

Bonding: For bonding traffic bearing toppings with this product, The Euclid Chemical Company strongly recommends using a bond coat rather than using this product as a primer by itself. After the surface has been prepared, prime all areas with a bond coat (see above mix design) before the topping is applied. Follow mixing and placing instructions listed below. Place the topping on the bond coat before it dries out.

Mixing: Small quantities may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 40°F (5°C) to 90°F (32°C). Add the appropriate amount of FLEX-CON for the batch size and then add the dry material. Mix a minimum of 3 minutes. The mixed product should be quickly transported to the repair area and placed immediately.

Bond Coat Application: Spread the bond coat with a stiff bristle broom until the suggested coverage rate is achieved. **Topping Application:** For patching, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. Finish by hand trowelling. On large floor areas, use screed guides in combination with a vibratory screeding to level. Compact and finish by hand or machine trowel.

Finishing: Finish the repair mortar to the desired texture. Typical texture is a broom or sponge float finish, though mortars made with FLEX-CON can be steel trowelled. Do not add additional water to the surface during the finishing operation. If additional liquid is required, use EUCOBAR finishing aid.

Curing: All cement products must be adequately cured. Proper curing procedures are important to ensure the durability and quality of the repair or overlayment. To prevent surface cracking, a moist cure should be maintained for 24 hours followed by use of a curing compound such as DIAMOND CLEAR VOX or AQUA-CURE VOX. NOTE: **Do not use a solvent-based curing compound on latex modified mortars.**

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 40°F (4°C).
- Do not use FLEX-CON by itself as a bonding agent. It must be mixed with cement.
- No heavy traffic until the repair has cured.
- Protect from freezing.
- Do not use in ready mix concrete.
- For thin topping mixes or large overlays, use SBR LATEX.
- For bonding floor toppings, a slurry bond coat is recommended.
- Use of this product in conjunction with air entrained cement/concrete or with other admixtures may significantly increase total entrained air content. Testing is strongly advised.
- Do not use a solvent-based curing compound on latex modified mortars.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SBR LATEX

LIQUID BONDING ADMIXTURE

EUCLID CHEMICAL

DESCRIPTION

SBR LATEX is a carboxylated styrene butadiene copolymer latex admixture that is designed as an integral adhesive for cement bond coats, mortars and concrete to improve bond strength and chemical resistance.

PRIMARY APPLICATIONS

- Toppings, repairs and leveling concrete surfaces
- Thin sets, terrazzo, stucco and bonding coats
- General reconstruction work/latex modified overlays
- Bridge decks, highways and parking decks

FEATURES/BENEFITS

- Reduces cracking through increased mortar flexural strength
- Increases wear resistance under rubber wheeled traffic
- Improves bond strengths to hardened concrete
- Increases durability during freeze/thaw cycles
- Increases mortar tensile strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	SBR LATEX-MODIFIED MORTAR
Compressive Strength, psi (MPa) ASTM C109	3 days: 3,200 (22) 7 days: 4,000 (28) 28 days: 4,700 (32)
Flexural Strength @ 7 days, psi (MPa) ASTM C78	3 days: 1,425 (9.8) 7 days: 2,075 (14.3)
Tensile Strength, 7 days, psi (MPa) ASTM C190	3 days: 330 (2.2) 7 days: 480 (3.3)
Appearance	White liquid

SBR LATEX-Modified Mortar Mix Design:

Type I Portland Cement
94 lb (42.6 kg)
Sand
300 lb (136.1 kg)
SBR LATEX
2 gal (7.6 L)
Water
3 gal (11.4 L)

PROPERTY OF SBR LATEX	VALUE
Solids Content (by weight)	48%
Unit Weight, Specific Gravity	8.4 lbs/gal, 1.01
VOC Content	< 5 g/L
pH as Shipped	10 to 11

PACKAGING

SBR LATEX is packaged in 55 gal (208.2 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C1059, Type II
SBR LATEX is classified by The American Concrete Institute as a non-re-emulsifiable bonding admixture
Canadian MTQ

COVERAGE

	Bond Coat	Cementitous Mortar	Concrete Topping
Cement	94 lb (42.6 kg)	94 lb (42.6 kg)	658 lb (298.5 kg)
Sand	------	300 lb (136.1 kg)	1520 lb (689.5 kg)
#8 Coarse Aggregate	------	------	1400 lb (635.0 kg)
SBR LATEX	3 gal (11.4 L)	2 to 4 gal (7.6 to 15.1 L)	10 to 12 gal (37.9 to 45.4 L)
Water	5 to 6 gal (18.9 to 22.7 L)	2 to 4 gal (7.6 to 15.1 L)	22 to 26 gal (83.3 to 98.4 L)
Total Liquid	8 to 9 gal (30.3 to 34.1 L)	5 to 6 gal (18.9 to 22.7 L)	34 to 36 gal (128.7 to 136.3 L)
Yield	700 ft^2 (65 m^2)	5 ft^3 (0.14 m^3)	25 ft^3 (0.71 m^3)

Coverage:

Bond Coat: 600 to 800 ft^2 (55.7 to 74.3 m^2) **Cementitious Mortar:** 100 to 120 ft^2 (9.3 to 11.1 m^2) @ 1/2 in. (12.7 mm)
Concrete Topping: 150 to 160 ft^2 (13.9 to 14.9 m^2) @ 2 in. (50 mm)

Coverage rates are estimates only and is highly dependent upon concrete texture and unit weight of aggregate used.

DIRECTIONS FOR USE

Surface Preparation: If using this product as a cementitious bond coat, the base concrete must be a minimum of 3 days old. The concrete must be clean and all oil, dirt, debris, paint, curing compounds, sealers and unsound concrete must be removed. The surface must be prepared mechanically using a scabbler, bushhammer, shotblaster or scarifier, so that the minimum surface profile is 1/8" (3 mm) and exposes the large aggregate of the concrete. **Note: Acid etching is not acceptable**. Finally, clean the concrete of all residue with a vacuum cleaner and/or pressure washer. Allow the concrete surface to begin drying, and do not place the cementitious bond coat on standing water. Base concrete must be saturated-surface dry (SSD) to reduce moisture loss.

Bonding: For bonding toppings with this product, The Euclid Chemical Company strongly recommends using a cement bond coat rather than using this product as a primer by itself. After the surface has been prepared, prime all areas with a bond coat before the topping is applied. Follow mixing and placing instructions listed below. Place the topping on the bond coat before the bond coat dries out.

Mixing: Small quantities may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 40°F (5°C) to 90°F (32°C). Add the appropriate amount of SBR LATEX for the batch size and then add the dry material. If using SBR LATEX with a pre-packaged product, reduce the amount of water added to compensate for the latex addition. Mix a minimum of 3 minutes. The mixed product should be quickly transported to the repair area and placed immediately. **Placement:** Discharge material onto the floor.

Bond Coat Application: Spread the bond coat with a stiff bristle broom until the suggested coverage rate is achieved.

Topping Application: For patching, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. Finish by hand troweling. On large floor areas, use screed strips as guides in combination with vibratory screeding to level. Compact and finish by hand or machine trowel.

Finishing: Finish the repair material to the desired texture. Typical texture is a broom or sponge float finish. Do not add additional water to the surface during the finishing operation. If additional liquid is required, use EUCOBAR finishing aid.

Curing: Proper curing procedures are important to ensure the durability and quality of the repair or overlayment. To prevent surface cracking, a moist cure should be maintained for 24 hours followed by use of a curing compound such as DIAMOND CLEAR VOX or AQUA-CURE VOX. ***Do not use a solvent based curing compound on latex modified mortars.***

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 45°F (7°C). Protect from freezing.
- No heavy traffic until the product has cured.
- Not designed for use on its own as a bonding agent. SBR LATEX must be used in a slurry with portland cement.
- Use of this product in conjunction with air entrained cement/concrete or with other admixtures may significantly increase total entrained air content. Testing is strongly advised.
- ***Do not use a solvent based curing compound on latex modified mortars.***
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSWELD

REWETTABLE LATEX BONDING AGENT FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

TAMMSWELD is a rewettable liquid bonding agent and polymer modifier for concrete and cement mortars. TAMMSWELD is a high film build, ethylene vinyl acetate copolymer emulsion.

PRIMARY APPLICATIONS

- Concrete
- Brick
- Tile
- Stone
- Concrete block
- Plaster
- Gypsum board
- Lath
- Plywood
- Hardboard
- Wood
- Interior and exterior surfaces

FEATURES/BENEFITS

- High build bonding agent or polymer admixture
- Increases bond strength
- Improves durability
- Long open time

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Physical Property	Value
Solids Content (by weight)	34%
Unit Weight, Specific Gravity	8.9 lbs/gal, 1.07
VOC Content	≤ 70 g/L
Viscosity	500 to 1,000 cp

PACKAGING

TAMMSWELD is packaged in 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1059, Type I

COVERAGE

200 to 250 ft^2/gal (4.91 to 6.14 m^2/L) on dense surfaces. Porous surfaces may require more material. Do not exceed 300 ft^2/gal (7.3 m^2/L).

DIRECTIONS FOR USE

Surface Preparation: Surface must be clean, dry and structurally sound. The substrate must also be free of all curing compounds, form release agents and any other contaminants, which may prevent the proper adhesion of TAMMSWELD. The preferred method of surface preparation is mechanical abrasion. For oil-contaminated surfaces, using steam cleaning in conjunction with a strong emulsifying detergent may be considered. Rinse thoroughly with potable water. Allow the concrete to dry before applying TAMMSWELD.

Application, **Bonding Agent:** Stir TAMMSWELD thoroughly before use. Do not dilute. For hand application, wet brushes or rollers before use and shake out excess water. For larger areas or faster application, use airless spray equipment with 0.015 in. to 0.020 in. (0.38 to 0.51 mm) orifice size spray tips. Hold spray gun 12 to 18 inches (30 to 46 cm) from the surface and apply TAMMSWELD using a cross coat technique consisting of a horizontal pass followed by a vertical pass. Extremely porous surfaces may require two coats of TAMMSWELD.

Allow the TAMMSWELD to dry before placing repair mortars, concrete, or toppings. TAMMSWELD will dry in approximately one hour depending on the temperature and humidity. If more than 7 days pass between TAMMSWELD application and placement of the concrete, topping, or mortar, check several areas to ensure adequate adhesion. Make test applications on questionable surfaces.

Application, Polymer Modifier: When using TAMMSWELD to produce a polymer modified mortar, add approximately 3 gal (11.36 L) of TAMMSWELD per 100 lbs (45.4 kg) of cement content in the mortar material. The properties achieved by using TAMMSWELD as a polymer modifier will vary depending on the composition of the mortar, and a thorough evaluation of properties should be completed prior to using the polymer modified mix.

CLEAN-UP

Clean tools and equipment with detergent and water immediately following use. Clean drips and over-spray with water while still wet. Dried TAMMSWELD may require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Do not use TAMMSWELD where constant moisture or hydrostatic pressure is present (swimming pools, cisterns or other areas that will be immersed).
- Do not dilute TAMMSWELD.
- Keep from freezing.
- Do not apply to frozen or frost filled surfaces.
- Do not apply if temperature is below 50°F (10°C).
- Do not over-trowel, or overwork cement mortars modified with TAMMSWELD.
- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- In all cases, consult the Safety Data Sheet before use.

DURAL ICC GEL

ICC-ES AC308 COMPLIANT & NSF/ANSI STANDARD 61 CERTIFIED ANCHORING ADHESIVE

EUCLID CHEMICAL

DESCRIPTION

DURAL ICC GEL is a NSF/ANSI 61 certified, building code compliant high performance hybrid anchoring adhesive with an extended installation temperature range from 5°F to 104°F (-15°C to 40°C). It has been tested for use with threaded rod and reinforcing bar for cracked and uncracked concrete in accordance with ACI 355.4 and ICC-ES AC308 and has sustained load resistance up to 194°F (90°C).

PRIMARY APPLICATIONS

- Anchoring threaded rod and rebar into either cracked or uncracked concrete
- Bonding hardened concrete to hardened concrete and freshly mixed concrete to hardened concrete
- For use in vertical down, horizontal, upwardly inclined and overhead installations

FEATURES/BENEFITS

- ICC-ES ESR-4255 evaluation report for cracked and uncracked concrete
- Certified to the requirements of NSF/ANSI Standard 61 for Drinking Water System Components
- Service temperature range under short term loading conditions of 5°F to 302°F (-15°C to 150°C)
- Full cure in 45 minutes at 77°F (25°C) ambient temperature
- Resists sustained loads up to 194°F (90°C)
- Withstands freeze-thaw conditions
- Resists static, wind and earthquake loading in tension and shear
- All season hybrid anchoring material for dry, damp & water saturated concrete

PACKAGING

DURAL ICC GEL is packaged in cases of 20 oz (591 mL) cartridges, 12 cartridges per case
The mix ratio is 3:1 by volume

Appearance: Part A is light gray, Part B is black, mixed color is gray

SHELF LIFE

12 months when stored in unopened containers in dry conditions

Store between 40°F and 77°F (4°C and 25°C)

SPECIFICATIONS/COMPLIANCES

Complies with IBC/IRC 2015, 2012, 2009 and 2006 and FBC/ICC ESR-4255

ASTM C881-14 Type I, II, IV* & V Grade 3, Class A, B & C (*Class A & B only)

NSF/ANSI Standard 61

COVERAGE/YIELD

One 20 oz (585 mL) cartridge yields 36 in^3 (590 cm^3) of material

PERFORMANCE OF DURAL ICC GEL TO ASTM C881-14

Property	Result at Conditioning Temperature			
	Class A 5°F (-15°C)	**Class B 50°F (10°C)**	**75°F (24°C)**	**Class C 104°F (40°C)**
Consistency ASTM C881	< 1/4" (6.4 mm)			
Gel Time (60g mass), minutes ASTM C881	78	12	5	2
Bond Strength (Hardened to Hardened Concrete), psi (MPa) ASTM C882	2 days: 2,530 (17.4)	2 days: 2,010 (13.9)	2 days: 2,030 (14.0)	2 days: 2,260 (15.6)
	14 days: 2,800 (19.3)	14 days: 2,430 (16.8)	14 days: 2,240 (15.4)	14 days: 3,300 (22.8)
Bond Strength (Fresh Concrete to Hardened Concrete), psi (MPa) ASTM C882	14 days: 2,660 (18.3)			
Water Absorption ASTM D570	14 days: 0.90%			
Heat Deflection Temperature ASTM D648	156°F (69°C)			
Linear Coefficient of Shrinkage ASTM D2566	0.003			
Compressive Yield, psi (MPa) ASTM D695	7 days: 10,730 (74.0)	7 days: 10,230 (70.5)	7 days: 9,380 (64.7)	7 days: 9,260 (63.8)
Compressive Modulus, psi (MPa) ASTM D695	7 days: 443,100 (3,055)	7 days: 365,300 (2,519)	7 days: 377,900 (2,605)	7 days: 346,200 (2,387)

1. Results are based on testing of a representative lot(s) of product. Results will vary according to the tolerances of the given property.
2. Full cure time is listed above to obtain the given properties for each product characteristic.
3. Results may vary due to environmental factors such as temperature, moisture and type of substrate.
4. Gel time may be lower than the minimum required for ASTM C881.

DURAL ICC GEL CURE SCHEDULE

Substrate Temperature	Working Time	Full Cure Time
5°F (-15°C)	60 min	36 hr
14°F (-10°C)	30 min	24 hr
23°F (-5°C)	20 min	8 hr
32°F (0°C)	13 min	4 hr
41°F (5°C)	9 min	2 hr
50°F (10°C)	5 min	1 hr
68°F (20°C)	4 min	45 min
86°F (30°C)	2 min	30 min

1. Working and full cure times are approximate and may be linearly interpolated between listed temperatures.
2. Substrate and ambient air temperature should be from 5 to 104°F (-15 to 40°C).
3. When installing at temperatures below 41°F (5°C), warm the adhesive to a minimum of 41°F (5°C).

DURAL ICC GEL ALLOWABLE TENSION LOADS FOR THREADED ROD IN NORMAL WEIGHT CONCRETE

Threaded Rod Diameter, in	Nominal Drill Bit Diameter, in	Embedment Depth, in (mm)	Allowable Tension Load Based on Bond Strength/Concrete Capacity f'c ≥ 2,500 psi (17 MPa)	Allowable Tension Load Based on Steel Strength		
			lb (kN)	ASTM F1554 Grade 36 lb (kN)	ASTM A193 Grade B7 lb (kN)	ASTM F593 304/316 SS lb (kN)
3/8	7/16	2 7/16 (62)	1,921 (8.5)	2,114 (9.4)	4,556 (20.3)	3,645 (16.2)
		3 3/8 (86)	2,660 (11.8)			
		4 1/2 (114)	3,268 (14.5)			
		7 1/2 (191)	3,268 (14.5)			
1/2	9/16	2 3/4 (70)	2,366 (10.5)	3,758 (16.7)	8,099 (36.0)	6,480 (28.8)
		4 1/2 (114)	4,458 (19.8)			
		6 (152)	5,944 (26.4)			
		10 (254)	9,907 (44.1)			
5/8	3/4	3 1/8 (79)	2,728 (12.1)	5,872 (26.1)	12,655 (56.3)	10,124 (45.0)
		5 5/8 (143)	6,684 (29.7)			
		7 1/2 (191)	8,912 (39.6)			
		12 1/2 (318)	14,854 (66.1)			
3/4	7/8	3 1/2 (86)	3,114 (13.7)	8,456 (37.6)	18,224 (81.1)	12,392 (55.1)
		6 3/4 (171)	9,227 (41.0)			
		9 (229)	12,424 (55.3)			
		15 (381)	20,707 (92.1)			
7/8	1	3 1/2 (89)	2,978 (13.2)	11,509 (51.2)	24,804 (110.3)	16,867 (75.0)
		7 7/8 (200)	11,346 (50.5)			
		10 1/2 (267)	16,543 (73.6)			
		17 1/2 (445)	27,571 (122.6)			
1	1 1/8	4 1/8 (105)	3,755 (16.7)	15,033 (66.9)	32,398 (144.1)	22,030 (98.0)
		9 (229)	13,577 (60.4)			
		12 (305)	21,090 (93.8)			
		20 (508)	35,211 (156.6)			
1 1/8	1 3/8	4 1/2 (114)	3,287 (14.6)	19,026 (84.6)	41,003 (182.4)	27,882 (124.0)
		10 1/8 (257)	11,441 (50.9)			
		13 1/2 (343)	17,498 (77.8)			
		22 1/2 (572)	30,803 (137.0)			
1 1/4	1 3/8	5 (127)	4,838 (21.5)	23,488 (104.5)	50,621 (225.2)	34,423 (153.1)
		11 1/4 (286)	18,340 (81.6)			
		15 (381)	29,507 (131.3)			
		25 (635)	52,517 (233.6)			

1. The lower value of either the allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design.

2. Allowable tension loads calculated based on strength design provisions of IBC Section 1605.3 with the following assumptions: Temperature range A: Maximum short term temperature = 176 °F (80°C), Maximum long term temperature = 122°F (50°C). Load combination from ACI based on 1.2D + 1.6L assuming dead load of 0.3 and live load of 0.7 giving a weighted average of 1.48. f'_c = 2,500 psi normal weight uncracked concrete. Single anchor, vertically down with periodic special inspection and no seismic loading. Φ_d 0.65 for dry concrete, $C_{a1} = C_{a2} \geq C_{ac}$, $h \geq h_{min}$

3. For short term temperature exposure greater than 176°F (80°C) and up to 248°F (120°C), apply a reduction factor of 0.87 to the allowable tension load. For short term temperature exposure greater than 248°F (120°C) and up to 302°F (150°C), apply a reduction factor of 0.75 to the allowable tension load.

4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $0.33 * F_u * A_{nom}$.

DURAL ICC GEL ALLOWABLE SHEAR LOADS FOR THREADED ROD IN NORMAL WEIGHT CONCRETE

Threaded Rod Diameter, in	Nominal Drill Bit Diameter, in	Embedment Depth, in (mm)	Allowable Shear Load Based on Bond Strength/Concrete Capacity f'c ≥ 2,500 psi (17 MPa)	Allowable Shear Load Based on Steel Strength		
			lbs (kN)	ASTM F1554 Grade 36 lb (kN)	ASTM A193 Grade B7 lb (kN)	ASTM F593 304/316 SS lb (kN)
3/8	7/16	2 7/16 (62)	1,565 (7.0)	1,089 (4.8)	2,347 (10.4)	1,878 (8.4)
		3 3/8 (86)	3,079 (13.7)			
		4 1/2 (114)	5,473 (24.3)			
		7 1/2 (191)	7,038 (31.3)			
1/2	9/16	2 3/4 (70)	1,875 (8.3)	1,936 (8.6)	4,172 (18.6)	3,338 (14.8)
		4 1/2 (114)	5,020 (22.3)			
		6 (152)	8,925 (39.7)			
		10 (254)	21,337 (94.9)			
5/8	3/4	3 1/8 (79)	2,264 (10.1)	3,025 (13.5)	6,519 (29.0)	5,216 (23.2)
		5 5/8 (143)	7,337 (32.6)			
		7 1/2 (191)	12,904 (57.4)			
		12 1/2 (318)	30,335 (134.9)			
3/4	7/8	3 1/2 (86)	2,689 (13.7)	4,356 (19.4)	9,388 (41.8)	6,384 (28.4)
		6 3/4 (171)	9,569 (42.6)			
		9 (229)	14,721 (65.5)			
		15 (381)	35,099 (156.1)			
7/8	1	3 1/2 (89)	2,452 (10.9)	5,929 (26.4)	12,778 (56.8)	8,689 (38.7)
		7 7/8 (200)	11,513 (51.2)			
		10 1/2 (267)	19,324 (86.0)			
		17 1/2 (445)	39,706 (176.6)			
1	1 1/8	4 1/8 (105)	3,318 (14.8)	7,744 (34.4)	16,690 (74.2)	11,349 (50.5)
		9 (229)	13,514 (60.1)			
		12 (305)	22,682 (100.9)			
		20 (508)	44,182 (196.5)			
1 1/8	1 3/8	4 1/2 (114)	3,616 (16.1)	9,801 (43.6)	21,123 (94.0)	14,364 (63.9)
		10 1/8 (257)	15,566 (69.2)			
		13 1/2 (343)	26,125 (116.2)			
		22 1/2 (572)	48,548 (216.0)			
1 1/4	1 3/8	5 (127)	4,103 (18.3)	12,100 (53.8)	26,078 (116.0)	17,733 (78.9)
		11 1/4 (286)	17,664 (78.6)			
		15 (381)	28,612 (127.3)			
		25 (635)	52,817 (234.9)			

1. The lower value of either the allowable bond strength/concrete capacity or steel strength should be used as the allowable shear value for design.

2. Allowable shear loads calculated based on strength design provisions of IBC Section 1605.3 with the following assumptions: Temperature range A: Maximum short term temperature = 176 °F (80 °C), Maximum long term temperature = 122°F (50°C). Load combination from ACI based on 1.2D + 1.6L assuming dead load of 0.3 and live load of 0.7 giving a weighted average of 1.48. f'_c = 2,500 psi normal-weight uncracked concrete. Single anchor, vertically down with periodic special inspection and no seismic loading. Φ_d 0.65 for dry concrete, $C_{a1} = C_{a2} \geq C_{ac}$, $h \geq h_{min}$

3. For short term temperature exposure greater than 176°F (80°C) and up to 248°F (120°C), apply a reduction factor of 0.87 to the allowable shear load. For short term temperature exposure greater than 248°F (120°C) and up to 302 °F (150 °C), apply a reduction factor of 0.75 to the allowable shear load.

4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Shear = $0.17 * F_u * A_{nom}$.

DURAL ICC GEL ALLOWABLE TENSION LOADS FOR REBAR IN NORMAL WEIGHT CONCRETE

Rebar Size	Nominal Drill Bit Diameter, in	Embedment Depth, in (mm)	Allowable Tension Load Based on Bond Strength/Concrete Capacity f'c ≥ 2,500 psi (17 MPa)	Allowable Tension Load Based on Steel Strength	
			lbs (kN)	ASTM A615 Grade 60 lb (kN)	ASTM A615 Grade 75 lb (kN)
#3	1/2	2 7/16 (62)	1,355 (6.0)	2,640 (11.7)	3,300 (14.7)
		3 3/8 (86)	1,877 (8.3)		
		4 1/2 (114)	2,551 (11.3)		
#4	5/8	2 3/4 (70)	1,904 (8.5)	4,800 (21.4)	6,000 (26.7)
		4 1/2 (114)	3,115 (13.9)		
		6 (152)	4,153 (18.5)		
#5	3/4	3 1/8 (79)	2,609 (11.6)	7,440 (33.1)	9,300 (41.4)
		5 5/8 (143)	4,696 (20.9)		
		7 1/2 (191)	6,262 (27.9)		
#6	7/8	3 1/2 (86)	3,114 (13.7)	10,560 (47.0)	13,200 (58.7)
		6 3/4 (171)	6,403 (28.5)		
		9 (229)	8,537 (38.0)		
#7	1 1/8	3 1/2 (89)	2,978 (13.2)	14,400 (64.1)	18,000 (80.1)
		7 7/8 (200)	8,388 (37.3)		
		10 1/2 (267)	11,184 (49.8)		
#8	1 1/4	4 (102)	3,570 (15.9)	18,960 (84.3)	23,700 (105.4)
		9 (229)	10,737 (47.8)		
		12 (305)	14,316 (63.7)		
#9	1 3/8	4 1/2 (114)	4,702 (20.9)	24,000 (106.8)	30,000 (133.4)
		10 (254)	13,998 (62.3)		
		14 (356)	18,664 (83.0)		
#10	1 1/2	5 5/8 (143)	5,867 (26.1)	30,480 (135.6)	38,100 (169.5)
		11 1/4 (286)	15,808 (70.3)		
		15 (381)	21,077 (93.8)		

1. The lower value of either the allowable bond strength/concrete capacity or steel strength should be used as the allowable tension value for design.

2. Allowable tension loads calculated based on strength design provisions of IBC Section 1605.3 with the following assumptions: Temperature range A: Maximum short term temperature = 176 °F (80 °C), Maximum long term temperature = 122°F (50°C). Load combination from ACI based on 1.2D + 1.6L assuming dead load of 0.3 and live load of 0.7 giving a weighted average of 1.48. f'_c = 2,500 psi normal-weight uncracked concrete. Single anchor, vertically down with periodic special inspection and no seismic loading. Φ_d 0.65 for dry concrete, $C_{a1} = C_{a2} \geq C_{ac}$, $h \geq h_{min}$

3. For short term temperature exposure greater than 176°F (80°C) and up to 248°F (120°C), apply a reduction factor of 0.87 to the allowable tension load. For short term temperature exposure greater than 248°F (120°C) and up to 302 °F (150 °C), apply a reduction factor of 0.75 to the allowable tension load.

4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Tensile = $0.33 * F_u * A_{nom}$.

DURAL ICC GEL ALLOWABLE SHEAR LOADS FOR REBAR IN NORMAL WEIGHT CONCRETE

Rebar Size	Nominal Drill Bit Diameter, in	Embedment Depth, in (mm)	Allowable Shear Load Based on Bond Strength/Concrete Capacity f'c ≥ 2,500 psi (17 MPa)	Allowable Shear Load Based on Steel Strength	
			lbs (kN)	ASTM A615 Grade 60 lb (kN)	ASTM A615 Grade 75 lb (kN)
#3	1/2	2 7/16 (62)	1,309 (5.8)	1,683 (7.5)	1,870 (8.3)
		3 3/8 (86)	2,276 (10.1)		
		4 1/2 (114)	3,711 (16.5)		
#4	5/8	2 3/4 (70)	1,697 (7.5)	3,060 (13.6)	3,400 (15.1)
		4 1/2 (114)	3,920 (17.4)		
		6 (152)	6,393 (28.4)		
#5	3/4	3 1/8 (79)	2,218 (9.9)	4,743 (21.1)	5,270 (23.4)
		5 5/8 (143)	6,025 (26.8)		
		7 1/2 (191)	9,722 (43.2)		
#6	7/8	3 1/2 (86)	2,689 (13.7)	6,732 (29.9)	7,480 (33.3)
		6 3/4 (171)	8,094 (36)		
		9 (229)	11,422 (50.8)		
#7	1 1/8	3 1/2 (89)	2,452 (10.9)	9,180 (40.8)	10,200 (45.4)
		7 7/8 (200)	10,021 (44.6)		
		10 1/2 (267)	15,428 (68.6)		
#8	1 1/4	4 (102)	3,140 (14.0)	12,087 (53.8)	13,430 (59.7)
		9 (229)	12,130 (54.0)		
		12 (305)	18,675 (83.1)		
#9	1 3/8	4 1/2 (114)	3,616 (16.1)	15,300 (68.1)	17,000 (75.6)
		10 (254)	14,209 (63.2)		
		14 (356)	21,876 (97.3)		
#10	1 1/2	5 5/8 (143)	5,073 (22.6)	19,431 (86.4)	21,590 (96.0)
		11 1/4 (286)	16,490 (73.4)		
		15 (381)	25,389 (112.9)		

1. The lower value of either the allowable bond strength/concrete capacity or steel strength should be used as the allowable shear value for design.

2. Allowable shear loads calculated based on strength design provisions of IBC Section 1605.3 with the following assumptions: Temperature range A: Maximum short term temperature = 176 °F (80 °C), Maximum long term temperature = 122°F (50°C). Load combination from ACI based on 1.2D + 1.6L assuming dead load of 0.3 and live load of 0.7 giving a weighted average of 1.48. f'_c = 2,500 psi normal-weight uncracked concrete. Single anchor, vertically down with periodic special inspection and no seismic loading. Φ_d 0.65 for dry concrete, $C_{a1} = C_{a2} \geq C_{ac}$, $h \geq h_{min}$

3. For short term temperature exposure greater than 176°F (80°C) and up to 248°F (120°C), apply a reduction factor of 0.87 to the allowable shear load. For short term temperature exposure greater than 248°F (120°C) and up to 302 °F (150 °C), apply a reduction factor of 0.75 to the allowable shear load.

4. Allowable steel strengths calculated in accordance with AISC Manual of Steel Construction: Shear = $0.17 * F_u * A_{nom}$.

DURAL ICC GEL CARBON STEEL DESIGN INFORMATION FOR FRACTIONAL THREADED ROD

Design Information		Symbol	Units	Threaded Rod							
				3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
Nominal Anchor Diameter		d	in.	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250
			(mm)	(9.5)	(12.7)	(15.9)	(19.1)	(22.2)	(25.4)	(28.6)	(31.8)
Threaded Rod Cross-Sectional Area		A_{se}	in.^{2}	0.078	0.142	0.226	0.335	0.462	0.606	0.763	0.969
			(mm^2)	(50)	(92)	(146)	(216)	(298)	(391)	(492)	(625)
ASTM F5658M Class 5.8 ISO 898-1 Class 5.8	Nominal Strength as Governed by Steel Strength	N_{sa}	lb.	5,620	10,290	16,385	24,250	33,475	43,915	55,301	70,260
			(kN)	(25.0)	(45.8)	(72.9)	(107.9)	(148.9)	(195.3)	(246.0)	(312.5)
		V_{sa}	lb.	3,370	6,170	9,830	14,550	20,085	26,350	33,180	42,160
			(kN)	(15.0)	(27.5)	(43.7)	(64.7)	(89.3)	(117.2)	(147.6)	(187.5)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
ASTM A36 Grade 36 F1554 Grade 36	Nominal Strength as Governed by Steel Strength	N_{sa}	lb.	4,496	8,273	13,128	19,423	26,796	35,159	44,241	56,200
			(kN)	(20.0)	(36.8)	(58.4)	(86.4)	(119.2)	(156.4)	(196.8)	(250.0)
		V_{sa}	lb.	2,698	4,964	7,877	11,654	16,078	21,095	26,544	33,720
			(kN)	(12.0)	(22.1)	(35.0)	(51.8)	(71.5)	(93.8)	(118.1)	(150.0)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
F1554 Grade 56	Nominal Strength as Governed by Steel Strength	N_{sa}	lb.	5,811	10,692	16,968	25,104	34,634	45,443	57,181	72,639
			(kN)	(25.9)	(47.6)	(75.5)	(111.7)	(154.1)	(202.1)	(254.4)	(323.1)
		V_{sa}	lb.	3,487	6,415	10,181	15,062	20,780	27,266	34,309	43,583
			(kN)	(15.5)	(28.5)	(45.3)	(67.0)	(92.4)	(121.3)	(152.6)	(193.9)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
ASTM A193 B7 ASTM F1554 Grade 105	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	9,690	17,740	28,250	41,810	57,710	75,710	95,117	121,135
			(kN)	(43.1)	(78.9)	(125.7)	(186.0)	(256.7)	(336.8)	(423.1)	(538.8)
		V_{sa}	lb	5,810	10,640	16,950	25,085	34,625	45,425	57,070	72,680
			(kN)	(25.9)	(47.3)	(75.4)	(111.6)	(154.0)	(202.1)	(253.8)	(323.3)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.75							
	Strength Reduction Factor for Shear	ϕ	----	0.65							

1. Values provided for common rod material types are based on specified strength and calculated in accordance with ACI 318-14 Eq. 17.4.1.2 and Eq. 17.5.1.2b or ACI 318-11 Eq. (D-2) and Eq. (D-29), as applicable. Nuts and washers must be appropriate for the rod strength and type.

2 For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a brittle steel element.

3 For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of ϕ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a ductile steel element.

DURAL ICC GEL STAINLESS STEEL DESIGN INFORMATION FOR FRACTIONAL THREADED ROD

Design Information		Symbol	Units	Threaded Rod							
				3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
Nominal Anchor Diameter		d	in	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250
			(mm)	(9.5)	(12.7)	(15.9)	(19.1)	(22.2)	(25.4)	(28.6)	(31.8)
Threaded Rod Cross-Sectional Area		A_{se}	in^2	0.078	0.142	0.226	0.335	0.462	0.606	0.763	0.969
			(mm^2)	(50.0)	(91.5)	(145.8)	(215.8)	(297.9)	(390.8)	(492.3)	(625.2)
ASTM A193 Grade B8/B8M Class 1 Stainless	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	4,420	8,090	12,880	19,065	26,315	34,525	43,470	55,240
			(kN)	(19.7)	(36.0)	(57.3)	(84.8)	(117.1)	(153.6)	(193.4)	(245.7)
		V_{sa}	lb	2,650	4,855	7,730	11,440	15,790	20,715	26,080	33,145
			(kN)	(11.8)	(21.6)	(34.4)	(50.9)	(70.2)	(92.1)	(116.0)	(147.4)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
ASTM A193 Grade B8/B8M Class 2B Stainless	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	7,362	13,546	21,498	31,805	43,879	57,572	72,444	92,028
			(kN)	(32.8)	(60.3)	(95.6)	(141.5)	(195.2)	(256.1)	(322.3)	(409.4)
		V_{sa}	lb	4,417	8,128	12,899	19,083	26,327	34,543	43,466	55,217
			(kN)	(19.7)	(36.2)	(57.4)	(84.9)	(117.1)	(153.7)	(193.3)	(245.6)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction actor for Shear	ϕ	----	0.60							
ASTM F593 CW Stainless	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	7,740	14,175	22,580	28,420	39,230	51,470	65,255	82,350
			(kN)	(34.4)	(63.1)	(100.4)	(126.4)	(174.5)	(228.9)	(290.3)	(366.3)
		V_{sa}	lb	4,645	8,505	13,550	17,055	23,540	30,880	39,153	49,410
			(kN)	(20.7)	(37.8)	(60.3)	(75.9)	(104.7)	(137.4)	(174.2)	(219.8)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	0.80				0.60			
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							

1. Values provided for common rod material types are based on specified strength and calculated in accordance with ACI 318 -14 Eq. 17.4.1.2 and Eq. 17.5.1.2b or ACI 318-11 Eq. (D-2) and Eq. (D-29), as applicable. Nuts and washers must be appropriate for the rod strength and type.

2. For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a brittle steel element.

DURAL ICC GEL CONCRETE BREAKOUT DESIGN INFORMATION FOR FRACTIONAL THREADED ROD

Design Information	Symbol	Units	Threaded Rod							
			3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
Minimum Embedment Depth	$h_{ef,min}$	in	2.36	2.76	3.11	3.50	3.50	4.02	4.49	5.00
		(mm)	(60)	(70)	(79)	(89)	(89)	(102)	(114)	(127)
Maximum Embedment Depth	$h_{ef,max}$	in	7.52	10.00	12.52	15.00	17.52	20.00	22.52	25.00
		(mm)	(191)	(254)	(318)	(381)	(445)	(508)	(572)	(635)
Effectiveness Factor for Cracked Concrete	$k_{c,cr}$	SI (in-lb)	17 (7.1)							
Effectiveness Factor for Uncracked Concrete	$k_{c,uncr}$	SI (in-lb)	24 (10)							
Minimum Spacing Distance	s_{min}	---	$S_{min} = C_{min}$							
Minimum Edge Distance	c_{min}	in	1.69	2.28	2.56	3.15	3.74	4.33	5.12	6.30
		(mm)	(43)	(58)	(65)	(80)	(95)	(110)	(130)	(160)
Minimum Concrete Thickness	h_{min}	in	$(h_{ef} + 1.25$, $[\geq 3.937])$		$h_{ef} + 2d_o$ where d_o is the hole diameter					
		(mm)	$h_{ef} + 30$, $[\geq 100]$							
Critical Edge Distance (Uncracked Concrete Only)	c_{ac}	in	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{1160}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
		mm	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{8}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
Strength Reduction Factor for Tension, Concrete Failure Mode, Condition B	ϕ	----	0.65							
Strength Reduction Factor for Shear, Concrete Failure Mode, Condition B	ϕ	----	0.70							

1. Values provided for post-installed anchors with category as determined from ACI 355.4 given for Condition B. Condition B applies without supplementary reinforcement or where pullout (bond) or pryout govern, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, while condition A requires supplemental reinforcement. Values are for use with the load combinations Section 1605.2 of the IBC, ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable, as set forth in ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D.4.4.

DURAL ICC GEL BOND STRENGTH DESIGN INFORMATION FOR FRACTIONAL THREADED ROD

Design Information		Symbol	Units	Threaded Rod							
				3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
Minimum Embedment Depth		$h_{ef,min}$	in.	2.36	2.76	3.11	3.50	3.50	4.02	4.49	5.00
			(mm)	(60)	(70)	(79)	(89)	(89)	(102)	(114)	(127)
Maximum Embedment Depth		$h_{ef,max}$	in.	7.52	10.00	12.52	15.00	17.52	20.00	22.52	25.00
			(mm)	(191)	(254)	(318)	(381)	(445)	(508)	(572)	(635)
Temperature Range A	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	624	624	624	667	667	667	667	754
			(MPa)	(4.3)	(4.3)	(4.3)	(4.6)	(4.6)	(4.6)	(4.6)	(5.2)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	1,523	1,436	1,378	1,334	1,305	1,276	1,247	1,218
			(MPa)	(10.5)	(9.9)	(9.5)	(9.2)	(9.0)	(8.8)	(8.6)	(8.4)
Temperature Range B	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	566	566	566	609	609	609	609	696
			(MPa)	(3.9)	(3.9)	(3.9)	(4.2)	(4.2)	(4.2)	(4.2)	(4.8)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	1,392	1,320	1,276	1,233	1,189	1,160	1,146	1,117
			(MPa)	(9.6)	(9.1)	(8.8)	(8.5)	(8.2)	(8.0)	(7.9)	(7.7)
Temperature Range C	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	508	508	508	537	537	537	537	609
			(MPa)	(3.5)	(3.5)	(3.5)	(3.7)	(3.7)	(3.7)	(3.7)	(4.2)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	1,233	1,175	1,117	1,088	1,059	1,030	1,015	986
			(MPa)	(8.5)	(8.1)	(7.7)	(7.5)	(7.3)	(7.1)	(7.0)	(6.8)
Reduction Factor for Seismic Tension		$\alpha_{N,seis}$	----	1.00							
Strength Reduction Factors for Permissible Installation Conditions	Dry Concrete	ϕ_d	----	0.65							
		K_d	----	1.00							
	Water Saturated Concrete	ϕ_{ws}	----	0.65	0.55			0.45			
		K_{ws}	----	1.00							

1. Characteristic bond strength values correspond to concrete compressive strength f´c =2,500 psi (17.2 MPa). For concrete compressive strength f´c between 2,500 psi (17.2 MPa) and 8,000 psi (55.2 MPa), the tabulated characteristic bond strength may be increased by a factor of (f´c /2,500)0.1 (for SI: (f´c /17.2)0.1).

2. Temperature range A: Maximum short term temperature = 176°F (80°C), Maximum long term temperature = 122°F (50°C)

Temperature range B: Maximum short term temperature = 248°F (120°C), Maximum long term temperature = 162°F (72°C)

Temperature range C: Maximum short term temperature = 302°F (150°C), Maximum long term temperature = 194°F (90°C)

Short term elevated concrete temperatures are those that occur over brief intervals, e.g., as a results of diurnal cycling. Long term concrete temperatures are roughly constant over significant periods of time.

DURAL ICC GEL STEEL DESIGN INFORMATION FOR FRACTIONAL REBAR

Design Information		Symbol	Units	Rebar Size							
				#3	#4	#5	#6	#7	#8	#9	#10
Nominal Anchor Diameter		d	in	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250
			(mm)	(9.5)	(12.7)	(15.9)	(19.1)	(22.2)	(25.4)	(28.6)	(31.8)
Rebar Cross-Sectional Area		A_{se}	in^2	0.110	0.200	0.310	0.440	0.600	0.790	1.000	1.270
			(mm^2)	(71)	(129)	(200)	(284)	(387)	(510)	(645)	(819)
ASTM A615 Grade 40	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	6,609	12,004	18,591	26,392	Grade 40 reinforcing bars are only available in sizes #3 through #6 per ASTM A615			
			(kN)	(29.4)	(53.4)	(82.7)	(117.4)				
		V_{sa}	lb	3,956	7,194	11,150	15,848				
			(kN)	(17.6)	(32.0)	(49.6)	(70.5)				
	Reduction Factor for Seismic Shear	αV,seis	----	0.74							
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
ASTM A615 Grade 60	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	9,891	18,006	27,898	39,610	53,997	71,104	90,010	114,311
			(kN)	(44.0)	(80.1)	(124.1)	(176.2)	(240.2)	(316.3)	(400.4)	(508.5)
		V_{sa}	lb	5,935	10,790	16,748	23,761	32,394	42,667	53,997	68,586
			(kN)	(26.4)	(48.0)	(74.5)	(105.7)	(144.1)	(189.8)	(240.2)	(305.1)
	Reduction Factor for Seismic Shear	αV,seis	----	0.74							0.93
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							
ASTM A706 Grade 60	Nominal Strength as Governed by Steel Strength	N_{sa}	lb	8,790	16,006	24,795	35,204	47,995	63,191	80,006	101,610
			(kN)	(39.1)	(71.2)	(110.3)	(156.6)	(213.5)	(281.1)	(355.9)	(452.0)
		V_{sa}	lb	5,283	9,599	14,882	21,131	28,797	37,924	47,995	60,966
			(kN)	(23.5)	(42.7)	(66.2)	(94.0)	(128.1)	(168.7)	(213.5)	(271.2)
	Reduction Factor for Seismic Shear	αV,seis	----	0.74							0.93
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							

1. Values provided for common rod material types are based on specified strength and calculated in accordance with ACI 318 -14 Eq. 17.4.1.2 and Eq. 17.5.1.2b or ACI 318-11 Eq. (D-2) and Eq. (D-29), as applicable. Nuts and washers must be appropriate for the rod strength and type.

2. For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a brittle steel element.

DURAL ICC GEL CONCRETE BREAKOUT DESIGN INFORMATION FOR FRACTIONAL REBAR

Design Information	Symbol	Units	Rebar Size							
			#3	#4	#5	#6	#7	#8	#9	#10
Minimum Embedment Depth	$h_{ef,min}$	in	2.36	2.76	3.11	3.50	3.50	4.02	4.49	5.00
		(mm)	(60)	(70)	(79)	(89)	(89)	(102)	(114)	(127)
Maximum Embedment Depth	$h_{ef,max}$	in	7.52	10.00	12.52	15.00	17.52	20.00	22.52	25.00
		(mm)	(191)	(254)	(318)	(381)	(445)	(508)	(572)	(635)
Effectiveness Factor for Cracked Concrete	$k_{c,cr}$	SI (in-lb)	7.1 (17)							
Effectiveness Factor for Uncracked Concrete	$k_{c,uncr}$	SI (in-lb)	10 (24)							
Minimum Spacing Distance	s_{min}	in	$S_{min} = C_{min}$							
		(mm)								
Minimum Edge Distance	c_{min}	in	1.67	2.26	2.56	3.15	3.74	4.33	5.12	6.30
		(mm)	(43)	(58)	(65)	(80)	(95)	(110)	(130)	(160)
Minimum Concrete Thickness	h_{min}	in	(h_{ef} + 1.25 , [≥ 3.937])		$h_{ef} + 2d_o$ where d_o is the hole diameter					
		(mm)	h_{ef} + 30 , [≥ 100]							
Critical Edge Distance (Uncracked Concrete Only)	c_{ac}	in	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{1160}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
		(mm)	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{8}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
Strength Reduction Factor for Tension, Concrete Failure Mode, Condition B	ϕ	----	0.65							
Strength Reduction Factor for Shear, Concrete Failure Mode, Condition B	ϕ	----	0.70							

1. Values provided for post-installed anchors with category as determined from ACI 355.4 given for Condition B. Condition B applies without supplementary reinforcement or where pullout (bond) or pryout govern, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, while condition A requires supplemental reinforcement. Values are for use with the load combinations Section 1605.2 of the IBC, ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable, as set forth in ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D.4.4.

DURAL ICC GEL BOND STRENGTH DESIGN INFORMATION FOR FRACTIONAL REBAR

Design Information		Symbol	Units	Rebar Size							
				#3	#4	#5	#6	#7	#8	#9	#10
Minimum Embedment Depth		$h_{ef,min}$	in	2.36	2.76	3.11	3.50	3.50	4.02	4.49	5.00
			(mm)	(60)	(70)	(79)	(89)	(89)	(102)	(114)	(127)
Maximum Embedment Depth		$h_{ef,max}$	in	7.52	10.00	12.52	15.00	17.52	20.00	22.52	25.00
			(mm)	(191)	(254)	(318)	(381)	(445)	(508)	(572)	(635)
Temperature Range A	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	464	464	464	493	493	493	493	566
			(MPa)	(3.2)	(3.2)	(3.2)	(3.4)	(3.4)	(3.4)	(3.4)	(3.9)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	1,131	1,073	1,044	1,001	972	957	928	914
			(MPa)	(7.8)	(7.4)	(7.2)	(6.9)	(6.7)	(6.6)	(6.4)	(6.3)
Temperature Range B	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	435	435	435	450	450	450	450	522
			(MPa)	(3.0)	(3.0)	(3.0)	(3.1)	(3.1)	(3.1)	(3.1)	(3.6)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	1,044	986	957	928	899	870	856	841
			(MPa)	(7.2)	(6.8)	(6.6)	(6.4)	(6.2)	(6.0)	(5.9)	(5.8)
Temperature Range C	Characteristic Bond Strength in Cracked Concrete	$T_{k,cr}$	psi	377	377	377	406	406	406	406	464
			(MPa)	(2.6)	(2.6)	(2.6)	(2.8)	(2.8)	(2.8)	(2.8)	(3.2)
	Characteristic Bond Strength in Uncracked Concrete	$T_{k,uncr}$	psi	928	870	841	812	798	769	754	740
			(MPa)	(6.4)	(6.0)	(5.8)	(5.6)	(5.5)	(5.3)	(5.2)	(5.1)
Reduction Factor for Seismic Tension		$\alpha_{N,seis}$	----	1.00							
Strength Reduction Factors for Permissible Installation Conditions	Dry Concrete	ϕ_d	----	0.65							
		K_d	----	1.00							
	Water Saturated Concrete	ϕ_{ws}	----	0.65	0.55			0.45			
		K_d	----	1.00							

1. Characteristic bond strength values correspond to concrete compressive strength f´c =2,500 psi (17.2 MPa). For concrete compressive strength f´c between 2,500 psi (17.2 MPa) and 8,000 psi (55.2 MPa), the tabulated characteristic bond strength may be increased by a factor of (f ´c /2,500)0.1 (for SI: (f´c /17.2)0.1).

2. Temperature range A: Maximum short term temperature = 176°F (80°C), Maximum long term temperature = 122°F (50°C)

Temperature range B: Maximum short term temperature = 248°F (120°C), Maximum long term temperature = 162°F (72°C)

Temperature range C: Maximum short term temperature = 302°F (150°C), Maximum long term temperature = 194°F (90°C)

Short term elevated concrete temperatures are those that occur over brief intervals, e.g., as a results of diurnal cycling. Long term concrete temperatures are roughly constant over significant periods of time.

DURAL ICC GEL STEEL DESIGN INFORMATION FOR METRIC THREADED ROD

Design Information		Symbol	Units	Threaded Rod						
				M8	M10	M12	M16	M20	M24	M30
Nominal Anchor Diameter		d	mm	8	10	12	16	20	24	30
			(in)	(0.31)	(0.39)	(0.47)	(0.63)	(0.79)	(0.94)	(1.18)
Threaded Rod Cross-Sectional Area		A_{se}	mm^2	36.6	58.0	84.3	156.7	244.8	352.5	560.7
			(in^2)	(0.057)	(0.090)	(0.131)	(0.243)	(0.379)	(0.546)	(0.869)
ISO 898-1 Class 5.8	Nominal Strength as Governed by Steel Strength	N_{sa}	kN	18.3	29.0	42.2	78.4	122.4	176.3	280.4
			(lb)	(4,114)	(6,520)	(9,476)	(17,615)	(27,518)	(39,625)	(63,028)
		V_{sa}	kN	11.0	17.4	25.3	47.0	73.4	105.8	168.2
			(lb)	(2,469)	(3,912)	(5,686)	(10,569)	(16,511)	(23,775)	(37,817)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	Not Applicable	1.00				0.87	
	Strength Reduction Factor for Tension	ϕ	----	0.65						
	Strength Reduction Factor for Shear	ϕ	----	0.60						
ISO 898-1 Class 8.8	Nominal Strength as Governed by Steel Strength	N_{sa}	kN	29.3	46.4	67.4	125.4	195.8	282.0	448.6
			(lb)	(6,583)	(10,432)	(15,162)	(28,183)	(44,029)	(63.399)	(100,845)
		V_{sa}	kN	17.6	27.8	40.5	75.2	117.5	169.2	269.1
			(lb)	(3,950)	(6,259)	(9,097)	(16,910)	(26,417)	(38,040)	(60,507)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	Not Applicable	0.90					
	Strength Reduction Factor for Tension	ϕ	----	0.65						
	Strength Reduction Factor for Shear	ϕ	----	0.60						
ISO 3506-1 Class A4-70 and Stainless C-70	Nominal Strength as Governed by Steel Strength	N_{sa}	kN	25.6	40.6	59.0	109.7	171.4	246.8	392.5
			(lb)	(5,760)	(9,128)	(13,267)	(24,661)	(38,525)	(55,474)	(88,240)
		V_{sa}	kN	15.4	24.4	35.4	65.8	102.8	148.1	235.5
			(lb)	(3,456)	(5,477)	(7,960)	(14,796)	(23,115)	(33,285)	(52,944)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	Not Applicable	0.90					
	Strength Reduction Factor for Tension	ϕ	----	0.65						
	Strength Reduction Factor for Shear	ϕ	----	0.60						
ISO 3506- Class A4-80 and Stainless C-80	Nominal Strength as Governed by Steel Strength	N_{sa}	kN	29.3	46.4	67.4	125.4	195.8	282.0	448.6
			(lb)	(6,583)	(10,432)	(15,162)	(28,183)	(44,029)	(63,399)	(100,845)
		V_{sa}	kN	17.6	27.8	40.5	75.2	117.5	169.2	269.1
			(lb)	(3,950)	(6,259)	(9,097)	(16,910)	(26,417)	(38,040)	(60,507)
	Reduction Factor for Seismic Shear	$\alpha_{V,seis}$	----	Not Applicable	0.90					
	Strength Reduction Factor for Tension	ϕ	----	0.65						
	Strength Reduction Factor for Shear	ϕ	----	0.60						

1. Values provided for common rod material types are based on specified strength and calculated in accordance with ACI 318 -14 Eq. 17.4.1.2 and Eq. 17.5.1.2b or ACI 318-11 Eq. (D-2) and Eq. (D-29), as applicable. Nuts and washers must be appropriate for the rod strength and type.

2. For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a brittle steel element.

DURAL ICC GEL CONCRETE BREAKOUT DESIGN INFORMATION FOR METRIC THREADED ROD

Design Information	Symbol	Units	Threaded Rod						
			M8	M10	M12	M16	M20	M24	M30
Minimum Embedment Depth	$h_{ef,min}$	mm	60	60	70	80	90	96	120
		(in)	(2.36)	(2.36)	(2.76)	(3.15)	(3.54)	(3.78)	(4.72)
Maximum Embedment Depth	$h_{ef,max}$	mm	160	200	240	320	400	480	600
		(in)	(6.30)	(7.87)	(9.45)	(12.60)	(15.75)	(18.90)	(23.62)
Effectiveness Factor for Cracked Concrete	$k_{c,cr}$	SI (in-lb)	7.1 (17)						
Effectiveness Factor for Uncracked Concrete	$k_{c,uncr}$	SI (in-lb)	10 (24)						
Minimum Spacing Distance	s_{min}	mm	$S_{min} = C_{min}$						
		(in)							
Minimum Edge Distance	c_{min}	mm	40	45	55	65	85	105	140
		(in)	(1.57)	(1.77)	(2.17)	(2.56)	(3.35)	(4.13)	(5.51)
Minimum Concrete Thickness	h_{min}	mm	$h_{ef} + 30$, [≥ 100]		$h_{ef} + 2d_0$ where d_o is the hole diameter				
		(in)	($h_{ef} + 1.25$, [≥ 3.937])						
Critical Edge Distance (Uncracked Concrete Only)	c_{ac}	mm	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{8}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$						
		in	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{1160}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$						
Strength Reduction Factor for Tension, Concrete Failure Mode, Condition B	ϕ	----	0.65						
Strength Reduction Factor for Shear, Concrete Failure Mode, Condition B	ϕ	----	0.70						

1. Values provided for post-installed anchors with category as determined from ACI 355.4 given for Condition B. Condition B applies without supplementary reinforcement or where pullout (bond) or pryout govern, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, while condition A requires supplemental reinforcement. Values are for use with the load combinations Section 1605.2 of the IBC, ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable, as set forth in ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D.4.4.

DURAL ICC GEL BOND STRENGTH DESIGN INFORMATION FOR METRIC THREADED ROD

Design Information		Symbol	Units	Threaded Rod						
				M8	M10	M12	M16	M20	M24	M30
Minimum Embedment Depth		$h_{ef,min}$	mm	60	60	70	80	90	96	120
			(in)	(2.36)	(2.36)	(2.76)	(3.15)	(3.54)	(3.78)	(4.72)
Maximum Embedment Depth		$h_{ef,max}$	mm	160	200	240	320	400	480	600
			(in)	(6.30)	(7.87)	(9.45)	(12.60)	(15.75)	(18.90)	(23.62)
Temperature Range A	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	2.8	4.3	4.3	4.3	4.6	4.6	4.8
			(psi)	(406)	(624)	(624)	(624)	(667)	(667)	(696)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	8.2	10.4	10.0	9.5	9.2	8.9	8.5
			(psi)	(1,189)	(1,508)	(1,450)	(1,378)	(1,334)	(1,291)	(1,233)
Temperature Range B	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	2.5	3.9	3.9	3.9	4.2	4.2	4.4
			(psi)	(363)	(566)	(566)	(566)	(609)	(609)	(638)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	7.5	9.5	9.2	8.7	8.4	8.1	7.8
			(psi)	(1,088)	(1,378)	(1,334)	(1,262)	(1,218)	(1,175)	(1,131)
Temperature Range C	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	2.2	3.5	3.5	3.5	3.7	3.7	3.9
			(psi)	(319)	(508)	(508)	(508)	(537)	(537)	(566)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	6.6	8.4	8.1	7.7	7.4	7.2	6.9
			(psi)	(957)	(1,218)	(1,175)	(1,117)	(1,073)	(1,044)	(1,001)
Reduction Factor for Seismic Tension		$\alpha_{N,seis}$	----	Not Applicable	1.00					
Strength Reduction Factors for Permissible Installation Conditions	Dry Concrete	ϕ_d	----	0.65						
	Water Saturated Concrete	ϕ_{ws}	----	0.65		0.55			0.45	

1. Characteristic bond strength values correspond to concrete compressive strength f´c =2,500 psi (17.2 MPa). For concrete compressive strength f´c between 2,500 psi (17.2 MPa) and 8,000 psi (55.2 MPa), the tabulated characteristic bond strength may be increased by a factor of (f ´c /2,500)0.1 (for SI: (f´c /17.2)0.1).

2. Temperature range A: Maximum short term temperature = 176°F (80°C), Maximum long term temperature = 122°F (50°C)

Temperature range B: Maximum short term temperature = 248°F (120°C), Maximum long term temperature = 162°F (72°C)

Temperature range C: Maximum short term temperature = 302°F (150°C), Maximum long term temperature = 194°F (90°C)

Short term elevated concrete temperatures are those that occur over brief intervals, e.g., as a results of diurnal cycling. Long term concrete temperatures are roughly constant over significant periods of time.

DURAL ICC GEL STEEL DESIGN INFORMATION FOR METRIC REBAR

Design Information		Symbol	Units	Rebar Size							
				8	10	12	16	20	25	28	32
Nominal Anchor Diameter		d	mm	8	10	12	16	20	25	28	32
			(in)	(0.31)	(0.39)	(0.47)	(0.63)	(0.79)	(0.98)	(1.10)	(1.26)
Rebar Cross Sectional Area		A_{se}	mm^2	50.2	78.5	113.1	201.1	314.2	490.9	615.8	804.2
			(in^2)	(0.078)	(0.122)	(0.175)	(0.312)	(0.487)	(0.761)	(0.954)	(1.247)
DIN 488 BSt 550/500	Nominal Strength as Governed by Steel Strength	N_{sa}	kN	28.0	43.2	62.2	110.6	172.8	270.0	338.7	442.3
			(lb)	(6,294)	(9,711)	(13,983)	(24,863)	(38,845)	(60,696)	(76,140)	(99,429)
		V_{sa}	kN	13.8	25.9	37.3	66.4	103.7	162.0	203.2	265.4
			(lb)	(3,102)	(5,822)	(8,385)	(14,927)	(23,312)	(36,418)	(45,679)	(56,662)
	Reduction Factor for Seismic Shear	$\alpha V,seis$	----	Not Applicable	1.00						
	Strength Reduction Factor for Tension	ϕ	----	0.65							
	Strength Reduction Factor for Shear	ϕ	----	0.60							

1. Values provided for common rod material types are based on specified strength and calculated in accordance with ACI 318 -14 Eq. 17.4.1.2 and Eq. 17.5.1.2b or ACI 318-11 Eq. (D-2) and Eq. (D-29), as applicable. Nuts and washers must be appropriate for the rod strength and type.

2. For use with load combinations of IBC Section 1605.2, ACI 318-14 5.3 or ACI 318-11 9.2, as applicable, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D4.4. Values correspond to a brittle steel element.

DURAL ICC GEL CONCRETE BREAKOUT DESIGN INFORMATION FOR METRIC REBAR

Design Information	Symbol	Units	Rebar Size mm							
			8	10	12	16	20	25	28	32
Minimum Embedment Depth	$h_{ef,min}$	mm	60	60	70	80	90	100	112	128
		(in)	(2.36)	(2.36)	(2.76)	(3.15)	(3.54)	(3.94)	(4.41)	(5.04)
Maximum Embedment Depth	$h_{ef,max}$	mm	160	200	240	320	400	500	560	640
		(in)	(6.30)	(7.87)	(9.45)	(12.60)	(15.75)	(19.69)	(22.05)	(25.20)
Effectiveness Factor for Cracked Concrete	$k_{c,cr}$	SI (in-lb)	7.1 (17)							
Effectiveness Factor for Uncracked Concrete	$k_{c,uncr}$	SI (in-lb)	10 (24)							
Minimum Spacing Distance	S_{min}	mm	$S_{min} = C_{min}$							
		(in)								
Minimum Edge Distance	C_{min}	mm	40	45	55	65	85	110	130	160
		(in)	(1.57)	(1.77)	(2.17)	(2.56)	(3.35)	(4.33)	(5.12)	(6.30)
Minimum Concrete Thickness	h_{min}	mm	h_{ef} + 30 , [≥ 100]			h_{ef} + 2d_o where d_o is the hole diameter				
		(in)	(h_{ef} + 1.25 , [≥ 3.937])							
Critical Edge Distance (Uncracked Concrete Only)	C_{ac}	mm	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{8}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
		in	$C_{ac} = h_{ef} \times \left[\frac{\min(\tau_{k,uncr};\ \tau_{k,\max})}{1160}\right]^{0.4} \times \max\left[\left(3.1 - 0.7\ \frac{h}{h_{ef}}\right); 1.4\right]$							
Strength Reduction Factor for Tension, Concrete Failure Mode, Condition B	ϕ	----	0.65							
Strength Reduction Factor for Shear, Concrete Failure Mode, Condition B	ϕ	----	0.70							

1. Values provided for post-installed anchors with category as determined from ACI 355.4 given for Condition B. Condition B applies without supplementary reinforcement or where pullout (bond) or pryout govern, as set forth in ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, while condition A requires supplemental reinforcement. Values are for use with the load combinations Section 1605.2 of the IBC, ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable, as set forth in ACI 318-11 D.4.3. If the load combinations of ACI 318-11 Appendix C are used, the appropriate value of Φ must be determined in accordance with ACI 318-11 D.4.4.

DURAL ICC GEL BOND STRENGTH DESIGN INFORMATION FOR METRIC REBAR

Design Information		Symbol	Units	Rebar Size mm							
				8	10	12	16	20	25	28	32
Minimum Embedment Depth		$h_{ef,min}$	mm	60	60	70	80	90	100	112	128
			(in)	(2.36)	(2.36)	(2.76)	(3.15)	(3.54)	(3.94)	(4.41)	(5.04)
Maximum Embedment Depth		$h_{ef,max}$	mm	160	200	240	320	400	500	560	640
			(in)	(6.30)	(7.87)	(9.45)	(12.60)	(15.75)	(19.69)	(22.05)	(25.20)
Temperature Range A	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	2.1	3.2	3.2	3.2	3.4	3.4	3.4	3.6
			(psi)	(305)	(464)	(464)	(464)	(493)	(493)	(493)	(522)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	----	7.8	7.5	7.1	6.9	6.6	6.5	6.3
			(psi)		(1,131)	(1,088)	(1,030)	(1,001)	(957)	(943)	(914)
Temperature Range B	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	1.9	3.0	3.0	3.0	3.1	3.1	3.1	3.3
			(psi)	(276)	(435)	(435)	(435)	(450)	(450)	(450)	(479)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	----	7.1	6.9	6.6	6.3	6.1	5.9	5.8
			(psi)		(1,030)	(1,001)	(957)	(914)	(885)	(856)	(841)
Temperature Range C	Characteristic Bond Strength in Cracked Concrete	$\tau_{k,cr}$	MPa	1.7	2.6	2.6	2.6	2.8	2.8	2.8	2.9
			(psi)	(247)	(377)	(377)	(377)	(406)	(406)	(406)	(421)
	Characteristic Bond Strength in Uncracked Concrete	$\tau_{k,uncr}$	MPa	----	6.3	6.1	5.8	5.6	5.4	5.2	5.1
			(psi)		(914)	(885)	(841)	(812)	(783)	(754)	(740)
Reduction Factor for Seismic Tension		$\alpha_{N,seis}$	----	Not Applicable	0.98	1.00					
Strength Reduction Factors for Permissible Installation Conditions	Dry Concrete	ϕ_d	----	0.65							
	Water Saturated Concrete	ϕ_{ws}	----	0.65		0.55			0.45		

1. Characteristic bond strength values correspond to concrete compressive strength f´c =2,500 psi (17.2 MPa). For concrete compressive strength f´c between 2,500 psi (17.2 MPa) and 8,000 psi (55.2 MPa), the tabulated characteristic bond strength may be increased by a factor of (f´c /2,500)0.1 (for SI: (f´c /17.2)0.1).

2. Temperature range A: Maximum short term temperature = 176°F (80°C), Maximum long term temperature = 122°F (50°C)

Temperature range B: Maximum short term temperature = 248°F (120°C), Maximum long term temperature = 162°F (72°C)

Temperature range C: Maximum short term temperature = 302°F (150°C), Maximum long term temperature = 194°F (90°C)

Short term elevated concrete temperatures are those that occur over brief intervals, e.g., as a results of diurnal cycling. Long term concrete temperatures are roughly constant over significant periods of time.

DIRECTIONS FOR USE

Drilling and Cleaning Holes: Using a rotary hammer drill, and a bit that conforms to ANSI B212.15 and is the appropriate size for the anchor diameter to be installed, drill the hole to the specified embedment depth. Always wear appropriate personal protection equipment (PPE) for eyes, ears & skin and avoid inhalation of dust during the drilling and cleaning process. Refer to the Safety Data Sheet (SDS) for details prior to proceeding.

Remove any standing water from hole prior to beginning the cleaning process. Using oil free compressed air with a minimum pressure of 90 psi, insert the air wand to the bottom of the drilled hole and blow out the debris with an up/down motion for a minimum of 4-5 seconds. For drilled holes less than 3/4 in (19 mm) in diameter, embedment depths less than 10d or in uncracked concrete, a hand pump may be used instead of compressed air.

Select the correct wire brush size for the drilled hole diameter, making sure that the brush is long enough to reach the bottom of the drilled hole. Reaching the bottom of the hole, brush in an up & down and twisting motion. The brush should contact the walls of the hole. If it does not, the brush is either too worn or small and should be replaced with a new brush of the correct diameter. Blow the hole out once more to remove brush debris using oil free compressed air with a minimum pressure of 90 psi. Visually inspect the hole to confirm it is clean. If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

Preparing Cartridges: Remove the protective cap from the DURAL ICC GEL cartridge and insert the cartridge into the dispensing tool. Screw on the supplied static mixer to the cartridge. Do not modify mixing nozzle and confirm that internal mixing element is in place prior to dispensing adhesive. Take note of the air and base material temperatures and review the working/full cure time chart prior to starting the injection process.

Dispense the initial amount of material from the mixing static mixer onto a disposable surface until the product is a uniform gray color with no streaks, as adhesive must be properly mixed in order to perform as published. Dispose of the initial amount of adhesive prior to injection into the drill hole. When changing cartridges, never re-use static mixers. A new static mixer should be used with each new cartridge.

Installation and Curing: The engineering drawings for the project must be followed. Insert the mixing nozzle, using an extension tube if hole depth is greater than 6 in (150 mm), to the bottom of the hole and fill from the bottom to the top approximately 2/3 full, being careful not to withdraw the nozzle too quickly as this may trap air in the adhesive. When using a pneumatic dispensing tool, ensure that pressure is set at 90 psi maximum.

Injection plugs must be used for overhead installations and those between horizontal and overhead. Overhead installations and those between horizontal and overhead are only allowed for the sizes 3/8 in (10 mm) through 1-1/8 in (30 mm) and M10 through M30 threaded rods and #3 through #9 and 10 through 28 reinforcing bar. Injection plugs also need to be used for all applications with drill hole diameters greater than 1 1/8 in (30 mm) or drill hole depths greater than 10 in (250 mm). The injection plug fits directly onto the tip of small mixing nozzle.

Prior to inserting the threaded rod or rebar into the hole, make sure it is straight, clean and free of oil and dirt and that the necessary embedment depth is marked on the anchor element. Insert the anchor element into the hole while turning 1-2 rotations prior to the anchor reaching the bottom of the hole. Excess adhesive should be visible on all sides of the fully installed anchor. CAUTION: Use extra care with deep embedment or high temperature installations to ensure that the working time has not elapsed prior to the anchor being fully installed.

Do not disturb, torque or apply any load to the installed anchor until the specified full cure time has passed. The amount of time needed to reach full cure is base material temperature dependent; refer to the Cure Schedule table for appropriate full cure time and the Installation Parameter tables for the corresponding maximum installation torque that can be applied once DURAL ICC GEL has fully cured.

CLEAN-UP

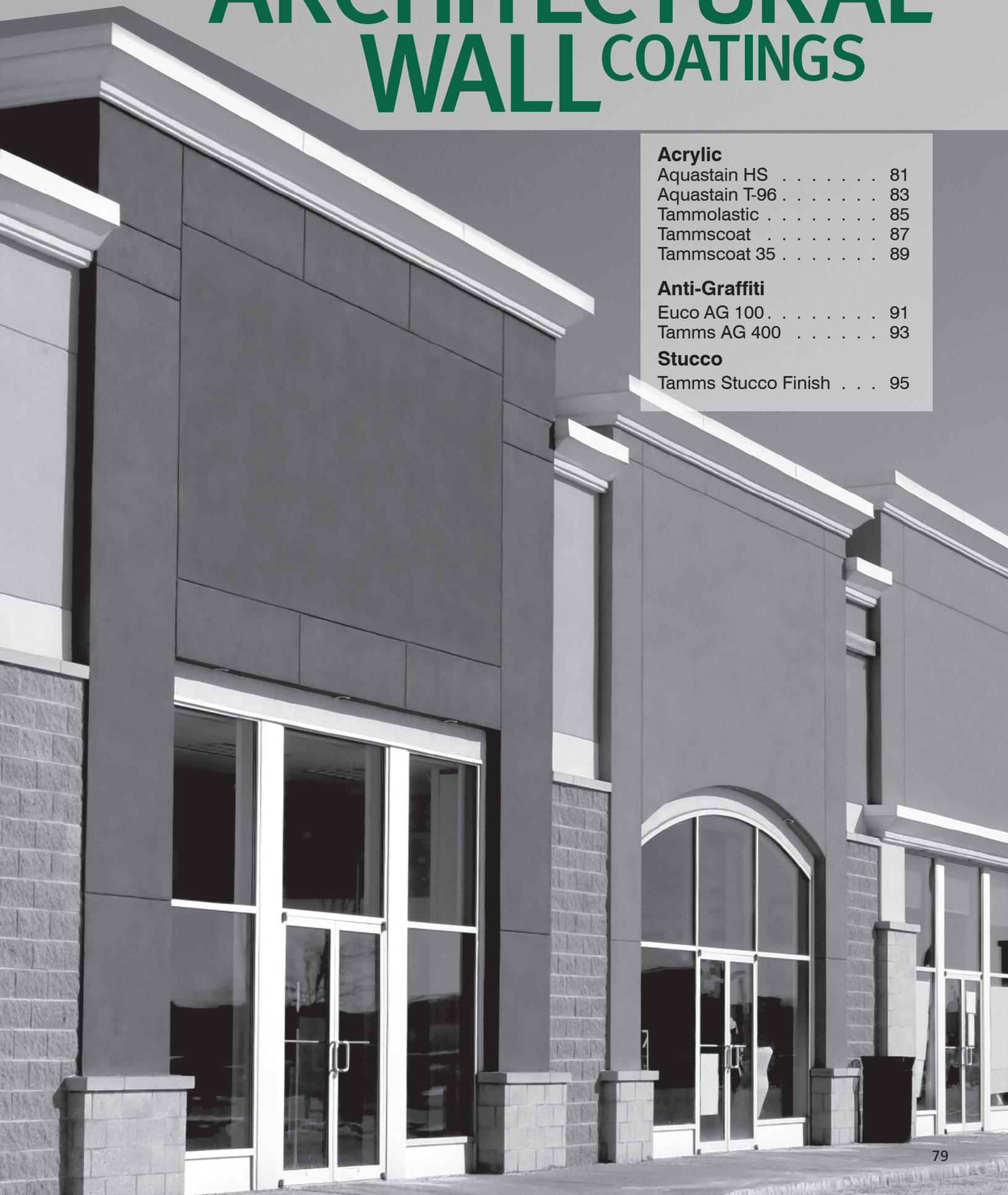
Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL ICC GEL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Install DURAL ICC GEL with a high quality, professional grade gun
- Do not thin DURAL ICC GEL as this may affect cure and performance
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

ARCHITECTURAL WALL COATINGS



AQUASTAIN HS

WATER-BASED, DECORATIVE AND PROTECTIVE ACRYLIC STAIN

EUCLID CHEMICAL

DESCRIPTION

AQUASTAIN HS is a water-based, acrylic stain used to protect and decorate vertical masonry and concrete surfaces.

PRIMARY APPLICATIONS

- Exterior and interior
- Concrete
- Concrete masonry units
- Stone and brick
- Stucco

FEATURES/BENEFITS

- Repels water
- Excellent adhesion
- Protects from carbonation
- Provides mildew and fungus growth resistant coating
- Breathable
- Freeze-thaw stable
- Outstanding color retention
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

Weight/gal .....11.5 ± 0.5 lbs (1.4kg/L)
Viscosity ..... 1,500-2,000 cp (98-105 ku)
Solids by weight .....55 to 60%

	Criterion	Results
Water permeability		
ASTM E514	Dampness shows	none
	First water shows	none
	Back of wall in 4 hrs	none
Wind driven rain resistance TT-C 555b		excellent
Water Vapor Trans. ASTM E96		
	20 mil film	12 to14 perms

Weatherometer ASTM G26
6,000 hrs.....no crazing, cracking, chipping or flaking
Carbon dioxide diffusion
Diffusion coefficient..... .....1.1 X 10^{-6} cm^2 sec^{-1}
Diffusion resistance coefficient 155,900
Klopfer criteria ..... passes

Freeze thaw durability ASTM C666
300 cycles 100.9%
Scaling resistance ASTM C672
Visual rating 0
25 cycles, scaling mass .....none
Salt spray resistance ASTM B117 5% solution
2,000 hrs.....no adhesion loss@ 90°F ± 2˚F
Fungus growth FED TEST 141, method 6271
28 days.....none
Impact resistance ASTM D2794.....no chipping
Flexibility
1" (25 mm) mandrel.....no chipping or breaking
Abrasion resistance ASTM C418 0 mils abraded

Appearance: AQUASTAIN HS is available in standard colors and tint bases for universal colorant systems. Custom colors are available with minimum quantity orders. Contact your local representative for further details.

PACKAGING

AQUASTAIN HS is packaged in 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

COVERAGE

	ft²/gal (m²/L) 1st Coat	2nd Coat
Tamms H/P Primer		
Porous Surfaces	100 to 150 (2.45 to 3.68)	-----
Smooth Surfaces	200 to 300 (if required) (4.91 to 7.36)	-----
Aquastain HS		
Porous Surfaces	100 to 150 (2.45 to 3.68)	100 to 150 (2.45 to 3.68)
Smooth Surfaces	120 to 170 (2.94 to 4.17)	130 to 180 (3.19 to 4.42)

Note: Coverage rates are approximate and are for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements. Apply samples to all surfaces to be coated. Obtain approval of architect or owner for the color, finish, water repellency, and coverage before proceeding with work.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete and masonry surfaces for 28 days. Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and clean of dust, dirt, paint, efflorescence, oil and all other contaminants. Preparation should be done by mechanical means to achieve a surface profile equal to CSP 1 to 2 in accordance with ICRI Guideline 310.2. Properly clean area that has been profiled.

Priming: For concrete and masonry, especially in hot, windy conditions, priming with TAMMS H/P PIMER is recommended.

Mixing: AQUASTAIN HS should be mechanically mixed using a low speed ¾" (19 mm) drill with a mixing paddle. Mix thoroughly to a uniform, smooth consistency. Do not aerate the mix.

Application: To spray AQUASTAIN HS, use airless spray equipment with a 0.025 to 0.035 in. (.64 to .89 mm) orifice size spray tip. Spray AQUASTAIN HS using a "cross coat" technique (horizontal pass followed by a vertical pass). Avoid applying to excess, which can cause the product to run down the wall or puddle. Backrolling is recommended during application of the first coat. The second coat can be sprayed after the first coat is dry, approximately 12 to 24 hours. Do not backroll during the second coat. For hand application use brushes or rollers designed for latex paint. Dampen the brushes or rollers with clean water before use. When using rollers, uniform millage is achieved by rolling AQUASTAIN HS in one direction only.

CLEAN-UP

Clean tools and application equipment immediately after use with soap and hot water. Clean overspray or drips while still wet with soap and hot water. Dried material may require strong solvents or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- AQUASTAIN HS is a water-based product and is not flammable.
- Provide adequate ventilation.
- Do not thin or dilute AQUASTAIN HS.
- Do not apply AQUASTAIN HS if rain is expected within 8 hours.
- Do not apply over frost filled surfaces.
- Do not apply if surface and ambient temperatures are below 45°F (7°C) or above 90° F (32°C).
- Store at temperatures between 50°F to 90°F (10°C to 32°C). Protect from freezing.
- Do not apply to non-absorbent materials such as glass, metal, glazed brick or glazed tile.
- Not for use on traffic bearing surfaces.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

AQUASTAIN T-96

WATER-BASED, DECORATIVE, PENETRATING STAIN

EUCLID CHEMICAL

DESCRIPTION

AQUASTAIN T-96 is a penetrating, non-flammable, decorative, water-based, liquid polymer stain. AQUASTAIN T-96 retains the the natural texture of the concrete or masonry surface without leaving a "painted look." It resists ultraviolet degradation, airborne dirt, smog, industrial fumes, acid rain and most other atmospheric chemicals. AQUASTAIN T-96 is a water-based formulation based on acrylic resins, inorganic pigments, fillers and proprietary additives.

PRIMARY APPLICATIONS

- Architectural finishes for buildings
- Sound walls
- Highway bridge structures
- Median barrier
- Interior/exterior surfaces
- Concrete block or brick
- Retaining walls
- Decorative finish
- Stucco

FEATURES/BENEFITS

- Resists untraviolet degradation
- Protects and provides a uniform color finish to precast or cast-in-place concrete
- Fights atmospheric conditions
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

Viscosity ..... 400 to 900 cps
VOC content ..... < 50 g/L
Weight/gal ..... 11.10 lbs (1.3 kg/L)
Solids by weight ..... 35 to 45%
Dry time ..... 15 to 45 minutes
Cure time ..... 3 to 6 hours
Weathering resistance ..... excellent
Abrasion resistance (Taber Abraser) ..... CS17, 1000 gm, 1000 cycles ..... 160 mg wt. loss

Appearance

AQUASTAIN T-96 is available in a wide range of colors. Custom colors are also available subject to minimum order quantities. Contact your local Euclid Chemical representative for details.

PACKAGING

AQUASTAIN T-96 is packaged in 55 gal (208 L) drums (standard colors only) and in 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

COVERAGE

	ft²/gal (m²/L)	
Substrate	**1st Coat**	**2nd Coat**
Concrete	150 to 225 (3.68 to 5.52)	250 to 350 (6.14 to 8.59)
Concrete block (std)	100 to 175 (2.45 to 4.29)	175 to 275 (4.29 to 6.75)
Light weight/split face	40 to 60 (0.98 to 1.47)	60 to 100 (1.47 to 2.45)
Brick	60 to 100 (1.47 to 2.45)	80 to 150 (1.96 to 3.68)
Stucco	60 to 100 (1.47 to 2.45)	80 to 120 (1.96 to 2.94)

Note: AQUASTAIN T-96 coverage rates are approximate and are for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements. Sample areas should be completed for all surfaces to be stained. Obtain architect and/or owner approval for the color, finish, and coverage rates before proceeding with the job.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete or masonry surfaces for 28 days. Cracks, voids and holes in old concrete should be repaired prior to application of AQUASTAIN T-96. The surface must be structurally sound, clean, free of dirt, paint, laitance, efflorescence and other contaminants. Provide an absorptive surface on all substrates including smooth precast or formed concrete by abrading the surface. Preparation should be done by mechanical means to achieve a surface profile equal to CSP 1 to 2 in accordance with ICRI Guideline 310.2. Properly clean profiled area. On porous surfaces or where required, the surface should be waterproofed with a compatible penetrating waterproofing sealer, such as CHEMSTOP WB, prior to applying AQUASTAIN T-96.

Mixing: AQUASTAIN T-96 comes ready to use and requires no additives. Mix AQUASTAIN T-96 with a slow speed drill and mixing blade to thoroughly disperse all ingredients. Do not aerate the mix. Do not dilute AQUASTAIN T-96 with any other material.

Application: AQUASTAIN T-96 should be applied when the temperature is warmer than 45°F (7°C) and rising. AQUASTAIN T-96 is applied in two coats. The first coat primes the surface and equalizes the absorption of the substrate. The second coat, which is applied 12 to 24 hours after the first coat, provides the finished appearance and maximizes the durability. AQUASTAIN T-96 can be applied by airless spray, roller or brush. The preferred application method is airless spray using equipment capable of 1000 to 3000 psi (6.89 to 20.68 MPa) with a self cleaning reversible spray tip with a 0.021" (0.53 mm) orifice. When applying AQUASTAIN T-96, hold the spray gun 12” to 18” (30 to 45 cm) from the wall. Use a cross coat technique which consists of a horizontal pass followed by a vertical pass. For fluted surfaces, only make vertical passes and hold the sprayer at the proper angle to coat both sides of the flutes. Apply AQUASTAIN T-96 to the point of saturation with no run down. Use brushes or rollers to remove sags or streak marks. Other use of brushes or rollers should be avoided except to coat edges or areas that cannot be sprayed. Apply the second coat 12 to 24 hours after the first using the same technique. Complete cure and full color development will be realized 48 hours after the second coat.

CLEAN-UP

Clean tools and application equipment immediately after use with detergent and hot water. Dried material may require solvents or abrasion for removal.

PRECAUTIONS/LIMITATIONS

- AQUASTAIN T-96 is not intended for horizontal surfaces.
- Do not thin or dilute AQUASTAIN T-96.
- Do not apply to exterior surfaces if rain is expected within 12 hours.
- Do not apply if temperatures are below 45°F (7°C) or above 90°F (32°C). High humidity and cool temperatures will slow the drying process.
- Do not apply to frost filled surfaces.
- Do not apply to non absorbent materials such as glass, metal, glazed brick or glazed tile.
- AQUASTAIN T-96 is not intended to seal leaks or withstand hydrostatic water pressure.
- Fresh concrete and mortar joints should be cured at least 28 days before applying AQUASTAIN T-96.
- Protect from freezing.
- Store between 50°F to 90°F (10°C to 32°C).
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMOLASTIC

ELASTOMERIC PROTECTIVE AND DECORATIVE COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMOLASTIC is a protective, decorative, flexible coating, formulated from high-performance elastomeric acrylic resins. It is designed to waterproof, bridge hairline cracks, and enhance the aesthetic appearance of concrete, stucco, and masonry surfaces. TAMMOLASTIC provides long-term protection from severe weather over a wide range of temperatures, dirt, airborne pollutants, and is resistant to ultraviolet light degradation and carbon dioxide. TAMMOLASTIC has superior adhesive, cohesive, and color retention characteristics.

PRIMARY APPLICATIONS

- Exterior and interior
- Concrete
- Precast panels
- Concrete masonry units
- Stone and brick
- Stucco

FEATURES/BENEFITS

- Repels water
- Excellent adhesion
- Protects from carbonation
- Provides mildew and fungus growth resistant coating
- Breathable
- Freeze-thaw stable
- Outstanding color retention
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

Weight/gal ..... 12 ± 1.0 lbs (1.4 kg/L)
Viscosity ..... 2,600-3,000 cp (116-122 ku)
Solids Content (by weight) ..... 65 to 70%
Tensile Strength, psi (MPa), ASTM D412
@ 75°F (24°C) ..... 200 to 220 (1.38 to 1.52)
@ 0°F (-18°C) ..... 550 to 650 (3.79 to 4.48)
Tensile Elongation, %, ASTM D412
@ 75°F (24°C) ..... 290 to 315
@ 0°F (-18°C) ..... 90 to 110
Water Permeability, ASTM E514
Dampness shows ..... none
First water shows ..... none
Back of wall in 4 hrs ..... none
Wind Driven Rain Resistance, TT-C 555B .... pass
Water Vapor Transmission, ASTM E96
20 mil film ..... 11 perms
Weatherometer, ASTM G26
6,000 hrs ... no crazing, cracking, chipping, flaking
Carbon Dioxide Diffusion
Diffusion coefficient ..... $1.2 \times 10^{-6} cm^2\ sec^{-1}$
Diffusion resistance coefficient 145,000
Klopfer criteria ..... pass
Freeze Thaw Resistance, ASTM C666
300 cycles 97.30%
Scaling Resistance, ASTM C672
Visual rating 0
25 cycles, scaling mass ..... none
Salt Spray Resistance, 5% solution
300 hrs ..... no adhesion loss @ 90°F ± 2°
Fungus Growth, FED TEST 141, Method 6271
28 days ..... none
Impact Resistance, ASTM D2794 ..... no chipping
Flexibility, ASTM D522
1/8" mandrel ..... no chipping or breaking

Appearance: TAMMOLASTIC is available in 12 standard colors and in tint bases for universal colorant systems. Custom colors are available with minimum quantity orders. Contact your local Euclid Chemical representative for further information.

PACKAGING

TAMMOLASTIC is packaged in 55 gal (208 L) drums and in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

	ft²/gal (m²/L)	
	1st Coat	**2nd Coat**
TAMMS H/P PRIMER		
Smooth surfaces	200 to 300 (4.91 to 7.36)	-----
TAMMS MASONRY PRIMER		
Porous surfaces	40 to 80 (0.98 to 1.96)	-----
TAMMOLASTIC		
Porous surfaces	50 to 70 (1.23 to 1.72)	60 to 80 (1.47 to 1.96)
Smooth surfaces	60 to 80 (1.47 to 1.96)	80 to 100 (1.96 to 2.45)

Note: TAMMOLASTIC coverage rates are approximate and are for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements. Apply samples to all surfaces to be coated. Obtain approval of Architect or Owner for the color, finish, water repellency, and coverage before proceeding with work. Retain sample or mock-up through completion of project.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete and masonry surfaces 28 days. Surface must be structurally sound, clean, dry, and free of dust, dirt, oil, peeling paint, curing and form release compounds, and other contaminants. Provide an absorptive surface on smooth precast, formed concrete, and other substrates by abrading the surface. Defective concrete and other surface defects should be routed to sound material and patched using compatible restoration products.

Priming: All surfaces to be coated with TAMMOLASTIC must be primed. For concrete surfaces, prime with TAMMS H/P Primer. For highly porous concrete block, prime with TAMMS MASONRY PRIMER.

Mixing: TAMMOLASTIC should be mechanically mixed using a low speed 3/4" (19mm) drill with a mixing paddle. Mix thoroughly to a uniform, smooth consistency. Do not aerate the mix.

Application: TAMMS H/P PRIMER: Use airless spray equipment with 0.017 to 0.021 inch (0.43 to 0.53 mm) orifice size spray tips, or paint rollers to apply TAMMS H/P PRIMER. TAMMOLASTIC may be applied to the TAMMS H/P PRIMER as soon as it is dry to the touch. **TAMMS MASONRY PRIMER:** Use heavy-duty spray equipment capable of spraying ceiling texture, plaster, or cement-based coatings, or use stiff brushes or 1-1/2" (38.1 mm) nap rollers designed for latex paints. Dampen brushers and rollers with clean water before use. When sprayed, back rolling is required to ensure appropriate uniform contact with the surface. Avoid applying to excess, which can cause the product to run down the wall or puddle. TAMMOLASTIC may be applied to the TAMMS MASONRY PRIMER 12 to 24 hours following primer application. **TAMMOLASTIC:** Use spray equipment with 0.025 to 0.031 inch (0.64 to 0.79 mm) orifice size spray tips, paint rollers, or brushes to apply TAMMOLASTIC. **If spraying:** Use the "cross coat" technique of a horizontal pass, followed by a vertical pass. Avoid applying excess, causing the product to run down the wall or puddle. Back rolling is recommended during application of the first coat. A second coat can be applied after the first coat is dry, typically 12 to 24 hours. **If rolling:** Use rollers with 1" to 1-1/2" (25.4 to 38.1 mm) nap. Dampen the brushes or rollers with clean water and shake our excess water before use. When using rollers, uniform millage is best achieved by rolling the TAMMOLASTIC in one direction. Do not back roll. A second coat can be applied after the first coat is dry, typically 12 to 24 hours.

CLEAN-UP

Clean tools and application equipment immediately after use with soap and hot water. Clean overspray or drips while still wet with soap and hot water. Dried material may require strong solvents or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- TAMMOLASTIC is a water-based product and is not flammable
- Provide adequate ventilation during application
- Do not thin or dilute TAMMOLASTIC
- Do not apply TAMMOLASTIC if rain is expected within 8 hours
- Do not apply over frost-filled surfaces
- Do not apply if surface or ambient temperatures are below 45°F (7°C)
- Store at temperatures between 50°F and 90°F (10°C and 32°C). Protect from freezing.
- Do not apply to non-absorbent materials such as glass, metal, glazed brick, or glazed tile
- Not for use on traffic bearing surfaces
- In all cases, consult the Safety Data Sheet before use

Rev. 01.19

TAMMSCOAT

WATER-BASED, DECORATIVE AND PROTECTIVE ACRYLIC COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMSCOAT is a high build, water-based, acrylic coating used to protect and decorate sound masonry and concrete walls. TAMMSCOAT is available in a multitude of colors in either a smooth or fine (sanded) finish.

PRIMARY APPLICATIONS

- Exterior and interior above grade walls
- Concrete
- Concrete masonry units
- Brick
- Stone
- Stucco

FEATURES/BENEFITS

- Repels water
- Excellent adhesion
- Protects from carbonation
- Outstanding color retention
- Highly durable
- Breathable
- Freeze-thaw stable
- Custom and standard colors & textures
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Property	FINE	SMOOTH
Density	12-13 lbs/gal 1.44-1.56 kg/L	11-12 lbs/gal 1.32-1.44 kg/L
Viscosity	3,000-3,700 cp	1,500-1,900 cp
Solids (by weight)	65-68%	55-60%
Flash Point	162°F (72°C)	162°F (72°C)

Wind Driven Rain Resistance, ASTM D6904
Weight Gain @ 24 hr (avg.) ..... 0.10 lbs.
Freeze-Thaw Resistance, AASHTO R-31
Result @ 30 days.....No disbondment
Water Vapor Transmission, ASTM D1653
Permeability @ 21 days.....19.0 grains/h-ft²-in Hg
Abrasion Resistance, ASTM D968
3,000 liter Sand Volume.....No coating loss
Salt Fog Resistance, ASTM B117
Result @ 2,000 hr .....No disbondment
UV & Condensation Exposure*, ASTM D4587
Blistering @ 2,000 hr ..... No blistering
Cracking @ 2,000 hr..... No cracking
Delamination @ 2,000 hr..... No delamination
Chalking @ 2,000 hr.....Rating 10
*4 hours UV, 4 hours condensation

Fungal Resistance, ASTM D3273
Result @ 4 weeks .....Rating 10 (no fungal growth)
Salt Scaling, ASTM C672
Result @ 50 cycles ..... No change
Freeze-Thaw Resistance, ASTM C666
Procedure A Result @ 300 cycles..... No change
Specular Gloss, ASTM D523
Result @ 60° 2.4
Result @ 85° 0.0
Impact Resistance, ASTM D2794
Result @ 219 inch-pounds ..... Pass
Dirt Collection, ASTM D3719
Result @ 61 days..... No change
Water Vapor Transmission, ASTM E96
Permeability, Procedure B .....21.7 grains/h-ft²-in Hg
Water Penetration Through Masonry Walls, ASTM E514
Result @ 4 hr ..... No water penetration
Chemical Resistance, ASTM G20
5% Ammonia Result @ 180 days..... No change
5% Urea Result @ 180 days..... No change
Fungal Resistance, TT-P-29B
Result @ 4 weeks ..... No fungal growth

Appearance: TAMMSCOAT is available in standard colors and tint bases for universal colorant systems. FINE or SMOOTH texture finish is standard. Custom colors are available with minimum quantity orders. Contact your local Euclid Chemical representative for further information.

PACKAGING

TAMMSCOAT is packaged in 55 gal (208.2 L) drums and in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

	ft²/gal (m²/L) 1st Coat	2nd Coat
TAMMS H/P PRIMER		
Porous surfaces	100 to 150 (2.45 to 3.68)	-----
Smooth surfaces	200 to 300 (if required) (4.91 to 5.33)	-----
TAMMS MASONRY PRIMER	40 to 80 (0.98 to 1.96)	-----
TAMMSCOAT SMOOTH		
Porous surfaces	80 to 100 (1.96 to 2.45)	80 to 100 (1.96 to 2.45)
Smooth surfaces	80 to 120 (1.96 to 2.94)	100 to 130 (2.45 to 3.19)
TAMMSCOAT FINE		
Porous surfaces	50 to 65 (1.23 to 1.60)	60 to 75 (1.47 to 1.84)
Smooth surfaces	75 to 100 (1.84 to 2.45)	85 to 110 (2.09 to 2.70)

Note: TAMMSCOAT coverage rates are approximate and are for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements. Apply samples to all surfaces to be coated. Obtain approval of Architect or Owner for the color, finish, water repellency, and coverage before proceeding with work.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete and masonry surfaces for 28 days. Surface must be structurally sound, clean, dry, and free of dust, dirt, oil, peeling paint, curing and form release compounds, and other contaminants. Provide an absorptive surface on smooth pre-cast, formed concrete and other substrates by abrading the surface. Surface profile should be equal to CSP 1 to 2 in accordance with ICRI Guideline 310.2. Defective concrete should be removed and patched using compatible restoration products.

Priming: For concrete and masonry, especially in hot, windy conditions, priming with TAMMS H/P Primer is recommended. For highly porous concrete block, priming with TAMMS MASONRY PRIMER is recommended.

Mixing: TAMMSCOAT should be mechanically mixed using a low speed 3/4" (19mm) drill with a mixing paddle. Mix thoroughly to a uniform, smooth consistency. Do not aerate the mix.

Application: Spray TAMMSCOAT FINE using heavy duty spray equipment capable of spraying ceiling texture, plaster or cementitious coatings. To spray TAMMSCOAT SMOOTH, use airless spray equipment with a 0.025" to 0.035" (0.64 to 0.89 mm) orifice size spray tip. Spray TAMMSCOAT using a "cross coat" technique (horizontal pass followed by a vertical pass). Avoid applying to excess, which can cause the product to run down the wall or puddle. Backrolling is recommended during application of the first coat. The second coat can be sprayed after the first coat is dry, approximately 12 to 24 hours. Do not backroll during the second coat. For hand application, use brushes and 1½" (38.1 mm) nap rollers designed for latex paint. Dampen the brushes or rollers with clean water before use. When using rollers, uniform millage is achieved by rolling TAMMSCOAT in one direction only.

CLEAN-UP

Clean tools and application equipment immediately after use with soap and hot water. Clean overspray or drips while still wet with soap and hot water. Dried material may require strong solvents or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F (10°C) to 90°F (32°C).
- Protect from freezing.
- Do not thin or dilute TAMMSCOAT.
- Do not apply TAMMSCOAT if rain is expected within 8 hours.
- Do not apply over frost filled surfaces.
- Do not apply if surface and ambient temperatures are below 45°F (7°C) or above 90°F (32°C).
- Do not apply to non-absorbent materials such as glass, metal, glazed brick or glazed tile.
- Not for use on traffic bearing surfaces.
- Use HP PRIMER as a prime coat on very porous surfaces or in hot, windy conditions.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSCOAT 35

COLD WEATHER DECORATIVE AND PROTECTIVE ACRYLIC COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMSCOAT 35 is a high-build, water-based, acrylic coating used to protect and decorate sound masonry and concrete walls. TAMMSCOAT 35 has been formulated to be applied on projects where the application temperature is 35ºF (2ºC) and rising. TAMMSCOAT 35 is available in a multitude of colors in either a smooth or fine (sanded) finish.

PRIMARY APPLICATIONS

- Exterior and interior above grade walls
- Concrete
- Concrete masonry units
- Brick
- Stone
- Stucco

FEATURES/BENEFITS

- Repels water
- Low temperature applications
- Excellent adhesion
- Protects from carbonation
- Outstanding color retention
- Highly durable
- Breathable
- Freeze-thaw stable
- Custom and standard colors
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

	FINE	SMOOTH
Weight/gal (kg/m²)	12.5 ± 0.5 lb (5.7 ±0.23)	11.5 ± 0.5 lb (5.2 ±0.23)
Viscosity	3000 to 3700 cp 118 to 125 ku	1500 to1900 cp 98 to 105 ku
Solids by weight	65 to 68%	55 to 60%

Wind Driven Rain Resistance TT-C 555B
Rating.....E (excellent)

Weatherometer ASTM G26
6000 hrs No crazing, cracking, chipping or flaking

Scaling Resistance ASTM C672 25 cycles
Visual Rating.....0
Scaling Mass.....none

Salt Spray Resistance ASTM B117 2,000 hrs 5% solution
no adhesion loss.....@ 90°F ± 2°F (24°C ± -17°C)

Fed Test 141, Method 6271 Fungus Growth
28 days.....none

Impact Resistance ASTM D2794..... no chipping

Flexibility Test
1" Mandrel (25mm)..... No chipping or breaking

Appearance: TAMMSCOAT 35 is available in standard colors and tint bases for universal colorant systems. FINE and SMOOTH textures are standard. Custom colors are available with minimum quantity orders. Contact your local Euclid Chemical representative for further information.

PACKAGING

TAMMSCOAT 35 is packaged in 55 gal (208.2 L) drums and in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

	ft²/gal (m²/L)	
TAMMSCOAT 35 SMOOTH	**1st Coat**	**2nd Coat**
Porous surfaces	80 to 100 (1.96 to 2.45)	80 to 100 (1.96 to 2.45)
Smooth surfaces	80 to 120 (1.96 to 2.94)	100 to 130 (2.45 to 3.19)
TAMMSCOAT 35 FINE		
Porous surfaces	50 to 65 (1.23 to 1.60)	60 to 75 (1.47 to 1.84)
Smooth surfaces	75 to 100 (1.84 to 2.45)	85 to 110 (2.09 to 2.70)

Note: TAMMSCOAT 35 coverage rates are approximate and are for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements. Apply samples to all surfaces to be coated. Obtain approval of architect and/or owner for the color and finish before proceeding with work.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete and masonry surfaces for 28 days. Surface must be structurally sound, clean, dry, and free of dust, dirt, oil, peeling paint, curing and form release compounds, and other contaminants. Provide an absorptive surface on smooth pre-cast, formed concrete and other substrates by abrading the surface. Surface profile should be at least equal to CSP 1 to 2 in accordance with ICRI Guideline 310.2. Defective concrete and other defects should be routed to sound material and repaired using compatible repair products.

Mixing: TAMMSCOAT 35 should be mechanically mixed using a low speed 3/4" (19mm) drill with a mixing paddle. Mix thoroughly to a uniform, smooth consistency. Do not aerate the material.

Application: Spray TAMMSCOAT 35 FINE using heavy duty spray equipment capable of spraying ceiling texture, plaster or cementitious coatings. To spray TAMMSCOAT 35 SMOOTH, use airless spray equipment with a 0.025" to 0.035" (0.64 to 0.89 mm) orifice size spray tip. Spray TAMMSCOAT 35 using a "cross coat" technique (horizontal pass followed by a vertical pass). Avoid applying to excess, which can cause the product to run down the wall or puddle. Backrolling is recommended during application of the first coat. The second coat can be sprayed after the first coat is dry, approximately 24 hours. Do not backroll during the second coat. For hand application use brushes and 1½" (38.1 mm) nap rollers designed for latex paint. Dampen the brushes or rollers with clean water before use. When using rollers, uniform millage is achieved by rolling TAMMSCOAT 35 in one direction only.

CLEAN-UP

Clean tools and application equipment immediately after use with soap and hot water. Clean overspray and drips while still wet with soap and hot water. Dried material may require strong solvents or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F (10°C) to 90°F (32°C).
- Protect from freezing.
- Do not apply if ambient temperatures will fall below 35°F (2°C) prior to the material drying.
- Do not thin or dilute TAMMSCOAT 35.
- Do not apply TAMMSCOAT 35 if rain is expected within 24 hours.
- Do not apply over frost filled surfaces.
- Do not apply if surface and ambient temperatures are below 35°F (2°C) or above 90°F (32°C).
- Do not apply to non-absorbent materials such as glass, metal, glazed brick or glazed tile.
- Not for use on traffic bearing surfaces.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO AG 100

SACRIFICIAL ANTI-GRAFFITI COATING SYSTEM

EUCLID CHEMICAL

DESCRIPTION

EUCO AG 100 is a specially formulated, water-based polymer and wax dispersion designed for use as a protective anti-graffiti sacrificial system over Euclid Chemical wall coatings like TAMMSCOAT and TAMMOLASTIC.

PRIMARY APPLICATIONS

- Sacrificial anti-graffiti coating to be used over Euclid Chemical wall coatings
- Sound barrier walls
- Parapet walls
- Bridge abutments
- Highway barrier walls

FEATURES/BENEFITS

- Provides graffiti protection
- Dries to a low gloss, clear finish
- Easily applied by spraying, rolling, or brushing
- Low odor
- Coating and graffiti easily removed by hot water pressure washing

TECHNICAL INFORMATION

MATERIAL PROPERTIES	
SOLIDS CONTENT	16.0%
VOC CONTENT	≤ 5 g/L
DENSITY	8.1 lbs/gal (0.97 kg/L)

Appearance: EUCO AG 100 cures to a clear film.

PACKAGING

EUCO AG 100 is packaged in 5 gal (18.9 L) pails and in 32 gal (121.1 L) drums.

SHELF LIFE

1 year in original, unopened container

COVERAGE

Typical coverage rates for EUCO AG 100 over TAMMSCOAT is 200-250 ft^2/gal (4.9 to 6.1 m^2/L).

Note: *Surface porosity, temperature, and texture will determine actual material requirements. Apply samples to all surfaces to be covered. Obtain approval of the project architect or owner for the finish and coverage before proceeding with the job.*

DIRECTIONS FOR USE

Surface Preparation: All surfaces must be structurally sound, dry, free of grease, oils, dust, curing compounds, and other contaminants. Previously painted surfaces should be checked to ensure proper coating adhesion to the substrate. Surface contaminants shall be thoroughly removed with the use of pressure washing, sand blasting, wire brushing, scraping, or other approved method.

Mixing: EUCO AG 100 comes ready to use and requires no additives. Mix EUCO AG 100 with a slow speed motor and mixing blade prior to use. Do not aerate.

Application: Masonry, concrete, and cement plaster surfaces must be cured a minimum of 28 days prior to applying EUCO AG 100. If applying over a Euclid Chemical decorative coating, allow 24 hours for the coating to cure prior to the application of EUCO AG 100. Ambient and surface temperatures should be between 40° and 100°F (4° and 38°C) at the time of application. EUCO AG 100 may be applied by roller, brush, or spray equipment. Apply EUCO AG 100 to achieve a continuous, pinhole-free film. If runs or sags occur, immediately brush them out to maintain an even film.

Graffiti Removal: 1) Hot water pressure wash the graffiti surface using 170° to 180°F (77° to 82°C) water at a pressure of 900 to 1,200 psi (6.2 to 8.3 MPa). Keep pressure as low as possible to prevent damage to the underlying surface. 2) Start at the top of the area to be cleaned and work down, allowing the water to heat the surface and carry away the graffiti. Clean all graffiti in this fashion. 3) Note where graffiti has been removed, as these will be the areas to which new EUCO AG 100 needs to be applied. 4) Allow the area to dry, then re-apply a new coat of EUCO AG 100 per the directions listed in "Application" section above. Overlap the new application onto the previously coated surface, where the EUCO AG 100 was not removed by the hot water pressure washing.

CLEAN-UP

Clean tools and equipment immediately following use with water. Clean spills or drips with water while they are still wet.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- Protect from moisture and freezing.
- When applied to dark colors of Euclid Chemical decorative coatings, EUCO AG 100 may blush when moisture vapor transmission is present.
- A test application is strongly recommended to evaluate coverage rates and final appearance prior to final application.
- Do not thin or dilute EUCO AG 100.
- Surface, ambient, and material temperatures must be 50°F (10°C) and rising prior to application.
- Do not apply EUCO AG 100 if rain is imminent, or surfaces are wet or frozen.
- Do not use EUCO AG 100 on below-grade surfaces or on horizontal surfaces exposed to ponding water.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMS AG 400

PERMANENT ANTI-GRAFFITI COATING SYSTEM

EUCLID CHEMICAL

DESCRIPTION

TAMMS AG 400 Topcoat is a two-component urethane coating for indoor and outdoor use that has excellent anti-graffiti properties. It combines superior chemical and abrasion resistance with excellent adhesion and weathering that make it effective for protecting surfaces that must be cleaned frequently with cleaners and solvents to remove graffiti. TAMMS AG 400 Basecoat is a two-component water-based epoxy that is used as a primer/base over previously uncoated concrete and masonry substrates. The TAMMS AG 400 system is used on concrete, concrete block, masonry and steel surfaces that are subject to defacing with graffiti. TAMMS AG 400 Topcoat can also be used as a graffiti resistant topcoat over most Euclid Chemical brand epoxy and acrylic coatings.

PRIMARY APPLICATIONS

- Bridge abutments
- Tunnels
- Sound walls
- Schools
- Washrooms
- Commercial properties

FEATURES/BENEFITS

- Protects and provides a uniform color finish to concrete
- Excellent coating for graffiti prone areas
- Interior and exterior surfaces

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)	**AG 400 Basecoat**	**AG 400 Topcoat**
Pot Life, 1 gal (7.6L)	1 to 1.5 hours	2 to 4 hours
Dry Time, Tack Free	5 to 8 hours	3 to 5 hours
Reapplication time	7 to 10 hours	5 to 9 hours
Final Cure, days	2 to 7 days	3 to 5 days
Mix Ratio by volume, Part A : Part B	4:1	2:1
Mixed Viscosity at 75°F (24°C)	400 to 900 cps	200 to 600 cps
Mixed Solids Content, by wt	43 to 47%	64% (clear), 73% (colors)
Flexibility, 1/8" (3.2 mm) Mandrel	no cracks	no cracks
VOC Content	230 g/L	340 g/L
Taber Abrasion Test (CS 17 wheel) 1,000 grams/500 cycles:	54 mg loss	22 mg loss
Adhesion, elcometer	425 psi	350 psi

Values presented are typical and not necessarily referenced to create specifications.

Appearance: TAMMS AG 400 Basecoat is available in clear. TAMMS AG 400 Topcoat is available in clear gloss, black, tile red, concrete gray, white, light gray, medium gray, dark gray, light reflective, and tan. Custom colors are available with minimum quantity orders and special pricing. Please contact your Euclid Chemical representative for additional details.

PACKAGING

TAMMS AG 400 Basecoat is available in 1 gallon (3.78 L) kits.

TAMMS AG 400 Topcoat is available in 3 gal (11.4 L) kits.

SHELF LIFE

2 years in original, unopened container

COVERAGE

Basecoat	250 to 320 ft^2/gal (6 to 8 m^2/L)
Topcoat	320 to 500 ft^2/gal (8 to 12 m^2/L)

TAMMS AG 400 coverage rates are approximate and for estimating purposes only.

Note: *Surface porosity and texture will determine actual material requirements. Apply samples to all surfaces to be covered. Obtain approval of the project architect or owner for the finish and coverage before proceeding with the job.*

DIRECTIONS FOR USE

Surface Preparation: Concrete: The surface must be structurally sound, clean, dry and free of laitance, dust, dirt, oil, coatings, form release agents and other contaminants. Remove defective concrete, honeycombs, cavities and other defects by routing to sound material. Repair areas with suitable repair mortars. Smooth, precast and formed concrete surfaces must be cleaned, roughened and made absorptive by mechanical means. **Steel:** The surface should be abrasive blasted using clean & dry aggregate to a white metal finish and primed immediately using a solvent based priming product.

Mixing: Premix Part A and Part B separately, then combine in a clean container. Mix thoroughly, using a "Jiffy" or similar mixer, for 3 to 5 minutes. Scrape the sides of the container and the blades at least once during the mixing. Do not aerate during mixing.

Application: The TAMMS AG 400 Basecoat can be applied by brush, short nap roller or airless spray equipment. TAMMS AG 400 Topcoat can be applied after the Basecoat is dry but no longer than 24 hours. TAMMS AG 400 Topcoat can be applied by brush, short nap roller or airless spray equipment. When spraying TAMMS AG 400, use a cross coat technique of a horizontal spray coat followed by a uniform, overlapping vertical spray coat. All runs and sags should be rolled before they dry. Proper safety precautions should be observed during spraying. TAMMS AG 400 application should be performed at surface and ambient temperatures between 50° F to 90° F (10°C to 32°C) and with humidity below 90%.

Graffiti Removal: Graffiti removal should not be attempted until 48 hours after TAMMS AG 400 application. Remove graffiti as soon as possible after the defacing by working on small areas at a time. Use commercially available graffiti removers and apply in accordance with the manufacturer's recommendations.

CLEAN-UP

Clean tools and equipment immediately following use with methyl ethyl ketone or acetone. Clean drips and over spray while still wet with the same solvents. Dried TAMMS AG 400 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- Protect from moisture and freezing.
- Do not mix or apply TAMMS AG 400 at temperatures below 50°F (10°C) or when humidity is higher than 90%.
- An epoxy primer applied under Clear TAMMS AG 400 may develop a yellow cast.
- Provide adequate ventilation and use proper safety equipment during application.
- Concrete surfaces may darken to give a "wet" look after application of TAMMS AG 400.
- A test patch is highly recommended to evaluate coverage rates and appearance.
- TAMMS AG 400 is FLAMMABLE; keep away from flames and provide proper protection during application.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMS STUCCO FINISH

WEATHERPROOF, DECORATIVE CEMENTITIOUS COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMS STUCCO FINISH is a textured, portland cement based stucco finish coat designed for interior or exterior applications.

PRIMARY APPLICATIONS

- Formed or precast concrete
- Masonry
- Stone
- Brick
- Commercial buildings
- Residential

FEATURES/BENEFITS

- Weatherproof and decorate concrete and masonry
- Mixes easily with potable water
- Trowel or spray apply
- Available in pre-blended colors
- Consistent color finish
- Excellent adhesion
- Highly durable

TECHNICAL INFORMATION

Appearance: TAMMS STUCCO FINISH is available in the standard colors: gray and white. Special colors subjected to minimum order quantities include: oyster, alpine, navajo, pearl, silver, and summer. Custom colors are also available.

PACKAGING

TAMMS STUCCO FINISH is packaged in 80 lb (36.3 kg) poly-lined bags.

SHELF LIFE

2 years in original, unopened package.

SPECIFICATIONS/COMPLIANCES

ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster
ANSI A42.2 - Portland Cement and Portland Cement-Lime Plastering, Exterior (Stucco) and Interior

COVERAGE

One 80 lb (36.3 kg) bag of TAMMS STUCCO FINISH will cover approximately 60 ft^2 (5.6 m^2) when applied at approximately 1/8" (3.2 mm) thick.

Note: The following coverage rates are approximate and for estimating purposes only. The texture, thickness, and application techniques will determine the quantity of TAMMS STUCCO FINISH required

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete for 28 days. Cracks, voids and holes in old concrete should be repaired prior to application of TAMMS STUCCO FINISH. The surface must be structurally sound, clean, free of dirt, paint, laitance, efflorescence and other contaminants. For maximum bond, apply TAMMSWELD to smooth, dense or non-porous substrates prior to applying TAMMS STUCCO FINISH. The substrate NOT coated with TAMMSWELD should be Saturated Surface Dry (SSD) prior to applying TAMMS STUCCO FINISH. If the substrate has been treated with TAMMSWELD, no water is required. Consult ANSI A42.2, A42.3 and ASTM C926 for surface preparation on scratch and brown coat applications requiring metal reinforcement.

Mixing: One 80 lb (36.3 kg) bag of TAMMS STUCCO FINISH will require approximately 8 qt (7.57L) of potable water or mixing liquid to produce a trowel consistency. A spray consistency may require up to an additional 1 qt (0.95 L) of liquid. In either mix, the quantity of liquid used must be uniform from batch to batch. Mix TAMMS STUCCO FINISH in a slow speed rotary mixer equipped with rubber tipped blades. High speed or prolonged mixing will entrap excess air. With the mixer running, add 1/2 of the required liquid and slowly add the bag of the TAMMS STUCCO FINISH. Add additional liquid to produce a smooth, workable consistency.

Continue mixing for 3 to 5 minutes. Stop the mixer, and allow the material to "fatten" for approximately 5 to 10 minutes. Start the mixer and blend for an additional 1 to 2 minutes. Add liquid as needed to achieve desired consistency. AKKRO-7T may be used in the mixing liquid to aid curing, reduce shrinkage, and improve bond qualities and strength. Reduce the amount of water in each batch by 2 qt (1.89L), and replace it with 2 qt (1.89 L) of AKKRO-7T. Work started with AKKRO-7T in the mix must contain AKKRO-7T in subsequent batches to help ensure color uniformity throughout the job.

Application: To produce uniform texture and color, TAMMS STUCCO FINISH must be installed by experienced applicators using the same application techniques and tools.

Trowel Application: Apply TAMMS STUCCO FINISH with sufficient pressure to ensure tight material contact and complete coverage of the substrate. Apply an even coat of material to the surface, and immediately double back with a second trowel application. The total thickness must be 1/8" (3.2mm) minimum. Allow TAMMS STUCCO FINISH to lose surface moisture and stiffen slightly before floating or texturing.

Spray Application: Applicators must be experienced in the use of spray equipment designed specifically for cement based materials. Apply TAMMS STUCCO FINISH with a professional type high production plaster spray gun or hopper type gun. Spray a thin, even coat of TAMMS STUCCO FINISH onto the surface to obtain uniform absorption. Hold the spray nozzle at a 90° angle a uniform distance from the surface. Immediately double back with the finish coat before the first coat has lost its surface sheen. The finished coating should be 1/8" to 3/16" (3.2 to 4.8 mm) thick. Spray to a natural break such as corners, control joints, expansion joints, roof lines, or wall and ceiling openings. Mix variations, trowel or spray application techniques, texture, finish, weather conditions, and job conditions, will affect the appearance of the final color and results obtained. Use proven, accepted stucco/plaster application practices.

Curing: TAMMS STUCCO FINISH should be mist or fog spray cured with potable water to develop proper strengths. Begin the curing process as soon as the stucco finish has set or hardened sufficiently to withstand the impact of the water droplets. The frequency and duration of the moist cure depends upon the weather conditions. The minimum cure period is usually 48 hours. Protect the wall with plastic, that is spaced away from the surface, to maintain a moist atmosphere and to permit proper hydration of the cementitious materials. Do not allow the plastic to touch the surface of the TAMMS STUCCO FINISH during the curing period. DO NOT MOIST CURE TAMMS STUCCO FINISH WHEN AKKRO-7T HAS BEEN USED IN THE MIX.

Important: Field Samples: Before starting the work, construct a field sample or mock-up using all materials and systems that will be employed in the actual construction process. TAMMS STUCCO FINISH must be mixed in full batch quantities, using all job site procedures. Do not mix by hand. Obtain approval of the owner or architect for color, texture, and coverage rates prior to beginning work.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean spills, overspray, splatters, or excess form surfaces before material sets. Dried material may require mechanical means for removal.

PRECAUTIONS/LIMITATIONS

- Protect from moisture during storage.
- Do not apply TAMMS STUCCO FINISH to frozen or frost covered surfaces.
- Do not apply TAMMS STUCCO FINISH when temperatures below 40°F (4°C) or above 95°F (35°C) are expected within 48 hours.
- Protect fresh TAMMS STUCCO FINISH from rain.
- Do not apply TAMMS STUCCO FINISH to horizontal traffic bearing surfaces.
- DO NOT MOIST CURE TAMMS STUCCO FINISH WHEN AKKRO-7T HAS BEEN USED IN THE MIX.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DECORATIVE FLOOR COATINGS

DURALTEX

VERSATILE, CHEMICALLY RESISTANT, EPOXY FLOOR COATING

EUCLID CHEMICAL

DESCRIPTION

DURALTEX is a two-component, cycloaliphatic amine-based, seamless epoxy flooring binder designed to be used for a variety of flooring applications and methods.

PRIMARY APPLICATIONS

- Warehouse and garage floors
- Manufacturing plants, workshops
- Educational facilities and hospitals
- Kitchens, lavatories and showers
- Metallic effect floors
- Vinyl chip floors

FEATURES/BENEFITS

- Versatile – neat coatings, broadcast floors, chipfloors, slurry, broadcast and trowel down
- User friendly
- Water spot resistant
- Chemically resistant
- Low modulus
- Low odor – 100% solids
- Blush resistant

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

Mix Ratio (by Volume).....2:1
VOC Content.....< 5 g/L
Gel Time, 200 g, minutes.....35 to 50
Pot Life, 3 gal (11.4 L), minutes.....15 to 30
Tack Free, hrs.....4 to 5
Hardness, Shore D ASTM D2240.....85 to 90
Tensile Strength, ASTM C307
psi (MPa) @ 14 days.....1,800 (12.4)
Tensile Strength, ASTM D638
psi (MPa).....4,000 to 6,000 (27.6 to 41.4)
Tensile Elongation, ASTM D638, %.....15 to 30
Compressive Strength, ASTM D695
Neat resin, psi (MPa) @ 24 hrs.....7,500 (51.7)
@ 7 days.....9,800 (67.6)
Bond Strength ASTM D4541.....Greater than Concrete

Water Absorption, ASTM D570
24 hrs.....0.15%
Resistance to Mold Growth Rating:.....10
ASTM D3273.....No Growth
Resistance to Bacteria Growth
ASTM G22.....No Growth
Monolithic Surfacing ASTM C722.....Passes
Abrasion Resistance, ASTM D4060.....32 mg loss
Flammability ASTM D635
Self Extinguishing.....0.75 Max

Available Colors: White, Light Reflective, Clear, Tan, Light Gray, Concrete Gray, Medium Gray, Dark Gray, Black, and Tile Red.

PACKAGING

DURALTEX is packaged in 3 gal (11.4 L), 15 gal (56.8 L) and 150 gal (567.8 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Neat Coating, 20 – 30 mils thick

Duraltex (clear), prime coat: 200-225 ft²/gal (4.9-5.5 m²/L)
Duraltex, 1st coat: 100 ft²/gal (2.5 m²/L)
Duraltex, 2nd coat: 150 ft²/gal (3.7 m²/L)

Aggregate Broadcast Coating, 1/16" - 1/8" thick (1.6 - 3.2 mm)

Duraltex (clear), 1st coat: 100 ft²/gal (2.5 m²/L)
Broadcast Aggregate: 0.5-1.0 lbs/ft² (2.4-4.9 kg/m²)
Duraltex, seal coat: 100-150 ft²/gal (2.5-3.7 m²/L)
or Eucothane: 200-250 ft²/gal (4.9-6.1 m²/L)

Trowel Down Coating, 1/8" - 1/4" thick (3.2 - 6.4 mm)

Duraltex (clear), prime coat: 200-225 ft²/gal (4.9-5.5 m²/L)
Trowel coat at 1/8" (3.2 mm) thick (mortar)
40 lbs (18 kg) silica sand 20/40 mesh &
1 gal (3.8 L) Duraltex: 40-45 ft²/gal (0.98-1.1 m²/L)
Duraltex, seal coat: 100-150 ft²/gal (2.5-3.7 m²/L)
or Eucothane: 200-250 ft²/gal (4.9-6.1 m²/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-3 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALTEX, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALTEX using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALTEX will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALTEX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALTEX if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALTEX
- When a vapor barrier is utilized in on-grade applications of DURALTEX, it must be installed directly under the slab
- Although DURALTEX is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALTEX will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALTEX FAST

RAPID TURNAROUND EPOXY FLOOR COATING

EUCLID CHEMICAL

DESCRIPTION

DURALTEX FAST is a versatile, fast-setting, 100% solids, two-component epoxy for flooring applications. Ideally suited for rapid turnaround projects.

PRIMARY APPLICATIONS

- Entryways and storage areas
- Production rooms and loading docks
- Warehouse and garage floors
- Manufacturing plants, workshops
- Educational facilities and hospitals
- Kitchens, lavatories and showers

FEATURES/BENEFITS

- Fast-curing - for rapid turnaround in busy areas
- Versatile – neat coatings, broadcast floors, chipfloors, slurry, broadcast and trowel down
- Chemically resistant
- Low modulus
- Low odor – 100% solids

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)
Mix Ratio (by Volume).....2:1
VOC Content.....< 50 g/L
Viscosity, Part A.....2,700 cp
Viscosity, Part B.....200 cp
Viscosity, Mixed.....930 cp
Gel Time, 200 g, minutes.....15 to 20
Tack Free, hrs.....3 to 4
Hardness, Shore D ASTM D2240.....80 to 90

Tensile Strength, ASTM D638
psi (MPa).....5,500 to 6,500 (37.9 to 44.8)
Tensile Elongation, ASTM D638, %.....5 to 15
Compressive Strength, ASTM D695
Neat resin, psi (MPa) @ 7 days.....11,500 (79.3)
Bond Strength ASTM C1583....Greater than Concrete
Water Absorption, ASTM D570
24 hrs.....<0.5%

Available Colors: White, Light Reflective, Clear, Tan, Light Gray, Concrete Gray, Medium Gray, Dark Gray, Black, and Tile Red.

PACKAGING

DURALTEX FAST is packaged in 3 gal (11.4 L), 15 gal (56.8 L) and 150 gal (567.8 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Neat Coating, 20 – 30 mils thick
Duraltex Fast (clear), prime coat: 200-225 ft²/gal (4.9-5.5 m²/L)
Duraltex Fast, 1st coat: 100 ft²/gal (2.5 m²/L)
Duraltex Fast, 2nd coat: 150 ft²/gal (3.7 m²/L)

Aggregate Broadcast Coating, 1/16" - 1/8" thick (1.6 - 3.2 mm)
Duraltex Fast (clear), 1st coat: 100 ft²/gal (2.5 m²/L)
Broadcast Aggregate: 0.5-1.0 lbs/ft² (2.4-4.9 kg/m²)
Duraltex Fast, seal coat: 100-150 ft²/gal (2.5-3.7 m²/L)
or Eucothane: 200-250 ft²/gal (4.9-6.1 m²/L)

Trowel Down Coating, 1/8" - 1/4" thick (3.2 - 6.4 mm)
Duraltex Fast (clear), prime coat: 200-225 ft²/gal (4.9-5.5 m²/L)
Trowel coat at 1/8" (3.2 mm) thick (mortar)
40 lbs (18 kg) silica sand 20/40 mesh &
1 gal (3.8 L) Duraltex Fast: 40-45 ft²/gal (0.98-1.1 m²/L)
Duraltex Fast, seal coat: 100-150 ft²/gal (2.5-3.7 m²/L)
or Eucothane: 200-250 ft²/gal (4.9-6.1 m²/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-3 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALTEX FAST, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALTEX FAST using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALTEX FAST will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALTEX FAST indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALTEX FAST if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALTEX FAST
- When a vapor barrier is utilized in on-grade applications of DURALTEX FAST, it must be installed directly under the slab
- Although DURALTEX FAST is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALTEX FAST will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALTEX UV

UV-RESISTANT, ALIPHATIC EPOXY FLOOR COATING

EUCLID CHEMICAL

DESCRIPTION

DURALTEX UV is a high gloss, moisture insensitive, 100% solids, two-component aliphatic epoxy floor binder. DURALTEX UV exhibits reduced tendency to yellow compared to traditional aromatic epoxy systems.

PRIMARY APPLICATIONS

- Warehouse and garage floors
- Manufacturing plants, workshops
- Educational facilities and hospitals
- Production rooms and loading docks
- Kitchens, lavatories and showers

FEATURES/BENEFITS

- Reduced tendency to yellow
- Aliphatic epoxy resin
- Clear coat for decorative aggregate floors
- Versatile – coating, broadcast floors, chip floors, and slurry/broadcast
- User friendly
- Low odor - 100% solids
- Chemically resistant

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C).

Mix ratio (by Volume) 2:1
Gel time, minutes ..... 45 to 55
Tack free, hrs. ..... 4 to 5
Hardness, Shore D, ASTM D2240 ..... 85 to 90
Tensile strength, ASTM D638, psi (MPa) ..... 4,500 to 5,500 (31.0 to 37.9)
Tensile elongation, ASTM D638, **%** ..... 15 to 25
Compressive strength, neat resin, ASTM D695, psi (MPa)
@ 24 hrs. 8,000 (55.2)
@ 7 days 10,000 (68.9)
Bond strength ..... greater than concrete
Water absorption, ASTM D570, 24 hrs, **%** ..... <0.5
Appearance: Available in clear and light gray.

PACKAGING

DURALTEX UV is available in 3 gal (11.4 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Neat Coating, 20 – 30 mils thick

Duraltex UV (clear), prime coat: 200-225 ft^2/gal (4.9-5.5 m^2/L)
Duraltex UV, 1st coat: 100 ft^2/gal (2.5 m^2/L)
Duraltex UV, 2nd coat: 150 ft^2/gal (3.7 m^2/L)

Aggregate Broadcast Coating, 1/8" - 1/4" thick (3.2 - 6.4 mm)

Duraltex UV (clear), 1st coat: 75-100 ft^2/gal (1.8-2.5 m^2/L)
Broadcast Aggregate: 1.0-1.5 lbs/ft^2 (4.9-7.3 kg/m^2)
Duraltex UV, 2nd coat: 75-100 ft^2/gal (1.8-2.5 m^2/L)
Eucothane, seal coat: 150-200 ft^2/gal (3.7-4.9 m^2/L)

Trowel Down Coating, 1/8" - 1/4" thick (3.2 - 6.4 mm)

Duraltex UV (clear), prime coat: 200-225 ft^2/gal (4.9-5.5 m^2/L)
Trowel coat at 1/8" (3.2 mm) thick (mortar)
40 lbs (18 kg) silica sand 20/40 mesh &
1 gal (3.8 L) Duraltex UV: 40-45 ft^2/gal (0.98-1.1 m^2/L)
Duraltex UV, seal coat: 100-150 ft^2/gal (2.5-3.7 m^2/L)
or Eucothane: 200-250 ft^2/gal (4.9-6.1 m^2/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for rinsing, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-3 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALTEX UV, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALTEX UV using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALTEX UV will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALTEX UV indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALTEX UV if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALTEX UV
- When a vapor barrier is utilized in on-grade applications of DURALTEX UV, it must be installed directly under the slab
- Although DURALTEX UV is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALTEX UV will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EUCOPOXY TUFCOAT DBS

DECORATIVE EPOXY FLOOR COATING AND BROADCAST SYSTEM

EUCLID CHEMICAL

DESCRIPTION

EUCOPOXY TUFCOAT DBS provides an attractive seamless floor that is chemical and abrasion resistant. Utilizing a clear 100% solids epoxy with a colored quartz aggregate, EUCOPOXY TUFCOAT DBS can be applied to provide positive footing or a smooth, high gloss appearance. The colored quartz aggregate may be blended to produce an aesthetic tile like pattern.

PRIMARY APPLICATIONS

- Manufacturing plants
- Kitchens
- Chemical processing
- Jails
- Food processing
- Schools
- Hospitals
- Restaurants
- Locker rooms
- Rest rooms
- Walkways
- Lobbies

FEATURES/BENEFITS

- Decorative, aesthetic appearance
- Alternative to trowel applied systems
- Easy to maintain
- Seamless
- Quartz aggregate is available in 21 colors

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Re-coat time.....5 to 7 hrs
Suitable for foot traffic.....24 hrs
Suitable for wheel traffic.....48 hrs
Pot life @ 73°F (23°C).....16 min
Working time over concrete at 73°F (23°C).....70 min
Thickness.....1/16" to 1/8" (1.6 mm to 3.2 mm)
Compressive strength ASTM C109
1 day.....>6,200 psi (42.8 MPa)
28 days.....10,000 psi (69.4 MPa)
Tensile strength ASTM D638.....5,000 psi (34.7 MPa)
Bond strength ASTM C882.....2,100 psi (14.5 MPa)
Full cure time.....7 days
VOC content.....≤ 5 g/L
Abrasion resistance: Taber Abrader with CS-17 Calibrese wheel with 1,000 gm load 500 cycles.....48 mg loss

Appearance: EUCOPOXY TUFCOAT DBS is a 3 part clear epoxy system consisting of a Part A (resin), a Part B (hardener), and a Part C (colored aggregate).

Standard aggregate colors include black, blue, blue gray, buff, camel brown, light beige, light rose, chocolate, green, gray, red, tan, teak, teal, white, yellow, OSHA yellow, peach, plum, smoke, and walnut.

Chemical Resistance

Acetic Acid, 5%	poor
Alkalies	excellent
Ammonia	excellent
Battery Acid	good
Beer	excellent
Bleach	excellent
Brake Fluid	good
Diesel Fuel	excellent
Ethanol	poor
Ethylene Glycol	excellent
Gasoline	excellent
Hydraulic Oil	excellent
Hydrochloric Acid, 10%	good
MEK	poor
Methylene Chloride	poor
MIBK	poor
Nitric Acid, 5%	poor
Oil	excellent
Power Steering Fluid	excellent
Phosphoric Acid, 30%	poor
Salt Water	excellent
Skydrol®	good
Transmission Fluid	excellent
Toluene	good
Urine	excellent

NOTE: Where chemical resistance is rated as poor, check the ratings on Eucothane as a possible topcoat for increased chemical resistance. **RATINGS: Poor**-affected within 24 hours; **Good**-no effect for 24 hours; **Excellent**-no effect after 2 weeks.

PACKAGING

EUCOPOXY TUFCOAT DBS is packaged in 3 gal (11.4 L kits) consisting of Part A: 2.0 gal (7.6 L), Part B: 1.0 gal (3.8 L). Colored aggregate is packaged in 50 lb (22.7 kg) bags.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

Material Requirements/1000 ft² (92.9 m²) **Double Broadcast:** 0.80 lb/ft² (3.9 kg/m²) **Single Broadcast**: 0.45 lb/ft² (2.2 kg/m²)

	Slip-resistant Texture		Standard Texture	
	1/16" (1.6 mm)	**1/8" (3.2 mm)**	**1/16" (1.6 mm)**	**1/8" (3.2 mm)**
Coating:	18 gal (68.1 L)	33 gal (124.9 L)	24 gal (90.8 L)	39 gal (147.6 L)
Aggregate:	450 lb (204 kg)	800 lb (363 kg)	450 lb (204 kg)	800 lb (363 kg)

* Broadcast rate will vary with surface texture of bare concrete as well as thickness of epoxy film on the surface.

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old and possess an open surface texture with all curing compounds and sealers removed. The concrete must be clean and sound. All oil, dirt, debris, paint and unsound concrete must be removed. The surface should be prepared mechanically, which will give an open surface profile with the cement paste removed from the surface. Surface profile should be be equal to CSP 2 to 3 in accordance with ICRI Guideline 310.2. **Important:** Acid etching is acceptable only when mechanical preparation is impractical.

Joints and Edges: If the floor is subjected to wheel traffic the edges of the floor area should be sawcut 1/4" (6 mm) deep to provide a locked in edge. Moving joints as in the case of expansion joints should be brought up through the coating. All cracks over 1/16" (1.6 mm) wide should be filled. Use a 100% solids epoxy such as DURAL FAST SET EPOXY GEL to fill wide cracks, joints and keyed edges.

Mixing: All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Mix the Part A and Part B together for 2 to 3 minutes using a drill and mixing prop. The epoxy must be well mixed to ensure proper chemical reaction. After mixing, place immediately.

Placement: Two coat application for nominal 20 mil total thickness: Apply the mixed EUCOPOXY TUFCOAT DBS to the clean, prepared surface using a roller or squeegee at a coverage rate of 160 ft^2/gal (4 m^2/L) or to specifications. Coverage rates will vary due to surface texture. Backrolling may be necessary to ensure complete wetting, uniform thickness and removal of any roller or squeegee marks. No primer is needed. After the initial coat has dried tack ffree (but no more than 24 hours), apply the second coat following the same procedures.

Application for nominal 1/16" (1.6 mm) broadcast coating: Apply the mixed EUCOPOXY TUFCOAT DBS to the clean, prepared surface using a roller or squeegee at a coverage rate of 115 ft^2/gal (2.8 m^2/L). Coverage rates will vary due to surface texture. Backrolling may be necessary to ensure complete wetting, uniform thickness and removal of any roller or squeegee marks. A uniform basecoat application is the key to a successful, level seamless floor. **Quartz broadcast:** Once 100 to 200 ft^2 (9.3 to 18.6 m^2) is covered with the EUCOPOXY TUFCOAT DBS base coat, begin broadcasting the quartz. Spiked shoes should be worn to facilitate walking on the wet epoxy to broadcast the aggregate. Broadcast the aggregate by allowing it to fall as vertically as possible from a chest high level. Broadcast uniformly onto the wet substrate until the substrate is no longer visible and the quartz appears and remains dry in appearance. Do not broadcast to the edge that will be adjoining the next section, leave a 12" to 14" (305 to 356 mm) unseeded strip to allow for overlapping of the base coat. This prevents a line from appearing where the sections meet. **Broadcast rate:** 0.45 lb/ft^2 (2.2 kg/m^2). **Sweeping and sanding:** Allow a minimum of 6 hours at 73°F (23°C) drying time prior to walking onto the surface and beginning this step. Cover shoes with plastic to prevent heel marking. Sweep or vacuum excess quartz aggregate from the surface. If areas appear to be uneven or unlevel, sanding may be required. The surface is now ready for the topcoat.

Application for nominal 1/8" (3.2 mm) broadcast coating: To achieve a more uniform color and increase thickness to a nominal 1/8" (3.2 mm), a double broadcast is recommended. Follow the procedures above for a 1/16" (1.6 mm) coating. After the initial broadcast, cure and sweeping, apply a tie coat by placing EUCOPOXY TUFCOAT DBS coating at an application rate of 65 ft^2/gal (1.6 m^2/L). Perform the second broadcast at a rate of 0.35lb/ft^2 (1.7 kg/m^2). Sweep and sand (if necessary) as indicated above.

Top Coat: Depending upon job requirements, several finishes are available as the final wear surface.

Slip-Resistant Finish: Topcoat the final aggregate broadcast with EUCOPOXY TUFCOAT DBS coating at an application rate of 115 ft^2/gal (2.8 m^2/L). **Standard Finish:** Topcoat the final aggregate broadcast with EUCOPOXY TUFCOAT DBS coating at an application rate of 65 ft^2/gal (1.6 m^2/L). **UV Resistant Finish:** To achieve a UV resistant finish, apply DBS epoxy in pre-described manner. Increase aggregate amount to fully absorb epoxy. Must top coat with EUCOTHANE. **Note:** If a smoother surface is desired additional EUCOPOXY TUFCOAT DBS coating may be applied to the surface. Additional gloss, abrasion and chemical resistance may be achieved with a final finish coat of EUCOTHANE (high performance, urethane coating).

CLEAN-UP

Clean tools and equipment with acetone, toluene or MEK. Do not allow the epoxy to harden on equipment.

PRECAUTIONS/LIMITATIONS

- Cool temperatures extend working times and cure schedules, while warmer temperatures reduce them.
- For large jobs in higher than usual temperatures, consult The Euclid Chemical Company for alternative epoxy base coat.
- Avoid application at air and floor temperatures below 50°F (10°C).
- Store indoors at 45°F to 110°F (7°F to 43°C).
- For UV protection and additional abrasion resistance, topcoat with EUCOTHANE.
- Although epoxy coatings are chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a polyurethane topcoat such as EUCOTHANE for improved stain resistance.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO TAMMOSHIELD

WATER-BASED, POLYURETHANE FLOOR COATING

EUCLID CHEMICAL

DESCRIPTION

EUCO TAMMOSHIELD is a non-yellowing, two-component water-based aliphatic polyurethane coating that provides a glossy, durable surface to concrete and masonry surfaces. It cures by a true thermoset reaction, providing toughness and chemical resistance that far surpasses that of acrylic or one-component water-based urethane sealers.

PRIMARY APPLICATIONS

- Clear protective topcoat for Eucopoxy and Dural epoxy coatings and vinyl chip flooring systems
- Seal coat for Euclid Chemical architectural wall coatings

FEATURES/BENEFITS

- Non-yellowing aliphatic formulation
- No odor
- Excellent abrasion resistance
- Provides a glossy, "wet" look
- Can be used on horizontal or vertical surfaces

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Typical Engineering Data
Viscosity cp .....500 to 800
Working time.....1 to 2 hours
Drying time @ 73ºF (23ºC), 50% RH
Tack free .....4 to 6 hours
Light foot traffic .....8 to10 hours
Complete cure.....24 hours
VOC content (clear gloss) ..... ≤ 50 g/L
VOC content (clear matte)..... ≤ 50 g/L
Solids by weight 56%
Resistance to tire marking .....excellent
Taber abrasion CS-17 wheel
1000 gram load ..... 78 mg weight loss

Chemical resistance Spot Test on EUCO TAMMOSHIELD after 14 day cure (ASTM 1308)

	Result after 4 hours	Result after 24 hours
10% Acetic Acid	no effect	slight softening
10% Sulfuric Acid	no effect	no effect
MEK	soft, blistered	soft, blistered
IPA	soft	soft
14% Ammonium Hydroxide	no effect	stained
10% Bleach	no effect	no effect
Gasoline	no effect	slight softening
50% Sodium Hydroxide	no effect	no effect

Appearance: EUCO TAMMOSHIELD is available in a clear gloss or clear matte finish. Custom colors are available upon request and subject to minimum order quantities.

PACKAGING

EUCO TAMMOSHIELD is available in a 5 gal (18.9 L) unit and in a case of two 1 gal (3.8 L) units.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Complies with all U.S. EPA and local VOC regulations, including OTC, Maricopa County and California (CARB and SCAQMD)

COVERAGE

300 to 400 ft^2/gal (7.4 to 9.8 m^2/L)
Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) will be determined by the requirements of the epoxy coating applied before the EUCO TAMMOSHIELD application. Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of EUCO TAMMOSHIELD, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

EUCO TAMMOSHIELD can not be applied directly to concrete. If an epoxy coating has not been applied, DURAPRIME WB, DURAL EPOXY PRIMER, or another Euclid Chemical epoxy coating must be used to prime concrete in accordance with the information provided on the technical data sheets.

Old or existing epoxy coatings should be cleaned and lightly sanded prior to application of EUCO TAMMOSHIELD as a seal coat. After sanding, solvent wipe the surface using acetone.

Mixing: Mix EUCO TAMMOSHIELD using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine all of Part A with all of Part B, then mix thoroughly for 3 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014. Allow mixed EUCO TAMMOSHIELD to stand for 10 minutes before use.

Application: EUCO TAMMOSHIELD can be applied as soon as the previously-applied prime coat of epoxy is tack free, but no later than 24 hours after application of the prime coat. If more than 24 hours have elapsed, the epoxy prime coat should be cleaned and lightly sanded prior to application of EUCO TAMMOSHIELD. After sanding, solvent wipe the surface using acetone. Apply EUCO TAMMOSHIELD using short nap roller, foam roller/applicator, brush, or airless sprayer. Redistribute or remove puddles or excess material before it dries.

Application over new coats of TAMMSCOAT should be done after the TAMMSCOAT has cured for 24 hours. Application over old/existing TAMMSCOAT should be done after the surface has been thoroughly cleaned and is dry.

Tack free time for EUCO TAMMOSHIELD is 4 to 6 hours (at 73°F (23°C)). EUCO TAMMOSHIELD requires 8 to 10 hours (at 73°F (23°C)) to cure sufficiently for light foot traffic. Complete cure is at 24 hours (at 73°F (23°C).

CLEAN-UP

Clean tools and application equipment immediately with water. Clean spills or drips with acetone, xylene, or MEK while still wet. Hardened EUCO TAMMOSHIELD will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store EUCO TAMMOSHIELD indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply EUCO TAMMOSHIELD if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin EUCO TAMMOSHIELD
- When a vapor barrier is utilized in on-grade applications of EUCO TAMMOSHIELD, it must be installed directly under the slab
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- EUCO TAMMOSHIELD is not recommended for asphalt surfaces
- Concrete surfaces may darken and give a "wet look" effect after application
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

INDUSTRIAL COATINGS

EPOXY & URETHANE COATINGS

APPLICATION GUIDE

EUCLID CHEMICAL

INTRODUCTION

The following instructions detail the general installation procedures for epoxy and urethane coatings manufactured by The Euclid Chemical Company. The contractor and engineer must consult the individual product's technical data sheet to obtain information that is specific to each product (mixing ratios, coverage rates, tack free time, etc.).

Note: If the contractor is not familiar with standard epoxy and urethane application techniques, a pre-job meeting is recommended to review the project details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.

SURFACE PREPARATION

A properly prepared surface is essential to a successful coating application. The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete or if the moisture vapor emission rate (MVER) is high. Before application of the coating, perform the "Visqueen test" (ASTM D4263) to check if there is moisture present. If moisture is found to be present during the "Visqueen test", perform the "calcium chloride test" (ASTM F1869) as a follow-up to determine the MVER. Contact Euclid Chemical if results indicate a MVER greater than 3.0 lbs. per 1,000 square feet per 24 hours. After surface preparation and moisture testing, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

MIXING INSTRUCTIONS

Mix coating using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 to 3 minutes each. Combine the appropriate volumes of Part A and Part B, then mix thoroughly for 3 to 5 minutes. See specific product technical data sheets for correct mixing times and ratios. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

APPLICATION PROCEDURES

Select one of the following methods:

A) Neat Coatings: Apply properly mixed coating to the prepared surface using a magic trowel, notched squeegee, short nap roller, or a combination of the above. The use of a primer under the first coat is strongly recommended for neat epoxy applications to help minimize the chances for surface defects. The use of a primer under the first coat is mandatory for urethane coatings. Follow the coverage rate provided on the product technical data sheet to produce the appropriate thickness. A second coat is recommended for most industrial applications.

The second coat can be applied after the first coat becomes tack free (verify tack free time on product technical data sheet), but no later than 24 hours after application of the first coat. Repeat the previous steps until the desired thickness is achieved. Check product technical data sheet for recommended curing time before opening to traffic. If more than 24 hours elapses between coats, sand the previous coat, wipe clean, and proceed with coating operations.

B) Aggregate Broadcast Coatings: The aggregate broadcast method consists of spreading silica sand into the coating, and is typically used to construct solid-colored, skid-resistant floors. This technique can also product a wide variety of multi-colored floors using a clear coating and colored quartz aggregate. The application procedure is similar for both systems.

Apply properly mixed coating to the prepared surface using a magic trowel, notched squeegee, short nap roller, or a combination of the above. Follow the coverage rate provided on the product technical data sheet to produce the appropriate thickness.

While the material is still wet, broadcast clean, dry aggregate into the resin to "refusal" (until the aggregate is no longer being saturated by the coating). If any area of aggregate looks "wet" during the broadcast, immediately broadcast additional aggregate over those areas. Typically, 20/40 mesh silica sand is used for solid-colored floors and Euclid Chemical's colored quartz aggregate is used for multi-colored floors. Aggregate application rates are typically between 0.5 and 2.0 lbs./ft.^{2} (2.4 and 9.8 kg/m^2) depending on the coating used. Verify the appropriate application rate on the product technical data sheet.

Allow the coating to cure. Sweep and/or vacuum up the excess aggregate. Repeat the previous steps until the desired thickness is achieved. Lastly, apply a seal coat over the final aggregate broadcast. In areas exposed to sunlight or high-intensity artificial light, color stability is improved if the seal coat is an aliphatic urethane such as EUCO TAMMOSHIELD or EUCOTHANE. Check product technical data sheet for recommended curing time before opening to traffic.

C) Vinyl Chip Broadcast Coatings: The vinyl chip broadcast method consists of spreading vinyl chips into the coating, and is typically used to produce multi-colored floors that look similar to terrazzo or granite.

Apply properly mixed coating to the prepared surface using a magic trowel, notched squeegee, short nap roller, or a combination of the above. Follow the coverage rate provided on the product technical data sheet to produce the appropriate thickness. Typically, a solid-colored coating is used under vinyl chips in case it is visible through gaps in the chips. While the material is still wet, broadcast clean, dry, colored vinyl chips to the desired concentration. Chips can be sprinkled in very lightly, broadcast to "refusal", or anything in between. Mock-ups of various application rates are recommended prior to installation.

Allow the coating to cure. Use a floor scraper to shave off any chips that may be protruding out of the coating. Sweep and/or vacuum up the excess vinyl chips. Lastly, apply a clear topcoat over the area. Check product technical data sheet for recommended curing time before opening to traffic.

D) Slurry Coatings: Apply properly mixed prime coat to the prepared surface using a magic trowel, notched squeegee, short nap roller, or a combination of the above. Follow the coverage rate provided on the product technical data sheet to produce the appropriate thickness.

Shortly after prime coat application, begin mixing subsequent slurry coat. The slurry is prepared by slowly adding clean, dry 60/70 mesh silica aggregate to the coating while properly mixing it with a drill and paddle. The slurry proportions are 12 to 15 lbs. (5.4 to 6.8 kg) of aggregate for each mixed gallon of coating. Mix thoroughly for 3 to 5 minutes, while keeping aeration of the mix to a minimum. Between these first two steps, the prime coat should not be allowed to become tack free.

Pour the slurry onto the primed surface and spread using a notched squeegee or gauge rake. Spiked shoes/cleats are recommended during this step to allow the user to move around freely in the coating. Slurries consisting of 1 gal. (3.8 L) of mixed epoxy and 15 lbs. (6.8 kg) of aggregate will typically cover approximately 20 ft.^{2} (1.8 m^2) at 1/8" (3.2 mm) thickness. Back roll with a short nap roller to ensure a consistent surface. Broadcast clean, dry, 40 to 60 mesh silica sand into the wet slurry coat to "refusal".

Allow the coating to cure. Sweep and/or vacuum up the excess aggregate. Repeat the previous steps until the desired thickness is achieved. Lastly, apply a seal coat over the final aggregate broadcast. In areas exposed to sunlight or high-intensity artificial light, color stability is improved if the seal coat is an aliphatic urethane such as EUCO TAMMOSHIELD or EUCOTHANE. Check product technical data sheet for recommended curing time before opening to traffic.

E) Trowel Down Coatings: The trowel down method can be used to create solid-colored floors using pigmented coatings and silica aggregate, or a variety of multi-colored floors using clear coatings and colored quartz aggregate. The application methods are similar for both systems.

Apply properly mixed prime coat to the prepared surface using a magic trowel, notched squeegee, short nap roller, or a combination of the above. Follow the coverage rate provided on the product technical data sheet to produce the appropriate thickness. Broadcast 20/40 mesh silica sand into the wet prime coat at a rate of 0.25 to 0.50 lbs./ft.^{2} (1.22 to 2.44 kg/m^2). Allow the prime coat to become tack free.

Prepare a mortar consisting of mixed coating and a trowel grade aggregate blend or colored quartz aggregate. Typical proportions are 3 to 4.5 parts of aggregate by volume to 1 part mixed coating by volume. Refer to product technical data sheet for specific proportions recommended for each coating. Large quantities of epoxy mortars are typically mixed in a horizontal shaft mortar mixer. Smaller quantities can be mixed in a pail using a low-speed drill and mixing paddle. Gradually add the aggregate to the mixed resin. Mixing times are typically 3 to 5 minutes after all the aggregate has been added.

Ensure that the aggregate has been thoroughly mixed into the resin.

Place the mortar onto the tack free prime coat no later than 24 hours after priming. A mortar consisting of 1 gal. (3.8 L) of mixed epoxy and 4.5 gal. (17.0 L) of aggregate will typically cover approximately 45 ft.^{2} (4.2 m^2) at 1/8" (3.2 mm) thickness. Screed the mortar to the desired thickness and trowel finish.

Allow the coating to cure. Repeat the previous steps until the desired thickness is achieved. Lastly, apply a seal coat over the area. In areas exposed to sunlight or high-intensity artificial light, color stability is improved if the seal coat is an aliphatic urethane such as EUCO TAMMOSHIELD or EUCOTHANE. Check product technical data sheet for recommended curing time before opening to traffic.

APPLICATION DETAILS

Cove base: To provide a seamless integral floor system at the floor to wall transition, a cove base of 2 to 6 inches (51 to 152 mm) in height may be required. The coating can be mixed with aggregate to use as a cove base.

Static cracks and control joints: Before application of the coating, static cracks and other non-moving joints should be routed, cleaned, and filled with a detail coat of the intended epoxy coating.

Note: Depending on the specific project, correct implementation of other application details, such as floor terminations, floor/drain detail, etc. may be required. For further information, contact Euclid Chemical Technical Support at (800) 321-7628.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened epoxy and urethane coatings will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store coatings indoors, protected from moisture, at temperatures recommended on individual product data sheets
- Surface and ambient temperature requirements for coating applications are product-specific, and are listed on individual product data sheets
- Material temperature requirements are product-specific, and are listed on individual product data sheets
- Do not apply coatings if surface temperature is within 5°F (3°C) of the dew point in the work area
- Coating working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin Euclid Chemical epoxy or urethane coatings
- Do not apply coatings to slabs on grade unless an uninterrupted vapor barrier has been installed under the slab
- Do not apply coatings if the substrate is subject to excessive moisture vapor drive or hydrostatic pressure
- Although epoxy coatings are chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance
- Epoxy coatings will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Consult the individual product's technical data sheet for product-specific precautions and limitations
- In all cases, consult the individual product's Safety Data Sheet before use

Rev. 02.17

DURALKOTE 61

NSF/ANSI STANDARD 61 COMPLIANT EPOXY COATING

EUCLID CHEMICAL

DESCRIPTION

DURALKOTE 61 is a two-component, 100% solids, high-performance epoxy coating system designed for use on concrete floors and walls. DURALKOTE 61 is verified NSF/ANSI Standard 61 compliant for contact with potable water. DURALKOTE 61 offers exceptional chemical and abrasion resistance, and provides excellent adhesion to properly prepared surfaces. DURALKOTE 61 produces a glossy, tile-like, easily maintained surface.

PRIMARY APPLICATIONS

- Potable water storage tanks, cisterns
- Mechanical rooms
- Warehouse floors
- Chemical processing and manufacturing plants
- Water treatment facilities
- Food service plants

FEATURES/BENEFITS

- NSF/ANSI Standard 61 compliant
- Good chemical resistance
- 100% solids - very low VOC

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

MIX RATIO (A:B, BY VOLUME)	1:1
MIXED VISCOSITY	3,500 cps
POT LIFE @ 90°F (32°C) (100 GRAMS)	20 minutes
POT LIFE @ 73°F (23°C) (100 GRAMS)	32 minutes
POT LIFE @ 50°F (10°C) (100 GRAMS)	69 minutes

COMPRESSIVE STRENGTH ASTM D695	5,900 psi
TENSILE STRENGTH, ASTM D638	1,850 psi
ELONGATION, ASTM D638	2.4%
SHORE D HARDNESS ASTM D2240	75
WATER ABSORPTION ASTM D570	0.09%

Appearance: The standard color for DURALKOTE 61 is gray.

PACKAGING

DURALKOTE 61 is packaged in 2 gal (7.6 L) cases and 10 gal (37.8 L) units

SHELF LIFE

18 months in original, unopened, properly stored containers

SPECIFICATIONS/COMPLIANCES

DURALKOTE 61 is ANSI Standard 61 certified for use with potable water

COVERAGE

DURALKOTE 61 should be applied at a rate of 100-160 ft^2/gal (2.45-3.9 m^2/L), which provides 10-16 wet mils in thickness, per coat. Two coats are recommended.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-4 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALKOTE 61, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALKOTE 61 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 3 minutes each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Surface and ambient temperatures should be between 50° and 90°F (10° and 32°C). Apply properly mixed DURALKOTE 61 using a brush, short nap roller, notched squeegee, or spray equipment to the properly prepared surface. Apply at a coverage rate of 100-160 ft^2/gal (2.45-3.9 m^2/L). Air bubbles and voids can be minimized by using a spiked roller immediately after application. Apply a second coat, at the same coverage rate, after the first coat is tack free, but within 36 hours.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALKOTE 61 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALKOTE 61 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALKOTE 61 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALKOTE 61
- If more than 36 hours elapses between coats: Sand the previous coat to roughen the coat, wipe clean, and proceed with coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- In all cases, consult the product Safety Data Sheet before use

In addition to the above, the following precautions apply to non-potable water applications:

- Although DURALKOTE 61 is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALKOTE 61 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.

Rev. 01.19

DURALKOTE 240

HIGH BUILD, FLEXIBLE EPOXY COATING

EUCLID CHEMICAL

DESCRIPTION

DURALKOTE 240 is a two-component, 100% solids, high performance epoxy coating system designed for use on concrete floors and walls. DURALKOTE 240 is flexible, offers exceptional chemical and abrasion resistance, and provides excellent adhesion to properly prepared surfaces. DURALKOTE 240 produces a glossy, tile-like, easily maintained surface. DURALKOTE 240 is available in 4 standard colors, and in a Neutral Base that can be colored with EUCLID UNIVERSAL COLOR PACKS; available in 33 standard colors.

PRIMARY APPLICATIONS

- Showrooms
- Mechanical rooms
- Truck/auto bay areas
- Warehouse floors
- Chemical processing and manufacturing plants
- Water treatment facilities
- Food service plants

FEATURES/BENEFITS

- High build
- Chemical resistance
- Glossy, tile-like finish
- 33 colors available using color packs

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio (A:B, by volume)	1:1
VOC Content	≤ 50 g/L
Viscosity Mixed, cp	3,000 to 5,000
Pot Life full unit, minutes	15 to 25
Gel Time (100g sample), minutes	30 to 40
Tack Free Time 15 mils, hours	4 to 6
Hardness ASTM D2240, Shore D	75 to 85
Tensile Strength ASTM D638, psi (MPa)	1,800 to 2,000 (12.4 to 13.8)
Tensile Elongation ASTM D638, % at break	15 to 25

Appearance: DURALKOTE 240 standard colors are Light Gray and Tan (see EUCLID UNIVERSAL COLOR CHART). DURALKOTE 240 is also available in a Neutral Base that can be colored using EUCLID UNIVERSAL COLOR PACKS, which are available in 33 standard colors. See the EUCLID UNIVERSAL COLOR CHART for available colors.

Chemical Resistance

ACIDS	
Acetic 10%	3D
Chromic 10%	2D
Citric 10%	3D
Formic 25%	1
Hydrochloric 10%	2D
Lactic 85%	2D
Nitric 10%	3D
Phosphoric 10%	3
85%	NR
Sulfuric Acid 10%	3D
50%	3D
98%	NR
Hydrofluoric 10%	2D
SOLVENTS	
Ethyl Alcohol 95%	1
Ethyl Acetate	NR
Methanol	1
Methyl Ethyl Ketone	NR
Mineral Spirits	4
Methylene Chloride	NR
Toluene	1
Xylene	1
Trichloroethane	2
ALKALIES/SALTS	
Ammonia 29%	4
Potassium Hydroxide 50%	4
Sodium Hydroxide 50%	4
Detergent Solution	4
Ammonium Sulfate 50%	4
Sodium Chloride 50%	4
Ferric Chloride 50%	3D
Sodium Hypochlorite 10%	3D
Hydrogen Peroxide 35%	3D
MISCELLANEOUS	
Brake Fluid	3
Skydrol	3
Formaldehyde 37%	3
Ethylene Glycol	4
Propylene Glycol	3
Vegetable Oil	4
Gasoline	2
Water	4
Anti Freeze	4
Bleach	4

1 = Incidental (8 hrs)
2 = Splash & spill (72 hrs)
3 = Extended exposure (7 days)
4 = Long term exposure (30 days)
D= Discoloration
NR =Not rated

PACKAGING

DURALKOTE 240 standard colors are packaged in a 4 gal (15.2 L) case containing two 2 gal (7.6 L) kits. DURALKOTE 240 is also packaged in a Neutral Base & Color Pack kit that contains two 2 gal (7.6 L) kits of Neutral Base and two Universal Color Packs of the chosen color. Alternately, the DURALKOTE 240 Neutral Base 4 gal (15.2 L) case and Universal Color Packs are available separately.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

Primer (optional)	ft²/gal (m²/L)
Duraprime WB	125 to 250 (3.1 to 6.1)
or	
Duraltex Clear	150 to 300 (3.7 to 7.4)

Neat Coating	ft²/gal (m²/L)
Duralkote 240, 1st coat	100 to 150 (2.5 to 3.7)
Duralkote 240, 2nd coat	100 to 150 (2.5 to 3.7)
Eucothane, seal coat	300 to 500 (7.4 to 12.3)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-4 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALKOTE 240, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALKOTE 240 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 3 minutes each. If DURALKOTE 240 NEUTRAL BASE and a EUCLID UNIVERSAL COLOR PACK are being used, it takes 1 EUCLID UNIVERSAL COLOR PACK per 2 gal (7.6 L) unit. Add the EUCLID UNIVERSAL COLOR PACK into the Part B and mix slowly until the color is uniform. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

Where an anti-skid surface is desired for DURALKOTE 240, broadcast approximately 0.25 to 0.50 lbs./$ft.^2$ (1.2 to 2.4 kg/m^2) of clean, dry aggregate into the first coat. When the first coat has cured, sweep off excess aggregate. Proceed with the second coat of DURALKOTE 240 and the optional seal coat of EUCOTHANE listed in the "Coverage" section above.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALKOTE 240 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALKOTE 240 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALKOTE 240 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALKOTE 240
- When a vapor barrier is utilized in on-grade applications of DURALKOTE 240, it must be installed directly under the slab
- Although DURALKOTE 240 is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALKOTE 240 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- DURALKOTE 240 NEUTRAL BASE requires 1 EUCLID UNIVERSAL COLOR PACK per 2 gal (7.6 L) unit. Mix COLOR PACK into the Part B component.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALKOTE 500

ULTRA HIGH BUILD EPOXY LINER

EUCLID CHEMICAL

DESCRIPTION

DURALKOTE 500 is a 100% solids, solvent free, low odor epoxy liner system. It is impervious to a wide variety of acids, caustic solutions, oils, grease and many other chemicals. DURALKOTE 500 is particularly resistant to sulfuric acid up to a concentration of 75%. No special precautions are necessary to contain odors or solvents often found in many other liner systems. DURALKOTE 500 is ideal for use as a protection system in the wastewater and chemical industries.

PRIMARY APPLICATIONS

DURALKOTE 500 is used as a lining system for protection against chemical attack to:

- Manholes
- Lift stations
- Headwork
- Sewer pipes
- Grit chambers
- Clarifiers
- Wastewater and containment areas
- Walls
- Sumps
- Trenches
- Pits

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio by volume 1:1
Gel Time (150 g), minutes..... 30 to 40
Tensile Strength, ASTM D638, psi (MPa) @ 7 days..... 4200 (28.9)
Elongation, ASTM D638, % psi (MPa) @ 7 days ..... 3 to 6
Compressive Strength, ASTM D695, psi (MPa) 8,780 (60.5)
Shore D Hardness, ASTM D2240 @ 7 days 88
Bond to Damp Concrete ASTM D4541 @ 7 days .....Concrete Failure
Flexural Strength, ASTM D790, @ 7 days psi (MPa) 5,100 (35.1)
VOC Content ..... ≤ 100 g/L
Appearance: DURALKOTE 500 is available in Light Gray and White.

PACKAGING

DURALKOTE 500 is packaged in 4 gal cases (15.14 L) containing two 2 gal (7.6 L) kits.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Liner System . . . . . **ft²/gal**
Duralkote 500, 1st coat . . . . . 25 @ 1/16" (1.6 mm)
Duralkote 500, 2nd coat . . . . . 12.8 @ 1/8" (3.2 mm)
Duralkote 500 w/ 2.5 parts sand . . . . . 32 @ 1/8" (3.2 mm)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-4 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI).

Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALKOTE 500 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 3 minutes each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

To make DURALKOTE 500 mortar, gradually add clean, dry, 60 mesh silica sand to previously mixed DURALKOTE 500 epoxy and mix thoroughly for 3 to 5 minutes. Combine 1 part by volume of mixed DURALKOTE 500 with 2 to 3 parts by volume of 60 mesh silica sand.

Application: Apply properly mixed DURALKOTE 500 using a brush, short nap roller, trowel, or spray to the properly prepared surface. **Roller and Brush:** Apply at a rate up to 100 mils (16 ft2/gal) in one application. **Trowel:** DURALKOTE 500 can be trowel-applied "neat" or mixed with silica sand to make a mortar (see instructions listed in the "Mixing" section above). **Spray:** DURALKOTE 500 can be applied by plural component spray equipment. A 125 mil (1/8", or 3.2 mm) thickness can be applied in one application.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALKOTE 500 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALKOTE 500 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALKOTE 500 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALKOTE 500
- Do not apply DURALKOTE 500 to slabs on grade unless an uninterrupted vapor barrier has been installed under the slab
- Do not apply DURALKOTE 500 if the substrate is subject to excessive moisture vapor drive or hydrostatic pressure
- Although DURALKOTE 500 is chemically resistant, surface staining of the coating may occur after contact with some chemicals.
- DURALKOTE 500 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURALTEX 1705, DURALTEX 1707

CHEMICALLY RESISTANT EPOXY FLOOR COATINGS/TOPPINGS

EUCLID CHEMICAL

DESCRIPTION

DURALTEX 1705 is a two component, 100% solids, epoxy-amine system that offers good chemical resistance to a broad range of solvents, salts, caustics and acids. DURALTEX 1705 is used in trowel down or broadcast applications. DURALTEX 1707 is a two component, flake filled, high build version of DURALTEX 1705 and is used for coating walls or floors. Both offer good abrasion and impact resistance and have been formulated to be user friendly, with low odor, long working life, and good application characteristics.

PRIMARY APPLICATIONS

- Chemical process and drainage areas
- Loading docks
- Aisles, ramps
- Waste water treatment facilities
- Industrial floors
- Food and beverage plants

FEATURES/BENEFITS

- Long term service life
- Good chemical resistance
- Use in trowel down or broadcast systems
- Flake filled version ideal for coating walls/floors

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DURALTEX	1705	1707
Mix Ratio (A:B) volume	2:1	2:1
Mixed Viscosity cps	1,500 to 3,500	4,000 to 6,000
Gel Time (100g) mins	25 to 35	25 to 35
Pot Life 3 gal (11.4 L) mins	12 to 18	12 to 18
Tensile Strength ASTM D638		
psi	5,000 to 5,500	5,000 to 5,500
MPa	(34.5 to 37.9)	(34.5 to 37.9)
Elongation at Break %	2 to 8	2 to 6

Values presented are typical and are not necessarily referenced to create specifications.

DURALTEX	1705	1707
Compressive Strength ASTM D695		
psi	9,000 to 10,000	9,000 to 10,000
MPa	(62.1 to 68.9)	(62.1 to 68.9)
Hardness Shore D ASTM D2240		
1 day	90 to 95	90 to 95
Compressive Strength, psi (MPa)		
Graded Aggregate 8:1 by wt.	12,000 to 13,000 (82.7 to 89.6)	n/a
Silica Sand 20/40 mesh 3:1 by wt.	6,000 to 7,500 (41.4 to 51.7)	n/a
Compliance ASTM C722	Yes	Yes

Appearance: Standard colors are Light Gray, Dark Gray, Tile Red, and Clear.

PACKAGING

DURALTEX 1705 and 1707 are packaged in 3 gal (11.4 L) units. DURALTEX 1705 is also available in 15 gal (56.8 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Neat Coating (Floor/Wall)	ft²/gal (m²/L)
Duraltex 1705 (clear), prime coat	300 to 350 (7.4 to 8.6)
Duraltex 1707, 1st coat	70 to 90 (1.7 to 2.2)
Duraltex 1707, 2nd coat	70 to 90 (1.7 to 2.2)

Aggregate Broadcast Coating	
Duraltex 1705, 1st coat	70 to 90 (1.7 to 2.2)
Broadcast Aggregate	1 to 2 lbs/ft² (4.9 to 9.8 kg/m²)
Duraltex 1705, each added coat	70 to 90 (1.7 to 2.2)
Broadcast Aggregate	1 to 2 lbs/ft² (4.9 to 9.8 kg/m²)
Duraltex 1705, seal coat	140 to 160 (3.4 to 3.9)

Trowel Down Coating	ft²/gal (m²/L)
Duraltex 1705 (clear), prime coat	300 to 350 (7.4 to 8.6)
Trowel coat at 1/4" (6.4 mm) thick (mortar) 3 gal (11.4 L) silica sand 20/40 mesh & 1 gal (3.8 L) Duraltex 1705	18 to 20 (0.44 to 0.49)
Trowel coat at 1/16" to 1/8" (1.6 to 3.2 mm) thick (mortar) 4.5 gal (17.0 L) graded aggregate & 1 gal (3.8 L) Duraltex 1705	24 to 26 (0.59 to 0.64)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALTEX 1705/1707, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALTEX 1705/1707 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURALTEX 1705 mortar, gradually add clean, dry aggregate to previously mixed DURALTEX 1705 epoxy and mix thoroughly for 3 to 5 minutes. Aggregate types and quantites for mixing are listed in the "Coverage" section above. A low-speed drill and a mixing paddle may be used for small quantities, and a horizontal shaft mortar mixer may be used for large quantities. **Do not blend aggregate with DURALTEX 1707; only blend aggregate with DURALTEX 1705.**

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

Tack free time for DURALTEX 1705/1707 is 5 to 8 hours at 75°F (24°C).

Chemical Resistance Data: Applicable for individual chemicals only, for exposure at room temperature to coatings applied at a minimum film thickness of 40 mils.

Acids

Acetic 50%	4
Acetic 10%	3
Chromic 10%	1
Chromic 50%	2
Citric 10%	1
Citric 50%	2
Formic 25%	4
Formic 98%	4
Hydrochloric 10%	1
Hydrochloric 37%	2D
Hydrofluoric 25%	4D
Lactic 85%	2
Nitric 10%	2
Nitric 45%	4
Phosphoric 10%	1
Phosphoric 85%	3
Sulfuric 10%	1
Sulfuric 75%	1
Sulfuric 98%	4D

Miscellaneous

Brake Fluid	1
Ethylene Glycol	2
Formaldehyde 37%	2
Gasoline	2
Propylene Glycol	2
Skydrol	1
Vegetable Oil	1

Solvents

Ethyl Alcohol 95%	3
Ethyl Acetate	4
Methanol	4
Methyl Ethyl Ketone	4
Methylene Chloride	NR
Mineral Spirits	1
Toluene	2
Tricholoroethane	2
Xylene	2

Alkalies / Salts

Ammonia 29%	1
Ammonium Sulfate 50%	1
Calcium Chloride	1
Diethanolamine	2
Ferric Chloride 50%	3D
Hydrogen Peroxide 35%	2D
Potassium Hydroxide 50%	1
Sodium Hydroxide 50%	2
Sodium Hypochlorite 10%	2D

Rating Key

1 = Long term Exposure (30 days)
2 = Extended Exposure (7 days)
3 = Splash / Spill (72 hours)
4 = Incidental Contact (8 hours)
D = Discoloration may occur
NR = Not Recommended

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALTEX 1705/1707 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALTEX 1705/1707 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALTEX 1705/1707 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALTEX 1705/1707
- When a vapor barrier is utilized in on-grade applications of DURALTEX 1705/1707, it must be installed directly under the slab
- Although DURALTEX 1705/1707 is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- DURALTEX 1705/1707 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not blend aggregate with DURALTEX 1707; only blend aggregate with DURALTEX 1705
- In all cases, consult the product Safety Data Sheet before use

DURALTEX 1805, DURALTEX 1807

EPOXY NOVOLAC FLOOR COATINGS/TOPPINGS

EUCLID CHEMICAL

DESCRIPTION

DURALTEX 1805 is a two component, 100% solids epoxy novolac that offers excellent chemical resistance to aggressive chemicals such as 98% sulfuric acid, 37% hydrochloric acid and other industrial chemicals. DURALTEX 1805 is also used in trowel down or broadcast systems. DURALTEX 1807 is the flake filled, high build version and is used for coating walls or floors. All DURALTEX products offer good abrasion and impact resistance and have been formulated to be user friendly, with low odor, long working life, and good application characteristics. By using specifically blended aggregates with DURALTEX 1805, very high early strength and excellent impact and abrasion resistance can be achieved for demanding flooring applications.

PRIMARY APPLICATIONS

- Chemical process and drainage areas
- Loading docks
- Aisles, ramps
- Waste water treatment facilities
- Industrial floors
- Food and beverage plants

FEATURES/BENEFITS

- Long term service life
- Excellent chemical resistance
- Use in trowel down or broadcast systems
- Very high early strengths

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DURALTEX	1805	1807
Mix Ratio (A:B) volume	2:1	2:1
Mixed Viscosity cps	1,000 to 1,800	3,000 to 5,000
Gel Time (100g) mins	30 to 40	30 to 40
Pot Life 3 gal (11.4 L) mins	15 to 20	15 to 20
Tensile Strength ASTM D638		
psi	5,600 to 6,200	5,600 to 6,200
MPa	(34.5 to 37.9)	(34.5 to 37.9)
Elongation at Break %	2 to 8	2 to 6

Values presented are typical and are not necessarily referenced to create specifications.

DURALTEX	1805	1807
Compressive Strength ASTM D695		
psi	9,000 to 10,000	9,000 to 10,000
MPa	(62.1 to 68.9)	(62.1 to 68.9)
Hardness Shore D ASTM D2240		
1 day	90 to 95	90 to 95
Compressive Strength, psi (MPa)		
Graded Aggregate 8:1 by wt.	12,000 to 13,000 (82.7 to 89.6)	n/a
Silica Sand 20/40 mesh 3:1 by wt.	6,000 to 7,500 (41.4 to 51.7)	n/a
Compliance ASTM C722	Yes	Yes

Appearance: Standard colors are Light Gray, Dark Gray, Tile Red, and Clear.

PACKAGING

DURALTEX 1805 and 1807 are packaged in 3 gal (11.4 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Neat Coating (Floor/Wall)	ft²/gal (m²/L)
Duraltex 1805 (clear), prime coat	300 to 350 (7.4 to 8.6)
Duraltex 1807, 1st coat	70 to 90 (1.7 to 2.2)
Duraltex 1807, 2nd coat	70 to 90 (1.7 to 2.2)

Aggregate Broadcast Coating	
Duraltex 1805, 1st coat	70 to 90 (1.7 to 2.2)
Broadcast Aggregate	1 to 2 lbs/ft² (4.9 to 9.8 kg/m²)
Duraltex 1805, each added coat	70 to 90 (1.7 to 2.2)
Broadcast Aggregate	1 to 2 lbs/ft² (4.9 to 9.8 kg/m²)
Duraltex 1805, seal coat	140 to 160 (3.4 to 3.9)

Trowel Down Coating	ft²/gal (m²/L)
Duraltex 1805 (clear), prime coat	300 to 350 (7.4 to 8.6)
Trowel coat at 1/4" (6.4 mm) thick (mortar) 3 gal (11.4 L) silica sand 20/40 mesh & 1 gal (3.8 L) Duraltex 1805	18 to 20 (0.44 to 0.49)
Trowel coat at 1/16" to 1/8" (1.6 to 3.2 mm) thick (mortar) 4.5 gal (17.0 L) graded aggregate & 1 gal (3.8 L) Duraltex 1805	24 to 26 (0.59 to 0.64)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURALTEX 1805/1807, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURALTEX 1805/1807 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes.

To make DURALTEX 1805 mortar, gradually add clean, dry aggregate to previously mixed DURALTEX 1805 epoxy and mix thoroughly for 3 to 5 minutes. Aggregate types and quantites for mixing are listed in the "Coverage" section above. A low-speed drill and a mixing paddle may be used for small quantities, and a horizontal shaft mortar mixer may be used for large quantities. **Do not blend aggregate with DURALTEX 1807; only blend aggregate with DURALTEX 1805.**

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

Tack free time for DURALTEX 1805/1807 is 5 to 8 hours at 75°F (24°C).

Chemical Resistance Data: Applicable for individual chemicals only, for exposure at room temperature to coatings applied at a minimum film thickness of 40 mils.

Acids				
Acetic	50%	4	10%	2
Chromic	10%	1	50%	1
Citric	10%	1	50%	1
Formic	25%	4	98%	4
Hydrochloric	10%	1	37%	1
Hydrofluoric	25%	4		
Lactic	85%	2		
Nitric	10%	2	45%	4
Phosphoric	10%	1	85%	2
Sulfuric	10%	1	75%	1
			98%	2

Miscellaneous	
Brake Fluid	1
Ethylene Glycol	1
Formaldehyde 37%	2
Gasoline	1
Propylene Glycol	1
Skydrol	1
Vegetable Oil	1

Solvents	
Ethyl Alcohol 95%	2
Ethyl Acetate	4
Methanol	4
Methyl Ethyl Ketone	4
Methylene Chloride	NR
Mineral Spirits	1
Toluene	2
Tricholoroethane	1
Xylene	2

Alkalies / Salts		
Ammonia	29%	1
Ammonium Sulfate	50%	1
Calcium Chloride		1
Diethanolamine		1
Ferric Chloride	50%	2D
Hydrogen Peroxide	35%	1D
Potassium Hydroxide	50%	1
Sodium Hydroxide	50%	1
Sodium Hypochlorite	10%	1D

Rating Key
1 = Long Term Exposure (30 days)
2 = Extended Exposure (7 days)
3 = Splash / Spill (72 hours)
4 = Incidental Contact (8 hours)
D = Discoloration may occur
NR = Not Recommended

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURALTEX 1805/1807 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURALTEX 1805/1807 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURALTEX 1805/1807 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURALTEX 1805/1807
- When a vapor barrier is utilized in on-grade applications of DURALTEX 1805/1807, it must be installed directly under the slab
- Although DURALTEX 1805/1807 is chemically resistant, surface staining of the coating may occur after contact with some chemicals.
- DURALTEX 1805/1807 will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating operations.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not blend aggregate with DURALTEX 1807; only blend aggregate with DURALTEX 1805
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EUCOPOXY TUFCOAT

CHEMICALLY RESISTANT, HIGH-PERFORMANCE EPOXY COATING

EUCLID CHEMICAL

DESCRIPTION

EUCOPOXY TUFCOAT is a high-performance epoxy floor coating system designed to provide concrete surfaces with excellent wear resistance in combination with protection against chemical attack. These outstanding properties are further enhanced by the availability of a wide selection of semi-gloss colors for superior aesthetic benefits.

PRIMARY APPLICATIONS

- Food processing plants
- Auto/truck repair bays
- Warehouse floors
- Chemical plants
- Manufacturing plants
- Mechanical rooms

FEATURES/BENEFITS

- Provides excellent wear under traffic
- Excellent resistance to a variety of chemicals
- Hardens to a semi-gloss finish
- Easy to apply with standard equipment
- Can be applied as a nonslip floor finish
- Available in a variety of colors
- No separate primer required

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Re-coat time ..... 2 to 24 hours
Foot traffic.....24 hours
Wheel traffic .....48 hours
Dry to touch .....2 hours
Pot life ..... 6 to 8 hours
Mixing ratio by volume A to B .....1 to 1
Total solids content.....58%
Dry film thickness .....3 to 4 mils/coat
Flexibility..... good
Weathering..... very good
VOC Content
Clear.....418 g/L
Colors.....430 g/L
Abrasion Resistance: Taber Abrader CS-17 wheel with 1,000 gm/500 cycles .....30.2 mg loss

Appearance: EUCOPOXY TUFCOAT is a 2-part epoxy system consisting of a Part A and a Part B. This product is available in Clear (amber), Concrete Gray, and Tan. After placement and curing, the product has a smooth, semi-gloss appearance.

CHEMICAL RESISTANCE

Acetic Acid, 5%..... poor
Alkalies..... excellent
Ammonia..... excellent
Battery Acid..... good
Beer..... excellent
Bleach..... excellent
Brake Fluid..... good
Ethanol..... poor
Ethylene Glycol..... excellent
Gasoline..... excellent
Hydrochloric Acid, 10%..... good
MEK..... poor
Methylene Chloride..... poor
MIBK..... poor
Nitric Acid, 5%..... poor
Oil..... excellent
Phosphoric Acid, 30%..... poor
Salt water..... excellent
Skydrol®..... good
Toluene..... good
Urine..... excellent
Xylene..... excellent

RATINGS: Poor - affected within 24 hours; Good - no effect for 24 hours; Excellent - no effect after 2 weeks.
NOTE: Where chemical resistance is rated as poor, check the ratings on EUCOTHANE as a possible topcoat for upgraded chemical resistance.

PACKAGING

EUCOPOXY TUFCOAT is available in 2 gal (7.6 L) kits. The mix ratio is 1 to 1 by volume.

SHELF LIFE

2 years in orignal, unopened containers

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

100 to 250 ft^2/gal (2.5 to 6.1 m^2/L) will produce a wet film thickness of 6 to 7 mils (dry film thickness 3.5 to 4 mils)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of EUCOPOXY TUFCOAT, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix EUCOPOXY TUFCOAT using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minutes each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 minutes. For ease of mixing, add the Part B into the Part A (not the reverse). Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

Two coats of EUCOPOXY TUFCOAT are recommended for most applications. If desired, additional coats of this product or a EUCOTHANE seal coat may be applied just after the initial coating has become tack free, or up to 24 hours later.

Tack free time for EUCOPOXY TUFCOAT is 2 to 4 hours (at 70°F (21°C)). EUCOPOXY TUFCOAT requires 24 hours (at 70°F (21°C)) to cure sufficiently for foot traffic. 48 hours (at 70°F (21°C)) is required for EUCOPOXY TUFCOAT to cure sufficiently for wheel traffic.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened EUCOPOXY TUFCOAT will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Keep EUCOPOXY TUFCOAT away from sparks, open flames, pilot lights, and other sources of ignition
- Provide adequate ventilation and ensure the use of proper protective and safety equipment during application
- If HVAC intake ducts will distribute solvent odor into adjoining areas of the building, care should be taken to block vents
- Keep EUCOPOXY TUFCOAT containers closed tightly
- Store EUCOPOXY TUFCOAT indoors, protected from moisture, at temperatures between 45°F and 110°F (7°C and 43°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 60°F (16°C) and rising
- Do not apply EUCOPOXY TUFCOAT if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin EUCOPOXY TUFCOAT
- When a vapor barrier is utilized in on-grade applications of EUCOPOXY TUFCOAT, it must be installed directly under the slab

- Although EUCOPOXY TUFCOAT is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- EUCOPOXY TUFCOAT will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- EUCOPOXY TUFCOAT components may cause irritation. Avoid contact with eyes and skin.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EUCOPOXY TUFCOAT VOX

WATER-BASED EPOXY FLOOR COATING

EUCLID CHEMICAL

DESCRIPTION

EUCOPOXY TUFCOAT VOX is a two-component, water-based, low-odor, epoxy-polyamide coating. It acts as a tough, abrasion-resistant membrane that withstands wear and chemical attack in a variety of applications. EUCOPOXY TUFCOAT VOX should be used in many areas where a solvent-based product is not permitted. EUCOPOXY TUFCOAT VOX comes in a variety of colors and provides a semi-gloss finish.

PRIMARY APPLICATIONS

- Food processing plants
- Occupied buildings
- Warehouse floors
- Chemical plants
- Manufacturing plants
- Auto/truck repair bays
- Aisleways and docks

FEATURES/BENEFITS

- Low odor
- Provides excellent wear under traffic
- Excellent resistance to a variety of chemicals
- Easy to apply with standard equipment
- Can be applied as a non-slip floor finish
- Available in a variety of colors
- Hardens to a semi-gloss finish

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

VOC Content	<125 g/L
Mixing ratio clear by vol, Part A to Part B	3.9 to 1
Mixing ratio color by vol, Part A to Part B	4.5 to 1
Re-Coat time	4 to 24 hours
Foot traffic	@ 24 hours
Wheel traffic	@ 48 hours
Dry to touch	4 to 6 hours
Pot life	1 to 1 ½ hours
Total solids content	56%
Dry film thickness	3 to 4 mils
Flexibility	good
Weathering	very good
Abrasion resistance	excellent

CHEMICAL RESISTANCE

Acetic Acid, 5%	poor
Alkalies	excellent
Ammonia	excellent
Battery Acid	good
Beer	excellent
Bleach	excellent
Brake Fluid	poor
Ethanol	poor
Ethylene Glycol	excellent
Gasoline	excellent
Hydrochloric Acid, 10%	poor
MEK	poor
Methylene Chloride	poor
MIBK	poor
Nitric Acid, 5%	poor
Oil	excellent
Phosphoric Acid, 30%	poor
Salt Water	excellent
Skydrol®	poor
Toluene	poor
Urine	excellent
Xylene	excellent

RATINGS: **Poor** - affected within 24 hours; **Good** - no effect for 24 hours; **Excellent** - no effect after 2 weeks.

NOTE: Where chemical resistance is rated as poor, check the ratings on EUCOTHANE as a possible topcoat for upgraded chemical resistance.

Appearance: EUCOPOXY TUFCOAT VOX is a two-component, epoxy-polyamide system consisting of a Part A and Part B. This product is available in white, light reflective, tile red, tan, concrete gray, black, & clear (amber).

Important: The clear has a slight amber appearance and may not be suitable for some applications. EUCOPOXY TUFCOAT DBS or DURALTEX should be used if a water clear appearance is required.

PACKAGING

EUCOPOXY TUFCOAT VOX is packaged in 1 gal (3.8 L) and 5 gal (18.9 L) kits.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

100 to 250 ft^2/gal (2.5 to 6.1 m^2/L) will produce a wet film thickness of 6 to 7 mils (dry film thickness 3.4 to 3.9 mils)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of EUCOPOXY TUFCOAT VOX, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix EUCOPOXY TUFCOAT VOX using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minutes each. Combine all of Part A with all of Part B, then mix thoroughly for 3 minutes. For ease of mixing, add the Part B into the Part A (not the reverse). Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

Two coats of EUCOPOXY TUFCOAT VOX are recommended for most applications. If desired, additional coats of this product or a EUCOTHANE seal coat may be applied just after the initial coating has become tack free, or up to 24 hours later.

Tack free time for EUCOPOXY TUFCOAT VOX is 4 to 6 hours (at 70°F (21°C)). EUCOPOXY TUFCOAT VOX requires 24 hours (at 70°F (21°C)) to cure sufficiently for foot traffic. EUCOPOXY TUFCOAT VOX requires 48 hours (at 70°F (21°C)) to cure sufficiently for wheel traffic.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened EUCOPOXY TUFCOAT VOX will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store EUCOPOXY TUFCOAT VOX indoors, protected from moisture, at temperatures between 45°F and 110°F (7°C and 43°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply EUCOPOXY TUFCOAT VOX if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin EUCOPOXY TUFCOAT VOX
- When a vapor barrier is utilized in on-grade applications of EUCOPOXY TUFCOAT VOX, it must be installed directly under the slab

- Although EUCOPOXY TUFCOAT VOX is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- EUCOPOXY TUFCOAT VOX will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not exceed 6 to 7 mils per coat wet film thickness during application. Thicker applications may result in the coating remaining soft/wet/tacky for longer than the times found on this data sheet.
- Application of first coat in high humidity (>70% RH) environments may result in adhesion problems with second coat. A test area should be applied to ensure proper results. If recoat problems are apparent, the base coat surface should be lightly abraded and solvent wiped to ensure proper adhesion of the second/seal coat.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EUCOTHANE

HIGH-PERFORMANCE POLYURETHANE COATING FOR CONCRETE AND METAL

EUCLID CHEMICAL

DESCRIPTION

EUCOTHANE is a two component, solvent based, polyester/aliphatic polyurethane coating that offers outstanding abrasion resistance, excellent flexibility, color stability and weather resistant characteristics. It offers very good chemical resistance without compromising on aesthetics. Ideal as a topcoat for most Euclid Chemical epoxy, urethane and some masonry coatings, EUCOTHANE provides excellent anti-graffiti properties.

PRIMARY APPLICATIONS

- Airport hangar floors
- Bridge structures
- Clean rooms
- Truck/auto repair bays
- Manufacturing plants
- Laboratories
- Warehouses
- Walls/floors

FEATURES/BENEFITS

- Excellent cleanability
- Good chemical resistance
- Anti-graffiti coating

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mix ratio (A:B) by volume	2 to 1
VOC Content (Clear Gloss, Colors)	335 g/L
VOC Content (Clear Satin)	447 g/L
Viscosity, mixed cp	200 to 600
Mixed solids % by wt	
70% (colors), 60% (clear gloss), 54% (clear satin)	
Pot life (1.5 gal volume)	2 to 4 hours
Hardness, Shore D	62
Tack Free Time	4 to 6 hours
Light Foot Traffic	14 - 24 hours
Final Cure/Heavy Traffic	3 to 5 days
Flexibility 1/8" (3.2 mm) Mandrel	No cracks
Taber Abrasion	
CS17 wheel, 1000 g load, 500 cycles	22 mg loss
Impact Resistance	
Gardner Impact, 160 in/lb	Passes

Appearance: Light Gray, Concrete Gray, Dark Gray, Tile Red, White, Black, Tan, Clear Gloss and Clear Satin are standard colors. Special or custom colors are available subject to minimum quantity orders.

Chemical Resistance

ACIDS	RATING
Acetic Acid 5%	2
Citric Acid 5%	3
Hydrochloric 10%	3
Nitric Acid 5%	3
Phosphoric 20%	3
Sulfuric 10%	3
SOLVENTS	
Ethyl Alcohol 95%	3
Ethyl Acetate	NR
Methanol	1
Methyl Ethyl Ketone	NR
Mineral Spirits	3
Methylene Chloride	NR
Toluene	2
Xylene	3
Trichloroethane	2
Isopropyl Alcohol	1

MISCELLANEOUS	RATING
Detergent Solution	3
Ethylene Glycol	3
Propylene Glycol	3
Vegetable Oil	3
Gasoline	3

1 = Incidental Contact (8 hrs)
2 = Splash & Spill (72 hrs)
3 = Extended Exposure (7 days)
D = Discoloration may occur
NR = Not Resistant

PACKAGING

EUCOTHANE is packaged in 3 gal (11.3 L) cases.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

300 to 500 ft^2/gal (7.4 to 12.3 m^2/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) will be determined by the requirements of the epoxy coating applied before the EUCOTHANE application. Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of EUCOTHANE, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

EUCOTHANE can not be applied directly to concrete. If an epoxy coating has not been applied, DURAPRIME WB, DURAL EPOXY PRIMER, or another Euclid Chemical epoxy coating must be used to prime concrete in accordance with the information provided on the technical data sheets.

Old or existing epoxy coatings should be cleaned and lightly sanded prior to application of EUCOTHANE as a seal coat. After sanding, solvent wipe the surface using acetone.

Mixing: Mix EUCOTHANE using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: EUCOTHANE can be applied as soon as the previously-applied prime coat of epoxy is tack free, but no later than 18 hours after application of the prime coat. If more than 18 hours have elapsed, the epoxy prime coat should be cleaned and lightly sanded prior to application of EUCOTHANE. After sanding, solvent wipe the surface using acetone. Apply EUCOTHANE using short nap roller, brush, or spray. When spraying, proper safety precautions should be observed. Two coats of EUCOTHANE are recommended for most applications. The second coat can be applied after the first coat has become tack free, typically within 4 to 6 hours after application (at 75°F (24°C)).

Where an anti-skid surface is desired for EUCOTHANE, broadcast approximately 0.5 to 1.0 lbs./$ft.^2$ (2.4 to 4.9 kg/m^2) of clean, dry aggregate into the first coat. When the first coat has cured, sweep off excess aggregate. Proceed with the second coat of EUCOTHANE to seal the surface.

Tack free time for EUCOTHANE is 4 to 6 hours (at 75°F (24°C)). EUCOTHANE requires 14 to 24 hours (at 75°F (24°C)) to cure sufficiently for light to moderate traffic.

Graffiti Removal: Graffiti removal should not be attempted until at least 72 hours after EUCOTHANE application. Remove graffiti as soon as possible after the graffiti incident by working on small areas at a time. Use commercially available graffiti removers and apply in accordance with manufacturer's instructions.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened EUCOTHANE will require mechanical abrasion for removal.

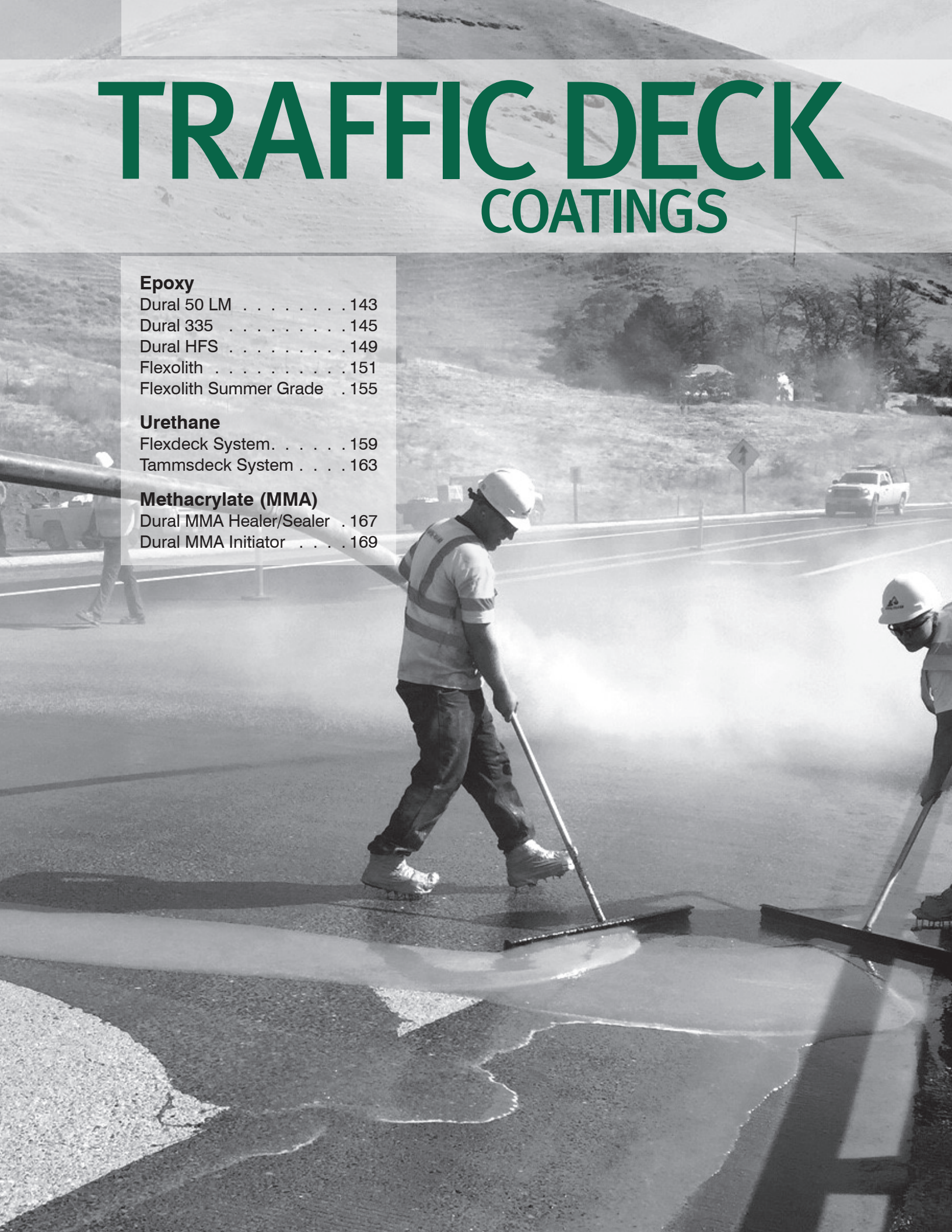
PRECAUTIONS/LIMITATIONS

- Keep EUCOTHANE away from sparks, open flames, pilot lights, and other sources of ignition
- Provide adequate ventilation and ensure the use of proper protective and safety equipment during application
- If HVAC intake ducts will distribute solvent odor into adjoining areas of the building, care should be taken to block vents
- Keep EUCOTHANE containers closed tightly
- Store EUCOTHANE indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)

- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply EUCOTHANE if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin EUCOTHANE
- When a vapor barrier is utilized in on-grade applications of EUCOTHANE, it must be installed directly under the slab
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- EUCOTHANE is not intended for continuous immersion
- Concrete surfaces may darken and give a “wet look” effect after application
- Excessively high film thicknesses and/or moisture may cause surface blistering
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

TRAFFIC DECK COATINGS



DURAL 50 LM

ULTRA-LOW VISCOSITY, LOW MODULUS, ACRYLATED EPOXY CRACK HEALER-SEALER

EUCLID CHEMICAL

DESCRIPTION

DURAL 50 LM is a two-component, low modulus, 100% solids, acrylated epoxy resin formulation designed to penetrate concrete and seal it from the ingress of chlorides and water. DURAL 50 LM heals and seals hairline cracks through its penetration.

PRIMARY APPLICATIONS

- Bridge decks
- Parking decks
- Consolidation of porous and dusting surfaces
- Reduces water absorption
- Reduces chloride penetration
- Pressure injection
- Gravity feed hairline cracks
- Re-bonding of delaminated concrete toppings

FEATURES/BENEFITS

- Low modulus
- Penetrates cracks by gravity
- Heals and seals concrete
- Increases wear resistance
- Significantly reduces chloride intrusion
- Easy mixing
- Alternative to methyl methacrylates
- Non-flammable
- Moisture tolerant

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio (A:B) by volume.....2:1
Mixed Viscosity, cps.....120
Gel Time (200 gms), mins.....90
Tack Free, hours.....3 to 5
Tensile Strength, ASTM D638, psi (MPa).....880 (6.1)
Tensile Elongation, ...50%
Bond Strength, ASTM C882, 14 days, psi (MPa).....> 1,500 (10.3)
Reduction in Chloride Ion Penetration, AASHTO T 260, 90 days
@ ½" depth, % improvement as compared to control.....90%
@ 1" depth, % improvement as compared to control.....92%

Water Absorption, ASTM C413, 24 hours, % improvement.....85.4%
% absorption.....0.70%

Abrasion Resistance, ASTM C779, 7 days
Abrasion Depth @ 30 minutes, % improvement.....91.3%
Abrasion Depth @ 45 minutes, % improvement.....94.7%
Abrasion Depth @ 60 minutes, % improvement.....96.2%

PACKAGING

DURAL 50 LM is packaged in 3 gal (11.3 L), 15 gal (56.8 L) and 150 gal (568 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Slab Sealing: 100 to 200 ft²/gal (2.5 to 4.9 m²/L) for the first coat (typical concrete surface). 150 to 300 ft²/gal (3.7 to 7.4 m²/L) for a second coat in cases of extensive cracking or high porosity. **Crack Grouting:** Coverage will be determined by depth and length of cracks.
Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate.The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI).

Blow debris and residue out of cracks and from the surface with a moisture-free and oil-free air jet. Mask expansion joint sealants to prevent adhesion of DURAL 50 LM to the joint surface. Surfaces and cracks must be completely dry before DURAL 50 LM application to obtain full penetration.

Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

Mixing: Mix DURAL 50 LM using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Slab Sealing: Pour or pump properly mixed DURAL 50 LM onto the properly prepared surface in a wave form, and spread uniformly with a squeegee or a short nap roller to fill voids, cracks, and porous areas. Allow epoxy to penetrate into the surface, re-applying to cracks and porous areas if necessary. Before the epoxy becomes tacky, use a squeegee (on a smooth surface) or a broom (on a textured or tined surface) to remove any excess epoxy that has not penetrated the surface. Broadcast clean, oven-dried silica sand into the wet epoxy to provide a skid-resistant surface, or where subsequent toppings or coatings will be applied. Broadcast the silica sand at an approximate rate of 0.2 to 0.8 lbs/ft^2 (0.98 to 3.9 kg/m^2) and/or until there are no wet spots. Wait until at least 20 minutes have elapsed since DURAL 50 LM application before broadcasting aggregate, but broadcasting must be completed before DURAL 50 LM has become tack free. Ensure that subsequent coatings or toppings are applied no earlier than 3 to 5 hours (at 75°F (24°C)) after DURAL 50 LM application, but no later than 24 hours after application. Before opening to traffic, remove any loose aggregate and verify that the skid-resistant properties are adequate for the intended purpose of the substrate.

Crack Grouting (Gravity Feed): Pour properly mixed DURAL 50 LM into "V"-notched cracks until completely filled. **Crack Grouting (Pressure Injection):** Set appropriate injection ports, depending on the system used. Seal the face of the crack and around ports using DURAL 452 GEL or DURAL FAST SET GEL. Inject properly mixed DURAL 50 LM using automated or manual injection equipment. Maintain slow, steady pressure until the crack is filled with the epoxy. After the DURAL 50 LM cures, remove the ports from the crack, and remove the epoxy on the face of the crack, if required.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 50 LM will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 50 LM indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURAL 50 LM if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 50 LM
- Do not apply DURAL 50 LM if the substrate or cracks are subject to hydrostatic pressure
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not mix or apply DURAL 50 LM when rain is expected within 12 hours after application
- Multiple applications of DURAL 50 LM must be done within 24 hours of the preceding application
- DURAL 50 LM will darken substrate upon application
- Excess DURAL 50 LM left on the surface will reduce skid resistance
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL 335

ULTRA-LOW VISCOSITY, HIGH MODULUS, EPOXY CRACK HEALER-SEALER

EUCLID CHEMICAL

DESCRIPTION

DURAL 335 is a solvent-free, two-component, 100% solids, moisture insensitive, ultra-low viscosity epoxy penetrating healer-sealer for damp and dry cracks.

PRIMARY APPLICATIONS

- Bridge decks
- Roadways
- Re-bonding of delaminated concrete toppings
- Airport runways
- Parking garage decks and ramps

FEATURES/BENEFITS

- Penetrating epoxy crack healer-sealer
- Alternative to methyl methacrylates
- Solvent free, no odor
- Ultra-low viscosity
- High strength
- Moisture insensitive
- Protects treated surface from salts, chemicals, and water absorption

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio (A : B) by volume 4:1
Mixed Viscosity cp . . . . . 80 to 120
Gel Time (60 gms), mins . . . . . 70 to 90
Pot life (1.25 gal unit), mins . . . . . 20 to 25
Tensile Strength, 7 days ASTM D638, psi (MPa) . . . . . 7,500 to 8,500 (51.7 to 58.6)
Tensile Modulus, 7 days psi (MPa) 300,000 (2,068)
Tensile Elongation, 7 days ASTM D638, % . . . . . 1 to 5
Compressive Strength, 7 days ASTM D695, psi (MPa) . . . . . 11,000 to 11,500 (75.8 to 79.3)
Compressive Modulus, 7 days ASTM D695, psi (MPa) 380,000 (2,620)
Compressive Strength, 7 days ASTM C109, psi (MPa)
mortar (3 parts sand) . . . . . 9,500 to 10,500 (65.5 to 72.4)
Slant Shear Bond Strength, ASTM C882, psi (MPa)
2 days . . . . . 1,450 to 1,600 (10.0 to 11.0)
14 days . . . . . 2,100 to 2,300 (14.5 to 15.9)
Flexural Strength, 7 days ASTM D790, psi (MPa) . . . . . 9,000 to 10,500 (62.1 to 72.4)
Water Absorption, 14 days ASTM D570, % 0.10
Water Absorption, 7 days ASTM C413, % 0.19
Heat Deflection Temperature, 7 days ASTM D648 . . . . . 124°F (51°C)
Linear Coefficient of Shrinkage, ASTM D2566, in/in 0.002
Abrasion Resistance, ASTM C779
Abrasion Depth @ 30 minutes, % improvement 88.5%
Abrasion Depth @ 45 minutes, % improvement 85.7%
Abrasion Depth @ 60 minutes, % improvement 83.3%
Chloride Resistance, AASHTO T259 & T260
Chloride Content @ 0.5" (12.7 mm), % improvement 90.6%
Chloride Content @ 1.0" (25.4 mm), % improvement 99.7%

PACKAGING

DURAL 335 is available in 1.25 gal 2 pack/case (4.73 L) and 5 gal (19.9 L) units.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

DURAL 335 complies with ASTM C881 Types I and IV, Grade 1, Class C

Canadian MTQ

Canadian Food Inspection Agency compliant

COVERAGE

Slab Sealing: 100 to 200 ft^2/gal (2.5 to 4.9 m^2/L) for the first coat (typical concrete surface). 150 to 300 ft^2/gal (3.7 to 7.4 m^2/L) for a second coat in cases of extensive cracking or high porosity. **Crack Grouting:** Coverage will be determined by depth and length of cracks.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Blow debris and residue out of cracks and from the surface with a moisture-free and oil-free air jet. Mask expansion joint sealants to prevent adhesion of DURAL 335 to the joint surface. Surfaces and cracks must be visibly dry before DURAL 335 application to obtain full penetration.

Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

Mixing: Mix DURAL 335 using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 4 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing, but do not scrape bottom or sides of the container after mixing; doing so may result in application of unmixed Part A or Part B. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Slab Sealing: Pour or pump properly mixed DURAL 335 onto the properly prepared surface in a wave form, and spread uniformly with a squeegee or a short nap roller to fill voids, cracks, and porous areas. Allow epoxy to penetrate into the surface, re-applying to cracks and porous areas if necessary. Before the epoxy becomes tacky, use a squeegee (on a smooth surface) or a broom (on a textured or tined surface) to remove any excess epoxy that has not penetrated the surface. Broadcast clean, oven-dried silica sand (recommended gradation: 16/30 or 20/40 mesh) into the wet epoxy to provide a skid-resistant surface, or where subsequent toppings or coatings will be applied. Broadcast the silica sand at an approximate rate of 0.2 to 0.8 lbs/yd^2 (0.11 to 0.43 kg/m^2) and/or until there are no wet spots. Wait until at least 20 minutes have elapsed since DURAL 335 application before broadcasting aggregate, but broadcasting must be completed before DURAL 335 has become tack free. Ensure that subsequent coatings or toppings are applied no earlier than 3 to 5 hours (at 75°F (24°C)) after DURAL 335 application, but no later than 24 hours after application. Before opening to traffic, remove any loose aggregate and verify that the skid-resistant properties are adequate for the intended purpose of the substrate.

Crack Grouting (Gravity Feed): Pour properly mixed DURAL 335 into “V”-notched cracks until completely filled. **Crack Grouting (Pressure Injection):** Set appropriate injection ports, depending on the system used. Seal the face of the crack and around ports using DURAL 452 GEL or DURAL FAST SET GEL. Inject properly mixed DURAL 335 using automated or manual injection equipment. Maintain slow, steady pressure until the crack is filled with the epoxy. After the DURAL 335 cures, remove the ports from the crack, and remove the epoxy on the face of the crack, if required.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 335 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 335 indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Temperature of DURAL 335 should be at least 50°F (10°C)
- Do not apply DURAL 335 if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 335
- Do not apply DURAL 335 if the substrate or cracks are subject to hydrostatic pressure
- Although DURAL 335 is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not mix or apply DURAL 335 when rain is expected within 12 hours after application
- Multiple applications of DURAL 335 must be done within 24 hours of the preceding application
- DURAL 335 will darken substrate upon application
- Excess DURAL 335 left on the surface will reduce skid resistance
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAL HFS

HIGH FRICTION SURFACE TREATMENT FOR ASPHALT AND CONCRETE PAVEMENTS

EUCLID CHEMICAL

DESCRIPTION

DURAL HFS is a two-component, 100% solids, low modulus, moisture insensitive epoxy binder used to bond a surface applied aggregate to an asphalt or concrete pavement, increasing the skid resistance of the surface. Dural HFS is formulated for low temperature applications, or where rapid cure is required.

PRIMARY APPLICATIONS

- Intersections
- Bridges
- Horizontal curves
- Steep grades
- Loading docks
- Exit/Entrance ramps

FEATURES/BENEFITS

- Rapid cure, minimizes down-time
- Can be used as a mortar or broadcast system
- Easy to use

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio, by volume (Part A:B).....1:1

Mixed Viscosity, cps
Brookfield Viscometer, Model RVT.....1,800

Gel Time, 60 grams, mins.....23

Tensile Strength, ASTM D638, psi (MPa)
Final.....>2,500 (17.2)

Tensile Elongation, ASTM D638, %.....30 to 60

Compressive Strength, ASTM D695, psi (MPa)
Final..... >5,000 (34.5)

Compressive Strength, ASTM D579, psi (MPa)
(2.75 parts sand) mortar
@ 3 hours.....>2,000 (13.8)
@ 7 days..... >7,000 (48.3)

Compressive Modulus, psi (MPa).....120,000 (827)

Flexural Strength, ASTM C790, psi (MPa)
Final.....>4,800 (33.3)

Bond Strength, ASTM C882, psi (MPa)
2 days.....2,100 (14.5)
7 days.....2,400 (16.5)

Adhesive Strength,ASTM C1583, psi (MPa) >250 (1.7)

Cure Rate, ASTM D1640, hrs..... <3

Hardness Shore D, ASTM D2240, min..... 60

Water Absorption, ASTM D570, 24 hr. %.....<0.5

Chloride Permeability, ASTM C1202, AASHTO T 77
Final.....<10 coulombs

Appearance: Dural HFS is available in clear. Custom colors are available, but are subject to minimum order quantities.

PACKAGING

DURAL HFS is available in 4 gal (15 L) cases, 10 gal (38 L) units, 100 gal (378.5 L) and 500 gal (1,892.5 L) tote units.

SHELF LIFE

2 years in original, unopened, properly stored containers

SPECIFICATIONS/COMPLIANCES

ASTM C881, Type III, Grade 1 Classes B and C

AASHTO M 235, Type III, Grade 1

COVERAGE

Coverage rates are for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements.

Standard Broadcast Method:	(ft^2/gal (m^2/L)
Dural HFS	25 to 32 (.61 to .79)
Aggregate lbs/ft^2 (kg/m^2)	1.3 to 1.7 (6.35 to 8.30)

Open-graded surface: (ft^2/gal (m^2/L)	**1st Coat**	**2nd Coat**
Dural HFS	25 to 32 (.61 to .79)	22 to 25 (.54 to .61)
Aggregate, lbs/ft^2 (kg/m^2)	1.3 to 1.7 (6.35 to 8.30)	1.5 to 2.0 (7.32 to 9.76)

DIRECTIONS FOR USE

Surface Preparation: All utilities, drainage structures, curbs and any other structure with or adjacent to treatment location shall be protected from surface preparation and installation of the DURAL HFS. Asphalt pavements that are contaminated with oils, grease, or other deleterious materials shall be washed with a mild detergent solution, rinsed with clean potable water and allowed to dry. Clean asphalt pavement surfaces using mechanical sweepers and high pressure air wash with sufficient oil traps. For best results asphalt surfaces should be lightly mechanically abraded prior to the application of the treatment. New asphalt pavements must cure for at least 30 days before surface preparation and application of the treatment. Concrete must be structurally sound, free of standing water, grease, oils, coatings, dust, curing compounds and other contaminants. Remove oil, grease smear and asphalt residue with trisodium phosphate or a strong detergent. For heavy oil contamination use steam cleaning in conjunction with a strong emulsifying detergent. Surface laitance must be removed. The preferred method of surface preparation is mechanical abrading. Mechanically abrade the surface to achieve a surface profile of at least CSP 4-6 in accordance with ICRI Guideline 310.2. Properly clean the profiled area. **New Concrete:** Allow to cure for a minimum of 28 days. Prepare surface as recommended above. **Old Concrete:** For a rapid cure repair, use a mortar of Dural HFS and clean aggregate. If portland cement repair materials are used, allow the repair to cure per the manufacturer's recommendations prior to coating. After repairing, a light brush blast is recommended prior to coating.

Hand Mixing: Using a low speed drill motor and a "Jiffy" type mixer, mix the part A & B components separately for approximately 1 minute. **Binder:** Combine one part by volume of "A" with one part by volume of "B" and mix thoroughly for 3 minutes. Scrape the bottom and sides of mixing container, at least once. Mix just enough material that can be used within the working life. Do not aerate the mix.

Mechanical Application: Euclid Chemical shall approve the use of the automated continuous application equipment. At a minimum the equipment shall mechanically mix, volumetrically meter, monitor and apply the DURAL HFS system according to specifications.

Application: Apply mixed Dural HFS binder to the prepared surface using roller, notched squeegee or mechanical equipment. Eliminate any puddles with a quick light roller pass. Immediately broadcast clean, dry aggregate to full saturation until no wet spots appear. After the binder has cured, broom or vacuum excess aggregate. Repeat the procedure to build coating thickness as required per specifications.

Aggregate for High Friction Skid Resistant Treatment: The preferred aggregate for the High Friction Surface Treatment is a Calcined Bauxite material that is clean, dry and free from foreign matter as per the specifications of the project. Other aggregates may be allowed based on project requirements.

CLEAN-UP

Clean tools and application equipment immediately after use with methyl ethyl ketone or acetone. Clean spills or drips while still wet with same solvent. Dried Dural HFS will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 40°F to 90°F (4°C to 32°C). Protect from moisture and freezing.
- Do not aerate Dural HFS during mixing.
- If Dural HFS is to be exposed to chemicals contact EUCLID Technical Service for a suitable top coat.
- In cold weather applications, it is recommended that all materials used in the treatment be conditioned to at least 75°F (24°C) for at least 24 hours prior to use. Heating of the resins and aggregate will enhance cure times and improve material handling characteristics.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

FLEXOLITH

LOW-MODULUS EPOXY COATING AND BROADCAST OVERLAY SYSTEM

EUCLID CHEMICAL

DESCRIPTION

FLEXOLITH is a two-component, 100% solids, low-modulus, moisture-insensitive epoxy binder with properties that make it suitable for use in applications where stress relief and resistance to mechanical and thermal movements are required. FLEXOLITH is formulated for low temperature applications, or where rapid cure is required. FLEXOLITH SUMMER GRADE is formulated for high temperature applications.

PRIMARY APPLICATIONS

- Parking decks
- Bridges
- Factories
- Warehouses
- Loading docks
- Nosing repair applications

FEATURES/BENEFITS

- Rapid cure, minimizes down time
- Easy to use
- Can be used as a mortar or broadcast system

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio, by volume (Part A:B).....1:1

Mixed Viscosity, cp
ASTM D2556.....700 to 2,500

Gel Time, ASTM C881, Class B, min.....14 to 45

Tensile Strength, ASTM D638, psi (MPa)
Final.....>2,000 (13.8)

Tensile Elongation, ASTM D638, %.....30 to 70

Compressive Strength, ASTM C579, psi (MPa)
@ 3 hours.....>2,000 (13.8)
@ 7 days.....>6,000 (41.4)

Compressive Modulus, psi (MPa).....120,000 (827)

Flexural Strength, ASTM C790, psi (MPa)
Final.....4,500 (34.5)

Bond Strength, psi (MPa)
ASTM C1583.....>250 (1.7)

Chloride Permeability, ASTM C1202, AASHTO T 77
Final.....0 coulombs

Hardness Shore D, ASTM D2240, min.....70±5

Water Absorption, ASTM D570, 24 hr. %.....<0.50

Thermal Compatibility, ASTM C884.....passes

Effective Shrinkage, ASTM C883.....passes

Appearance: FLEXOLITH is available in clear, light gray, dark gray, and tile red. Custom colors are available, but are subject to minimum order quantities.

PACKAGING

FLEXOLITH is available in 4 gal (15 L) cases, 10 gal (38 L) units, 100 gal (378 L) units, and 500 gal (1,892 L) totes

SHELF LIFE

2 years in original, unopened, properly stored containers

SPECIFICATIONS/COMPLIANCES

ASTM C881, Type III, Grade 1 Classes B and C

AASHTO M 235, Type III, Grade 1

COVERAGE

Bridge Deck Overlay	**1st Coat**	**2nd Coat**	**3rd Coat (Optional)**
Flexolith (ft^2/gal (m^2/L))	40 (.98)	20 to 22 (.49 to .54)	20 to 22 (.49 to .54)
#8 Flint Rock or Basalt (lbs/ft^2 (kg/m^2))	1.25 to 1.50 (6.1 to 7.3)	1.50 to 2.00 (7.3 to 9.8)	1.50 to 2.00 (7.3 to 9.8)
Parking Deck Coating	**1st Coat**	**2nd Coat**	**Seal Coat (Optional)**
Flexolith (ft^2/gal (m^2/L))	60 to 80 (1.5 to 2.0)	40 to 60 (.98 to 1.5)	80 to 100 (2.0 to 2.5)
#4 Flint Rock or Basalt (lbs/ft^2 (kg/m^2))	1.00 to 1.50 (4.9 to 7.3)	1.25 to 1.50 (6.1 to 7.3)	----------
Trowel Down Coating	**1st Coat**	**2nd Coat**	**Seal Coat (Optional)**
Flexolith (ft^2/gal (m^2/L))	200 (4.9)	----------	150 to 250 (3.7 to 6.1)
Flexolith mortar* at 1/4" (6.4 mm) thick	----------	16 to 20 ft^2 (1.5 to 1.9 m^2)	----------

*Flexolith mortar consists of 1 gal (3.8 L) of mixed FLEXOLITH combined with 2 to 3 gal (7.6 to 11.4 L) 20/40 mesh, clean, dry silica sand

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants that may interfere with bond. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 4-6 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete or if the moisture vapor transmission rate is high. Before application of FLEXOLITH, perform the "Visqueen test" (ASTM D 4263, modified to a test duration of 2 hours). Do not apply FLEXOLITH when the Visqueen test indicates the presence of moisture vapor transmission through the concrete. After surface preparation, a test section application of FLEXOLITH is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix FLEXOLITH using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 minutes.

To make FLEXOLITH mortar, gradually add clean, dry aggregate to previously mixed FLEXOLITH epoxy and mix thoroughly for 3 minutes. Aggregate types and quantites for mixing are listed in the "Coverage" section above. A low-speed drill and a mixing paddle may be used for small quantities, and a horizontal shaft mortar mixer may be used for large quantities.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the "Epoxy & Urethane Coatings Application Guide" for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the "Epoxy & Urethane Coatings Application Guide" are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

The recommended aggregate for heavy duty applications/skid-resistant overlays (high traffic bridge decks, parking deck turn lanes, etc.) is #8 or #4 basalt, #8 or #4 flint rock, or another similarly graded non-slip aggregate. For other applications, or where specified, silica sand aggregate may be used.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened FLEXOLITH will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store FLEXOLITH indoors, protected from moisture, at temperatures between 40°F and 90°F (4°C and 32°C)
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Material temperatures should be at least 40°F (4°C) and rising
- Do not apply FLEXOLITH if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin FLEXOLITH
- Do not apply FLEXOLITH to slabs on grade
- Do not apply FLEXOLITH if the substrate is subject to excessive moisture vapor transmission or hydrostatic pressure
- Although FLEXOLITH is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- FLEXOLITH will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- If FLEXOLITH is to be exposed to chemicals, contact Euclid Chemical Technical Service for a top coat recommendation
- In cold weather applications, it is recommended that all materials used in the overlay be conditioned to at least 75°F (24°C) for at least 24 hours prior to use. Heating of the epoxy components and aggregates will enhance cure times and improve material handling characteristics.
- In all cases, consult the product Safety Data Sheet before use

FLEXOLITH SUMMER GRADE

LOW MODULUS EPOXY COATING AND BROADCAST OVERLAY FOR WARMER TEMPERATURES

EUCLID CHEMICAL

DESCRIPTION

FLEXOLITH SG is a two-component, 100% solids, low modulus, moisture insensitive epoxy binder with properties which makes it suitable for use in applications where stress relief and resistance to mechanical and thermal movements are required. FLEXOLITH SG is designed for use as a binder for overlays or non-skid surfaces and is formulated for higher temperature applications, or where a longer working time is required.

PRIMARY APPLICATIONS

- Parking decks
- Bridges
- Factories
- Warehouses
- Loading docks
- Nosing repair applications

FEATURES/BENEFITS

- Ample working time in warmer climates
- Can be used as a mortar or broadcast system
- Easy to use

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio, by volume (Part A:B).....1:1

Mixed Viscosity, cp
Brookfield Viscometer, Model RVT.....1,700

Gel Time, ASTM C881, Class B, min.....45

Tensile Strength, ASTM D638, psi (MPa)
Final.....3,200 (22.1)

Tensile Elongation, ASTM D638, %.....30 to 60

Compressive Strength, ASTM D695, psi (MPa)
Final.....5,800 (40)

Compressive Strength, ASTM C109, psi (MPa)
(3 parts sand) mortar
@ 4 hours.....1,400 (9.6)
@ 24 hours.....7,040 (48.5)

Compressive Modulus, psi (MPa).....120,000 (827)

Bond Strength, ASTM C882, psi (MPa)
2 days.....2,100 (14.5)
7 days.....2,400 (16.5)

Chloride Permeability, ASTM C1202, AASHTO T 77
Final.....<100 coulombs

Hardness Shore D, ASTM D2240, min.....65

Water Absorption, ASTM D570, 24 hr. %.....<0.5

Thermal Compatibility, ASTM C884.....passes

Effective Shrinkage, ASTM C883.....passes

COVERAGE

Aggregate Broadcast Coating	**1st Coat**	**2nd Coat**	**Seal Coat**
Flexolith SG (ft^2/gal (m^2/L))	40 to 50 (.98 to 1.2)	30 to 40 (.74 to .98)	100 to 120 (2.5 to 2.9)
Broadcast Aggregate (lbs/ft^2 (kg/m^2))	1.2 to 1.5 (5.9 to 7.3)	1.5 to 2.0 (7.3 to 9.8)	----------

1/4" Skid-Resistant Overlay	**1st Coat**	**2nd Coat**	**3rd Coat** HD 3/8" (9.5 mm)
Flexolith SG (ft^2/gal (m^2/L))	40 to 45 (.98 to 1.1)	22 to 25 (.54 to .61)	22 to 25 (.54 to .61)
Flint/Basalt Aggregate (lbs/ft^2 (kg/m^2))	1.0 to 1.5 (4.9 to 7.3)	1.5 to 2.0 (7.3 to 9.8)	1.5 to 2.0 (7.3 to 9.8)

Trowel Down Coating	**1st Coat**	**2nd Coat**	**Seal Coat**
Flexolith SG (ft^2/gal (m^2/L))	200 (4.9)	----------	150 to 250 (3.7 to 6.1)
Flexolith SG mortar @ 1/4" (6.4 mm)*	----------	16 to 20 ft^2 (1.5 to 1.9 m^2)	----------

*FLEXOLITH mortar consists of 1 gal (3.8 L) of mixed FLEXOLITH combined with 2 to 3 gal (7.6 to 11.4 L) 20/40 mesh, clean, dry silica sand

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

PACKAGING

FLEXOLITH SG is available in 4 gal (15 L) cases, 10 gal (38 L) units and 100 gal (378.5 L) units.

SHELF LIFE

2 years in original, unopened, properly stored containers

SPECIFICATIONS/COMPLIANCES

ASTM C881, Type III, Grade 1 Classes B and C

AASHTO M 235, Type III, Grade 1

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 4-6 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete or if the moisture vapor emission rate (MVER) is high. Before application of the coating, perform the “Visqueen test” (ASTM D4263, modified to 2 hours). Do not apply coatings when test indicates presence of moisture. After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a “near white” finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix FLEXOLITH SG using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 minutes.

To make FLEXOLITH SG mortar, gradually add clean, dry aggregate to previously mixed FLEXOLITH epoxy and mix thoroughly for 3 minutes. Aggregate types and quantites for mixing are listed in the “Coverage” section above. A low-speed drill and a mixing paddle may be used for small quantities, and a horizontal shaft mortar mixer may be used for large quantities.

Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: See the “Epoxy & Urethane Coatings Application Guide” for installation means and methods. Note that any coverage rates or mixing ratios for epoxy or epoxy-aggregate combinations found in the “Epoxy & Urethane Coatings Application Guide” are approximations, and are for general reference only. For product-specific coverage rates and mixing ratios, refer to this technical data sheet.

The recommended aggregate for heavy duty applications/skid-resistant overlays (high traffic bridge decks, parking deck turn lanes, etc.) is #8 or #4 basalt, #8 or #4 flint rock, or another similarly graded non-slip aggregate, containing at least 10% aluminum oxide for resistance to polishing. For other applications, or where specified, silica sand aggregate may be used.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened FLEXOLITH SG will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store FLEXOLITH SG indoors, protected from moisture, at temperatures between 40°F and 90°F (4°C and 32°C)
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Material temperatures should be at least 40°F (4°C) and rising
- Do not apply FLEXOLITH SG if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin FLEXOLITH SG
- Do not apply FLEXOLITH SG to slabs on grade unless an uninterrupted vapor barrier has been installed under the slab

- Do not apply FLEXOLITH SG if the substrate is subject to excessive moisture vapor drive or hydrostatic pressure
- Although FLEXOLITH SG is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- FLEXOLITH SG will discolor upon prolonged exposure to ultraviolet light and high-intensity artificial lighting. An aliphatic urethane topcoat such as EUCOTHANE can minimize these effects.
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- If FLEXOLITH SG is to be exposed to chemicals, contact Euclid Chemical Technical Service for a top coat recommendation
- In all cases, consult the product Safety Data Sheet before use

FLEXDECK SYSTEM

WATERPROOFING, HEAVY DUTY, URETHANE/EPOXY TRAFFIC MEMBRANE SYSTEM

EUCLID CHEMICAL

DESCRIPTION

FLEXDECK SYSTEM is a lightweight, multi-layer, fluid applied, urethane/epoxy system for protecting surfaces subjected to vehicle traffic wear. It is a flexible, waterproof, rugged system designed for concrete surfaces. It provides superior strength, high elasticity, along with abrasion resistance and resistance to thermal and mechanical movement. Aggregate is embedded into the FLEXDECK WEAR COAT during application to produce a textured, non-skid, wearing surface. There are three Flexdeck systems available; Light Traffic, Medium Traffic, and Heavy Traffic. The use of each system is based upon the type of exposure and the amount of traffic the parking deck receives. All three systems use the same primer; DURAL EPOXY PRIMER, a two-component epoxy resin compound, and the same membrane; FLEXDECK MEMBRANE, a two-component, 100% solids, elastomeric polyurethane compound. The FLEXDECK Light Traffic System then uses FLEXDECK URETHANE TIECOAT for the top coat. The Medium Traffic and Heavy Traffic Systems use the FLEXDECK WEAR COAT, a two-component epoxy resin compound as a wearing course; and a choice of two topcoats: FLEXDECK URETHANE TIECOAT, a one-part aliphatic urethane, or FLEXDECK EPOXY TOPCOAT, a two-part epoxy.

PRIMARY APPLICATIONS

- Concrete parking decks and ramps
- Walkways
- Above/below grade
- Marine decks
- Interior/exterior

FEATURES/BENEFITS

Excellent resistance to most solvents, oils, gasoline, detergents, salts, and animal refuse. FLEXDECK SYSTEM provides superior wear resistance and waterproofing capabilities.

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

FLEXDECK MEMBRANE

Pot Life	20 to 30 minutes
Initial Cure	2 1/2 hours
VOC Content	128 g/L
Tensile Strength, ASTM D412	
7 day min	1,200 psi (8.3 MPa)
Tensile Elongation, ASTM D412	350%
Tear Resistance, ASTM D1004	100 pli
Abrasion Resistance, ASTM D968	
Falling sand method	40 L/mil
Shrinkage	None

FLEXDECK WEAR COAT/FLEXDECK EPOXY TOPCOAT

Pot Life	20 minutes
Initial Cure	4 hours
VOC Content	≤5 g/L
Tensile Strength, ASTM D638	
7 day min	2,000 psi (13.8 MPa)
Tensile Elongation, ASTM D638	30%
Shrinkage	None

FLEXDECK URETHANE TIECOAT

Pot Life	3 to 4 hours
Tack Free	6 to 8 hours
Full Cure	18 hours
VOC Content	240 g/L
Solids Content	78%
Tensile Strength, ASTM D412, 7 days	2,500 psi (17.2 MPa)
Tensile Elongation, ASTM D412	100%
Abrasion Resistance, CS17 Wheel, 1000g	0.010g loss

PACKAGING

DURAL EPOXY PRIMER: 4 gal (15.1 L) and 10 gal (37.8 L) kits. FLEXDECK WEAR COAT: 10 gal (37.8 L) and 100 gal (378.5 L) kits. FLEXDECK MEMBRANE: 5 gal (18.9 L) kit. FLEXDECK URETHANE TIECOAT: 5 gal (18.9 L) pail. FLEXDECK EPOXY TOPCOAT: 4 gal (15.1 L) and 10 gal (37.8 L) kits.

SHELF LIFE

In original, unopened, properly stored containers; DURAL EPOXY PRIMER: 2 years. FLEXDECK WEAR COAT: 2 years. FLEXDECK EPOXY TOPCOAT: 2 years. FLEXDECK MEMBRANE: 6 months. FLEXDECK URETHANE TIECOAT: 6 months.

COVERAGE

Parking Stalls/Light Traffic	ft²/gal (m²/L)
Dural Epoxy Primer	200 to 250 (4.9 to 6.1)
Flexdeck Membrane	40 to 60 (0.98 to 1.5)
Flexdeck UrethaneTiecoat	100 to 150 (2.5 to 3.7)
Broadcast Aggregate	0.25 to 0.75 lbs/ft² (1.22 to 3.66 kg/m²)

Driving Lanes/Medium Traffic	ft²/gal (m²/L)
Dural Epoxy Primer	200 to 250 (4.9 to 6.1)
Flexdeck Membrane	40 to 60 (0.98 to 1.5)
Flexdeck Wear Coat*	60 to 80 (1.5 to 2.0)
Broadcast Aggregate to Refusal	0.78 to 1.00 lbs/ft² (3.81 to 4.88 kg/m²)
Flexdeck UrethaneTiecoat/Epoxy Topcoat	60 to 100 (1.5 to 2.5)

Heavy Duty/Heavy Traffic	ft²/gal (m²/L)
Dural Epoxy Primer	200 to 250 (4.9 to 6.1)
Flexdeck Membrane	40 to 60 (0.98 to 1.5)
Flexdeck Wear Coat*, 1st coat	60 to 80 (1.5 to 2.0)
Broadcast Aggregate to Refusal	0.78 to 1.00 lbs/ft² (3.81 to 4.88 kg/m²)
Flexdeck Wear Coat*, 2nd coat	40 to 60 (0.98 to 1.5)
Broadcast Aggregate to Refusal	1.00 to 1.33 lbs/ft² (4.88 to 6.49 kg/m²)
Flexdeck Urethane Tiecoat/Epoxy Topcoat	60 to 100 (1.5 to 2.5)

*Use #4 flint rock in FLEXDECK WEAR COAT applications for the best wear resistance.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 3-6 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Repair moving or working cracks that are 1/32" to 1/16" (0.79 to 1.59 mm) wide by applying a 6" (152 mm) wide coating of DURAL EPOXY PRIMER, and then overcoat with FLEXDECK MEMBRANE embedded with fiberglass cloth. For cracks wider than 1/16" (1.59 mm), contact your local Euclid Chemical representative.

For quick, shallow patching of damaged concrete, use a suitable epoxy mortar. For larger, deeper concrete repairs, use cementitious patching materials compatible with the system. After patching, a light brush blast is recommended prior to coating.

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete or if the moisture vapor emission rate (MVER) is high. Before application of the coating, perform the "Visqueen test" (ASTM D4263, modified to 2 hours). Do not apply coatings when test indicates presence of moisture. After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: For DURAL EPOXY PRIMER, FLEXDECK WEAR COAT, FLEXDECK EPOXY TOPCOAT: Mix using a **low-speed** drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 to 2 minutes each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing.

Mix FLEXDECK MEMBRANE using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 2 to 3 minutes each. Combine all of Part A with all of Part B, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

FLEXDECK URETHANE TIECOAT is a one-component product. Prior to application, mix FLEXDECK URETHANE TIECOAT for 3 to 5 minutes using a low-speed drill and a mixing paddle.

Application: First, apply DURAL EPOXY PRIMER to the prepared surface using a short nap roller, brush, or airless spray. Next, apply FLEXDECK MEMBRANE to the surface using a magic trowel, notched squeegee, or short nap roller. Use of a spiked roller to remove entrapped air before FLEXDECK MEMBRANE begins initial set is strongly recommended. FLEXDECK MEMBRANE application can take place as soon as the primer becomes tack free, but no longer than 24 hours after application of the primer. If more than 24 hours has elapsed, or if the primer fully cures, abrade the surface, wipe clean, then apply a fresh coat of primer. For the Light Traffic System, apply FLEXDECK URETHANE TIECOAT, broadcast silica aggregate, and immediately back roll to complete the system. For the Medium Traffic and Heavy Traffic Systems, apply FLEXDECK WEAR COAT to the surface using a short nap roller, brush, or spray. FLEXDECK WEAR COAT application can take place as soon as the FLEXDECK MEMBRANE becomes tack free, but no longer than 24 hours after membrane application. Immediately after applying the wear coat, broadcast clean, dry aggregate into the wet material to refusal. After the wear coat has hardened, sweep away the excess aggregate. If required, apply another layer of FLEXDECK WEAR COAT and aggregate as above. Lastly, apply a seal coat of FLEXDECK URETHANE TIECOAT or FLEXDECK EPOXY TOPCOAT using a short nap roller, brush, or spray. Application can take place as soon as the FLEXDECK WEAR COAT has properly cured.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened FLEXDECK SYSTEM components will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store FLEXDECK SYSTEM indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C). Pre-condition all materials to 75°F (24°C) prior to use.
- Ambient temperature during FLEXDECK SYSTEM COMPONENT applications should be between 50°F and 90°F (10°C and 32°C)
- Do not apply when relative humidity exceeds 85%. High humidity may cause pinholing and surface tackiness of FLEXDECK MEMBRANE
- To reduce the chance of outgassing and pinholes, apply system components while surface temperatures are decreasing
- Surface temperatures during FLEXDECK SYSTEM COMPONENT applications should be at least 50°F (10°C) and rising
- Do not apply FLEXDECK SYSTEM if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin FLEXDECK SYSTEM
- Do not apply FLEXDECK SYSTEM to slabs on grade
- Do not apply FLEXDECK SYSTEM if the substrate is subject to excessive moisture vapor drive or hydrostatic pressure
- Although FLEXDECK SYSTEM is chemically resistant, surface staining of the coating may occur after contact with some chemicals
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- FLEXDECK URETHANE TIECOAT **cannot** be re-sealed and re-used after opening. All of the material in an original container should be used after opening.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

TAMMSDECK SYSTEM

ELASTOMERIC, URETHANE, WATERPROOFING DECK COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMSDECK SYSTEM is an elastomeric deck coating for pedestrian and light vehicular traffic. The system consists of a two-part epoxy primer (DURAL EPOXY PRIMER), a single-component aromatic urethane membrane (TAMMSDECK MEMBRANE), and a single-component, sand filled, aliphatic urethane topcoat (TAMMSDECK TOPCOAT).

PRIMARY APPLICATIONS

- Balconies
- Mechanical rooms
- Plazas
- Parking garages
- Stadiums
- Floors
- Stairs
- Landings

FEATURES/BENEFITS

- Lightweight, anti-skid surface – ideal for deck resurfacing
- Impervious to water
- One-component membrane and topcoat
- Easy application
- Superior durability
- Abrasion resistance
- Strong bond to concrete
- Flexible over wide temperature range
- Outstanding weathering characteristics

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

	Dural Epoxy Primer	Tammsdeck Membrane	Tammsdeck Topcoat
Mixing Ratio (A:B by vol.)	1:1	NA	NA
Mixed Viscosity, cps	300 to 400	3,000 to 6,000	1,500 to 3,000
Pot Life, (2 gal/7.6 L), min.	20 to 30	60 to 120	60 to 120
Solids, % by wt.	100	86	78
VOC Content (g/L)	≤ 100	193	240
Tack Free Time, hrs.	3 to 4	10 to 12	18
Tensile Strength, psi (MPa) (ASTM D412)	NA	1,200 (8.3)	2,500 (17.2)
Tensile Elongation, % (ASTM D412)	NA	600	100
Tear Resistance, pli (ASTM D1004)	NA	80	>200
Abrasion Resistance CS 17 Wheel, 1000 g	NA	NA	0.010

Appearance: TAMMSDECK SYSTEM color is determined by the color of TAMMSDECK TOPCOAT. The standard colors are a light gray and tan. Special colors are available with minimum quantity orders and special pricing. TAMMSDECK MEMBRANE is available only in light gray, while DURAL EPOXY PRIMER is clear.

PACKAGING

DURAL EPOXY PRIMER is available in 4 gal (3.8 L) and 10 gal (37.8L) units. TAMMSDECK MEMBRANE and TAMMSDECK TOPCOAT are available in 5 gal (18.9 L) pails.

SHELF LIFE

In original, unopened, properly stored containers; DURAL EPOXY PRIMER: 2 years. TAMMSDECK MEMBRANE: 6 months. TAMMSDECK TOPCOAT: 6 months.

COVERAGE/YIELD

Product	ft²/gal (m²/L)
Dural Epoxy Primer	200 to 250 (4.9 to 6.1)
Tammsdeck Membrane	60 to 70 (1.5 to 1.7)
Tammsdeck Topcoat	90 to 100 (2.2 to 2.5)
Broadcast Aggregate	0.25 to 0.75 lbs/ ft² (1.22 to 3.66 kg/m²)
Tammsdeck Topcoat (Optional)	150 to 250 (3.7 to 6.1)

A dry film thickness (DFT) of 20 mils of TAMMSDECK MEMBRANE is recommended for most applications. TAMMSDECK MEMBRANE at a coverage rate of 65 ft²/gal (1.6 m²/L) yields 20 mils DFT.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean, dry, absorptive, and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 3-4 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete or if the moisture vapor emission rate (MVER) is high. Before application of the coating, perform the "Visqueen test" (ASTM D4263, modified to 2 hours). Do not apply coatings when test indicates presence of moisture. After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL EPOXY PRIMER using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 2 to 3 minutes each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

TAMMSDECK MEMBRANE is a one-compnent product. Prior to application, mix TAMMSDECK MEMBRANE for 3 to 5 minutes using a low-speed drill and a mixing paddle.

TAMMSDECK TOPCOAT is also a one-component product. Prior to application, mix TAMMSDECK TOPCOAT for 3 to 5 minutes using a low-speed drill and a mixing paddle.

Application: First, apply DURAL EPOXY PRIMER to the prepared surface using a short nap roller, brush, or airless spray. Next, apply TAMMSDECK MEMBRANE to the surface using a magic trowel, notched squeegee, or short nap roller. TAMMSDECK MEMBRANE application can take place as soon as the primer becomes tack free, but no longer than 24 hours after application of the primer. Lastly, apply TAMMSDECK TOPCOAT to the surface using a short nap roller, brush, or spray. TAMMSDECK TOPCOAT application can take place as soon as the TAMMSDECK MEMBRANE becomes tack free, but no longer than 36 hours after the membrane becomes tack free. Immediately after applying the topcoat, broadcast clean, dry, 20 to 30 mesh silica sand into the wet topcoat. After broadcasting, back roll the topcoat to evenly distribute and completely encapsulate the sand. Where a second topcoat is desired, do not back roll the initial application of TAMMSDECK TOPCOAT and broadcasted aggregate. Allow initial application of topcoat to cure, sweep off excess aggregate, and apply the second coat of TAMMSDECK TOPCOAT.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened TAMMSDECK SYSTEM components will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store TAMMSDECK SYSTEM indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply TAMMSDECK SYSTEM if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- At elevated temperatures, the DURAL EPOXY PRIMER must be coated with the TAMMSDECK MEMBRANE within 12 hours
- Do not thin TAMMSDECK SYSTEM
- Do not apply TAMMSDECK SYSTEM to slabs on grade
- Do not apply TAMMSDECK SYSTEM if the substrate is subject to excessive moisture vapor drive or hydrostatic pressure
- Although TAMMSDECK SYSTEM is chemically resistant, surface staining of the coating may occur after contact with some chemicals
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- TAMMSDECK SYSTEM should not be used on helical ramps. Please use FLEXDECK HEAVY TRAFFIC SYSTEM for this type of application.
- TAMMSDECK MEMBRANE and TAMMSDECK TOPCOAT **cannot** be re-sealed and re-used after opening. All of the material in an original container should be used after opening.
- In all cases, consult the product Safety Data Sheet before use

DURAL MMA HEALER/SEALER

METHYL METHACRYLATE PENETRATING SEALER

EUCLID CHEMICAL

DESCRIPTION

DURAL MMA HEALER/SEALER is a 100% reactive ultra-low viscosity methyl methacrylate resin used as a penetrating crack healer/sealer or to fortify extremely porous concrete substrates. DURAL MMA HEALER/SEALER is typically used on bridge decks, parking structures or as a general penetrating sealer to prevent moisture intrusion. DURAL MMA HEALER/SEALER is a reactive methacrylate resin, which hardens rapidly with the addition of DURAL MMA HEALER/SEALER INITIATOR, even at low temperatures.

PRIMARY APPLICATIONS

- Parking decks
- Bridge decks
- Loading docks
- Warehouses

FEATURES/BENEFITS

- Rapid cure, minimizes down time
- Use over wide temperature range - even below freezing
- Full cure in less than 60 minutes
- Ultra-low viscosity for excellent absorption into concrete
- Protects against water penetration into hairline cracks
- Low VOC content - 69 g/L

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Percent Reactive.....100%

Mixed Viscosity, cp
Brookfield Viscometer, Model RVT.....5 to 15

Working Life, minutes
Varies w/ temperature & hardener addition.....5 to 25

Recoat Time, minutes.....25 to 60

Tensile Strength, ASTM D638, psi (MPa)
Final.....>7,800 (53.8)

Tensile Elongation, ASTM D638, %.....4.5 to 5.0

Compressive Strength, ASTM C579, psi (MPa)
@ 7 days.....12,500 (86.2)

Flexural Strength, ASTM C790, psi (MPa)
Final.....11,000 (75.8)

Bond Strength, psi (MPa)
ASTM C1583.....>300 (2.1)

Hardness Shore D, ASTM D2240, min.....>80

Water Absorption, ASTM D570, 24 hr. %.....0.50

Appearance: DURAL MMA HEALER/SEALER is clear to light amber.

PACKAGING

DURAL MMA HEALER/SEALER resin is available in 1 gal (3.79 L), 5 gal (18.9 L), and 50 gal (189 L) drums.

SHELF LIFE

1 year in original, unopened, properly stored containers.

COVERAGE

Coverage rate is approximately 80-100 ft^2/gal/coat (1.96-2.45 m^2/L/coat). Coverage rate will vary depending on the porosity of the concrete and quantity of cracks. Assume two coats on very absorbent surfaces.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. Expose surface cracks and clean out cracks with oil-free compressed air. If cracks have latent moisture, use a propane torch to flame the concrete at a rate of 10 feet per minute or as needed to dry out cracks. Allow surface to cool to ambient temperature, then immediately begin to apply sealer. Do not apply if there is excessive moisture in the concrete or if the moisture vapor emission rate (MVER) is high. Contact Euclid Chemical if results indicate a MVER greater than 3.0 lbs. per 1,000 square feet per 24 hours. After surface preparation and moisture testing, a test section application of the healer/sealer is recommended to confirm good adhesion and compatibility of the healer/sealer with the surface, and also to confirm appearance and aesthetics.

Mixing: DURAL MMA HEALER/SEALER requires the addition of DURAL MMA HEALER/SEALER INITIATOR to start the hardening process. The amount of Initiator must be adjusted to the respective surface temperature (see table below). At temperatures below 40°F (4°C), DURAL MMA HEALER/SEALER COLD TEMPERATURE ACCELERATOR must be used in addition to the amount of initiator used at the 40°F level. As a rule of thumb, add about 0.5 oz by volume per gallon of resin at 39° to 32°F (4° to 0°C), up to 2.0 oz by volume per gallon at -20°F (-29°C), increasing the quantity gradually in a consistent linear progression as the temperature decreases.

DURAL MMA HEALER/SEALER RESIN

Temp of Resin, Air & Floor	Initiator, Volume oz/gal	Working life, mins.	Hardening Time, mins.
+30°F (-1°C)	13 vol. oz + 0.5 vol. oz Accelerator	15	60
+40°F (4°C)	13 vol. oz	15	60
+50°F (10°C)	9 vol. oz	12-16	45-50
+60°F (16°C)	6 vol. oz	15-20	45-50
+70°F (21°C)	4 vol. oz	15-20	45-50
+80°F (27°C)	2* vol. oz	20-25	45-50
+90°-105°F (32°-41°C)	2* vol. oz	5-10	25-30

*Do not use less than 2 vol. oz. of DURAL MMA HEALER/SEALER INITIATOR

VERY IMPORTANT: MUST add Accelerator to the MMA resin and thoroughly blend BEFORE adding the MMA INITIATOR, or hazardous decomposition may occur (i.e., violent foaming).

Application: Inspect underside of elevated decks for evidence of full depth cracks that may require additional treatment to prevent draining of resin. Cracks greater than 1/8" width should be repaired individually prior to application of flood coat. Fill 1/8" or larger cracks with loose sand and pour small quantity of mixed DURAL MMA HEALER/SEALER into the crack and spread with a paint brush, allow to cure before applying flood coat. DURAL MMA HEALER/SEALER is spread evenly on the surface as a flood coat with a squeegee or rollers and allowed to absorb completely into the concrete substrate. Do not allow to form puddles. Apply subsequent applications of resin only after the previous application is completely hardened. There should be very little resin film on the surface upon completion.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL MMA HEALER/SEALER will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL MMA HEALER/SEALER indoors, out of direct sunlight, protected from moisture, at temperatures below 80°F (26°C).
- Do not store near open flame or food.
- After extended storage: Additives and fillers can separate with storage, materials should be inspected for any visible signs of settlement, polymerization, or paraffin coagulation (clumps, strands).
- Do not thin DURAL MMA HEALER/SEALER.
- Adequate cross ventilation should be provided. Good ventilation during the processing ensures a good cross linking and hardening.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user.
- In all cases, consult the product Safety Data Sheet before use.

Rev. 01.19

DURAL MMA INITIATOR

METHYL METHACRYLATE INITIATOR FOR DURAL MMA RESINS

EUCLID CHEMICAL

DESCRIPTION

DURAL MMA INITIATOR is a white dry powder consisting of 50% BPO, Dibenzoyl Peroxide. It must be thoroughly mixed with Dural MMA resins before adding other fillers and aggregates (if required) to ensure the hardening of the mixed materials. DURAL MMA INITIATOR is soluble in Acrylic (MMA) resin. After mixing the powder into the reactive acrylic, it starts the polymerization reaction, which leads to the curing process of the floor system.

TECHNICAL INFORMATION

Composition ..... 50% BPO, dibenzoyl peroxide
Appearance.....Sandy, white dry powder
Mixed Ratio .....See Dural MMA Healer/Sealer Tech Data Sheet

Self-Accelerating Decomposition Temperature SADT..... 140°F
Self-Ignition Temperature.....>680°F
Solubility.....Not soluble in water

PACKAGING

DURAL MMA INITIATOR is available in a 1 gallon pail containing 5 lbs. powder and a 15 lbs. box of powder.

SHELF LIFE

1 year in original, unopened, properly stored containers kept in dry environments below 80°F.

MIXING INSTRUCTIONS

DURAL MMA INITIATOR must be added to, and mixed with, the DURAL MMA HEALER/SEALER resin immediately before the application of DURAL MMA resins. Fillers and aggregates (if required) are added after the initiator is added to and mixed with the DURAL MMA HEALER/SEALER resin. It is important to follow the mix ratio chart for the MMA resin pertaining to temperature and desired set time. Refer to the DURAL MMA HEALER/SEALER product information sheet for the correct amount of initiator to use in the mix. The amount of initiator needed depends on the type of resin being used and the ambient and surface temperature, which leads to the proper curing process of the DURAL MMA system.

PRECAUTIONS/LIMITATIONS

DURAL MMA INITIATOR is an oxidizing agent that violently decomposes under the influence of heat or when in contact with reducing agents. Do not mix directly with accelerators. Store separately from the DURAL MMA resins. Do not store near, or mix with amines. A violent reaction can take place. Review SDS information thoroughly.

Rev. 01.19

MOISTURE MITIGATION COATINGS

DURAL AQUATIGHT 100

MOISTURE MITIGATION TREATMENT SYSTEM

EUCLID CHEMICAL

DESCRIPTION

DURAL AQUATIGHT 100 is a two component, modified epoxy system designed to seal concrete and reduce moisture vapor transmission prior to applying finished flooring. DURAL AQUATIGHT 100 has proven to reduce moisture vapor emissions and be resistant to damage from high alkalinity. It is an environmentally friendly material containing no hydrocarbons or other solvents, making it very low VOC. DURAL AQUATIGHT 100 will tolerate a moisture content up to 90% relative humidity as tested according to ASTM F2170 and moisture transmission rates (MVT) up to 10 pounds per 1,000 square feet per 24 hours as tested according to ASTM F1869.

PRIMARY APPLICATIONS

- Industrial & Manufacturing
- Chemical Processing
- Food & Beverage Processing
- Warehouses

FEATURES/BENEFITS

- Reduces Moisture Vapor Transmission (MVT) rates
- Resistant to high alkaline conditions
- Moisture tolerant up to 10 lbs. MVT and 90% R.H.
- Excellent Adhesion to properly prepared concrete
- Greatly reduces concrete outgassing
- Low-odor during application and cure, 100% solids
- Excellent physical properties
- Can be used as a bonding agent for cementitious toppings

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

Mixed Ratio (by volume).....2:1

VOC Content..... 0 g/L

Pot Life, mins.....25-35

Hardness, Shore D, ASTM D2240.....85

Tensile Strength, ASTM D638, psi (MPa)6,400 (44.4)

Tensile Elongation, ASTM D638, % 3-5

Bond Strength, ASTM D7294, psi (MPa)>450 (3.1)

Compressive Strength, psi (MPa)
ASTM D695 ..... 11,000 (76.4)

Water Absorption, ASTM D570, %.....0.2

Flammability, ASTM D635 ..... Self-Extinguishing

Permeability, ASTM E96, Perms
1 coat @ 10-12 mils, WFT.....0.09
2 coats @ 20 mils, WFT.....0.04

Water Vapor Transmission, ASTM E96, Grams/hrs/m²
1 coat.....0.023
2 coats.....0.012

Alkaline Resistance, ASTM D1308, 14 day immersion
10% Sodium Hydroxide .....unaffected
50% Sodium Hydroxide .....unaffected

Fungus and Bacteria Growth, MIL-F-52505, 4.4.2.11
*Will not support growth of fungus or bacteria

Recoat, minimum, hrs from first coat.....6
Recoat, maximum, hrs from first coat 24

PACKAGING

DURAL AQUATIGHT 100 is available in a 3 gallon (11.4 L) and 15 gallon (56.8 L) units.

SHELF LIFE

1 year in original, unopened, properly stored containers.

COVERAGE

Coverage rate is approximately 130 ft²/gallon/coat. Two coats are required for a total of 20-24 mils.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete must be at least 7 days old. Surface laitance must be removed. All substrates must be properly prepared with shot blasting ONLY (unless another method is approved by Euclid Chemical) to achieve a minimum CSP-3 surface profile in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI) and then thoroughly cleaned of all dust and debris. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583. The tensile pull-off strength should be at least 200 psi (1.4 MPa). The prepared surface must be able to pass a water absorption test to confirm adequate porosity: Apply dime size water droplets randomly across floor surface, (at least one per 100 square feet) using eye dropper. Water must completely absorb into concrete within 60 seconds. Areas that fail this test must be further prepared until passing the test. Then the surface must be tested for confirm that the relative humidity (RH) of the concrete is <90% relative humidity as tested according to ASTM F2170 or that the moisture transmission rates (MVT) are <10 pounds per 1,000 square feet per 24 hours as tested according to ASTM F1869. Work must be performed by experienced contractors.

Non-Moving Cracks: Cracks less than 1/8" wide can be filled with DURAL AQUATIGHT 100. Cracks larger than 1/8" wide can be filled with a mortar consisting of properly mixed DURAL AQUATIGHT 100 and sand. Once the non-moving cracks have been filled, and while it is still wet, broadcast sand to refusal. Allow to cure throughly and then remove all excess sand prior to proceeding with the application.

Moving Cracks, Saw Cut Joints: All moving joints and cracks must be honored up through the moisture mitigation system any underlayment and floor covering material. Saw Cut Joint sidewalls and the bottom of the joint should be coated with DURAL AQUATIGHT 100 then allowed to cure for 12 to 24 hours. Then the Saw Cut Joint should be filled with a joint filler recommended by Euclid Chemical.

Expansion Joints: The Expansion Joint sidewalls and bottom of the joint shall be coated with DURAL AQUATIGHT 100 and allowed to cure 12 to 24 hours. Then a suitable backer rod should be placed in the joint and the cavity filled with a joint filled recommended by Euclid Chemical.

Mixing: Mix each component of **DURAL AQUATIGHT 100** prior to combining. Mix ratio is 2 parts resin Part A to one part hardener, Part B, by volume. Pour together and mix thoroughly for 3-5 minutes. Scrape the bottom and sides of the containers at least once during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: To best ensure a pinhole-free application, **DURAL AQUATIGHT 100** should be installed in a two coat application, both resin coats together totaling 20+ mils of neat resin, factor the coverage rates per coat accordingly. Apply the first coat at the rate of 250 ft^2/gallon. Apply extra material to areas showing penetration and soaking into the concrete. Fill all cracks and non-moving joints with **DURAL AQUATIGHT 100**. Allow to cure. Apply second coat at the rate of 80-100 ft^2/gallon. Assure that there is a pinhole free and a uniform 12-14 mils minimum thickness above the highest points of the surface profile then immediately follow with a broadcast of 30 mesh or 40-60 mesh aggregate, approximately 0.5 pounds per square foot, until there are no wet spots. After cure, thoroughly sweep off excess aggregate.

The maximum recoat time for the first of the two coats of **DURAL AQUATIGHT 100** (neat resin) is 24 hours. The second application will have texture from the broadcast aggregate so it has an extended recoat time as long as surface is clean before application of the floor covering system.

DURAL AQUATIGHT 100 must be topcoated with Euclid decorative coatings, industrial coatings, cemenentitious toppings or underlayments.

CLEAN-UP

Tools and equipment should be cleaned with xylene or lacquer thinner. Consult Safety Data Sheet (SDS) for safety and health precautions.

PRECAUTIONS/LIMITATIONS

- Store **DURAL AQUATIGHT 100** indoors, protected from moisture, at temperatures between 50°F (10°C) and 90°F (32°C).
- Do not use **DURAL AQUATIGHT 100** over gypsum based underlayments.
- Do not apply to slabs that have been treated with densifiers, shake-on hardeners or liquid hardeners.
- Post-cracking of the concrete, slab warping at joints, or cracks after installation of DURAL AQUATIGHT 100 may cause a breach in the system and void any warranties.
- Substrate temperature and air temperature must be a minimum of 50°F. during installation and cure.
- Before performing moisture level tests enclose and condition the work area for the length of time as required by ASTM F2170 and ASTM F1869.
- When a vapor barrier is utilized in on-grade applications, it must be installed directly under the slab.
- For use on standard mix design concrete, special mix designs or high density mix designs must be reviewed with Euclid.
- Application of a test area is recommended to confirm final appearance of the system with the end user.
- In all cases, consult the product Safety Data Sheet before use.

Rev. 02.19

DURAL AQUATIGHT WB

MOISTURE MITIGATION TREATMENT SYSTEM

EUCLID CHEMICAL

DESCRIPTION

DURAL AQUATIGHT WB is a low viscosity, water-emulsion, penetrating epoxy primer designed for use as a moisture mitigation treatment on concrete with excessive moisture vapor transmission or moisture content. DURAL AQUATIGHT WB will tolerate a moisture content up to 90% relative humidity as tested according to ASTM F2170 and moisture transmission rates (MVT) up to 10 pounds per 1,000 square feet per 24 hours as tested according to ASTM F1869.

PRIMARY APPLICATIONS

- Industrial & Manufacturing
- Chemical Processing
- Food & Beverage Processing
- Warehouses

FEATURES/BENEFITS

- Reduces Moisture Vapor Transmission (MVT) rates
- Fast dry time
- Low-odor during application and cure
- Excellent Adhesion to properly prepared concrete
- Greatly reduces concrete outgassing
- Moisture tolerant up to 10 lbs. MVT and 90% R.H.
- Very low VOC

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

Mixed Viscosity, cps
Brookfield Viscometer, Model RVT.....50

Solids Content, %, diluted.....38

Weight/gal, mixed.....8.75

VOC, EPA Method 24 ..... 5 g/L

Bond Strength, ASTM D7234, psi (MPa)...>400(2.8)

Working Life, mins. 60

Dry to Touch, hrs.....1.5-2

Dry Hard, light foot traffic, hrs.....5

Recoat, minimum, hrs 3-5

Recoat, maximum, hrs.....24

Appearance: Milky emulsion when mixed, clear/amber when dry.

PACKAGING

DURAL AQUATIGHT WB is available in a 1.8 gallon (6.82 L) premeasured package.

SHELF LIFE

1 year in original, unopened, properly stored containers.

COVERAGE

A 1.8 gallon unit mixed with 1.8 gallons of water, as instructed, will yield 3.6 gallons. Coverage rate for the diluted material is 200-300 ft^2/gallon. It is critical that coverage rates are accurately followed to obtain maximum performance of the system.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, by mechanical means, and then thoroughly cleaned of all dust and debris. The Concrete Surface Profile (CSP) should be equal to CSP-3 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583. The tensile pull-off strength should be at least 200 psi (1.4 MPa). The prepared surface must be able to pass a water absorption test to confirm adequate porosity: Apply dime size water droplets randomly across floor surface, (at least one per 100 square feet) using an eye dropper. Water must completely absorb into concrete within 60 seconds. Areas that fail this test must be further prepared until passing the test. Then the surface must be tested for confirm that the relative humidity (RH) of the concrete is <90% as tested in accordance to ASTM F2170 or that the moisture transmission rates (MVT) are <10 pounds per 1,000 square feet per 24 hours as tested in accordance to ASTM F1869. Work must be performed by experienced contractors.

Non-Moving Cracks: Cracks less than 1/8" wide can be filled with **DURAL AQUATIGHT WB**. Cracks larger than 1/8" wide can be filled with an epoxy mortar made with EUCLID CHEMICAL **DURAL AQUATIGHT 100** and fine sand. Once the non-moving cracks have been filled, and while it is still wet, broadcast sand to refusal. Allow to cure thoroughly and then remove all excess sand prior to proceeding with the application.

Moving Cracks, Saw Cut Joints: All moving joints and cracks must be honored up through the moisture mitigation system any underlayment and floor covering material. Saw Cut Joint sidewalls and the bottom of the joint should be coated with **DURAL AQUATIGHT WB** then allowed to cure for 12 to 24 hours. Then the Saw Cut Joint should be filled with a joint filler recommended by Euclid Chemical.

Expansion Joints: The Expansion Joint sidewalls and bottom of the joint shall be coated with **DURAL AQUATIGHT WB** and allowed to cure 12 to 24 hours. Then a suitable backer rod should be placed in the joint and the cavity filled with a joint filled recommended by Euclid Chemical.

Mixing: The substrate and all materials must be maintained at 50°F-85°F for 24 hours before, during and after installation. **DURAL AQUATIGHT WB** comes in a premeasured kit. Mix each component of **DURAL AQUATIGHT WB** prior to combining. Pour the Part B into a clean mixing container. Be sure to use a suitable size mixing container since the mixed volume of material will double. Then begin mixing the Part B while slowly adding the Part A. It is important that the Part A is added into the Part B, not the other way around! Mix thoroughly, for at least 3 minutes to obtain a uniform creamy emulsion mixture. A high speed drill using a high shear mixing paddle, such as a #P13 paddle as found in ICRI Guideline 320.5R-2014 is recommended for this procedure. Once this is complete, DURAL AQUATIGHT WB is then diluted with an equal amount of potable water to reduce the solids content. Slowly add this potable water while continuously mixing. Mix for another 3 minutes to ensure homogenous consistency.

Application: Apply **DURAL AQUATIGHT WB** at approximate rate of 200-300 ft^2 per mixed gallon. Using a flat squeegee, spread material at the recommended rate. Pull the squeegee slowly with a puddle in front of the squeegee. Allow for sufficient wetting of the slab and back-roll with a 1/4" nap roller. Very porous concrete may require additional material. Important: Avoid leaving puddles or a resin-rich surface film, immediately brush or roll out excess material. Resin-rich surface material may not cure properly! Final appearance when cured should NOT be a glossy film.

DURAL AQUATIGHT WB must be topcoated with Euclid decorative or industrial coatings within recoat times. Cure time for light foot traffic is 5 hours, recoat time is 3-24 hours at 75°F and 50% RH. Allow for additional cure time in cooler temperatures and higher humidity.

CLEAN-UP

Tools and equipment should be cleaned with xylene or lacquer thinner. Consult Safety Data Sheet (SDS) for safety and health precautions.

PRECAUTIONS/LIMITATIONS

- Store **DURAL AQUATIGHT WB** indoors, protected from moisture, at temperatures between 50°F (10°C) and 90°F (32°C).
- Do not use **DURAL AQUATIGHT WB** over gypsum based underlayments.
- Do not use **DURAL AQUATIGHT WB** under cementitious overlayment topping products. Use **DURAL AQUATIGHT 100** instead.
- Do not apply to slabs that have been treated with densifiers, shake-on hardeners or liquid hardeners.
- Post-cracking of the concrete, slab warping at joints, or cracks after installation of **DURAL AQUATIGHT WB** may cause a breach in the system and void any warranties.
- Substrate temperature must be a minimum of 50°F.
- Before performing moisture level tests enclose and condition the work area for the length of time as required by ASTM F2170 and ASTM F1869.
- When a vapor barrier is utilized in on-grade applications, it must be installed directly under the slab.
- Concrete must be free of dirt, curing agents, fiber reinforcement, densifiers, ASR byproducts, standing water, and other foreign materials.
- **DURAL AQUATIGHT WB** must absorb completely into concrete pores, do not puddle or apply a thick resin-rich surface layer.
- For use on standard mix design concrete, special mix designs or high density mix designs must be reviewed with Euclid Chemical.
- Application of a test area is recommended to confirm final appearance of the system with the end user.
- In all cases, consult the product Safety Data Sheet before use.

Rev. 02.19

PRIMER COATINGS

DURAL EPOXY PRIMER

100% SOLIDS EPOXY PRIMER FOR EPOXY AND URETHANE COATING SYSTEMS

EUCLID CHEMICAL

DESCRIPTION

DURAL EPOXY PRIMER is a two-component, 100% solids, penetrating epoxy primer. It is recommended for use as a primer with various Euclid Chemical water-based epoxies, 100% solids epoxies, and urethane coatings.

PRIMARY APPLICATIONS

- Schools
- Warehouses
- Laboratories
- Hospitals
- Clean rooms

FEATURES/BENEFITS

- Fast drying
- Low odor
- Non-flammable
- Low VOC

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @75°F (24°C) and 50% RH

Mix ratio (A:B by vol)	1:1
VOC Content	≤ 5 g/L
Mixed viscosity, cps	300 to 400
Gel time (100 gms.), mins	30 to 40
Pot life, 2 gal. (7.6L) mins	10 to 20
Mixed solids % by wt	100
Tack free time, hrs	3 to 4

Values presented are typical and not necessarily referenced to create specifications.

PACKAGING

DURAL EPOXY PRIMER is available in 4 gal (15.1 L) cases that contain two 2 gal (7.6 L) kits. It is also available in 10 gal (37.9 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

200 to 250 ft²/gal (4.9 to 6.1 m²/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURAL EPOXY PRIMER, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB instead of DURAL EPOXY PRIMER. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAL EPOXY PRIMER using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 1 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: DURAL EPOXY PRIMER can be applied using a short nap roller, magic trowel/squeegee, brush, or an airless spray. Subsequent epoxy or urethane coatings may be applied as soon as the DURAL EPOXY PRIMER has become tack free (typically 3 to 4 hours at 75°F (24°C)), but no later than 24 hours after primer application. If more than 24 hours passes between applications, lightly sand the primer, then perform a solvent wipe over the area using acetone. Allow the acetone to fully evaporate before applying the subsequent coating.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL EPOXY PRIMER will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL EPOXY PRIMER indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURAL EPOXY PRIMER if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL EPOXY PRIMER
- When a vapor barrier is utilized in on-grade applications of DURAL EPOXY PRIMER, it must be installed directly under the slab
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- DURAL EPOXY PRIMER is not to be used as a finished/aesthetic coating
- DURAL EPOXY PRIMER may have a yellow cast to the film if applied at higher film builds
- Concrete surfaces may darken and give a "wet look" effect after application
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DURAPRIME WB

WATER-BASED EPOXY PRIMER FOR EPOXY AND URETHANE COATING SYSTEMS

EUCLID CHEMICAL

DESCRIPTION

DURAPRIME WB is a two-component, penetrating, water-based epoxy primer. It is recommended for use as a primer with various Euclid Chemical water based epoxies, 100% solids epoxies, and urethane coatings.

PRIMARY APPLICATIONS

- Schools
- Warehouses
- Laboratories
- Hospitals
- Clean rooms
- Concrete block
- Walls & barriers
- Bridge abutments
- Parapets

FEATURES/BENEFITS

- Can be used on damp concrete
- Fast drying, yet has long pot life
- Very low odor - excellent for indoor use
- Reduces concrete porosity and outgassing

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C) and 50% RH
Mixed viscosity.....3 to 400 cps
Dry to touch ..... 2 to 4 hrs
Pot life..... 6 to 8 hrs
VOC Content mixed ..... 83 g/L
Mixed solids (as supplied) 32%
Values presented are typical and are not necessarily referenced to create specifications.

PACKAGING

DURAPRIME WB is available in a 4.75 gal (18 L) kit and a case of two 0.81 gal (3.1 L) units.

SHELF LIFE

1 year in original, unopened containers

COVERAGE

	ft²/gal (m²/L)
Bare concrete:	300 to 400 (7.4 to 9.8)
Concrete block:	200 to 350 (4.9 to 8.6)
Coated surface:	350 to 450 (8.6 to 11.0)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. See note in "Precautions/Limitations" section if coating is to be placed over old/existing epoxy or urethane coatings. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI). Allow substrate to dry before coating application. Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

Do not apply epoxy or urethane coatings if there is excessive moisture in the concrete, or if the moisture vapor emission rate (MVER) is high. Before application of DURAPRIME WB, perform either of these tests: **ASTM F2170 -** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes, or **ASTM F1869 -** Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. If the relative humidity is 70% or greater, or the MVER is 3 lbs/1000 ft^2/24 hrs or greater, use a moisture mitigation system such as Dural Aquatight WB instead of DURAPRIME WB. After surface preparation and moisture testing, a test section application is recommended to confirm good adhesion and compatibility of the coating with the surface, and to confirm appearance and aesthetics.

When coating steel, all contamination should be removed and the steel surface prepared to a "near white" finish (SSPC SP10) using clean, dry blasting media.

Mixing: Mix DURAPRIME WB using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine all of Part A with all of Part B in a 1 to 5.5 ratio by volume, then mix thoroughly for 3 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014. Allow the mixed, milky looking, DURAPRIME WB to stand for 20 minutes before use. This also allows for any air in the mix to be released.

Application: DURAPRIME WB can be applied using a short nap roller, magic trowel/squeegee, brush, or an airless spray. The initially milky appearance will dry clear. Subsequent epoxy or urethane coatings may be applied as soon as the DURAPRIME WB has become tack free (typically 2 to 4 hours at 75°F (24°C)), but no later than 24 hours after primer application. When top coating with moisture-sensitive materials like EUCOTHANE, ensure that the DURAPRIME WB is dry to the touch and free of any moisture. If more than 24 hours passes between applications, lightly sand the primer, then perform a solvent wipe over the area using acetone. Allow the acetone to fully evaporate before applying the subsequent coating.

CLEAN-UP

Clean tools and application equipment immediately with water or a blend of butyl cellosolve and water. Clean spills or drips with water while still wet. Hardened DURAPRIME WB will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAPRIME WB indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURAPRIME WB if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAPRIME WB
- When a vapor barrier is utilized in on-grade applications of DURAPRIME WB, it must be installed directly under the slab
- Depending on the condition of the substrate, minor surface defects can appear in the coating when applied. Proper surface prep, patching of substrate imperfections, and priming will ensure a better overall finish.
- If coating over old/existing epoxy or urethane coatings, or if more than 24 hours elapses between coats: sand the previous coat, wipe clean, and proceed with coating operations. If old/existing coatings are peeling, flaking, etc., all unsound material must be removed prior to new coating applications.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Thicker than recommended applications may result in the coating remaining soft/wet/tacky for longer than the times found on this data sheet, and can cause blistering, or a yellow cast to the film
- Application of DURAPRIME WB in high humidity (>90% RH) environments may result in adhesion problems with subsequent coatings. A test area should be applied to ensure proper results.
- DURAPRIME WB is not to be used as a finished/aesthetic coating
- Concrete surfaces may darken and give a "wet look" effect after application
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

TAMMS H/P PRIMER

PRIMER FOR CONCRETE OR MASONRY SURFACES

EUCLID CHEMICAL

DESCRIPTION

TAMMS H/P PRIMER aids in the proper curing of acrylic resin or cement-based masonry coatings, especially when applied to hot or porous surfaces. TAMMS H/P PRIMER dries rapidly to create a breathable barrier within the substrate surface. The barrier retards the excessive absorption of moisture from the coating into the substrate, and aids in the proper curing of the coating. This action helps to minimize "cratering" of acrylic coatings, and the formation of shrinkage cracks in cementitious materials. TAMMS H/P PRIMER is necessary on porous surfaces or when the weather is warm and windy.

PRIMARY APPLICATIONS

- Exterior/interior, above/below grade
- Concrete and masonry surfaces
- Brick
- Stone
- Concrete block surfaces such as split face, textured, regular, or lightweight block
- Precast, textured, lightweight and formed concrete

FEATURES/BENEFITS

- Provides a stable base for Euclid Chemical coatings
- Aids in achieving appropriate coverage rates for subsequent coatings

TECHNICAL INFORMATION

TAMMS H/P PRIMER is a milky white emulsion of 100% acrylic polymer solids and modifiers in a water-based formulation. TAMMS H/P PRIMER turns clear with a slight gloss when dry.

PACKAGING

TAMMS H/P PRIMER is packaged in 5 gal (18.9 L) pails and 55 gal (208 L) drums.

SHELF LIFE

2 years in original, unopened container

COVERAGE

The coverage rates below are approximate and for estimating purposes only. Actual surface texture and porosity will determine the total amount of TAMMS H/P PRIMER required.

	ft^2/gal	m^2/L
Porous	100 to 150	(2.5 to 3.7)
Non Porous	200 to 300	(4.9 to 7.3)

DIRECTIONS FOR USE

Surface must be structurally sound, clean, dry, and free of contaminants. Repair surface defects, cracks, and voids before applying TAMMS H/P PRIMER. Cure new concrete and masonry surfaces minimum 28 days. Provide an absorptive surface on all substrates, including smooth precast or formed concrete by abrading the surface. Apply TAMMS H/P PRIMER to a dry surface, and do not apply when rain is expected within 4 hours or if the primed surface cannot be topcoated within 24 hours.

Mixing: Stir TAMMS H/P PRIMER slowly and thoroughly, using slow speed mixing equipment that will not aerate the product. Do not dilute TAMMS H/P PRIMER.

Application: Use airless spray equipment with 0.017 to 0.021 inch (0.43 to 0.53 mm) orifice size spray tips to apply TAMMS H/P PRIMER. Hold spray gun 12 to 18 inches (30.4 to 45.7 cm) from the wall surface, and apply using a "cross coat" technique consisting of a horizontal pass followed by a vertical pass. For hand application, use equipment designed for latex paints, and dampen the brushes or the 1½ inch (3.8 cm) nap rollers with water before use. Thoroughly wet the surface with TAMMS H/P PRIMER to the point of saturation with no run down. Pick up any drips or runs with a brush or roller.

TAMMS H/P PRIMER is rapid drying, and the finish coat may be applied as the primer dries, but no later than 24 hours after primer application. Labor costs on large projects may be reduced by using separate application systems to apply the TAMMS H/P PRIMER and the finish coat during the same "drop".

CLEAN-UP

Clean tools and application equipment immediately after use with detergent and hot water. Clean overspray or drips, while still wet, with detergent and hot water. Clean glass and metal surfaces before material dries. Dried material will require strong solvents or abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Do not thin or dilute TAMMS H/P PRIMER.
- Do not apply to external surfaces if rain is forecast within 4 hours.
- Do not apply TAMMS H/P PRIMER below 50°F (10°C) or above 90°F (32°C), or over frozen or frost-filled surfaces.
- Do not apply TAMMS H/P PRIMER to non-absorbent materials such as glass, metal, glazed brick, or glazed tile. Primer should be topcoated within 24 hours after application.
- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- Protect from freezing. If material was ever frozen, do not use.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMS MASONRY PRIMER

ACRYLIC BLOCK FILLER

EUCLID CHEMICAL

DESCRIPTION

TAMMS MASONRY PRIMER is a heavy-bodied, water-based, 100% acrylic resin emulsion block filler used as a primer for Euclid Chemical decorative coating systems such as TAMMSCOAT and SUPER WALL-PRO. TAMMS MASONRY PRIMER is formulated with freeze-thaw stabilizers, and finely graded texture minerals for interior or exterior, above and below grade applications.

PRIMARY APPLICATIONS

- Brick
- Block
- Stone
- Stucco surfaces

FEATURES/BENEFITS

- Fills pores
- Breathable
- Provides a stable base for subsequent coatings

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)

Density	12.5-13.5 lb/gal (1.50-1.62 kg/L)
VOC Content	74 g/L
Viscosity	120-130 KU
Solids by Weight	68-72%
Solids by Volume	52.5%

PACKAGING

TAMMS MASONRY PRIMER is packaged in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

	ft²/gal (m²/L)
TAMMS MASONRY PRIMER	40 to 80 (0.98 to 1.96)

Note: Coverage rates are approximate and for estimating purposes only. Surface temperature, porosity of surface and texture will determine actual material requirements. Apply samples to all surfaces to be coated. Obtain approval of Architect or Owner for the color, finish, water repellency, and coverage before proceeding with work. Retain sample or mock-up through completion of project.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete and masonry surfaces 28 days. Surfaces must be structurally sound, clean, dry, and free of dust, dirt, oil, peeling paint, curing and form release compounds, and other contaminants. Provide an absorptive surface on smooth precast, formed concrete, and other substances by lightly abrading the surface. Defective concrete, honeycombs, cracks, cavities and other defects should be routed to sound concrete and patched using compatible materials.

Mixing: TAMMS MASONRY PRIMER should be mixed using a low speed 3/4 in. (19 mm) drill with a mixing paddle. Mix thoroughly to a uniform, smooth consistency. Do not aerate the mix.

Application: Apply TAMMS MASONRY PRIMER to the surface using heavy duty spray equipment capable of spraying ceiling texture, plaster or cement based coatings, or use stiff brushes or rollers. When sprayed, backrolling is required to ensure good uniform contact with the surface. Avoid applying to excess which can cause the product to run down the wall or puddle. For hand application, use brushes and 1½ in. (3.81 cm) nap rollers designed for latex paints. Dampen the brushes and rollers with clean water before use. Decorative topcoats may be applied 12 to 24 hours following the primer application.

CURING COMPOUNDS

KUREZ DR VOX

DISSIPATING CURING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

KUREZ DR VOX is a water-based resin, reduced odor, liquid membrane forming curing compound formulated with dissipating agents. KUREZ DR VOX provides an excellent initial cure for concrete, then it begins to break down and deteriorate upon exposure to traffic and UV light. After cleaning to completely remove the KUREZ DR VOX, the concrete is ready for the application of coverings, coatings, or sealers.

PRIMARY APPLICATIONS

- Curing interior or exterior* concrete
- Concrete that will later receive a covering or coating
- Where a long term membrane film is not desired on the concrete surface

** Product film will discolor when exposed to sunlight*

FEATURES/BENEFITS

- Use of this product ensures proper curing resulting in stronger, more wear-resistant concrete
- Helps to minimize dusting
- Film breaks down when exposed to UV & traffic
- Available in a fugitive dye formulation

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time* at 73°F, 50% RH: ..... 1 hour
Foot Traffic: ..... 2 to 4 hours
Wheel Traffic: ..... 6 to 10 hours
VOC Content: .....285 g/L
Moisture Loss (ASTM C156)**:** ..... < 0.55 kg/m^2

**Low concrete or air temperature and/or high relative humidity will extend drying time.*

Appearance: The color of KUREZ DR VOX may vary from off white to pale yellow. Color variation does not affect product performance. KUREZ DR VOX may turn a deeper amber color upon exposure to UV light.

PACKAGING

KUREZ DR VOX is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Types 1 and 1-D, Classes A & B
AASHTO M 148, Types 1 and 1-D, Classes A & B

COVERAGE

	ft^2/gal (m^2/L)
Textured Concrete:	300 (7.4)
Smooth Concrete:	400 (9.8)

For good dissipation and easy removal, do not apply at a thicker film than indicated.

DIRECTIONS FOR USE

Surface Preparation: As soon as possible after final troweling (or stripping of forms in vertical applications), apply KUREZ DR VOX at the recommended coverage rate.

Mixing: Material may separate during long term storage. Mild agitation or mixing is required before use.

Application: Apply at a uniform coverage by spray or roller application. Product may be sprayed with a hand held "pump-up" sprayer or an airless industrial sprayer. On vertical surfaces such as walls and columns, KUREZ DR VOX should be applied immediately after forms are stripped. **Do not apply at a thicker film than the suggested coverage rates allow. Heavy or uneven application can result in slow dissipation, difficult removal of the KUREZ DR VOX, and may discolor the concrete surface.** On interior hard troweled floors where a liquid densifier will be applied (and with approval from the project engineer), the coverage rate of KUREZ DR VOX may be increased to 400 ft^2/gal (9.8 m^2/L) in order to facilitate easier removal.

Dissipation and Cleaning: The exact time for dissipation/break down of KUREZ DR VOX will vary depending on application rate, moisture level in the concrete, and the amount of exposure to UV light and construction traffic. KUREZ DR VOX will continue to dissipate and become increasingly easier to remove as time passes. **Floors to receive coatings, sealers and coverings must be cleaned thoroughly to ensure complete removal of KUREZ DR VOX.** The use of a heavy-duty floor cleaner such as EUCO CLEAN & STRIP is recommended to aid cleaning and removal. Scrub the floor with the cleaner and stiff bristle mechanical equipment, then rinse well with clean water. Heavy-duty mechanical means may also be used for removal, such as heavy-duty water blasting or abrasive methods like sanding or grinding. After proper clean-up, follow the instructions of the sealer, coating or covering manufacturer for the recommended surface preparation for the particular product to be applied. The use of KUREZ DR VOX does not eliminate the need to adequately clean and prepare the surface to assure good adhesion of the applied product, particularly when concrete or terrazzo toppings are to follow.

CLEAN-UP

Clean tools and equipment with warm, soapy water before KUREZ DR VOX dries.

PRECAUTIONS/LIMITATIONS

- Do not allow containers of this product to freeze.
- Store between 50°F to 100°F (10°C to 38°C).
- For best application results, product temperature should be between 50°F to 90°F (10°C to 32°C) with ambient and surface temperatures between 45°F to 100°F (7°C to 38°C).
- After application, KUREZ DR VOX must remain uncovered and unprotected for proper dissipation.
- Do not apply at temperatures below 40°F (4°C).
- Do not use as bond breaker for tilt-up construction.
- Do not subject to rain or water for 12 hours after application.
- Not intended for use on architectural concrete panels unless complete removal is planned.
- Do not thin this product with water or other solvents.
- Longer dissipation times can be expected if the product is not exposed to traffic & sunlight or if the product is applied heavily or unevenly.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

KUREZ DR-100

LOW VOC, DISSIPATING CURING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

KUREZ DR-100 is a water-based resin, liquid membrane-forming curing compound that provides an excellent initial cure for concrete, then begins to break down and deteriorate upon exposure to traffic and UV light. After simple cleaning to completely remove the KUREZ DR-100, the concrete is ready to receive application of coverings, coatings, or sealers. With a VOC content of less than 100 g/L, KUREZ DR-100 is fully VOC-compliant in the U.S. and Canada, even in the highly regulated air quality districts of California.

PRIMARY APPLICATIONS

- Interior or exterior* concrete
- Concrete that will later receive a covering or coating
- Where a long term membrane film is not desired on the concrete surface

** Product will discolor when exposed to sunlight*

FEATURES/BENEFITS

- Use of this product ensures proper curing resulting in stronger, more wear resistant concrete
- Helps to minimize dusting
- Breaks down quickly to allow subsequent application of floor coverings
- Quickly and easily applied by spray application
- Available in a fugitive dye formulation

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time* at 73°F, 50% RH: ..... 1 hour
Foot Traffic: ..... 2 to 4 hours
Wheel Traffic: ..... 6 to 10 hours
VOC Content: .....98 g/L
Moisture Loss (ASTM C156)**:** ..... < 0.55 kg/m^2

**Low concrete or air temperature and/or high relative humidity will extend drying time.*

Appearance: The color of KUREZ DR-100 may vary from off white to pale yellow. Color variation does not affect product performance. KUREZ DR-100 will turn a deeper amber color upon exposure to UV light.

PACKAGING

KUREZ DR-100 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Types 1 and 1-D, Classes A & B
AASHTO M 148, Types 1 and 1-D, Classes A & B

COVERAGE

	ft^2/gal (m^2/L)
Textured Concrete:	300 (7.4)
Smooth Concrete:	400 (9.8)

For proper dissipation and easy removal, carefully follow the recommended coverage rates and apply evenly. Heavy or uneven application can make dissipation and removal difficult.

DIRECTIONS FOR USE

Surface Preparation: As soon as possible after final troweling (or stripping of forms in vertical applications), apply KUREZ DR-100 at the recommended coverage rate.

Mixing: Material may separate during long term storage. Mild agitation or mixing is required before use.

Application: Apply at a uniform coverage by spray or roller application. Product may be sprayed with a hand held "pump-up" sprayer or an airless industrial sprayer. On vertical surfaces such as walls and columns, KUREZ DR-100 should be applied immediately after forms are stripped. **Do not apply at a thicker film than the suggested coverage rates allow. Heavy or uneven application can result in slow dissipation and difficult removal of the KUREZ DR-100, and may discolor the concrete surface.** On interior hard troweled floors where a liquid densifier will be applied (and with approval from the project engineer), the coverage rate of KUREZ DR-100 may be increased to 400 ft^2/gal (9.8 m^2/L) in order to facilitate easier removal.

Dissipation and Cleaning: The exact time for dissipation/break down of KUREZ DR-100 will vary depending on application rate, moisture level in the concrete, and the amount of exposure to UV light and construction traffic. KUREZ DR-100 will continue to dissipate and become increasingly easier to remove as time passes. **Floors to receive coatings, sealers and coverings must be cleaned thoroughly to ensure complete removal of KUREZ DR-100.** The use of a heavy-duty floor cleaner such as EUCO CLEAN & STRIP is recommended to aid cleaning and removal. Scrub the floor with the cleaner and stiff bristle mechanical equipment, then rinse well with clean water. Heavy-duty mechanical means may also be used for removal, such as heavy-duty water blasting or abrasive methods like sanding or grinding. After proper clean-up, follow the instructions of the sealer, coating or covering manufacturer for the recommended surface preparation for the particular product to be applied. The use of KUREZ DR-100 does not eliminate the need to adequately clean and prepare the surface to assure good adhesion of the applied product, particularly when concrete or terrazzo toppings are to follow.

CLEAN-UP

Clean tools and equipment with warm, soapy water before KUREZ DR-100 dries.

PRECAUTIONS/LIMITATIONS

- Do not allow containers of this product to freeze.
- Store between 50°F to 100°F (10°C to 38°C).
- For best application results, product temperature should be between 50°F to 90°F (10°C to 32°C) with ambient and surface temperatures between 45°F to 100°F (7°C to 38°C).
- After application, KUREZ DR-100 must remain uncovered and unprotected for proper dissipation.
- Do not apply at temperatures below 40°F (4°C).
- Do not use as bond breaker for tilt-up construction.
- Do not subject to rain or water for 12 hours after application.
- Not intended for use on architectural concrete panels unless complete removal is planned.
- Do not thin this product with water or other solvents.
- Longer dissipation times can be expected if the product is not exposed to traffic & sunlight or if the product is applied heavier than recommended.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

KUREZ VOX WHITE PIGMENTED

WHITE PIGMENTED CURING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

KUREZ VOX WHITE PIGMENTED is a white pigmented wax emulsion curing compound for new concrete requiring a reflective curing membrane. It maintains adequate moisture in new concrete so that desired properties, such as strength and durability, can develop. This white pigmented formulation also reflects sunlight, helping to keep concrete cool when placed in hot weather.

PRIMARY APPLICATIONS

- Exterior paving
- Walls, columns and highway barriers
- Residential concrete
- Sidewalks, curbs and gutters
- Bridge decks and parapet walls
- Commercial concrete

FEATURES/BENEFITS

- Forms an efficient moisture barrier for optimum curing of concrete
- Helps ensure proper cement hydration
- Low VOC
- Designed primarily for exterior applications where sunlight reflectivity is needed
- No odor

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time* @ 73°F, 50% RH: .....1 hour
Foot Traffic: .....2 to 4 hours
Wheel Traffic: .....6 to 10 hours
VOC Content: .....≤5 g/L
Moisture Loss (ASTM C156):..... < 0.55 kg/m^2

** Low concrete or air temperatures and/or high relative humidity will extend drying times.*

Appearance: KUREZ VOX WHITE PIGMENTED is a white pigmented liquid. After application and drying, the film is white in appearance.

PACKAGING

KUREZ VOX WHITE PIGMENTED is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 2, Class A
AASHTO M 148, Type 2, Classes A & B

COVERAGE

	ft^2/gal (m^2/L)
Smooth Concrete:	300 (7.4)
Textured Concrete:	200 (4.9)

Coverage will vary depending on surface porosity and texture. AVOID EXCESSIVE BUILD-UP. THICKER APPLICATIONS MAY LEAD TO DISCOLORATION AND POOR PRODUCT PERFORMANCE.

DIRECTIONS FOR USE

Surface Preparation: This product is designed for use on fresh concrete only. The concrete surface should first be finished to the desired texture.

Mixing: Agitate before using. Material may separate during long term storage. Mild agitation is recommended before usage.

Application: Apply a uniform coverage by spray or roller application. Product may be sprayed with a hand held "pump-up" sprayer or with an airless industrial sprayer. If roller applied, use a short nap sleeve.

Curing: For the best cure of freshly placed concrete, apply KUREZ VOX WHITE PIGMENTED as soon as possible after finishing operations and/or immediately after the disappearance of the "sheen" of surface moisture.

CLEAN-UP

Clean tools and equipment with warm, soapy water before the KUREZ VOX WHITE PIGMENTED dries.

REMOVAL

May be removed by using EUCO CLEAN & STRIP along with aggressive scrubbing, or by the careful use of a high pressure water spray.

PRECAUTIONS/LIMITATIONS

- This product utilizes wax as a curing medium. Application on smooth troweled concrete may result in significantly increased slipperiness.
- Do not allow containers of product to freeze. Store between 50°F to 100°F (10°C to 38°C).
- For best application results, product temperature should be between 50°F to 100°F (10°C to 38°C) with ambient and surface temperatures between 45°F to 110°F (7°C to 45°C).
- Complete removal is necessary before installing adhesives, carpet, tile, or other coverings.
- Do not subject to rain or water for 12 hours after application.
- Not intended for use on architectural concrete panels unless complete removal is planned.
- Do not thin this product with water or other solvents.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

KUREZ W VOX

WAX-BASED, LOW VOC CURING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

KUREZ W VOX is a clear, water-based, wax emulsion curing compound for concrete. It maintains adequate moisture in new concrete so that desired properties, such as strength and durability, can develop.

PRIMARY APPLICATIONS

- Exterior paving
- Walls and columns
- Sidewalks, curbs and gutters
- Interior and exterior concrete
- Decks and parapet walls
- Residential concrete

FEATURES/BENEFITS

- Forms an efficient moisture barrier for optimum curing of concrete
- Assists in proper cement hydration
- Designed for interior or exterior applications
- Low VOC

TECHNICAL INFORMATION

Typical Engineering Data
The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time*@ 73°F, 50% RH:.....1 hour
Foot Traffic: .....2 to 4 hours
Wheel Traffic: .....6 to 10 hours
VOC Content:.....≤5 g/L
Solids Content:.....15%
Moisture Loss: (ASTM C156).....<0.55 kg m^2

** Low concrete or air temperatures and/or high relative humidity will extend the drying time.*

Appearance: KUREZ W VOX is a white, opaque liquid. After application, the film dries clear.

Heavy applications and/or prolonged exposure to moisture will cause the cured film to have a milky appearance.

PACKAGING

KUREZ W VOX is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Class A
AASHTO M 148, Type 1, Classes A & B
USDA and Canadian Food Inspection Agency

COVERAGE

	ft²/gal (m²/L)
Smooth Concrete:	300 (7.4)
Textured Concrete:	200 (4.9)

Coverage will vary depending on surface porosity and texture. AVOID EXCESSIVE BUILD-UP. THICKER APPLICATIONS MAY LEAD TO DISCOLORATION AND POOR PRODUCT PERFORMANCE.

DIRECTIONS FOR USE

Surface Preparation: This product is designed for use on fresh concrete only. The concrete surface should be finished to the desired texture before application of KUREZ W VOX.

Mixing: Agitate before using. Material may separate during long term storage. Mild agitation is recommended before usage.

Application: Apply at a uniform coverage by spray or roller application. Product may be sprayed with a hand held “pump-up” sprayer or with an airless industrial sprayer. If roller applied, use a short 3/8" (9.5 mm) nap sleeve.

Curing: For the best cure of freshly placed concrete, apply KUREZ W VOX as soon as possible after finishing operations, and/or immediately after the disappearance of the “sheen” of surface moisture.

CLEAN-UP

Clean tools and equipment with warm, soapy water before KUREZ W VOX dries.

REMOVAL

May be removed with EUCO CLEAN & STRIP and aggressive scrubbing. KUREZ W VOX may also be removed with careful use of high pressure water spray.

PRECAUTIONS/LIMITATIONS

- **Note:** this product utilizes wax as a curing medium. Application on smooth troweled concrete may result in significantly increased slipperiness.
- Do not allow containers of this product to freeze. Store between 50°F to 100°F (10°C to 38°C).
- For best application results, product temperature should be between 50°F to 100°F (10°C to 38°C) with ambient and surface temperatures between 45°F to 110°F (7°C to 45°C).
- This product should be completely removed before installation of adhesives, coatings, or other coverings.
- Do not use as bond breaker for tilt-up construction.
- Do not subject to rain or water for at least 12 hours after application.
- Not intended for use on architectural concrete panels unless complete removal is planned.
- Do not thin this product with water or other solvents.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSCURE WB 30 (C AND D)

WATER BASED RESIN CURING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

TAMMSCURE WB 30 is a water based dissipating curing compound that facilitates proper hydration of the concrete, then begins to break down upon exposure to traffic and UV light. After cleaning the concrete to completely remove TAMMSCURE WB 30, the surface is ready for the application of coverings, coatings, or sealers. TAMMSCURE WB 30C is an unpigmented formulation, and TAMMSCURE WB 30D contains a red fugitive dye.

FEATURES/BENEFITS

- Economical and convenient method of curing new concrete
- Use of this product ensures proper curing resulting in stronger, more wear resistant concrete
- Helps to minimize dusting
- Film breaks down when exposed to UV & traffic, making removal easier than non-dissipating products
- Available in a fugitive dye formulation

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time @ 73^{0}F (23^{0}C), 50% RH	1 to 2 hours
Foot Traffic	2 to 4 hours
Wheel Traffic	6 to 10 hours
VOC Content	255 g/L
Moisture Loss (ASTM C 156)	< 0.55 kg/m^2

PACKAGING

TAMMSCURE WB 30 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container.

SPECIFICATIONS/COMPLIANCES

ASTM C 309, Types 1 and 1-D, Classes A & B

AASHTO M 148, Types 1 and 1-D, Classes A & B

COVERAGE

200 to 400 ft^2/gal (4.9 to 9.8 m^2/L). The coverage rate will vary due to differences in concrete surface finish, with hard troweled finishes requiring the higher coverage rate. Apply evenly, as heavy or uneven application of TAMMSCURE WB 30 can cause yellowing and discoloration.

DIRECTIONS FOR USE

Surface Preparation: Use on freshly placed concrete as soon as possible after the concrete receives the final finishing, just as the water sheen disappears.

Mixing: Thoroughly mix at slow speed before use to ensure best results and ease of application.

Application: TAMMSCURE WB 30 should be applied with standard spray equipment. Small, hand operated units are adequate for small area applications, while power sprayers are recommended for mass concrete. When applying, coat uniformly and leave no gaps or overlapped areas.

CLEAN-UP

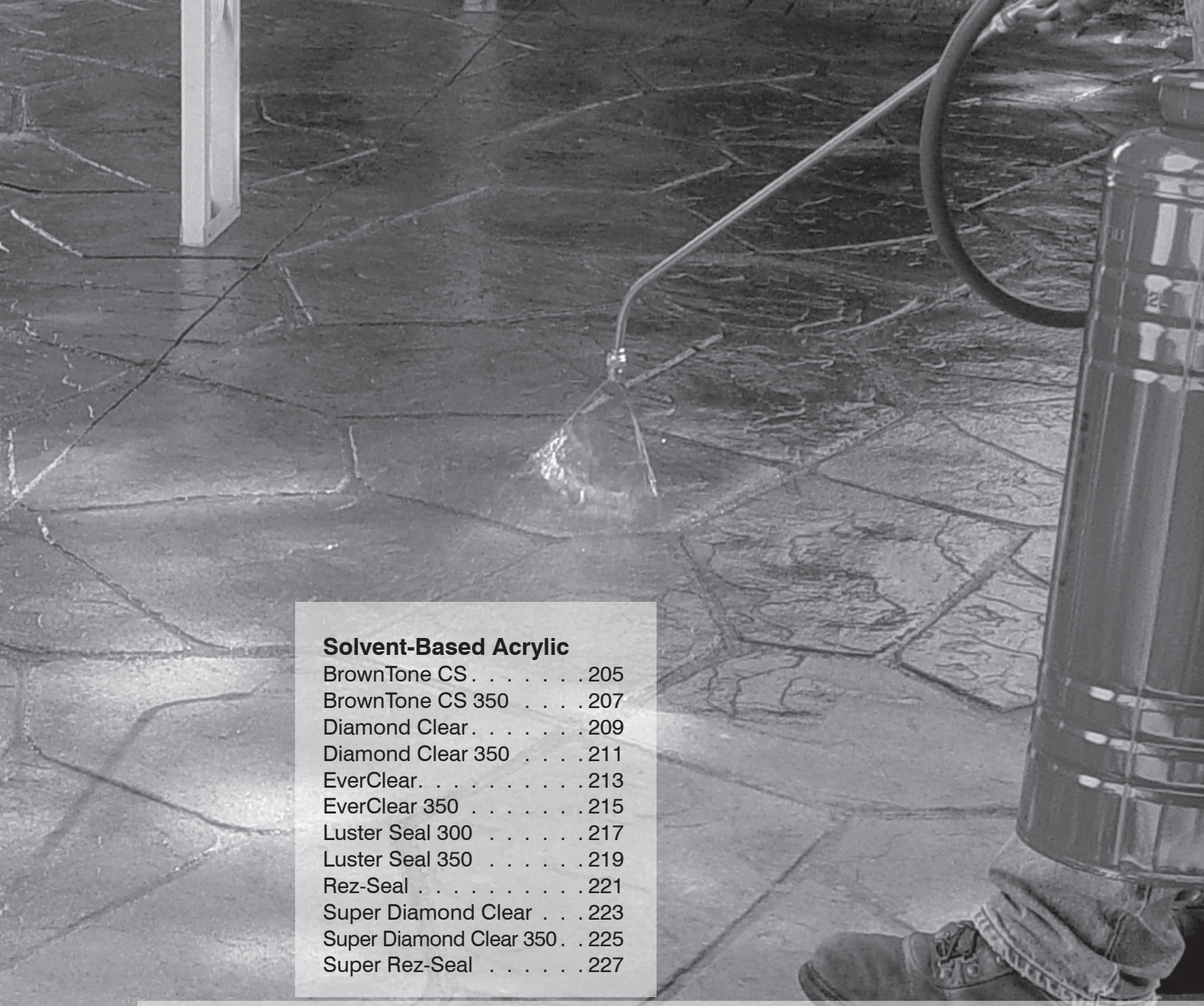
Dissipation and Cleaning: TAMMSCURE WB 30 will begin to break down approximately 4 to 6 weeks after application, but the exact time will vary depending on application rate, moisture level in the concrete, and the amount of exposure to UV light and construction traffic. Floors to receive coatings, sealers and coverings must be cleaned thoroughly to ensure complete removal of TAMMSCURE WB 30. The use of a heavy-duty floor cleaner such as EUCO CLEAN & STRIP is recommended to aid cleaning and removal. Scrub the floor with EUCO CLEAN & STRIP and stiff bristle scrubbers, then rinse well with clean water. After proper clean-up, follow the instructions of the sealer, coating or adhesive manufacturer for the recommended surface preparation for the particular product to be applied.

Clean tools and equipment with warm, soapy water before TAMMSCURE WB 30 dries.

PRECAUTIONS/LIMITATIONS

- Do not apply TAMMSCURE WB 30 to frozen or frosted surfaces, or when the temperature is expected to fall below 40°F (4°C) within 24 hours.
- Protect containers of this product from freezing.
- Do not dilute as the product is supplied at the proper consistency. Dilution will reduce curing efficiency.
- TAMMSCURE WB 30 will impart an amber color to concrete that may darken upon exposure to UV light.
- Complete removal of TAMMSCURE WB 30 will be required before application of sealers, coatings, or toppings.
- In all cases, consult the Material Safety Data Sheet before use.

Rev. 01.19



Solvent-Based Acrylic

CURING AND SEALING COMPOUNDS

Water-Based Acrylic

BROWNTONE CS

SOLVENT-BASED, PIGMENTED CURE & SEAL FOR EXPOSED AGGREGATE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

BROWNTONE CS is a solvent-based acrylic polymer blend that cures, seals, and enhances the appearance of exposed aggregate concrete surfaces. BROWNTONE CS is specially formulated with earth-toned pigments that highlight the natural color of the aggregate, making exposed aggregate surfaces look more even in color and richer in appearance. BROWNTONE CS also provides protection against the damaging effects of traffic, weather, and de-icing salts. Although especially formulated for exposed aggregate concrete, BROWNTONE CS can be used on any concrete surfaces - new or old - where a translucent brown tint is desired.

PRIMARY APPLICATIONS

- Curing and sealing exposed aggregate concrete

FEATURES/BENEFITS

- Enhances the natural tone and evens out the color of exposed aggregate concrete
- Cures and seals new concrete in one step
- Protects concrete from the damaging effects of weather and traffic
- Non-yellowing

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	4 hours minimum
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	653 g/L
SOLIDS CONTENT (BY WEIGHT)	26-28%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: BROWNTONE CS is a brown liquid in the container. After application and drying, BROWNTONE CS will greatly darken concrete to a brown color, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

BROWNTONE CS is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 450 (9.8 to 11.0)
Sealing or Re-sealing Existing/Cured Concrete	400 to 450 (9.8 to 11.0)	450 to 500 (11.0 to 12.3)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying BROWNTONE CS to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between BROWNTONE CS and the old sealer. When applying BROWNTONE CS to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying BROWNTONE CS, and the surface must be hard enough as to not be marred during product application.

Mixing: BROWNTONE CS should be gently agitated/mixed prior to use to distribute pigments evenly. If using Euco Grip with this sealer, please refer to that product's technical data sheet for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. BROWNTONE CS may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before BROWNTONE CS dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of BROWNTONE CS too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying BROWNTONE CS in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured BROWNTONE CS may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep BROWNTONE CS away from open flames, sparks, or other sources of ignition
- If using BROWNTONE CS indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting BROWNTONE CS application.
- BROWNTONE CS will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply BROWNTONE CS to frost-filled or frozen substrates
- Do not apply BROWNTONE CS in hot direct sunlight
- Do not apply BROWNTONE CS over bleed water or free-standing water
- Do not apply BROWNTONE CS if rain or heavy fog is expected within 12 hours of application
- Do not thin BROWNTONE CS
- BROWNTONE CS is not resistant to gasoline or other automotive fluids
- BROWNTONE CS will enhance color and darken substrates
- Excessive build up of BROWNTONE CS or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following BROWNTONE CS application, a test area is recommended to ensure compatibility of the adhesive with BROWNTONE CS
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

BROWNTONE CS 350

EXEMPT SOLVENT-BASED, PIGMENTED CURE & SEAL FOR EXPOSED AGGREGATE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

BROWNTONE CS 350 is an exempt solvent-based acrylic polymer blend that cures, seals, and enhances the appearance of exposed aggregate concrete surfaces. BROWNTONE CS 350 is specially formulated with earth-toned pigments that highlight the natural color of the aggregate, making exposed aggregate surfaces look more even in color and richer in appearance. BROWNTONE CS 350 also provides protection against the damaging effects of traffic, weather, and de-icing salts. Although especially formulated for exposed aggregate concrete, BROWNTONE CS 350 can be used on any concrete surfaces - new or old - where a translucent brown tint is desired.

PRIMARY APPLICATIONS

- Curing and sealing exposed aggregate concrete

FEATURES/BENEFITS

- Enhances the natural tone and evens out the color of exposed aggregate concrete
- Cures and seals new concrete in one step
- Protects concrete from the damaging effects of weather and traffic
- Non-yellowing
- Complies with VOC standards in the OTC and LADCO states

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	318 g/L
SOLIDS CONTENT (BY WEIGHT)	26-28%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: BROWNTONE CS 350 is a brown liquid in the container. After application and drying, BROWNTONE CS 350 will greatly darken concrete to a brown color, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

BROWNTONE CS 350 is packaged in 55 gal (208 L) drums and in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

Complies with Federal AIM Rule VOC regulations and with VOC standards in the OTC and LADCO states

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 450 (9.8 to 11.0)
Sealing or Re-sealing Existing/Cured Concrete	400 to 450 (9.8 to 11.0)	450 to 500 (11.0 to 12.3)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying BROWNTONE CS 350 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between BROWNTONE CS 350 and the old sealer. When applying BROWNTONE CS 350 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying BROWNTONE CS 350, and the surface must be hard enough as to not be marred during product application.

Mixing: BROWNTONE CS 350 should be gently agitated/mixed prior to use to distribute pigments evenly. If using Euco Grip with this sealer, please refer to that product's technical data sheet for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. BROWNTONE CS 350 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before BROWNTONE CS 350 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application. **Backrolling must immediately follow spraying, as this product dries quickly.**

Application of BROWNTONE CS 350 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying BROWNTONE CS 350 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured BROWNTONE CS 350 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep BROWNTONE CS 350 away from open flames, sparks, or other sources of ignition
- If using BROWNTONE CS 350 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting BROWNTONE CS 350 application.
- BROWNTONE CS 350 will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 85°F (4°C and 29°C)
- Do not apply BROWNTONE CS 350 to frost-filled or frozen substrates
- Do not apply BROWNTONE CS 350 in hot direct sunlight
- Do not apply BROWNTONE CS 350 over bleed water or free-standing water
- Do not apply BROWNTONE CS 350 if rain or heavy fog is expected within 12 hours of application
- Do not thin BROWNTONE CS 350
- BROWNTONE CS 350 is not resistant to gasoline or other automotive fluids
- BROWNTONE CS 350 will enhance color and darken substrates
- Excessive build up of BROWNTONE CS 350 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following BROWNTONE CS 350 application, a test area is recommended to ensure compatibility of the adhesive with BROWNTONE CS 350
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DIAMOND CLEAR

SOLVENT-BASED, NON-YELLOWING CURE & SEAL FOR FRESH CONCRETE

EUCLID CHEMICAL

DESCRIPTION

DIAMOND CLEAR is an acrylic copolymer curing and sealing compound designed to provide a quality cure and seal while assuring total resistance to yellowing from ultraviolet exposure. DIAMOND CLEAR is particularly well suited for curing and sealing fresh, exterior architectural concrete where membrane yellowing is undesirable. DIAMOND CLEAR can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Exterior or interior fresh concrete surfaces
- Walls and columns
- Parking garages
- Dry shake hardened floors

FEATURES/BENEFITS

- Seals all concrete surfaces providing a glossy appearance and easier clean-up
- Improves new concrete by promoting a proper cure and development of a strong surface
- Dustproofs concrete with a tough durable film
- Will not yellow under ultraviolet exposure
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	4 hours minimum
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	682 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: DIAMOND CLEAR is a clear liquid in the container. After application and drying, DIAMOND CLEAR will darken concrete, and will have a high-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

DIAMOND CLEAR is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying DIAMOND CLEAR to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between DIAMOND CLEAR and the old sealer. When applying DIAMOND CLEAR to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying DIAMOND CLEAR, and the surface must be hard enough as to not be marred during product application.

Mixing: DIAMOND CLEAR requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. DIAMOND CLEAR may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before DIAMOND CLEAR dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of DIAMOND CLEAR too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying DIAMOND CLEAR in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured DIAMOND CLEAR may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep DIAMOND CLEAR away from open flames, sparks, or other sources of ignition
- If using DIAMOND CLEAR indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting DIAMOND CLEAR application.
- DIAMOND CLEAR will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply DIAMOND CLEAR to frost-filled or frozen substrates
- Do not apply DIAMOND CLEAR in hot direct sunlight
- Do not apply DIAMOND CLEAR over bleed water or free-standing water
- Do not apply DIAMOND CLEAR if rain or heavy fog is expected within 12 hours of application
- Do not thin DIAMOND CLEAR
- DIAMOND CLEAR is not resistant to gasoline or other automotive fluids
- DIAMOND CLEAR will enhance color and darken substrates
- Excessive build up of DIAMOND CLEAR or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following DIAMOND CLEAR application, a test area is recommended to ensure compatibility of the adhesive with DIAMOND CLEAR
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DIAMOND CLEAR 350

EXEMPT SOLVENT-BASED, NON-YELLOWING CURE & SEAL FOR FRESH CONCRETE

EUCLID CHEMICAL

DESCRIPTION

DIAMOND CLEAR 350 is a low VOC, non-yellowing concrete curing compound and cure & seal used to cure and seal exterior concrete. DIAMOND CLEAR 350 is formulated with a unique exempt solvent blend that gives this product all the performance benefits of traditional solvent based curing and sealing products while ensuring compliance with VOC laws in regulated areas. DIAMOND CLEAR 350 can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Curing and sealing fresh concrete surfaces
- Walls and columns
- Parking garages
- Dry shake hardened floors

FEATURES/BENEFITS

- Maintains adequate moisture in new concrete so that strength and durability properties can develop
- Will not yellow under ultraviolet exposure
- Slower drying than products based on acetone or tert-butyl acetate exempt solvents
- Complies with VOC standards in the OTC and LADCO states
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	320 g/L
SOLIDS CONTENT (BY WEIGHT)	12-13%
MOISTURE LOSS ASTM C156	< 0.55 kg/m^2

Appearance: DIAMOND CLEAR 350 is a clear liquid in the container. After application and drying, DIAMOND CLEAR 350 will darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

DIAMOND CLEAR 350 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

Complies with Federal AIM rule VOC regulations, and with VOC standards in the OTC and LADCO states

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 450 (9.8 to 11.0)
Sealing or Re-sealing Existing/Cured Concrete	450 to 550 (11.0 to 13.5)	400 to 450 (9.8 to 11.0)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying DIAMOND CLEAR 350 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between DIAMOND CLEAR 350 and the old sealer. When applying DIAMOND CLEAR 350 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying DIAMOND CLEAR 350, and the surface must be hard enough as to not be marred during product application.

Mixing: DIAMOND CLEAR 350 requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. DIAMOND CLEAR 350 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before DIAMOND CLEAR 350 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application. **Backrolling must immediately follow spraying, as this product dries quickly.**

Application of DIAMOND CLEAR 350 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying DIAMOND CLEAR 350 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured DIAMOND CLEAR 350 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep DIAMOND CLEAR 350 away from open flames, sparks, or other sources of ignition
- If using DIAMOND CLEAR 350 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting DIAMOND CLEAR 350 application.
- Store DIAMOND CLEAR 350 indoors, protected from moisture, at temperatures above 40°F (4°C)
- DIAMOND CLEAR 350 should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 85°F (4°C and 29°C)
- Do not apply DIAMOND CLEAR 350 to frost-filled or frozen substrates
- Do not apply DIAMOND CLEAR 350 in hot direct sunlight
- Do not apply DIAMOND CLEAR 350 over bleed water or free-standing water
- Do not apply DIAMOND CLEAR 350 if rain or heavy fog is expected within 12 hours of application
- Do not thin DIAMOND CLEAR 350
- DIAMOND CLEAR 350 is not resistant to gasoline or other automotive fluids
- DIAMOND CLEAR 350 will enhance color and darken substrates
- Excessive build up of DIAMOND CLEAR 350 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following DIAMOND CLEAR 350 application, a test area is recommended to ensure compatibility of the adhesive with DIAMOND CLEAR 350
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EVERCLEAR

SOLVENT-BASED, PURE ACRYLIC CURE & SEAL FOR DECORATIVE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EVERCLEAR is a pure acrylic concrete cure & seal that protects and enhances the appearance of cured concrete with a clear, non-yellowing seal that is harder and more durable than standard cure and seal products. EVERCLEAR is specially formulated to enhance the color of stamped concrete, exposed aggregate, and colored concrete pavers, making these surfaces look deeper and richer in appearance. It provides protection against the damaging effects of traffic, weather, and de-icing salts while allowing the concrete to "breathe". EVERCLEAR gives concrete a satin finish that highlights the color and texture of surfaces without excessive shine. EVERCLEAR can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Stamped concrete
- Terrazzo
- Driveways and sidewalks
- Concrete pavers
- Decorative concrete overlays
- Acid-stained concrete

FEATURES/BENEFITS

- Pure acrylic formulation ensures no yellowing and a more breathable seal
- Enhances the appearance of colored concrete
- Harder and more durable than standard polymer blend cure & seals
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	4 hours minimum
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	681 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: EVERCLEAR is a clear liquid in the container. After application and drying, EVERCLEAR will greatly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

EVERCLEAR is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying EVERCLEAR to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between EVERCLEAR and the old sealer. When applying EVERCLEAR to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying EVERCLEAR, and the surface must be hard enough as to not be marred during product application.

Mixing: EVERCLEAR requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. EVERCLEAR may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before EVERCLEAR dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of EVERCLEAR too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying EVERCLEAR in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured EVERCLEAR may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep EVERCLEAR away from open flames, sparks, or other sources of ignition
- If using EVERCLEAR indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting EVERCLEAR application.
- EVERCLEAR will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply EVERCLEAR to frost-filled or frozen substrates
- Do not apply EVERCLEAR in hot direct sunlight
- Do not apply EVERCLEAR over bleed water or free-standing water
- Do not apply EVERCLEAR if rain or heavy fog is expected within 12 hours of application
- Do not thin EVERCLEAR
- EVERCLEAR is not resistant to gasoline or other automotive fluids
- EVERCLEAR will enhance color and darken substrates
- Excessive build up of EVERCLEAR or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following EVERCLEAR application, a test area is recommended to ensure compatibility of the adhesive with EVERCLEAR
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EVERCLEAR 350

EXEMPT SOLVENT-BASED, PURE ACRYLIC CURE & SEAL FOR DECORATIVE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EVERCLEAR 350 is a pure acrylic curing compound and cure & seal that protects and enhances the appearance of concrete with a clear, non-yellowing film that is more durable than standard polymer blend cure and seal products. EVERCLEAR 350 is formulated in an exempt solvent carrier formulated for use in VOC-regulated areas. EVERCLEAR 350 is designed to enhance the color of stamped concrete, exposed aggregate, and colored concrete pavers, making these surfaces look deeper and richer in appearance. It provides protection against the damaging effects of traffic, weather, and de-icing salts while allowing the concrete to "breathe". Applied properly, EVERCLEAR 350 will not turn white in the presence of moisture. EVERCLEAR 350 gives concrete a satin finish that highlights the color and texture of surfaces. EVERCLEAR 350 can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Stamped, colored concrete
- Terrazzo
- Driveways and sidewalks
- Acid-stained concrete
- Concrete pavers
- Decorative concrete overlays

FEATURES/BENEFITS

- Ensures proper curing of new concrete
- Pure acrylic polymer ensures no yellowing and a more breathable seal
- Enhances the appearance of colored concrete
- Harder and more durable than standard cure & seals
- Slower drying than products based on acetone or tert-butyl acetate exempt solvents
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	20 minutes
RECOAT	2 hours minimum
FOOT TRAFFIC	1 hour
WHEEL TRAFFIC	10 to 12 hours

VOC CONTENT	335 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: EVERCLEAR 350 is a clear liquid in the container. After application and drying, EVERCLEAR 350 will greatly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

EVERCLEAR 350 is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

Complies with Federal AIM rule VOC regulations, and with VOC standards in the OTC and LADCO states

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying EVERCLEAR 350 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between EVERCLEAR 350 and the old sealer. When applying EVERCLEAR 350 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying EVERCLEAR 350, and the surface must be hard enough as to not be marred during product application.

Mixing: EVERCLEAR 350 requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. EVERCLEAR 350 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before EVERCLEAR 350 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application. **Backrolling must immediately follow spraying, as this product dries quickly.**

Application of EVERCLEAR 350 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying EVERCLEAR 350 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured EVERCLEAR 350 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep EVERCLEAR 350 away from open flames, sparks, or other sources of ignition
- If using EVERCLEAR 350 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting EVERCLEAR 350 application.
- EVERCLEAR 350 will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 85°F (4°C and 29°C)
- Do not apply EVERCLEAR 350 to frost-filled or frozen substrates
- Do not apply EVERCLEAR 350 in hot direct sunlight
- Do not apply EVERCLEAR 350 over bleed water or free-standing water
- Do not apply EVERCLEAR 350 if rain or heavy fog is expected within 12 hours of application
- Do not thin EVERCLEAR 350
- EVERCLEAR 350 is not resistant to gasoline or other automotive fluids
- EVERCLEAR 350 will enhance color and darken substrates
- Excessive build up of EVERCLEAR 350 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following EVERCLEAR 350 application, a test area is recommended to ensure compatibility of the adhesive with EVERCLEAR 350
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

LUSTER SEAL 300

SOLVENT-BASED, PURE ACRYLIC CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

LUSTER SEAL 300 is a pure acrylic concrete cure & seal that protects and enhances the appearance of cured concrete with a clear, non-yellowing seal that is harder and more durable than standard cure and seal products. LUSTER SEAL 300 is specially formulated to enhance the color of stamped concrete, exposed aggregate, and colored concrete pavers, making these surfaces look deeper and richer in appearance. It provides protection against the damaging effects of traffic, weather, and de-icing salts. LUSTER SEAL 300 gives concrete a satin finish that highlights the color and texture of surfaces without excessive shine. LUSTER SEAL 300 can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Stamped concrete
- Terrazzo
- Driveways and sidewalks
- Concrete pavers
- Decorative concrete overlays
- Acid-stained concrete

FEATURES/BENEFITS

- Advanced acrylic formulation ensures no yellowing and a more durable seal
- Enhances the appearance of colored concrete
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	4 hours minimum
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	681 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: LUSTER SEAL 300 is a clear liquid in the container. After application and drying, LUSTER SEAL 300 will greatly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

LUSTER SEAL 300 is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying LUSTER SEAL 300 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between LUSTER SEAL 300 and the old sealer. When applying LUSTER SEAL 300 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying LUSTER SEAL 300, and the surface must be hard enough as to not be marred during product application.

Mixing: LUSTER SEAL 300 requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. LUSTER SEAL 300 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before LUSTER SEAL 300 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of LUSTER SEAL 300 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying LUSTER SEAL 300 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured LUSTER SEAL 300 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep LUSTER SEAL 300 away from open flames, sparks, or other sources of ignition
- If using LUSTER SEAL 300 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting LUSTER SEAL 300 application.
- LUSTER SEAL 300 will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply LUSTER SEAL 300 to frost-filled or frozen substrates
- Do not apply LUSTER SEAL 300 in hot direct sunlight
- Do not apply LUSTER SEAL 300 over bleed water or free-standing water
- Do not apply LUSTER SEAL 300 if rain or heavy fog is expected within 12 hours of application
- Do not thin LUSTER SEAL 300
- LUSTER SEAL 300 is not resistant to gasoline or other automotive fluids
- LUSTER SEAL 300 will enhance color and darken substrates
- Excessive build up of LUSTER SEAL 300 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following LUSTER SEAL 300 application, a test area is recommended to ensure compatibility of the adhesive with LUSTER SEAL 300
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

LUSTER SEAL 350

EXEMPT SOLVENT-BASED, PURE ACRYLIC CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

LUSTER SEAL 350 is an acrylic curing compound and cure & seal that protects and enhances the appearance of concrete with a clear, non-yellowing film that is more durable than standard polymer blend cure and seal products. LUSTER SEAL 350 is formulated in an exempt solvent carrier formulated for use in VOC-regulated areas. LUSTER SEAL 350 is designed to enhance the color of stamped concrete, exposed aggregate, and colored concrete pavers, making these surfaces look deeper and richer in appearance. It provides protection against the damaging effects of traffic, weather, and de-icing salts. Applied properly, LUSTER SEAL 350 will not turn white in the presence of moisture. LUSTER SEAL 350 gives concrete a satin finish that highlights the color and texture of surfaces. LUSTER SEAL 350 can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Stamped, colored concrete
- Terrazzo
- Driveways and sidewalks
- Acid-stained concrete
- Concrete pavers
- Decorative concrete overlays

FEATURES/BENEFITS

- Ensures proper curing of new concrete
- Pure acrylic polymer ensures no yellowing and a more durable seal
- Enhances the appearance of colored concrete
- Slower drying than products based on acetone or tert-butyl acetate exempt solvents
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	20 minutes
RECOAT	2 hours minimum
FOOT TRAFFIC	1 hour
WHEEL TRAFFIC	10 to 12 hours

VOC CONTENT	335 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: LUSTER SEAL 350 is a clear liquid in the container. After application and drying, LUSTER SEAL 350 will greatly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

LUSTER SEAL 350 is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying LUSTER SEAL 350 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between LUSTER SEAL 350 and the old sealer. When applying LUSTER SEAL 350 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying LUSTER SEAL 350, and the surface must be hard enough as to not be marred during product application.

Mixing: LUSTER SEAL 350 requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. LUSTER SEAL 350 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before LUSTER SEAL 350 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application. **Backrolling must immediately follow spraying, as this product dries quickly.**

Application of LUSTER SEAL 350 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying LUSTER SEAL 350 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured LUSTER SEAL 350 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep LUSTER SEAL 350 away from open flames, sparks, or other sources of ignition
- If using LUSTER SEAL 350 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting LUSTER SEAL 350 application.
- LUSTER SEAL 350 will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 85°F (4°C and 29°C)
- Do not apply LUSTER SEAL 350 to frost-filled or frozen substrates
- Do not apply LUSTER SEAL 350 in hot direct sunlight
- Do not apply LUSTER SEAL 350 over bleed water or free-standing water
- Do not apply LUSTER SEAL 350 if rain or heavy fog is expected within 12 hours of application
- Do not thin LUSTER SEAL 350
- LUSTER SEAL 350 is not resistant to gasoline or other automotive fluids
- LUSTER SEAL 350 will enhance color and darken substrates
- Excessive build up of LUSTER SEAL 350 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following LUSTER SEAL 350 application, a test area is recommended to ensure compatibility of the adhesive with LUSTER SEAL 350
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

REZ-SEAL

SOLVENT-BASED CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

REZ-SEAL is an acrylic polymer curing and sealing compound that cures and seals new concrete, providing for proper cement hydration and development of strength and durability.

PRIMARY APPLICATIONS

- Industrial floor slabs
- Parking garages
- Exterior pavements
- Walls and columns
- Dry shake floors
- Concrete toppings

FEATURES/BENEFITS

- Provides a transparent curing film for new concrete
- Seals new concrete surfaces providing a glossy appearance
- Helps strengthen new concrete by promoting proper cement hydration

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	685 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: REZ-SEAL is a clear liquid in the container. After application and drying, REZ-SEAL will darken concrete, and will have a medium-gloss finish. This product may yellow when exposed to sunlight or interior UV light. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

REZ-SEAL is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class C

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 350 (7.4 to 8.6)	350 to 400 (8.6 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	350 to 400 (8.6 to 9.8)	350 to 400 (8.6 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying REZ-SEAL to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between REZ-SEAL and the old sealer. When applying REZ-SEAL to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying REZ-SEAL, and the surface must be hard enough as to not be marred during product application.

Mixing: REZ-SEAL requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. REZ-SEAL may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before REZ-SEAL dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of REZ-SEAL too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying REZ-SEAL in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured REZ-SEAL may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep REZ-SEAL away from open flames, sparks, or other sources of ignition
- If using REZ-SEAL indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting REZ-SEAL application.
- REZ-SEAL will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply REZ-SEAL to frost-filled or frozen substrates
- Do not apply REZ-SEAL in hot direct sunlight
- Do not apply REZ-SEAL over bleed water or free-standing water
- Do not apply REZ-SEAL if rain or heavy fog is expected within 12 hours of application
- Do not thin REZ-SEAL
- REZ-SEAL is not resistant to gasoline or other automotive fluids
- REZ-SEAL may discolor/yellow when exposed to sunlight or interior UV light
- REZ-SEAL will enhance color and darken substrates
- Excessive build up of REZ-SEAL or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following REZ-SEAL application, a test area is recommended to ensure compatibility of the adhesive with REZ-SEAL
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

SUPER DIAMOND CLEAR

SOLVENT-BASED, HIGH-SOLIDS, NON-YELLOWING CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SUPER DIAMOND CLEAR is a solvent-based curing and sealing compound specially designed to cure new concrete, assuring proper cement hydration and strength gain, while providing a non-yellowing seal to protect and enhance the appearance of concrete. SUPER DIAMOND CLEAR is particularly suited for curing and sealing exterior architectural concrete, where membrane yellowing is undesirable. SUPER DIAMOND CLEAR can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Driveways & exterior pavements
- Walls and columns
- Exposed aggregate
- Dry shake floors
- Curing and sealing decorative concrete

FEATURES/BENEFITS

- Helps promote development of concrete strength and durability through proper curing
- Enhances color and provides gloss to the surface
- Will not yellow under ultraviolet exposure
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	648 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: SUPER DIAMOND CLEAR is a clear liquid in the container. After application and drying, SUPER DIAMOND CLEAR will greatly darken concrete, and will have a high-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

SUPER DIAMOND CLEAR is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 450 (9.8 to 11.0)
Sealing or Re-sealing Existing/Cured Concrete	400 to 450 (9.8 to 11.0)	450 to 550 (11.0 to 13.5)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying SUPER DIAMOND CLEAR to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between SUPER DIAMOND CLEAR and the old sealer. When applying SUPER DIAMOND CLEAR to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying SUPER DIAMOND CLEAR, and the surface must be hard enough as to not be marred during product application.

Mixing: SUPER DIAMOND CLEAR requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. SUPER DIAMOND CLEAR may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before SUPER DIAMOND CLEAR dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of SUPER DIAMOND CLEAR too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying SUPER DIAMOND CLEAR in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured SUPER DIAMOND CLEAR may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep SUPER DIAMOND CLEAR away from open flames, sparks, or other sources of ignition
- If using SUPER DIAMOND CLEAR indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting SUPER DIAMOND CLEAR application.
- SUPER DIAMOND CLEAR will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply SUPER DIAMOND CLEAR to frost-filled or frozen substrates
- Do not apply SUPER DIAMOND CLEAR in hot direct sunlight
- Do not apply SUPER DIAMOND CLEAR over bleed water or free-standing water
- Do not apply SUPER DIAMOND CLEAR if rain or heavy fog is expected within 12 hours of application
- Do not thin SUPER DIAMOND CLEAR
- SUPER DIAMOND CLEAR is not resistant to gasoline or other automotive fluids
- SUPER DIAMOND CLEAR will enhance color and darken substrates
- Excessive build up of SUPER DIAMOND CLEAR or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following SUPER DIAMOND CLEAR application, a test area is recommended to ensure compatibility of the adhesive with SUPER DIAMOND CLEAR
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

SUPER DIAMOND CLEAR 350

EXEMPT SOLVENT-BASED, HIGH-SOLIDS, NON-YELLOWING CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SUPER DIAMOND CLEAR 350 is a state-of-the-art concrete curing compound and cure & seal specially designed with a high solids formulation to provide the most efficient moisture retention for proper cement hydration and strength gain, as well as protection from liquids, weathering, and abrasion. SUPER DIAMOND CLEAR 350 is particularly well suited for exterior architectural concrete where membrane yellowing is undesirable. It is formulated with a unique exempt solvent blend that gives this product all the performance benefits of traditional solvent-based curing and sealing products while ensuring compliance with VOC laws in regulated areas. SUPER DIAMOND CLEAR 350 can be tinted with Euclid Universal Color Packs, which are available in 33 standard colors.

PRIMARY APPLICATIONS

- Driveways & exterior pavements
- Exposed aggregate
- Dry shake floors
- Curing and sealing decorative concrete

FEATURES/BENEFITS

- Enhances color and gives a glossy appearance
- Provides proper curing to new concrete
- Will not yellow under ultraviolet exposure
- Can be tinted with Euclid Universal Color Packs to even out variegated concrete surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	350 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: SUPER DIAMOND CLEAR 350 is a clear liquid in the container. After application and drying, SUPER DIAMOND CLEAR 350 will greatly darken concrete, and will have a high-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

SUPER DIAMOND CLEAR 350 is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

Complies with Federal AIM rule VOC regulations, and with VOC standards in the OTC and LADCO states

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 450 (9.8 to 11.0)
Sealing or Re-sealing Existing/Cured Concrete	450 to 550 (11.0 to 13.5)	400 to 450 (9.8 to 11.0)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying SUPER DIAMOND CLEAR 350 to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between SUPER DIAMOND CLEAR 350 and the old sealer. When applying SUPER DIAMOND CLEAR 350 to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying SUPER DIAMOND CLEAR 350, and the surface must be hard enough as to not be marred during product application.

Mixing: SUPER DIAMOND CLEAR 350 requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. SUPER DIAMOND CLEAR 350 may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before SUPER DIAMOND CLEAR 350 dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application. **Backrolling must immediately follow spraying, as this product dries quickly.**

Application of SUPER DIAMOND CLEAR 350 too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying SUPER DIAMOND CLEAR 350 in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured SUPER DIAMOND CLEAR 350 may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep SUPER DIAMOND CLEAR 350 away from open flames, sparks, or other sources of ignition
- If using SUPER DIAMOND CLEAR 350 indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting SUPER DIAMOND CLEAR 350 application.
- SUPER DIAMOND CLEAR 350 will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 85°F (4°C and 29°C)
- Do not apply SUPER DIAMOND CLEAR 350 to frost-filled or frozen substrates
- Do not apply SUPER DIAMOND CLEAR 350 in hot direct sunlight
- Do not apply SUPER DIAMOND CLEAR 350 over bleed water or free-standing water
- Do not apply SUPER DIAMOND CLEAR 350 if rain or heavy fog is expected within 12 hours of application
- Do not thin SUPER DIAMOND CLEAR 350
- SUPER DIAMOND CLEAR 350 is not resistant to gasoline or other automotive fluids
- SUPER DIAMOND CLEAR 350 will enhance color and darken substrates
- Excessive build up of SUPER DIAMOND CLEAR 350 or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following SUPER DIAMOND CLEAR 350 application, a test area is recommended to ensure compatibility of the adhesive with SUPER DIAMOND CLEAR 350
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

SUPER REZ-SEAL

SOLVENT-BASED, HIGH-SOLIDS CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SUPER REZ-SEAL is a high-solids acrylic polymer curing and sealing compound that cures and seals new concrete, providing for proper cement hydration and strength gain, as well as protection from water ingress and abrasive traffic. The high-solids formulation provides increased coverage and a more durable seal.

PRIMARY APPLICATIONS

- Industrial floor slabs
- Parking garages
- Dry shake floors
- Concrete floor toppings

FEATURES/BENEFITS

- High solids content for increased coverage and curing efficiency
- Seals all concrete surfaces - old or new - providing glossy appearance and easier clean-up
- Increases durability of new concrete by promoting a proper cure

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRY TO TOUCH	< 1 hour
RECOAT	2 hours minimum
FOOT TRAFFIC	2 to 4 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	649 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: SUPER REZ-SEAL is a clear liquid in the container. After application and drying, SUPER REZ-SEAL will greatly darken concrete, and will have a high-gloss finish. This product may yellow when exposed to sunlight or interior UV light. A small test area is strongly recommended to confirm appearance prior to beginning full application.

***Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

SUPER REZ-SEAL is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails

SHELF LIFE

3 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class C

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	400 to 450 (9.8 to 11.0)	450 to 500 (11.0 to 12.3)
Sealing or Re-sealing Existing/Cured Concrete	400 to 450 (9.8 to 11.0)	450 to 500 (11.0 to 12.3)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying SUPER REZ-SEAL to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between SUPER REZ-SEAL and the old sealer. When applying SUPER REZ-SEAL to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying SUPER REZ-SEAL, and the surface must be hard enough as to not be marred during product application.

Mixing: SUPER REZ-SEAL requires no pre-blending prior to use. If using Euclid Universal Color Packs or Euco Grip with this sealer, please refer to those products' technical data sheets for mixing instructions.

Application: Apply at the recommended coverage rate using an industrial, solvent-resistant pump-up sprayer with a high-solids nozzle and a short-nap, solvent-resistant roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. SUPER REZ-SEAL may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before SUPER REZ-SEAL dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 12 hours after application.

Application of SUPER REZ-SEAL too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying SUPER REZ-SEAL in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with EUCO SOLVENT, xylene/xylol, or acetone (always follow package directions and warning labels) immediately following use. Clean drips and overspray with one of the above solvents while still wet. Run cleaning solvent through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Dried, cured SUPER REZ-SEAL may be removed with a strong solvent such as EUCO SOLVENT, xylene/xylol, or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that can also be used to remove this product. Alternatively, the product can be removed by sandblasting or by other similar mechanical means.

PRECAUTIONS/LIMITATIONS

- Keep SUPER REZ-SEAL away from open flames, sparks, or other sources of ignition
- If using SUPER REZ-SEAL indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting SUPER REZ-SEAL application.
- SUPER REZ-SEAL will not freeze in storage, but should be allowed to reach at least 50°F (10°C) before use
- Surface and ambient temperature during coating applications should be between 40°F and 90°F (4°C and 32°C)
- Do not apply SUPER REZ-SEAL to frost-filled or frozen substrates
- Do not apply SUPER REZ-SEAL in hot direct sunlight
- Do not apply SUPER REZ-SEAL over bleed water or free-standing water
- Do not apply SUPER REZ-SEAL if rain or heavy fog is expected within 12 hours of application
- Do not thin SUPER REZ-SEAL
- SUPER REZ-SEAL is not resistant to gasoline or other automotive fluids
- SUPER REZ-SEAL may discolor/yellow when exposed to sunlight or interior UV light
- SUPER REZ-SEAL will enhance color and darken substrates
- Excessive build up of SUPER REZ-SEAL or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following SUPER REZ-SEAL application, a test area is recommended to ensure compatibility of the adhesive with SUPER REZ-SEAL
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

AQUA-CURE VOX

WATER-BASED, LOW ODOR CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

AQUA-CURE VOX is a water-based acrylic polymer curing and sealing compound. AQUA-CURE VOX is suitable for use over new and old concrete and performs well on both interior and exterior surfaces. It enables fresh concrete to maintain adequate moisture, seals the surface, and provides an attractive sheen.

PRIMARY APPLICATIONS

- Hospitals
- Exterior concrete
- Walls
- Industrial floors
- Basements & footings
- Interior & exterior concrete surfaces
- Pavements

FEATURES/BENEFITS

- Forms an efficient moisture barrier for optimum curing of concrete
- Seals concrete surfaces to protect against the effects of weathering
- Increases durability by promoting proper cement hydration
- Helps prevent dusting of new concrete
- Dries to a clear transparent film that resists yellowing under exterior or ultraviolet exposure
- Gives an alternative to solvent-based materials where fumes may be objectionable, undesirable, or non-compliant
- Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	1 to 2 hours
RECOAT	2 to 4 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	183 g/L
SOLIDS CONTENT (BY WEIGHT)	16%
MOISTURE LOSS ASTM C156	< 0.55 kg/m^2

Appearance: AQUA-CURE VOX is a milky white liquid in the container. After application and drying, AQUA-CURE VOX will slightly darken concrete, and will have a low-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

AQUA-CURE VOX is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

Canadian Food Inspection Agency compliant

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	200 to 300 (4.9 to 7.4)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	250 to 350 (6.1 to 8.6)	350 to 450 (8.6 to 11.0)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying AQUA-CURE VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between AQUA-CURE VOX and the old sealer. When applying AQUA-CURE VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying AQUA-CURE VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: AQUA-CURE VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like AQUA-CURE VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. AQUA-CURE VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before AQUA-CURE VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of AQUA-CURE VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying AQUA-CURE VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried AQUA-CURE VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store AQUA-CURE VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply AQUA-CURE VOX to frost-filled or frozen substrates
- Do not apply AQUA-CURE VOX in hot direct sunlight
- Do not apply AQUA-CURE VOX over bleed water or free-standing water
- Do not apply AQUA-CURE VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin AQUA-CURE VOX
- AQUA-CURE VOX is not resistant to gasoline or other automotive fluids
- AQUA-CURE VOX will enhance color and darken substrates
- Excessive build up of AQUA-CURE VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following AQUA-CURE VOX application, a test area is recommended to ensure compatibility of the adhesive with AQUA-CURE VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

BROWNTONE VOX

WATER-BASED, PIGMENTED CURE & SEAL FOR EXPOSED AGGREGATE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

BROWNTONE VOX is a water-based sealer that enhances the appearance of exposed aggregate and other decorative concrete surfaces. BROWNTONE VOX is formulated with earth-toned pigments that especially highlight the natural color of exposed aggregate surfaces, making them look more even in color and richer in appearance. BROWNTONE VOX also provides protection against the damaging effects of daily traffic and weather. Although specifically formulated for exposed aggregate concrete, BROWNTONE VOX can be used on any concrete surfaces - new or old - where a translucent brown tint is desired.

PRIMARY APPLICATIONS

- Exposed aggregate concrete
- Concrete pavers
- Colored and stamped concrete

FEATURES/BENEFITS

- Enhances the natural tone and evens out the color of exposed aggregate and decorative concrete
- Protects concrete from the damaging effects of weather and traffic
- Non-yellowing
- Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	< 1 hour
RECOAT	4 to 24 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	92 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: BROWNTONE VOX is a brown liquid in the container. After application and drying, BROWNTONE VOX will darken concrete to a brown color, and will have a low-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

BROWNTONE VOX is packaged in 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	300 to 400 (7.4 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying BROWNTONE VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between BROWNTONE VOX and the old sealer. When applying BROWNTONE VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying BROWNTONE VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: BROWNTONE VOX should be gently agitated/mixed prior to use to distribute pigments evenly. Euclid Chemical water-based cure & seals, like BROWNTONE VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. BROWNTONE VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before BROWNTONE VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of BROWNTONE VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying BROWNTONE VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried BROWNTONE VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store BROWNTONE VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply BROWNTONE VOX to frost-filled or frozen substrates
- Do not apply BROWNTONE VOX in hot direct sunlight
- Do not apply BROWNTONE VOX over bleed water or free-standing water
- Do not apply BROWNTONE VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin BROWNTONE VOX
- BROWNTONE VOX is not resistant to gasoline or other automotive fluids
- BROWNTONE VOX will enhance color and darken substrates
- Excessive build up of BROWNTONE VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following BROWNTONE VOX application, a test area is recommended to ensure compatibility of the adhesive with BROWNTONE VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DIAMOND CLEAR VOX

WATER-BASED, NON-YELLOWING CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

DIAMOND CLEAR VOX is a VOC compliant, water-based acrylic curing and sealing compound. This product provides a quality cure to freshly placed interior or exterior concrete while assuring total resistance to yellowing from ultraviolet exposure. DIAMOND CLEAR VOX promotes proper hydration of cement in new concrete by preventing rapid loss of moisture. Used as a sealer, DIAMOND CLEAR VOX helps concrete repel water and gives surfaces a semi-gloss appearance.

PRIMARY APPLICATIONS

- Curing and sealing new concrete where a non-yellowing, semi-gloss finish is desired
- Commercial buildings

FEATURES/BENEFITS

- Very low odor
- Perfect for interior or exterior projects
- Can contribute to LEED points
- Non-yellowing formula
- Monolithic membrane for great curing properties

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	1 hour
RECOAT	2 to 4 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	91 g/L
SOLIDS CONTENT (BY WEIGHT)	14%
MOISTURE LOSS ASTM C156	< 0.55 kg/m^2

Appearance: DIAMOND CLEAR VOX is a milky white liquid in the container. After application and drying, DIAMOND CLEAR VOX will slightly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

DIAMOND CLEAR VOX is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	200 to 300 (4.9 to 7.4)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	350 to 450 (8.6 to 11.0)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying DIAMOND CLEAR VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between DIAMOND CLEAR VOX and the old sealer. When applying DIAMOND CLEAR VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying DIAMOND CLEAR VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: DIAMOND CLEAR VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like DIAMOND CLEAR VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. DIAMOND CLEAR VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before DIAMOND CLEAR VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of DIAMOND CLEAR VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying DIAMOND CLEAR VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried DIAMOND CLEAR VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store DIAMOND CLEAR VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DIAMOND CLEAR VOX to frost-filled or frozen substrates
- Do not apply DIAMOND CLEAR VOX in hot direct sunlight
- Do not apply DIAMOND CLEAR VOX over bleed water or free-standing water
- Do not apply DIAMOND CLEAR VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin DIAMOND CLEAR VOX
- DIAMOND CLEAR VOX is not resistant to gasoline or other automotive fluids
- DIAMOND CLEAR VOX will enhance color and darken substrates
- Excessive build up of DIAMOND CLEAR VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following DIAMOND CLEAR VOX application, a test area is recommended to ensure compatibility of the adhesive with DIAMOND CLEAR VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EUCOCURE VOX

WATER-BASED, ECONOMICAL CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EUCOCURE VOX is an economical water-based acrylic curing and sealing compound. This product assists in maintaining adequate moisture content in new concrete so that desired properties can develop. The acrylic seal provided by EUCOCURE VOX provides moderate protection against water penetration and gives the concrete a low-sheen appearance.

PRIMARY APPLICATIONS

- Curing and sealing concrete
- Interior and exterior applications

FEATURES/BENEFITS

- Low odor
- Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	1 hour
RECOAT	2 to 4 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	123 g/L
SOLIDS CONTENT (BY WEIGHT)	15%
MOISTURE LOSS ASTM C156	< 0.55 kg/m^2

Appearance: EUCOCURE VOX is a milky white liquid in the container. After application and drying, EUCOCURE VOX will slightly darken concrete, and will have a low-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

EUCOCURE VOX is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Classes A & B

AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	200 to 300 (4.9 to 7.4)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	350 to 450 (8.6 to 11.0)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying EUCOCURE VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between EUCOCURE VOX and the old sealer. When applying EUCOCURE VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying EUCOCURE VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: EUCOCURE VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like EUCOCURE VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. EUCOCURE VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before EUCOCURE VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of EUCOCURE VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying EUCOCURE VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried EUCOCURE VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store EUCOCURE VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply EUCOCURE VOX to frost-filled or frozen substrates
- Do not apply EUCOCURE VOX in hot direct sunlight
- Do not apply EUCOCURE VOX over bleed water or free-standing water
- Do not apply EUCOCURE VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin EUCOCURE VOX
- EUCOCURE VOX is not resistant to gasoline or other automotive fluids
- EUCOCURE VOX will enhance color and darken substrates
- Excessive build up of EUCOCURE VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following EUCOCURE VOX application, a test area is recommended to ensure compatibility of the adhesive with EUCOCURE VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

EVERCLEAR VOX

WATER-BASED, PURE ACRYLIC CURE & SEAL FOR DECORATIVE CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EVERCLEAR VOX is a water-based, pure acrylic sealer for concrete with excellent blush resistance and total resistance to yellowing from UV exposure. This sealer imparts an attractive sheen and protection to all concrete surfaces, and is especially suited for decorative concrete. EVERCLEAR VOX is formulated to be compliant with all VOC regulations in the United States and Canada, and its low odor makes it usable indoors or out. EVERCLEAR VOX dries to a clear, medium-gloss finish, but a higher gloss can be achieved with additional coats.

PRIMARY APPLICATIONS

- Concrete driveways, sidewalks, floors
- Stamped, stenciled, colored, acid stained concrete
- Concrete pavers and precast units
- Cultured stone
- Terrazzo

FEATURES/BENEFITS

- Non-yellowing, medium-gloss sealer provides protection and improved appearance to concrete
- Low odor
- Complies with all U.S. EPA and local VOC regulations, including OTC, LADCO, Maricopa County, and California (CARB and SCAQMD)
- Excellent abrasion and blush resistance
- Can be applied over previous coats of sealers – water based and solvent based
- Excellent recoatability
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	< 1 hour
RECOAT	4 to 24 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	93 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.55 kg/m^2

Appearance: EVERCLEAR VOX is a milky white liquid in the container. After application and drying, EVERCLEAR VOX will slightly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

EVERCLEAR VOX is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C309, Type 1, Classes A & B
AASHTO Specification M 148, Type 1, Classes A & B

COVERAGE

Application ft^2/gal (m^2/L)	**First Coat**	**Second Coat (Optional)**
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	300 to 400 (7.4 to 9.8)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying EVERCLEAR VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between EVERCLEAR VOX and the old sealer. When applying EVERCLEAR VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying EVERCLEAR VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: EVERCLEAR VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like EVERCLEAR VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. EVERCLEAR VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before EVERCLEAR VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of EVERCLEAR VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying EVERCLEAR VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried EVERCLEAR VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store EVERCLEAR VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply EVERCLEAR VOX to frost-filled or frozen substrates
- Do not apply EVERCLEAR VOX in hot direct sunlight
- Do not apply EVERCLEAR VOX over bleed water or free-standing water
- Do not apply EVERCLEAR VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin EVERCLEAR VOX
- EVERCLEAR VOX is not resistant to gasoline or other automotive fluids
- EVERCLEAR VOX will enhance color and darken substrates
- Excessive build up of EVERCLEAR VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following EVERCLEAR VOX application, a test area is recommended to ensure compatibility of the adhesive with EVERCLEAR VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

SUPER AQUA-CURE VOX

WATER-BASED, HIGH-SOLIDS, LOW ODOR CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SUPER AQUA-CURE VOX is a high-solids, water-based acrylic polymer curing and sealing compound. SUPER AQUA-CURE VOX is suitable for use over new and old concrete and performs well on both interior and exterior surfaces. It enables fresh concrete to maintain adequate moisture, seals the surface, and provides an attractive sheen.

PRIMARY APPLICATIONS

- Parking decks
- Interior & exterior concrete
- Industrial floors
- Basements & footings
- Walls
- Pavements

FEATURES/BENEFITS

- Forms an efficient moisture barrier for optimum curing of concrete
- High solids content permits greater coverage and better durability
- Seals concrete surfaces to help protect against the effects of weathering
- Helps eliminate dusting of new concrete through good surface strength development
- Gives an alternative to solvent-based materials where fumes may be objectionable, undesirable, or non-compliant
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	1 to 2 hours
RECOAT	2 to 4 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	174 g/L
SOLIDS CONTENT (BY WEIGHT)	> 25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: SUPER AQUA-CURE VOX is a milky white liquid in the container. After application and drying, SUPER AQUA-CURE VOX will slightly darken concrete, and will have a medium-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

SUPER AQUA-CURE VOX is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class B
ASTM C309, Type 1, Classes A & B
AASHTO Specification M 148, Type 1, Classes A & B
Canadian Food Inspection Agency compliant

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	300 to 400 (7.4 to 9.8)	400 to 500 (9.8 to 12.3)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	400 to 500 (9.8 to 12.3)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying SUPER AQUA-CURE VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between SUPER AQUA-CURE VOX and the old sealer. When applying SUPER AQUA-CURE VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying SUPER AQUA-CURE VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: SUPER AQUA-CURE VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like SUPER AQUA-CURE VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. SUPER AQUA-CURE VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before SUPER AQUA-CURE VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of SUPER AQUA-CURE VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying SUPER AQUA-CURE VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

REMOVAL

Hardened/dried SUPER AQUA-CURE VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store SUPER AQUA-CURE VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply SUPER AQUA-CURE VOX to frost-filled or frozen substrates
- Do not apply SUPER AQUA-CURE VOX in hot direct sunlight
- Do not apply SUPER AQUA-CURE VOX over bleed water or free-standing water
- Do not apply SUPER AQUA-CURE VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin SUPER AQUA-CURE VOX
- SUPER AQUA-CURE VOX is not resistant to gasoline or other automotive fluids
- SUPER AQUA-CURE VOX will enhance color and darken substrates
- Excessive build up of SUPER AQUA-CURE VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following SUPER AQUA-CURE VOX application, a test area is recommended to ensure compatibility of the adhesive with SUPER AQUA-CURE VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

SUPER DIAMOND CLEAR VOX

WATER-BASED, HIGH-SOLIDS, NON-YELLOWING CURE & SEAL FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SUPER DIAMOND CLEAR VOX is a VOC compliant, water-based acrylic curing and sealing compound. This product provides a quality cure to freshly placed interior or exterior concrete while assuring total resistance to yellowing from ultraviolet exposure. SUPER DIAMOND CLEAR VOX helps control hydration of cement by preventing rapid loss of moisture through the surface of newly placed concrete. SUPER DIAMOND CLEAR VOX can also be used on existing concrete, giving surfaces a glossy appearance and a protective seal.

PRIMARY APPLICATIONS

- Curing and sealing concrete where a non-yellowing, glossy finish is desired

FEATURES/BENEFITS

- Very low odor
- Non-yellowing formula
- Excellent cure and durable seal
- Perfect for interior or exterior projects
- Subsequent flooring can be applied directly over product (see Precautions/Limitations section)
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	1 hour
RECOAT	2 to 4 hours
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	88 g/L
SOLIDS CONTENT (BY WEIGHT)	25%
MOISTURE LOSS ASTM C156	< 0.40 kg/m^2

Appearance: SUPER DIAMOND CLEAR VOX is a milky white liquid in the container. After application and drying, SUPER DIAMOND CLEAR VOX will slightly darken concrete, and will have a medium to high-gloss finish. A small test area is strongly recommended to confirm appearance prior to beginning full application.

*Lower concrete temperatures, lower ambient temperatures, higher relative humidity, or a combination of the above will extend drying times.

PACKAGING

SUPER DIAMOND CLEAR VOX is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM C1315, Type 1, Class A
ASTM C309, Type 1, Classes A & B
AASHTO Specification M 148, Type 1, Classes A & B
Canadian MTQ

COVERAGE

Application ft^2/gal (m^2/L)	First Coat	Second Coat (Optional)
Curing & Sealing Fresh Concrete	200 to 300 (4.9 to 7.4)	300 to 400 (7.4 to 9.8)
Sealing or Re-sealing Existing/Cured Concrete	300 to 400 (7.4 to 9.8)	400 to 500 (9.8 to 12.3)

NOTE: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity. **Avoid excessive build-up of sealer, as this may cause discoloration and/or poor product performance.**

DIRECTIONS FOR USE

Surface Preparation: For existing concrete, the surface must be clean of any and all surface contaminants, and free of standing water. If applying SUPER DIAMOND CLEAR VOX to previously sealed concrete, call Euclid Chemical to check compatibility. If the chemical makeup of the previous sealer is unknown, a small test section is strongly recommended to check compatibility between SUPER DIAMOND CLEAR VOX and the old sealer. When applying SUPER DIAMOND CLEAR VOX to freshly poured concrete as a cure & seal, the surface bleed water must be allowed to evaporate prior to applying SUPER DIAMOND CLEAR VOX, and the surface must be hard enough as to not be marred during product application.

Mixing: SUPER DIAMOND CLEAR VOX requires no pre-blending prior to use. Euclid Chemical water-based cure & seals, like SUPER DIAMOND CLEAR VOX, are not compatible with Euclid Universal Color Packs or Euco Grip. If use of color or slip-resistant additive is desired, consider using a Euclid Chemical solvent-based cure & seal instead.

Application: Apply at the recommended coverage rate using an industrial pump-up sprayer with a high-solids nozzle and a short-nap roller. Apply sealer uniformly to the concrete using sprayer, then lightly backroll the sealer to ensure even coverage. Maintain a "wet edge" while spraying, and backroll over sprayer lap marks for best appearance. SUPER DIAMOND CLEAR VOX may be applied by roller alone, but extra care must be taken to ensure that the sealer is applied uniformly, and at the proper coverage rate. Re-distribute any puddles or runs before SUPER DIAMOND CLEAR VOX dries. Protect freshly coated surfaces from rain or heavy fog for a minimum of 24 hours after application.

Application of SUPER DIAMOND CLEAR VOX too heavily, in too many successive coats, or in multiple coats from re-sealing too frequently can cause failure to dry completely, bubbling, whitening, peeling, flaking, and ultimately, failure of the product. To prevent over-application, it is good practice to measure the area to be sealed and then measure the corresponding volume of product required based on the coverage rate. In addition, applying SUPER DIAMOND CLEAR VOX in hot weather/direct sunlight or onto a hot surface can cause bubbling.

For additional guidance in applying Euclid Chemical curing and sealing compounds, visit our website to see an instructional video on the procedure.

CLEAN-UP

Tools and equipment may be cleaned with warm, soapy water immediately following use. Clean drips and overspray with warm, soapy water while still wet. Run warm, soapy water through spray equipment to remove residual materials and prevent clogging of nozzle in future use. If not cleaned immediately, the sealer may leave an unwanted residue on painted surfaces, glass, or wood.

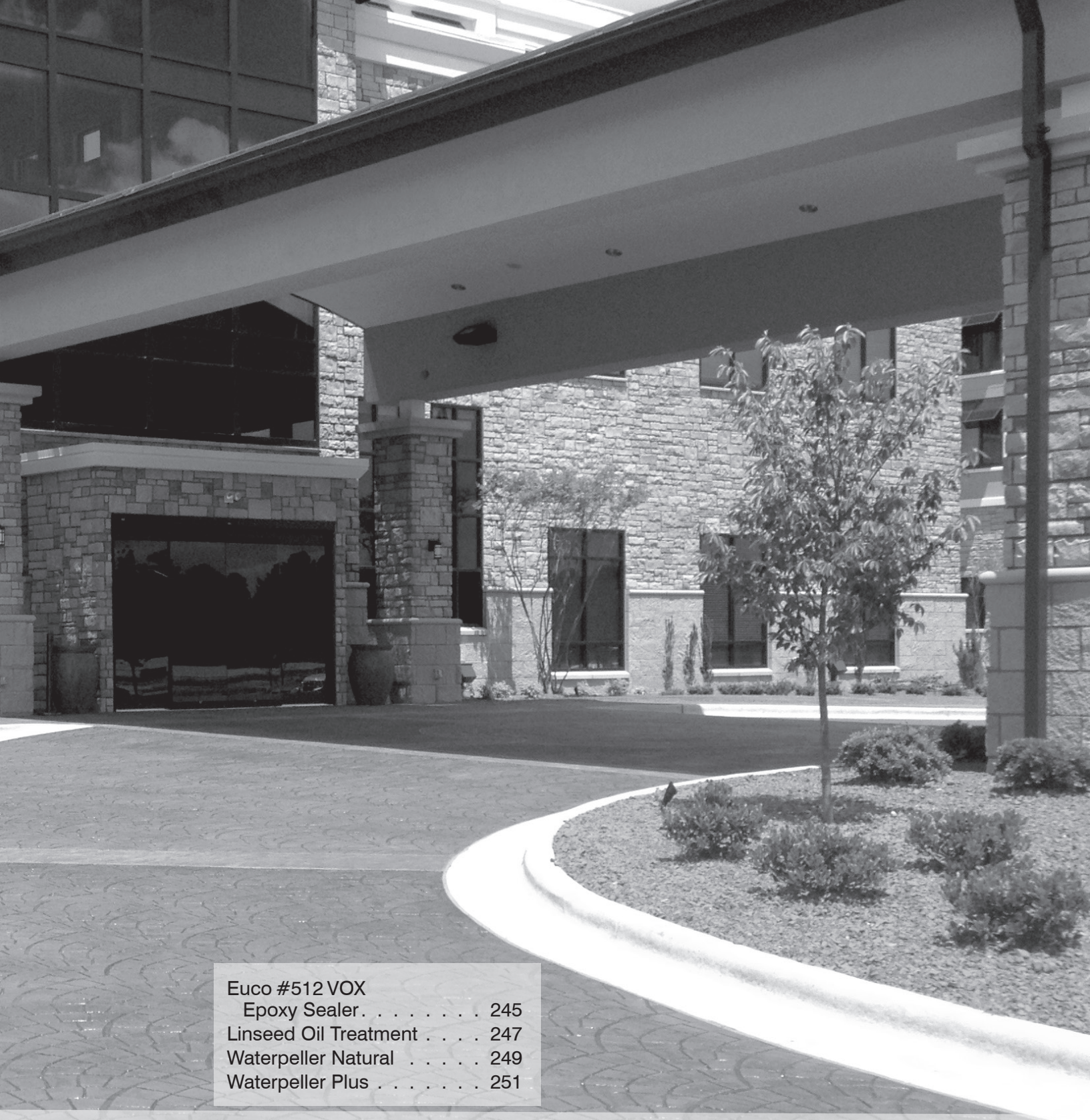
REMOVAL

Hardened/dried SUPER DIAMOND CLEAR VOX may be removed with a strong solvent such as xylene/xylol or MEK (always follow package directions and warning labels). EUCO CLEAN & STRIP is a citrus-based stripper that may also be used to remove this product. Alternatively, the product can be removed by sand blasting or other mechanical means.

PRECAUTIONS/LIMITATIONS

- Store SUPER DIAMOND CLEAR VOX indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 95°F (7°C and 35°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply SUPER DIAMOND CLEAR VOX to frost-filled or frozen substrates
- Do not apply SUPER DIAMOND CLEAR VOX in hot direct sunlight
- Do not apply SUPER DIAMOND CLEAR VOX over bleed water or free-standing water
- Do not apply SUPER DIAMOND CLEAR VOX if rain or heavy fog is expected within 24 hours of application
- Do not thin SUPER DIAMOND CLEAR VOX
- SUPER DIAMOND CLEAR VOX is not resistant to gasoline or other automotive fluids
- SUPER DIAMOND CLEAR VOX will enhance color and darken substrates
- Excessive build up of SUPER DIAMOND CLEAR VOX or puddling of the product during application can lead to failure to dry completely, bubbling, whitening, peeling and/or flaking of the sealer, and discoloration of the concrete
- Applying thicker than recommended, applying in cool/cold weather, prolonged exposure to moisture (high humidity, rain), or lack of air flow may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet
- When floor covering adhesives will be used following SUPER DIAMOND CLEAR VOX application, a test area is recommended to ensure compatibility of the adhesive with SUPER DIAMOND CLEAR VOX
- Application of a test area is strongly recommended to confirm final appearance and texture of the product with the end user
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19



SEALING COMPOUNDS

EUCO #512 VOX EPOXY SEALER

PENETRATING EPOXY SEALER

EUCLID CHEMICAL

DESCRIPTION

EUCO #512 VOX EPOXY SEALER is a two-component, water-based epoxy designed to penetrate and seal concrete surfaces. It fills surface pores resulting in improved wear resistance and lower absorption of water and salts. This system is supplied as a 20% solids formulation.

PRIMARY APPLICATIONS

- Parking decks
- Bridge decks
- Industrial floors
- Improve durability of dusting concrete surfaces
- Seals and protects concrete flooring in livestock pens and facilities

FEATURES/BENEFITS

- Improves wear and chemical resistance
- Reduces water and salt absorption
- Water-based, low odor
- Resistant to mild acids
- Can be used as a primer under epoxy or urethane coatings
- Resistant to gasoline and other solvent spills

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Suitable for foot traffic.....12 to 24 hours
Suitable for wheel traffic.....48 hours
Total Solids: 20%
Pot Life: .....4 hours
VOC Content. .....68 g/L

Appearance

EUCO #512 VOX EPOXY SEALER is a two-component epoxy system consisting of Part A and Part B. When first applied, it has a milky-white appearance. After curing, the product has a clear, smooth, semi-gloss appearance. Broadcast a light application of silica sand for a slip resistant finish.

PACKAGING

EUCO #512 VOX EPOXY SEALER is an epoxy system that utilizes a 2 to 1 ratio by volume - 2 gal (7.6 L) of Part A is mixed with 1 gal (3.8 L) of Part B. The units are pre-proportioned and packaged in 3 gal (11.4 L) kits.

SHELF LIFE

1 year in original, unopened containers

COVERAGE

	ft²/gal (m²/L)	
Concrete Surface	**First Coat**	**Second Coat**
Troweled Smooth	250 to 300 (6.1 to 7.4)	400 to 600 (9.8 to 14.7)
Broomed Textured	200 to 300 (4.9 to 7.4)	300 to 400 (7.4 to 9.8)

Material Requirements: A two coat application using a coverage rate of 200 ft²/gal (4.9 m²/L) will require approximately 5 gal (18.9 L) of material per 1000 ft² (92.9 m²) of area. Two coats are recommended for best results. The concrete surface texture greatly affects coverage rates and final appearance. Additionally, introducing silica sand for slip resistance will reduce coverage rates. Do not apply at less than 150 ft²/gal (3.7 m²/L). Apply a second coat if a thicker film is desired. Allow the first coat to dry tack free (but wait no more than 24 hours) before the second coat is applied.

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old and possess an open surface texture with all curing compounds and sealers removed. The concrete must be clean and sound. All oil, dirt, debris, paint and unsound concrete must be removed. Pressure washing and/or power scrubbing is recommended. The concrete surface can be damp or dry at the time of application of EUCO #512 VOX EPOXY SEALER. However, best results are obtained when the concrete is damp with all puddles removed.

Mixing: All materials should be in the proper temperature range of 60°F to 90°F (16°C to 32°C). Pre-mix Part A and add the entire container of Part B to all the Part A. Mix for 2 to 3 minutes using a mechanical (drill) mixer. The epoxy must be well mixed to ensure proper chemical reaction. After mixing, place immediately.

Placement: To apply the sealer to concrete, use a pump-up or airless sprayer for best results. A short nap roller or lambs wool applicator may also be used.

CLEAN-UP

Clean tools and equipment with warm, soapy water before the material dries.

PRECAUTIONS/LIMITATIONS

- Avoid application at air and floor temperatures below 50°F (10°C).
- Store indoors at 45°F to 110°F (7°C to 43°C).
- Follow application rates. Heavy applications will result in poor performance and a blotchy appearance.
- When using EUCO #512 VOX EPOXY SEALER as a primer, ensure adhesion and compatibility with the topcoat with a test section prior to use.
- Do not apply over curing membranes and sealers.
- Do not use on a surface previously treated with a liquid densifier, paint, or coating.
- Product may discolor or chalk with outdoor use.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

LINSEED OIL TREATMENT

CONCRETE SEALER

EUCLID CHEMICAL

DESCRIPTION

LINSEED OIL TREATMENT is a blend of boiled linseed oil and solvents. When applied in a thin coating to concrete surfaces, it protects them from winter damage due to freeze-thaw cycling and the effects of de-icing salts. Two applications of the oil compound will protect concrete and increase its resistance to winter damage.

PRIMARY APPLICATIONS

- Roads and bridge decks
- Parking ramps and curbs
- Sidewalks and driveways
- Concrete exposed to freeze-thaw cycles
- Exterior concrete surfaces

FEATURES/BENEFITS

- Deep penetration
- Salt protection
- Ease of application
- Rapid drying

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Suitable for exposure to traffic .....4 to 6 hours
Viscosity ..... 25 to 35 sec, #1 Zahn Cup
Percent solids by volume .....min 50%
Flash point ..... 116°F (47°C) TCC
VOC content.....389 g/L
Drying time: 2 hours, depending on humidity and other climatic conditions.

Appearance

LINSEED OIL TREATMENT is a light brown material that will slightly darken concrete.

PACKAGING

LINSEED OIL TREATMENT is packaged in 55 gal (208 L) drums, and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

- Linseed Oil portion meets ASTM D260
- Mineral Spirits portion meets ASTM D235

COVERAGE

Troweled Smooth	300 ft^2/gal (7.4 m^2/L)
Broomed Textured	400 ft^2/gal (9.8 m^2/L)

Material Requirements

A two coat application using a coverage rate of 300 ft^2/gal (7.4 m^2/L) for each coat will require approximately 6.7 gal (25.4 L) of material per 1000 ft^2 (92.9 m^2) of area.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be clean, dry and free of oil, dirt, loose scale and any other contaminants. Surfaces shall be swept clean by hand or by mechanical means. Remove oil and grease as completely as possible. New concrete should be at least twenty-eight days prior to application. New concrete cured with curing compounds or cure & seals should not be treated until such agents have completely weathered away or been removed by other means.

Mixing: LINSEED OIL TREATMENT is a one-component product that requires no pre-blending prior to placement. LINSEED OIL TREATMENT should be used directly from the container.

Placement: LINSEED OIL TREATMENT should be applied sparingly in two coats, at the average rate of 300 ft^2/gal (7.4 m^2/L) per coat. Application may be done by medium nap paint roller or industrial pump-up sprayer, using a wide fan nozzle. The second coat may be applied as soon as the first coat is dry to touch. In warm, dry weather this requires only one to four hours, but in cool weather, drying times up to 24 hours may be required. The preferred time for application is late afternoon so that when the concrete cools, the compound penetrates deep into the pores. Further treatment is recommended in form of a single application annually on surfaces subject to de-icing chemicals and wear.

CLEAN-UP

Clean equipment with mineral spirits.

PRECAUTIONS/LIMITATIONS

- Keep LINSEED OIL TREATMENT away from open flames, sparks, or other sources of ignition
- If using LINSEED OIL TREATMENT indoors, ensure adequate fresh air ventilation and block all HVAC ducts which may distribute solvent odor. Extinguish any pilot lights or other sources of ignition prior to starting LINSEED OIL TREATMENT application.
- All rags soaked with the compound must be stored in air-tight covered steel drums.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

WATERPELLER NATURAL

WATER-BASED, NATURAL LOOK SEALING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

WATERPELLER NATURAL is a ready-to-use, water-based, silicone sealing compound. WATERPELLER NATURAL forms a barrier with excellent water beading characteristics that protects stone, pavers, and concrete from weathering. WATERPELLER NATURAL is a breathable sealer that preserves the natural look of the surface, without adding gloss or excessive darkening of the substrate.

PRIMARY APPLICATIONS

- Natural stone
- Cultured stone
- Pavers & precast units
- Concrete
- Driveways & sidewalks
- Patios
- Salt water pool decks

FEATURES/BENEFITS

- Excellent water beading
- Natural look - very low gloss
- Breathable
- Good tire marking resistance
- Excellent blush resistance
- Non-yellowing
- Low odor
- Can contribute to LEED points (EQ Credit 4.2)

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	less than 1 hour
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	< 50 g/L
VISCOSITY	5 cp

Appearance: WATERPELLER NATURAL is a white, opaque liquid. After application and drying, the product is clear, and has a very low gloss/matte finish. WATERPELLER NATURAL may slightly darken some substrates. A small test area is strongly recommended to confirm appearance prior to beginning full application.

PACKAGING

WATERPELLER NATURAL is packaged in 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

1 year in original, unopened container

COVERAGE

First Coat: 150 to 350 ft^2/gal (3.7 to 8.6 m^2/L)
Second Coat: 200 to 400 ft^2/gal (4.9 to 9.8 m^2/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of curing compounds, sealers, grease, oil, dust, soil, and other contaminants. New concrete must be at least 7 days old. Prior to application, surface defects, voids, cracks, and joints should be properly treated and/or repaired. Allow surface to dry prior to application.

Mixing: Stir/agitate WATERPELLER NATURAL prior to application.

Application: Apply WATERPELLER NATURAL in an even, continuous film by sprayer, short nap roller, brush, or a combination of the above. Apply the second coat of WATERPELLER NATURAL using a "wet on wet" method, before the first coat has dried. Typically, the second coat will need to be applied within 10 to 20 minutes of applying the first coat, although drying times will vary with weather conditions. Re-distribute or soak up puddles of WATERPELLER NATURAL that have not penetrated into the substrate after 10 to 20 minutes. Allowing puddles to dry on surface may lead to higher gloss and tackiness in those areas.

CLEAN-UP

Clean tools and spray equipment immediately with water. Clean spills, drips, or overspray with water while still wet. Hardened/dried WATERPELLER NATURAL will require chemical stripping or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store WATERPELLER NATURAL indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 105°F (7°C and 41°C)
- Do not apply WATERPELLER NATURAL to frost-filled or frozen substrates
- Do not apply WATERPELLER NATURAL if rain or heavy fog is expected within 4 hours of application
- Material temperatures should be at least 50°F (10°C) and rising
- Do not thin WATERPELLER NATURAL
- Application of a test area is strongly recommended to confirm final appearance and texture of the sealer with the end user
- WATERPELLER NATURAL may slightly darken some substrates
- WATERPELLER NATURAL does not cure concrete, and is not intended for use as a curing compound
- Do not apply WATERPELLER NATURAL over existing curing compounds or curing & sealing compounds
- Do not allow puddles of WATERPELLER NATURAL to dry on surface during application. If puddles are allowed to dry, the affected areas may have a higher gloss and tackiness.
- Applying thicker than recommended, applying in cool/cold weather, or prolonged exposure to moisture (high humidity, rain, etc.) may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

WATERPELLER PLUS

WATER-BASED, COLOR-ENHANCING SEALING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

WATERPELLER PLUS is a ready-to-use, water-based, silicone sealing compound. WATERPELLER PLUS forms a barrier with excellent water beading characteristics that protects concrete, pavers, and stone from weathering. WATERPELLER PLUS is a breathable sealer that provides superior color enhancement of the surface, without adding gloss.

PRIMARY APPLICATIONS

- Concrete
- Driveways & sidewalks
- Patios
- Pavers & precast units
- Natural stone
- Salt water pool decks

FEATURES/BENEFITS

- Greatly enhances color of surface
- Excellent water beading
- Breathable
- Good tire marking resistance
- Excellent blush resistance
- Non-yellowing
- Low odor
- Can contribute to LEED points (EQ Credit 4.2)

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

DRYING TIME	less than 1 hour
FOOT TRAFFIC	4 to 6 hours
WHEEL TRAFFIC	6 to 10 hours

VOC CONTENT	< 50 g/L
VISCOSITY	5 cp

Appearance: WATERPELLER PLUS is a white, opaque liquid. After application and drying, the product is clear, and has a very low gloss/matte finish. WATERPELLER PLUS will enhance color and darken substrates. A small test area is strongly recommended to confirm appearance prior to beginning full application.

PACKAGING

WATERPELLER PLUS is packaged in 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

1 year in original, unopened container

COVERAGE

First Coat: 150 to 350 ft^2/gal (3.7 to 8.6 m^2/L)
Second Coat: 200 to 400 ft^2/gal (4.9 to 9.8 m^2/L)

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of curing compounds, sealers, grease, oil, dust, soil, and other contaminants. New concrete must be at least 7 days old. Prior to application, surface defects, voids, cracks, and joints should be properly treated and/or repaired. Allow surface to dry prior to application.

Mixing: Stir/agitate WATERPELLER PLUS prior to application.

Application: Apply WATERPELLER PLUS in an even, continuous film by sprayer, short nap roller, brush, or a combination of the above. Apply the second coat of WATERPELLER PLUS using a "wet on wet" method, before the first coat has dried. Typically, the second coat will need to be applied within 10 to 20 minutes of applying the first coat, although drying times will vary with weather conditions. Re-distribute or soak up puddles of WATERPELLER PLUS that have not penetrated into the substrate after 10 to 20 minutes. Allowing puddles to dry on surface may lead to higher gloss and tackiness in those areas.

CLEAN-UP

Clean tools and spray equipment immediately with water. Clean spills, drips, or overspray with water while still wet. Hardened/dried WATERPELLER PLUS will require chemical stripping or mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store WATERPELLER PLUS indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 45°F and 105°F (7°C and 41°C)
- Do not apply WATERPELLER PLUS to frost-filled or frozen substrates
- Do not apply WATERPELLER PLUS if rain or heavy fog is expected within 4 hours of application
- Material temperatures should be at least 50°F (10°C) and rising
- Do not thin WATERPELLER PLUS
- Application of a test area is strongly recommended to confirm final appearance and texture of the sealer with the end user
- WATERPELLER PLUS will enhance color and darken substrates. However, color enhancement may be lower when applying WATERPELLER PLUS to polymer/latex-modified cementitious mortars and overlays.
- WATERPELLER PLUS does not cure concrete, and is not intended for use as a curing compound
- Do not apply WATERPELLER PLUS over existing curing compounds or curing & sealing compounds
- Do not allow puddles of WATERPELLER PLUS to dry on surface during application. If puddles are allowed to dry, the affected areas may have a higher gloss and tackiness.
- Applying thicker than recommended, applying in cool/cold weather, or prolonged exposure to moisture (high humidity, rain, etc.) may result in the sealer remaining soft/wet/tacky for longer than the times found on this data sheet.
- In all cases, consult the product Safety Data Sheet before use

Rev. 01.19

DRY SHAKE FLOOR HARDENERS

DRY SHAKE FLOOR HARDENERS

APPLICATION INSTRUCTIONS

EUCLID CHEMICAL

INTRODUCTION

The following instructions detail the general installation of Euclid Chemical manufactured dry shake floor hardeners. The contractor and engineer are encouraged to consult the individual product's technical data sheet for additional suggestions for a successful installation.

These instructions are written specifically for EUCO-PLATE HD, DIAMOND-PLATE, EUCO FLAT-PLATE and SURFLEX products.

DIRECTIONS FOR USE

General Guidelines:

The following recommendations of ACI 302 and the following topics should be carefully reviewed prior to the pre-slab meeting.

1. "Dry Shake Floor Hardeners" are formulated to be applied to properly designed concrete. Conditions such as high winds, low humidity or hot or cold weather require mix design changes and adjustments in application and/or finishing procedures. In dry conditions, The Euclid Chemical Company recommends the use of EUCOBAR to help retain moisture.

2. A well compacted, leveled sub-grade is required. Follow recommendations of ACI 360, "Design of Slabs on Grade".

3. Concrete containing calcium chloride or admixtures with > 0.05% chloride ions should not be treated with metallic dry shakes. **Air content must be below 3% for all dry shakes.**

4. The correct number of bags should be positioned along the sides of the slab placement prior to the start of each days concreting operation.

5. Cement should be the only cementitious material present in the mix. The use of supplementary cementitious matierials, such as fly ash, slag, and microsilica can cause delayed bleeding and are not recommended for use with a dry shake hardener.

6. Note: Colored (pigmented) dry shakes require special attention to achieve a uniform color. If the job involves placement of a colored dry shake, the best appearance and performance results from:

- **a.** Delaying application of the shake as long as possible to the get the maximum color saturation at the surface of the slab.
- **b.** For maximum uniformity, apply the shake in two even passes.
- **c.** Do not burnish the final trowel. Hand troweling the final finish results in the best appearance.

IMPORTANT: *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your Euclid Chemical Company representative for additional information.*

Placing: The following directions and ACI 302 Guidelines should be carefully followed when applying the dry shake floor hardener. Apply the product on well designed, non-air entrained concrete mixes containing straight cement only at temperatures of between 60°F (16°C) and 80°F (27°C). If unusual conditions exist, such as direct hot sun, high winds, low humidity or cold weather, care should be taken to protect the slab during dry shake placement. Ideally, the building walls and roof are in place and the slab is protected from the direct environment. If this is not practical, the placement of wind screens protects the fresh, plastic base concrete from moisture evaporation. This allows an earlier than normal dry shake application. In dry conditions, use EUCOBAR (evaporation retardant and finishing aid) to help retain moisture.

Check the specifications for the amount of hardener required per square foot (square meter), then stack the correct number of bags along the placement area to be used that day. This is important because it gives the finishers a "gauge" for applying the correct amount of material. After the above conditions have been met, proceed with work in the following manner:

Single Pass Application: This method is used in fast track projects where the application of the shake hardener is applied directly behind the screeding process.

After the concrete is hand or mechanically screeded, use a bullfloat or highway straightedge to flatten out or remove any imperfections on the surface of the wet slab. Care should be taken not to "close" the surface of the concrete. This procedure is quickly followed by the application of the full amount of dry shake, by a mechanical spreader. Observe the dry shake, for the color will darken as the material absorbs the bleed water from the slab. Defer initial floating operations until the shake is completely "wetted out" and concrete reaches initial set.

Using a walk-behind or a ride-on power-trowel with float shoes, the shake hardener must be thoroughly worked into the slab. If not, the risk of delamination is higher. After the shake has been worked into the concrete and the slab has been given time to further "tighten up", begin final troweling procedures. Finish the slab according to specifications, paying close attention not to burnish the surface.

Dual Pass Application: This procedure is the best method to use when a colored shake hardener is applied for aesthetic purposes.

Screed and bullfloat as described above. Allow the slab to dry sufficiently to a point where the weight of the finishers and their power-trowel equipment do not leave any indentations. If any excess bleed water remains on the surface, use a rubber hose to drag the water from the concrete. Using float shoes, break the surface of the slab open and apply 2/3 of the desired amount of the shake hardener. Once the shake hardener has fully darkened due to the absorption of moisture, continue to floating process to work the shake hardener into the surface.

Once the first application of shake has been successfully worked into the slab, immediately place the remaining 1/3 of the material over the slab. Pay close attention to the areas where the color may not be prevalent from the first application. Continue the floating process to work the second application into the slab. After the slab has been given time to "tighten up", final finishing operations can begin as described above.

*****In both cases, pay strict attention to the slab edges because they will dry faster than the bulk of the slab.**

Curing: Cure the dry shake per instructions on the individual product's technical data sheet.

Iron Armored Joints: Metallic floor hardeners (EUCO-PLATE HD, DIAMOND-PLATE, EUCO FLAT-PLATE) may also be used as a mortar in constructing iron armored floor joints. These joints provide added wear resistance at joint edges increasing the serviceable life of the floor.

SURFLEX

NON-METALLIC FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

SURFLEX is a quartz-silica mixture of finely graded non-metallic aggregates, plasticizer and cement binder. It is an economical concrete floor hardener recommended for both interior and exterior use. It is particularly valuable because of its non-rusting characteristics when floors will be frequently wet. SURFLEX is available in several colors.

PRIMARY APPLICATIONS

- Lobbies and waiting rooms of commercial and public buildings
- Corridors and washrooms in institutional and public buildings
- Auto showrooms and service centers
- Factory and warehouse floors
- Commercial and industrial facilities
- Restaurants and dairies

FEATURES/BENEFITS

- Hardens concrete in one economical operation
- Use of hard and properly graded aggregates increases the wear resistance over plain concrete floors
- Ready-to-use factory blend eliminates messy and expensive job mixing and minimizes errors
- Non-rusting materials make it possible to use SURFLEX outdoors as well as indoors

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (25 mm) cubes
Mixed at 5.25 lb (2.38 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	10,000 (69.0)
28 days	12,000 (82.8)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.019” (0.48 mm)	0.042” (1.07 mm)
28 days	0.013” (0.33 mm)	0.036” (0.91 mm)

Appearance: SURFLEX is a free flowing powder as packaged. Standard colors are Natural (cement-colored), Light Gray, and Light Reflective. SURFLEX is also available made-to-order in Battleship Gray, Brown, Diamond Green, French Gray, Tan, Terra Cotta, and Tile Red. The final finish can be any texture normally achieved with concrete and should be specified by the owner. In addition, the joints of a SURFLEX floor can be filled with a matching color available in EUCO QWIKJOINT UVR polyurea joint filler.

PACKAGING

SURFLEX is packaged in 50 lb (22.7 kg) bags

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

SURFLEX may be applied at rates from 0.5 to 2.0 lb/ft^2 (2.4 to 9.8 kg/m^2). Greater application rates yield better total abrasion resistance, and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. If the job involves placement of SURFLEX, care should be taken with regards to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, and do not burnish trowel the floor. Best appearance is achieved by hand troweling the final finish.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener.
- Proper curing and sealing is required.
- Sufficient manpower is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if application of this product will be over air entrained concrete with more than 3% total air content.
- For additional abrasion resistance beyond that offered by SURFLEX, consider the use of EUCO-PLATE HD, an iron aggregate floor hardener.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SURFLEX E

NON-METALLIC, EMERY AGGREGATE FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

SURFLEX E is a mixture of cement and graded emery aggregates. It is a wear resistant concrete floor hardener recommended for both interior and exterior use, and is particularly valuable because of its non-rusting characteristics when floors will be frequently wet. SURFLEX E is only available in a natural cement gray color.

PRIMARY APPLICATIONS

- Lobbies and waiting rooms of commercial and public buildings
- Corridors and washrooms in institutional and public buildings
- Auto showrooms and service centers
- Factory and warehouse floors
- Commercial and industrial facilities
- Restaurants and dairies

FEATURES/BENEFITS

- Use of hard and properly graded emery aggregates increases the wear resistance over plain concrete floors
- Ready-to-use factory blend eliminates messy and expensive job mixing and minimizes errors
- Non-rusting materials make it possible to use SURFLEX E outdoors as well as indoors

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (50 mm) cubes
Mixed at 5.25 lb (2.38 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	12,000 (82.8)
28 days	15,000 (103.4)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.016” (0.41 mm)	0.033” (0.84 mm)
28 days	0.015” (0.38 mm)	0.027” (0.69 mm)

Appearance: SURFLEX E is a free flowing powder as packaged. It is available in a natural cement color only. The final finish can be any texture normally achieved with concrete and should be specified by the owner.

PACKAGING

SURFLEX E is packaged in 50 lb (22.7 kg) bags

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

SURFLEX E may be applied at rates from 1.0 to 2.5 lb/ft^2 (4.9 to 12.2 kg/m^2). Higher application rates yield better total abrasion resistance. Greater application rates may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound, cure and seal or water cure according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- For additional abrasion resistance beyond that offered by SURFLEX E consider the use of EUCO-PLATE HD an iron aggregate floor hardener.
- Sufficient manpower is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if applied over air entrained concrete with more than 3% total air content.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SURFLEX LIGHT REFLECTIVE

NON-METALLIC, LIGHT REFLECTIVE FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

SURFLEX LIGHT REFLECTIVE is a special formulation of finely graded silica aggregates, pigments, plasticizers and a cement binder. It is an economical concrete floor hardener recommended for both interior and exterior use. SURFLEX LIGHT REFLECTIVE has been designed to give increased reflectivity to improve lighting levels in combination with increased abrasion resistance.

PRIMARY APPLICATIONS

- Where floor surfaces will be subjected to a range of duty service
- Where light-reflective, non-metallic floors are specified
- Airline hangars
- Warehouses
- Factory floors
- Parking garages
- Auto service centers
- Commercial and industrial facilities

FEATURES/BENEFITS

- Provides reflectivity levels in excess of 60%
- Saves on initial facility investments possibly eliminating some light fixtures
- Capable of reducing annual energy costs by lowering electrical requirements due to improved lighting
- Excellent for both indoor and outdoor use
- Provides a dense, high-strength surface for easy maintenance

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (50 mm) cubes
Mixed at 5.13 lb (2.32 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	10,000 (69.0)
28 days	12,000 (82.8)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.019” (0.48 mm)	0.042” (1.07 mm)
28 days	0.013” (0.33 mm)	0.036” (0.91 mm)

Appearance: SURFLEX LIGHT REFLECTIVE is a free flowing powder as packaged. The color will appear darker after placement on the concrete surface, but will lighten substantially after curing and drying. The final finish can be any texture normally achieved with concrete and should be specified by the owner.

PACKAGING

SURFLEX LIGHT REFLECTIVE is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

COVERAGE

SURFLEX LIGHT REFLECTIVE may be applied at rates from 1.0 to 2.5 lb/ft^2 (4.9 to 12.2 kg/m^2). Greater application rates yield better total abrasion resistance, and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. If the job involves placement of SURFLEX LIGHT REFLECTIVE, care should be taken with regards to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, and do not burnish trowel the floor. Best appearance is achieved by hand troweling the final finish.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound, cure and seal, or water cure according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Proper curing and sealing is required.
- Sufficient manpower is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if applied over air entrained concrete with more than 3% total air content.
- Do not burnish trowel light reflective surface hardeners.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SURFLEX TR

NON-METALLIC, TRAP ROCK FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

SURFLEX TR is a special formulation of finely graded trap rock aggregates, plasticizers and a cement binder. It is an economical concrete floor hardener recommended for both interior and exterior use. SURFLEX TR has been designed to give increased abrasion resistance to both interior and exterior floors and slabs.

PRIMARY APPLICATIONS

- Loading docks
- High wear floors and aisleways
- Factory and warehouse floors
- Commercial and industrial facilities
- Restaurants and dairies

FEATURES/BENEFITS

- Use of hard and properly graded aggregates increases the wear resistance over plain concrete floors
- Ready-to-use factory blend eliminates messy and expensive job mixing and minimizes errors
- Non-rusting materials make it possible to use SURFLEX TR outdoors as well as indoors

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (50 mm) cubes
Mixed at 5.38 lb (2.44 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	10,000 (69.0)
28 days	13,000 (89.7)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.013” (0.33 mm)	0.035” (0.89 mm)
28 days	0.008” (0.20 mm)	0.032” (0.81 mm)

Appearance: SURFLEX TR is a free flowing powder as packaged. It is available in a natural cement color only. The final troweled appearance can be any texture consistent with that expected from concrete and should be specified by the owner.

PACKAGING

SURFLEX TR is packaged in 55 lb (24.9 kg) bags

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

SURFLEX TR may be applied at rates from 0.75 to 2.0 lb/ft^2 (3.7 to 9.8 kg/m^2). The higher the application rate the better total abrasion resistance. Greater application rates may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound, cure and seal, or water cure according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Interior concrete must be non air-entrained. For exterior, air-entrained concrete, contact The Euclid Chemical Company for special instructions.
- For additional abrasion resistance beyond that offered by SURFLEX TR consider the use of EUCO-PLATE, an iron aggregate floor hardener.
- Store in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO FLAT-PLATE

HEAVY DUTY, METALLIC FLOOR HARDENER FOR FLAT FLOORS F_F 40 AND GREATER

EUCLID CHEMICAL

DESCRIPTION

EUCO FLAT-PLATE is a specially formulated metallic floor hardener composed of a specially processed and graded iron aggregate, selected portland cement and plasticizing agents. This hardener is specifically designed to achieve high flatness numbers, F_F 40 and greater. EUCO FLAT-PLATE has been formulated to be applied at heavy application rates, up to 2.5 lb/ft² (12 kg/m²) using standard procedures, while maintaining a "window of finishability" long enough for the contractor to perform the restraightening and finishing operations necessary for high flatness floors.

PRIMARY APPLICATIONS

- F_F 40 and greater floors with high traffic patterns
- Narrow aisles in high bay facilities
- Autonomous Guided Vehicle (AGV) areas
- Warehouses
- Industrial floors
- Distribution centers

FEATURES/BENEFITS

- Designed to be used on ACI 302 Class 6 or greater floors requiring surface toughness with a flatness rating of F_F40 or greater
- Optimum consistency and gradation
- Flatness friendly for use by qualified finishers
- Virtually non-dusting surface

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109
2 in. (50 mm) cubes

	psi (MPa)
1 day	4,000 (27.6)
7 days	7,000 (48.3)
28 days	10,000 (69.0)

Appearance
EUCO FLAT-PLATE is packaged as a free flowing powder. The final finish can be any texture normally achievable with concrete and should be specified by the owner.

PACKAGING

EUCO FLAT-PLATE is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

COVERAGE

EUCO FLAT-PLATE may be applied at rates from 1.0 to 2.5 lb/ft² (4.9 to 12.2 kg/m²). Greater application rates yield better total abrasion resistance and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Armored Joints: EUCO FLAT-PLATE may also be used as a mortar to construct armored floor joints.

Application Tips: Screeding and straightening the slab before application of EUCO FLAT-PLATE may require the use of a highway straight-edge and/or use of a laser screed to meet the proper floor tolerances. Use of a highway straight-edge may be required after each application of EUCO FLAT-PLATE to ensure proper tolerances. A sample slab is recommended to demonstrate proper techniques for the particular mix design.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Sufficient labor is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if this product will be applied over air entrained concrete with more than 3% total air content.
- Not recommended for floors subjected to deicing salts, continuously wet or acidic/corrosive environments where chemicals may attack a cement-based material.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO-PLATE HD

HEAVY DUTY METALLIC FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

EUCO-PLATE HD is a dry shake, metallic floor hardener with graded iron aggregate in a high strength cementitious binder. Designed to be incorporated into fresh concrete slabs, EUCO-PLATE HD provides a dense, tough surface capable of withstanding the abrasion and impact loading of industrial and manufacturing facilities. EUCO-PLATE HD has been specially formulated to be applied at heavy application rates which exceed those of standard EUCO-PLATE or other first generation metallic hardeners. EUCO-PLATE HD is also used to construct iron armored joints to protect and reinforce joint shoulders in heavy traffic areas.

PRIMARY APPLICATIONS

- Industrial floors
- Loading docks
- Warehouses
- High traffic aisleways
- Processing plants
- Passenger and freight terminals
- Towveyors
- Distribution centers
- Iron armored joints

FEATURES/BENEFITS

- Iron aggregate is free of rust, oil, or other contaminants
- Virtually non-dusting in service
- Easy to clean and maintain
- Economical to own over the life of the floor
- Can be applied at coverage rates up to 3.0 lb/ft^2 (14.6 kg/m^2)
- Available in colors

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in.(50 mm) cubes mixed at 4.75 lb (2.16 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	10,000 (69.0)
28 days	12,000 (82.8)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.013” (0.33 mm)	0.040” (1.02 mm)
28 days	0.009” (0.23 mm)	0.025” (0.64 mm)

Appearance: EUCO-PLATE HD is a free flowing powder as packaged. Pigmented formulations will appear darker after placement. Standard colors are Natural (cement-colored), Light Gray, and Light Reflective. EUCO-PLATE HD is also available made-to-order in Battleship Gray, Brown, Diamond Green, French Gray, Tan, Terra Cotta, and Tile Red. The final finish can be any normally achieved with concrete and should be specified by the owner. In addition, the joints of the newly installed EUCO-PLATE HD floor can be filled with a matching color available in EUCO QWIKJOINT UVR polyurea joint filler.

PACKAGING

EUCO-PLATE HD is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

COVERAGE

EUCO-PLATE HD may be applied at rates from 1.5 to 3.0 lb/ft^2 (7.3 to 14.6 kg/m^2). Greater application rates yield better total abrasion resistance and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Armored Joints: EUCO-PLATE HD may also be used as a mortar to construct armored floor joints.

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. Care should be taken with regard to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, do not burnish trowel the floor. Best appearance is achieved by hand trowelling the final finish.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Proper curing and sealing is required.
- Curing with a sheet membrane (poly or burlene) is acceptable, however potential mottling problems may occur.
- Sufficient manpower is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if application of this product will be over air entrained concrete with more than 3% total air content.
- Not recommended for floors subjected to deicing salts, continuously wet environments or acids or other corrosive chemicals that may attack a cement based material. Use DIAMOND-PLATE for these applications.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO-PLATE HD LIGHT REFLECTIVE

HEAVY DUTY, LIGHT REFLECTIVE, METALLIC FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

EUCO-PLATE HD LIGHT REFLECTIVE is a dry shake, metallic floor hardener with graded iron aggregate in a high strength cementitious binder. Designed to be incorporated into the surface of fresh concrete slabs, EUCO-PLATE HD LIGHT REFLECTIVE provides a dense, tough surface capable of withstanding the abrasion and impact loading seen by floor slabs of numerous industrial and manufacturing facilities. EUCO-PLATE HD LIGHT REFLECTIVE has been specially formulated to give increased reflectivity to improve lighting levels in combination with increased abrasion resistance.

PRIMARY APPLICATIONS

- Industrial floors
- Loading docks
- Warehouses
- Main, high traffic aisleways
- Processing plants
- Passenger and freight terminals
- Towveyors
- Distribution centers
- Iron armored joints

FEATURES/BENEFITS

- Provides a high strength wearing surface
- Iron aggregate is free of rust, oil, and non-ferrous materials
- Can be applied at coverage rates up to 3.0 lb/ft² (14.6 kg/m²)
- Provides reflectivity levels in excess of 60%
- Capable of reducing annual energy costs with lowering of electrical requirements due to improved lighting

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (50 mm) cubes

	psi (MPa)
1 day	4,000 (27.6)
3 days	5,000 (34.5)
7 days	7,000 (48.3)
14 days	9,000 (62.1)
28 days	10,000 (69.0)

Appearance: EUCO-PLATE HD LIGHT REFLECTIVE is a free flowing powder as packaged. The final finish can be any texture normally achieved with concrete and should be specified by the owner. In addition, the joints of the newly installed EUCO-PLATE HD LIGHT REFLECTIVE floor can be filled with a matching color available in EUCO QWIKJOINT UVR polyurea joint filler.

PACKAGING

EUCO-PLATE HD LIGHT REFLECTIVE is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

COVERAGE

EUCO-PLATE HD LIGHT REFLECTIVE may be applied at rates from 1.5 to 3.0 lb/ft² (7.3 to 14.6 kg/m²). Greater application rates yield better total abrasion resistance, and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Armored Joints: EUCO-PLATE HD LIGHT REFLECTIVE may also be used as a mortar to construct armored floor joints.

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. Care should be taken with regard to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, do not burnish trowel the floor. Best appearance is achieved by hand trowelling the final finish.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Proper curing and sealing is required.
- Curing with a sheet membrane (poly or burlene) is acceptable, however there is the potential for mottling problems.
- Sufficient manpower is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if application of this product will be over air entrained concrete with more than 3% total air content.
- Do not burnish trowel light reflective surface hardeners.
- Not recommended for floors subjected to deicing salts, continuously wet or acidic/corrosive environments that may attack a cement based material. Use DIAMOND-PLATE LIGHT REFLECTIVE for these applications.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DIAMOND-PLATE

NON-OXIDIZING, HEAVY DUTY METALLIC FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

DIAMOND-PLATE is a metallic, dry shake floor hardener with graded, non-oxidizing metallic aggregate in a high strength cementitious binder. Designed to be incorporated into fresh concrete slabs, DIAMOND-PLATE provides a dense, tough surface capable of withstanding the abrasion and impact loading seen by floor slabs of numerous industrial and manufacturing facilities. DIAMOND-PLATE has been specially formulated with a non-rusting aggregate for increased abrasion resistance in areas subject to frequent moisture or water exposure. DIAMOND-PLATE can also be mixed in a mortar consistency and placed along joints to provide edge reinforcement.

PRIMARY APPLICATIONS

- Industrial floors
- Loading docks
- Warehouses
- Main, high traffic aisleways
- Processing plants
- Passenger and freight terminals
- Towveyors
- Distribution centers
- Joint shoulder reinforcement

FEATURES/BENEFITS

- Provides a high strength wearing surface in areas subject to constant or frequently wet conditions without oxidizing
- Metallic aggregate is free of rust, oil, or other contaminants
- Virtually non-dusting in service, easy to clean and maintain
- Can be applied at coverage rates up to 3.0 lb/ft^2 (14.6 kg/m^2)
- Available in 10 standard colors including a natural cement color

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (25 mm) cubes
Mixed at 4.50 lb (2.04 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	11,000 (75.9)
28 days	13,000 (89.7)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.013” (0.33 mm)	0.038” (0.97 mm)
28 days	0.012” (0.30 mm)	0.034” (0.86 mm)

Appearance: DIAMOND-PLATE is a free flowing powder as packaged. Standard colors are Natural (cement-colored), Light Gray, and Light Reflective. DIAMOND-PLATE is also available made-to-order in Battleship Gray, Brown, Diamond Green, French Gray, Tan, Terra Cotta, and Tile Red. The final finish can be any texture normally achieved with concrete and should be specified by the owner. In addition, the joints of the newly installed DIAMOND-PLATE floor can be filled with a matching color available in EUCO QWIKJOINT UVR polyurea joint filler.

PACKAGING

DIAMOND-PLATE is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

DIAMOND-PLATE may be applied at rates from 1.0 to 3.0 lb/ft^2 (4.9 to 14.6 kg/m^2). Greater application rates yield better total abrasion resistance, and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Armored Joints: DIAMOND-PLATE may also be used as a mortar in constructing armored floor joints.

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. Care should be taken with regard to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, do not burnish trowel the floor. Best appearance is achieved by hand trowelling the final finish.

Curing and Sealing: After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Proper curing and sealing is required.
- Curing with a sheet membrane (poly or burlene) is acceptable, however potential mottling problems may occur.
- Sufficient labor is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if applied over air entrained concrete with more than 3% total air content.
- Not recommended for floors subjected to acids or other corrosive chemicals that may attack a cement based material.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DIAMOND-PLATE LIGHT REFLECTIVE

NON-OXIDIZING, LIGHT REFLECTIVE, METALLIC FLOOR HARDENER

EUCLID CHEMICAL

DESCRIPTION

DIAMOND-PLATE LIGHT REFLECTIVE is a metallic, dry shake floor hardener with graded, non-oxidizing metallic aggregate in a high strength cementitious binder. Designed to be incorporated into fresh concrete slabs, DIAMOND-PLATE LIGHT REFLECTIVE provides a dense, tough surface capable of withstanding the abrasion and impact loading seen by floor slabs of numerous industrial and manufacturing facilities. DIAMOND-PLATE LIGHT REFLECTIVE has been specially formulated to give increased reflectivity and to improve lighting levels in combination with a non-rusting aggregate for increased abrasion resistance. DIAMOND-PLATE LIGHT REFLECTIVE can also be mixed into a mortar consistency and placed along joints to provide edge reinforcement.

PRIMARY APPLICATIONS

- Industrial floors
- Loading docks
- Warehouses
- Main, high traffic aisleways
- Processing plants
- Passenger and freight terminals
- Towveyors
- Distribution centers
- Joint shoulder reinforcement

FEATURES/BENEFITS

- Provides a high strength wearing surface in areas subject to constant or frequently wet conditions without oxidizing
- Metallic aggregate is free of rust, oil, or other contaminants
- Virtually non-dusting in service, easy to clean and maintain
- Capable of reducing annual energy costs with lowering of electrical requirements due to improved lighting
- Can be applied at coverage rates up to 3.0 lb/ft^2 (14.6 kg/m^2)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2 in. (25 mm) cubes
Mixed at 4.50 lb (2.04 kg) of water per 50 lb (22.7 kg) bag

	psi (MPa)
7 days	11,000 (75.9)
28 days	13,000 (89.7)

Relative Abrasion Resistance ASTM C 779

	Abrasion @ 30 min.	Abrasion @ 60 min.
7 days	0.013” (0.33 mm)	0.038” (0.97 mm)
28 days	0.012” (0.30 mm)	0.034” (0.86 mm)

Appearance: DIAMOND-PLATE LIGHT REFLECTIVE is a free flowing powder as packaged. The color will appear darker after placement on the concrete surface, but will lighten substantially after curing. The final finish can be any texture normally achieved with concrete and should be specified by the owner.

PACKAGING

DIAMOND-PLATE LIGHT REFLECTIVE is packaged in 50 lb (22.7 kg) bags with polyethylene liners for moisture protection.

SHELF LIFE

2 years in original, unopened package

COVERAGE

DIAMOND-PLATE LIGHT REFLECTIVE may be applied at rates from 1.0 to 3.0 lb/ft^2 (4.9 to 14.6 kg/m^2). Greater application rates yield better total abrasion resistance and may be used with special considerations. Contact your Euclid Chemical Company representative for recommended procedures.

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin **"Dry Shake Floor Hardeners - Application Instructions"**. The document offers instructions detailing the general installation of Euclid Chemical manufactured dry shake floor hardeners. **Note:** *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.*

Armored Joints- DIAMOND-PLATE LIGHT REFLECTIVE may also be used as a mortar in constructing armored floor joints.

Application Tips: Colored (pigmented) dry shakes require special attention for a uniform color. Care should be taken with regard to the following; delay application of the shake as long as possible to get the maximum color saturation at the surface of the slab, apply the shake as evenly as possible and in two applications for maximum uniformity, do not burnish trowel the floor. Best appearance is achieved by hand trowelling the final finish.

Curing and Sealing After finishing operations are complete and the surface will not be marred by foot traffic, apply a Euclid Chemical curing compound or cure and seal according to product instructions. To produce an exceptionally durable and dustproof surface, cure with a dissipating curing compound such as KUREZ DR VOX, then densify with EUCO DIAMOND HARD.

CLEAN-UP

Clean tools and equipment with soap and water before material hardens.

PRECAUTIONS/LIMITATIONS

- The use of supplementary cementitious materials are not recommended for use with a dry shake hardener
- Proper curing and sealing is required.
- Curing with a sheet membrane (poly or burlene) is acceptable, however potential mottling problems may occur.
- Sufficient labor is required to produce consistent results on large placements.
- **Important:** Air-entraining admixtures may complicate finishing operations and cause blistering. Contact The Euclid Chemical Company if the application of this product will be on air entrained concrete with more than 3% total air content.
- Do not burnish light reflective surface hardeners.
- Not recommended for floors subjected to acids or other corrosive chemicals that may attack a cement based material.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

Cementitious

GROUTS

Epoxy

CEMENTITIOUS GROUT

APPLICATION GUIDE

EUCLID CHEMICAL

The following instructions detail the general installation procedures for grouts manufactured by The Euclid Chemical Company. The contractor and engineer are encouraged to consult the individual product's technical data sheet regarding possible additional suggestions for successful installations.

Note: If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.

This guideline is written specifically for DRY PACK GROUT, EUCO PRE-CAST GROUT, HI-FLOW GROUT, NC GROUT, and NS GROUT.

General Guidelines

Careful preparation is a must for a successful grouting operation. Grouts generally work best at 50°F to 80°F (10°C to 27°C). Cold weather retards strength gain and set time. Hot weather accelerates setting time and causes premature drying of the grout. Provide heating or cooling, as necessary, to compensate for extremes in ambient temperatures and resulting variations in cure time.

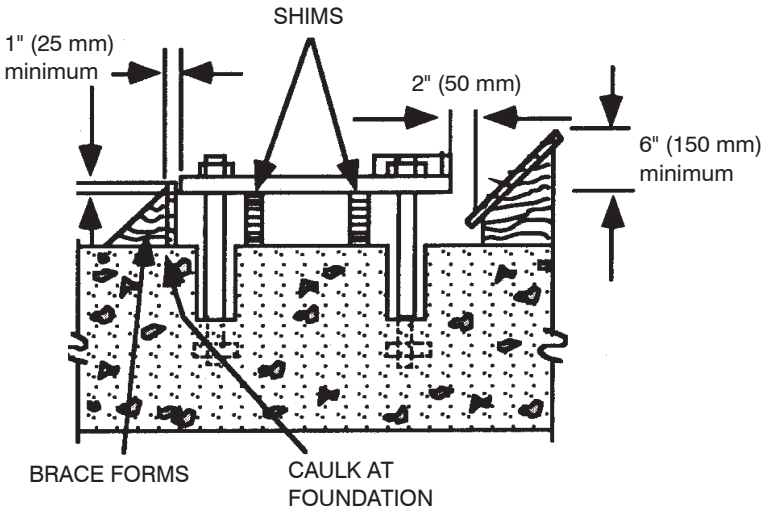
DIRECTIONS

Surface Preparation: Surfaces to be grouted and the underside of the baseplate should be clean and free from rust, grease, oil, laitance, and other contaminants. Concrete should be mechanically roughened to a Concrete Surface Profile (CSP) of 5-9 in accordance with ICRI 310.2R. Determine work schedule and plan for grout placement, then prepare strong, properly braced forms to retain the grout and provide relief holes, if needed. The concrete surface should be saturated with water and maintained in a saturated condition for a minimum of 24 hours before grouting. Remove all excess surface water immediately before grouting.

Forming: Forms should be rigid and sealed with caulk or sealant to prevent grout leakage. Forms should be coated with release agent but do not allow release agent to contact underside of the baseplate or the concrete surface.

Forms should extend at least 1" (2.5 cm) above the bottom of the baseplate on all sides. A headbox must be constructed on one side of the baseplate so that a pressure head can be developed. The headbox should begin 2" (5 cm) from the baseplate and slope away from the plate at approximately 45 degrees and provide a minimum grout head of 6" (15 cm). The headbox should be caulked/sealed to the form to generate the head pressure required to ensure proper grout flow. The form on the side opposite the headbox and forms parallel to grout flow should all be at least 1" (2.5 cm) from the plate edge. This allows air to vent during grout placement. Closer-fitting forms may cause air entrapment under the baseplate.

FIGURE 1 FORMING REQUIREMENTS



Mixing: Consult the technical data sheet for the correct amount of mixing water. Never exceed the maximum water content, as this will cause bleeding, segregation, and poor performance. Small quantities of grout may be mixed with a drill and paddle mixer. For large jobs, a mortar mixer can be used only if it provides high-shear mixing.

All materials should be in the proper temperature range of 50°F to 80°F (10°C to 27°C). Add the correct amount of clean, potable water to the mixing vessel and then add the dry grout. Mix for a minimum of 3 minutes. The flow of the grout should be measured with a flow cone and care taken to ensure the grout will not bleed with the amount of water that has been added. The mixed grout should be quickly transported to the headbox and placed immediately. (DRY PACK GROUT does not use a head box.) The amount of time the contractor has to place the grout varies from product to product. Consult the technical data sheet for typical setting times.

Do not add sand or cement to the grout since this may significantly change the grout's performance characteristics.

Grout Placement: Grouts should be placed quickly and continuously. Place grout from one side only, using the headbox, to assure complete filling of the space being grouted. Use a rod or strapping to assist in placement on large or difficult grouting configurations. Place grout only to the bottom edge of the baseplate.

Finishing and Curing: As soon as the sheen of water disappears and the grout has begun to stiffen, pond with water or cover with wet rags, burlap or plastic to prevent premature drying. The forms may be removed as soon as the grout has stiffened or set sufficiently to prevent sagging away from the bottom of the baseplate.

Cut back the shoulders of the grout to a 45 degree angle, sloping downward from the bottom of the baseplate to the foundation. Do not allow any excess grout to remain above the bottom edge of the baseplate or in an unchamfered shoulder. Finish the grout surface to the desired texture where required. Following cut back and finishing operations, apply two coats of a high solids curing compound to the grout. If a curing compound is not desired, keep all surfaces wet by sprinkling the surface with water then covering with wet burlap or polyethylene sheeting for a minimum of 72 hours.

Treatment of Shrinkage Cracks: Cracks in exposed grout (shoulders) typically do not propagate under the baseplate, and do not affect the vertical load-carrying capacity of the grout. However, if repair is desired, the surface of hairline cracks can be treated with a low-viscosity epoxy crack healer/sealer. Another acceptable option is to rout out and fill cracks by hand with a compatible grout.

PRECAUTIONS/LIMITATIONS

- Keep grout from freezing until it reaches a minimum strength of 4,000 psi (28 MPa).
- Proper curing is required.
- Do not add admixtures or fluidifiers, cement, or sand to the grout.
- Store bagged grout in a dry place.
- Do not use materials at temperatures that may cause premature freezing.
- When using in extreme conditions, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Employ cold weather or hot weather grout practices as the temperatures dictate.
- Do not use grouts as a topping or repair material.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DRY PACK GROUT

NON-SHRINK STRUCTURAL GROUT

EUCLID CHEMICAL

DESCRIPTION

DRY PACK GROUT is designed for use where high-strength, non- shrink characteristics are required. DRY PACK GROUT contains only natural aggregate and is designed to be mixed with minimum water for placement at a damp pack consistency where flowable, fluid or plastic grouts are not possible or desired.

PRIMARY APPLICATIONS

- Structural baseplates
- Equipment and machinery
- Precast elements

FEATURES/BENEFITS

- Extremely cohesive at damp pack consistency
- Non-staining and similar to concrete in appearance
- Contains no chloride based or corrosive ingredients
- High compressive strengths for maximum bearing capability
- Non-shrink for long term support

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength 2" (50 mm) cubes (ASTM C 109 Modified*)

Age	Strength
1 day	2,500 psi (17.2 MPa)
3 days	4,000 psi (27.6 MPa)
7 days	6,000 psi (41.4 MPa)
28 days	7,000 psi (48.3 MPa)

* See ASTM C1107 Section 11.5

Appearance

DRY PACK GROUT is a free-flowing powder designed to be mixed with a minimum amount of water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

PACKAGING

DRY PACK GROUT is packaged in 50 lb (22.7 kg) bags. When mixed with 0.55 to 0.70 gal (2.08 to 2.65 L) of water, the yield is 0.40 ft^3 (.011 m^3) of material.

SHELF LIFE

2 years in original, unopened package

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin "Cementitious Grout Application Guide." The document offers instructions detailing the general installation of cement-based grout products from The Euclid Chemical Company.

Note: If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.

Mixing: Water content will vary depending on temperature and relative humidity, but generally will fall between 0.55 and 0.70 gal (2.08 and 2.65L) per 50 lb (22.7 kg) bag. You must use a mechanical mixer when mixing DRY PACK GROUT.

Placement: Using a ramming device with a blunt end, pack the mixed grout into the void or space with sharp, quick blows. The use of hammers or mallets may also be helpful. Build up material until the space is full. Finish exposed edges as desired. Be careful during the packing process not to knock critical plates out of alignment.

Application: See the "Cementitious Grout Application Guide" for installation means and methods.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Keep grout from freezing until it reaches a minimum strength of 4,000 psi (27.6 MPa).
- Proper curing is required.
- Do not add admixtures or fluidifiers.
- Do not use material at temperatures that may cause premature freezing.
- Store product in a dry place.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO CABLE GROUT PTX

HIGH PERFORMANCE CABLE GROUT

EUCLID CHEMICAL

DESCRIPTION

EUCO CABLE GROUT PTX is formulated to produce a pumpable, non-shrink, high strength grout. It provides unparalleled corrosion protection for steel cables, anchorages and rods. EUCO CABLE GROUT PTX is extremely fluid, and cured grout is similar in appearance to concrete. EUCO CABLE GROUT PTX exhibits thixotropic properties defined in PTI specifications, and can be used to repair previously grouted cables.

PRIMARY APPLICATIONS

- Post-tensioned cables and ducts
- Grouting of tight clearances

FEATURES/BENEFITS

- Superior corrosion protection
- High fluidity for easy placement
- Non-shrink
- Exceptional strength
- Aggregate free

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT @ 1.5 gal/50 lb (5.7 L/22.7 kg) mix water (unless otherwise noted)
Flow Rate ASTM C 939 modified	9 to 20 seconds initial flow *9 to 30 seconds at 30 minutes
Initial Setting Time at 70°F (21°C) ASTM C 953	8 to 12 hours (depending on material and ambient temperature)
Compressive Strength ASTM C 942	7 days: > 3,000 psi (20.7 MPa) 28 days: > 7,000 psi (48.3 MPa)
Hardened Height Change ASTM C 1090	24 hours: 0.0% to 0.1% 28 days: 0.0% to 0.2%
Plastic Expansion ASTM C 940	0.0% to 2.0% for up to 3 hours
Wick Induced Bleed ASTM C 940 Modified according to C.4.4.6.1 of the PTI Guide Specification	0.0% at 5 minutes 0.0% at 3 hours
Schupack Pressure Bleed Test @1.5 gal/50 lb (5.7 L/22.7 kg) mix water	0.0% (5 minutes @ 100 psi)
Schupack Pressure Bleed Test @1.7 gal/50 lb (6.4 L/22.7 kg) mix water	0.0% (5 minutes @ 50 psi)
Chloride Permeability ASTM C 1202	28 days (30V for 6 hrs): < 2,500 coulombs

*Tested under laboratory conditions with a 30 second re-mix prior to measuring the flow.

EUCO CABLE GROUT PTX is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten up substantially as the grout cures, the grout may always appear somewhat darker than the surrounding concrete.

AVAILABILITY & SHELF LIFE

****EUCO CABLE GROUT PTX is Made To Order (MTO) and has a 10 day lead time.** It has a 6 month shelf life in the original, properly stored, unopened package.

PACKAGING/YIELD

EUCO CABLE GROUT PTX is packaged in 50 lb (22.7 kg) bags or pails and yields 0.54 ft^3 (0.015 m^3) of fluid grout when mixed with 1.5 gal (5.7 L) of potable water. Yield is 0.56 ft^3 (0.016 m^3) when mixed with 1.7 gal (6.4 L) of potable water.

DIRECTIONS FOR USE

If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Refer to the PTI Guide Specification for Post-Tensioned Structures for proper mixing, pumping and placement practices.

Mixing:

Consistency	**Estimated Water Content***
Fluid	1.5 to 1.7 gal/50 lb (5.7 to 6.4 L/22.7kg)
Flowable	1.3 to 1.5 gal/50 lb (4.9 to 5.7 L/22.7kg)

***** Do not add water in an amount that will cause bleeding. Do not add aggregate or cement to the grout since this action will change its precision grouting characteristics.

Curing and Sealing: Cure all exposed grout by wet curing for 24 hours, then with a high solids curing and sealing compound, such as Super Diamond Clear or Super Diamond Clear VOX.

PRECAUTIONS/LIMITATIONS

- To minimize bleeding in vertical applications greater than twenty feet, The Euclid Chemical Company recommends a water dosage no greater than 1.50 gal/50 lb (5.7 L/22.7 kg).
- Clean tools and equipment with water before the material hardens.
- Do not add any admixture or fluidifiers.
- Do not use any more or less water than what is specified above.
- Store materials in a dry place.
- Application temperature must be 40°F (4°C) or above and remain so for 24 hours after placement.
- Employ cold weather or hot weather grouting practices as the temperature dictates.
- Rate of strength gain and setting times are significantly affected at temperature extremes.
- The Euclid Chemical Company is not responsible for corrosion caused by ingredients in the flushout, saturation, or mixing water, or for contaminants either in the space being grouted or from other materials used in the system.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO PRE-CAST GROUT

NON-SHRINK, NON-METALLIC GROUT

EUCLID CHEMICAL

DESCRIPTION

EUCO PRE-CAST GROUT is designed for critical use where high strength, non-staining characteristics and positive expansion are required. It contains only natural aggregate and an expansive cementitious binder.

PRIMARY APPLICATIONS

- Pre-cast panels
- Structural supports

FEATURES/BENEFITS

- Non-staining natural aggregate for better appearance
- Non-shrink provides full structural support
- High strength and durability
- Appearance similar to concrete
- Does not contain any added chloride ions

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Plastic Consistency	0.75 gal water/50 lb bag (2.8 L/22.7 kg)
Flow Rate (flow table) ASTM C 939 & CRD C 621	100% flow
Compressive Strength ASTM C 109 Modified see ASTM C 1107 Section 11.5	1 day: 4,000 psi (27.6 MPa) 3 days: 5,800 psi (40.0 MPa) 7 days: 6,800 psi (46.9 MPa) 28 days: 8,000 psi (55.2 MPa)
Expansion CRD C 621	3 days: 0.03% 7 days: 0.06% 14 days: 0.07% 28 days: 0.07%
Setting Time ASTM C 191	Initial Set: 40 minutes Final Set: approximately 1 hour

Appearance: EUCO PRE-CAST GROUT is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

EUCO PRE-CAST GROUT is packaged in 50 lb (22.7 kg) bags and yields 0.42 ft^3 (0.012 m^3) of plastic grout when mixed with 0.75 gal (2.8 L) of water.

SHELF LIFE

2 years in original, unopened package

19215 Redwood Road • Cleveland, OH 44110
800-321-7628 t • 216-531-9596 f

DIRECTIONS FOR USE

If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.

Grouts generally work best at 50°F to 80°F (10°C to 27°C). Cold weather retards strength gain and set time. Hot weather accelerates setting time and causes premature drying of the grout. Provide heating or cooling, as necessary, to compensate for extremes in ambient temperatures and resulting variations in cure time.

Surface Preparation: Surfaces to be grouted should be clean and free from rust, grease or oil. Determine work schedule and method of placing grout, then prepare strong, properly braced and oiled forms to retain the grout and provide relief holes, if needed. Saturate the area to be grouted with water until it is uniformly damp and remove excess water just before placing the grout.

Mixing: Small quantities may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 50°F to 80°F (10°C to 27°C). Add the appropriate amount of clean, potable water for the batch size and then add the dry grout. Mix for a minimum of 2 to 3 minutes. The mixed grout should be quickly transported to the grouting site and placed immediately.

Application: See the “Cementitious Grout Application Guide” for installation means and methods.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not add any admixture or fluidifiers.
- Proper curing is required.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- Store materials in a dry place.
- Do not use as a topping.
- Rate of strength gain is significantly affected at temperature extremes.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO ROCK

RAPID-SETTING FLOWABLE GROUT

EUCLID CHEMICAL

DESCRIPTION

EUCO ROCK is a pourable hydraulic cement designed for anchoring or grouting applications. EUCO ROCK sets rapidly and quickly achieves load bearing and bond strength properties. It does not contain any metallic aggregate or chloride ions.

PRIMARY APPLICATIONS

- Interior and exterior applications
- Anchoring bolts in concrete slabs
- Hand rails & posts
- Reinforcing rods
- May be extended with pea gravel for larger areas

FEATURES/BENEFITS

- Fast and controlled set
- Excellent freeze/thaw durability
- High early strengths

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes @ 72°F (22°C)
3 hours.....2,600 psi (17.9 MPa)
24 hours.....3,800 psi (26.2 MPa)
7 days.....5,000 psi (34.5 MPa)
28 days.....6,000 psi (41.7 MPa)

Working Time.....~ 5 - 15 minutes

Appearance: EUCO ROCK is a free flowing powder designed to be mixed with water. After mixing and placing, the product color may initially appear darker than the surrounding concrete. This color will lighten substantially as the anchoring cement cures and dries out.

PACKAGING/YIELD

EUCO ROCK anchoring cement is available in a 50 lb (22.7 kg) pail which yields 0.48 ft^3 (0.014 m^3) when mixed with 1.5 gal (5.7 L) of water per pail.

SHELF LIFE

1 year in original, unopened package.

DIRECTIONS FOR USE

Hole Preparation: Remove any standing water from the space to be grouted prior to beginning the cleaning process. Using oil free compressed air, insert the air wand to the bottom of the hole and blow out any debris with an up/down motion for a minimum of 4-5 seconds.

Using a wire brush that is long enough to reach the bottom of the hole, brush in an up & down and twisting motion. Blow the hole out once more to remove brush debris using oil free compressed air. Visually inspect the hole to confirm it is clean. If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

Saturation: Saturate the hole for a minimum of one hour before grouting. Again, remove all free standing water before placing EUCO ROCK.

Mixing and Placing: EUCO ROCK can be easily mixed with a drill and mixing prop. Mix 50 lbs. (22.7 kg) of EUCO ROCK with 1.4 to 1.5 gallons (5.3 to 5.7 L) for 1 minute to a smooth, lump-free consistency. Place EUCO ROCK in thicknesses from 1/4" to 1" of annular space. When anchoring bolts, posts or rails in concrete or masonry, mix EUCO ROCK to a flowable consistency and pour around the bolt and fill the hole. Crown the cement slightly with a trowel or putty knife as it stiffens. When anchoring on a horizontal surface, mix EUCO ROCK to a plastic consistency and fill the pre-dampened, clean hole. Drive the anchor into place and finish surface with a trowel.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Place material quickly due to fast set.
- Do not use EUCO ROCK as an anchoring grout for rock bolts. Consult your local Euclid Chemical representative for information on grouting rock bolts.
- Do not add admixtures or fluidifiers.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO TREMIE GROUT

NON-SHRINK UNDERWATER GROUT

EUCLID CHEMICAL

DESCRIPTION

EUCO TREMIE GROUT is specially designed for use in underwater grouting applications. This highly flowable, cement based, non-shrink grout remains in a cohesive, well blended mix when placed or pumped in off-shore concrete repairs.

PRIMARY APPLICATIONS

- Underwater grouting
- Pier supports
- Underwater concrete structures
- Off-shore rigging

FEATURES/BENEFITS

- Non-shrink for positive, secure support
- Contains an anti-washout additive to ensure cohesiveness underwater
- No added chlorides
- Highly flowable for easy mixing & pumping
- Rapid strength gain for early support

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT @ 72°F (22°C)	RESULT @ 50°F (10°C)
Compressive Strength ASTM C 109 Modified see ASTM C 1107 Section 11.5	1 day: 3,200 psi (22 MPa) 3 days: 4,800 psi (33 MPa) 7 days: 6,100 psi (42 MPa) 28 days: 9,000 psi (62 MPa)	1 day: 2,500 psi (17 MPa) 3 days: 3,900 psi (27 MPa) 7 days: 5,200 psi (36 MPa) 28 days: 8,300 psi (57 MPa)
Volume Change ASTM C 1090 & CRD C 621	3 days: +0.04% 7 days: +0.06% 14 days: +0.06% 28 days: +0.08%	3 days: +0.04% 14 days: +0.08% 28 days: +0.08%
Setting Time ASTM C 191	Initial Set: 5 hours Final Set: 7 hours	Initial Set: 12 hours Final Set: 18 hours

Appearance: EUCO TREMIE GROUT is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten substantially as the concrete cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

EUCO TREMIE GROUT is packaged in 50 lb (22.7 kg) bags. Yield is approximately 0.45 ft^3 (.013 m^3) of flowable grout when mixed with 1.2 gal (4.5 L) of water. (Also available in bulk bags).

SHELF LIFE

6 months in original, unopened package.

SPECIFICATIONS/COMPLIANCES

- Meets the requirements of CRD C 621, Corps of Engineers specification for non-shrink grout
- Shows positive expansion when tested in accordance with ASTM Specification C 1090, Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
- Meets the performance requirements of ASTM C 1107, combination volume adjusting grout standard specification for packaged, dry, hydraulic-cement grout (non-shrink)

DIRECTIONS FOR USE

Surface Preparation: All concrete surfaces should be clean, sound and free of surface scaling and any material which may interfere with bond.

Mixing: Approximately 1.2 gal (4.5 L) of water will be required to produce a flowable consistency. EUCO TREMIE GROUT should not be placed at a fluid consistency. Mechanically mix for a minimum of 3 minutes then place the grout. For placements where the clearance is beyond 5" (12.7 cm), EUCO TREMIE GROUT may be extended with up to 20 lb (9.1 kg) of 3/8" (9.5 mm) pea gravel per 50 lb (22.7 kg) bag.

Placing: After mixing, grout may be pumped into place. EUCO TREMIE GROUT should be placed continuously.

Curing: No special curing is required when product is placed under water. Air exposed surfaces may be coated with a curing compound if hot, dry conditions exist.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Store materials in a dry place.
- Do not add admixtures or fluidifiers.
- Keep exposed portions of the grout from freezing until a minimum strength of 4,000 psi (27.6 MPa) is reached.
- Rate of strength gain is significantly affected at temperature extremes.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

HI-FLOW GROUT

HIGH TOLERANCE, NON-SHRINK GROUT

EUCLID CHEMICAL

DESCRIPTION

HI-FLOW GROUT is specially designed for use where high tolerance, high strength and high fluidity are required. It is formulated as a natural aggregate system with a shrinkage-compensating binder and is highly flowable without sacrificing strength or performance capabilities. HI-FLOW GROUT is formulated to provide consistent and exacting performance in critical grouting operations.

PRIMARY APPLICATIONS

- Heavy duty grouting of machinery and equipment
- Structural columns
- Crane rails
- Bridge seats
- Bearing plates
- Anchorages

FEATURES/BENEFITS

- Highly fluid for ease in placement
- High strength for maximum load bearing
- Non-shrink with minimum positive expansion for high-tolerance performance
- Non-bleeding and non-segregating at a fluid consistency
- Does not contain any chlorides or additives which may contribute to corrosion of base structure
- Total shrinkage compensation provides a maximum bearing surface for the greatest overall support
- Rapid strength gain to minimize turnaround time for equipment re-grouts
- Excellent working time at high ambient temperatures

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	FLOWABLE CONSISTENCY	FLUID CONSISTENCY
Flow Rate (ASTM C939/CRD C621)	n/a	Initial <30 seconds 30 minutes <30 seconds 60 minutes <35 seconds
Flow Rate (ASTM C1437)	129%	n/a
Compressive Strength (ASTM C109 Modified*) 2 in (50 mm) cubes	1 day 3500 psi (24 MPa) 3 days 5250 psi (36 MPa) 7 days 6000 psi (41 MPa) 28 days 9500 psi (66 MPa)	1 day 3000 psi (21 MPa) 3 days 4800 psi (33 MPa) 7 days 5000 psi (34 MPa) 28 days 8500 psi (59 MPa)
Volume Change (ASTM C 1090/CRD C 621)	1, 3, 7, and 28 days 0.02%	1, 3, 7, and 28 days 0.03%
Setting Time (ASTM C 191)	Initial Set 3 hrs 50 min Final Set 4 hrs 50 min	Initial Set 3 hrs 50 min Final Set 4 hrs 50 min

* See ASTM C 1107 Section 11.5

PACKAGING/YIELD

HI-FLOW GROUT is packaged in 50 lb (22.7 kg) bags and yields 0.45 ft^3 (0.013 m^3) of fluid grout when mixed with 1.0 gal (3.8 L) of water.

50 lb (22.7 kg) of HI-FLOW GROUT extended with 25 lbs (11.3 kg) of 3/8" (9.5 mm) pea gravel will yield approximately 0.60 ft^3 (0.017 m^3) of flowable consistency grout.

Extend with pea gravel only for deep placements over 5" (12.7 cm) in thickness. **When extending HI-FLOW GROUT with pea gravel, the maximum allowable mixing water is 0.9 to 1.0 gal (3.4 to 3.8 L) in order to prevent segregation of aggregate during placement and initial set.**

SHELF LIFE

6 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

- CRD C 621, Corps of Engineers specification for non-shrink grout
- Shows positive expansion when tested in accordance with ASTM Specification C 1090, "Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout"
- ASTM C 1107, "Standard Specification for Packaged, Dry, Hydraulic-Cement Grout (non-shrink)"
- Canada MTQ

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin "Cementitious Grout Application Guide." The document offers instructions detailing the general installation of Euclid Chemical manufactured cement-based grout products.

General Information: While HI-FLOW GROUT is designed to be fluid poured at temperatures ranging from 40°F to 100°F (4.5°C to 38°C), the product is most easily placed at temperatures of 60°F to 70°F (16°C to 21°C).

Mixing Water Guide gal (L)/bag

Consistency	Estimated Water Content	Mix Time
Fluid	1.0 to 1.2 (3.8 to 4.5 L)	5 Min.
Flowable	0.9 to 1.0 (3.4 to 3.8 L)	5 Min.
Plastic	0.8 to 0.9 (3.0 to 3.4 L)	5 Min.

**** Do not add water in an amount that will cause bleeding or segregation. More or less water may be required to achieve a 25 second flow or the desired placing consistency, depending on temperature and other variables. Do not add sand or cement to the grout since this action will change its precision grouting characteristics.***

When HI-FLOW GROUT will be placed at a depth over 5" (12.7 cm), up to 25 lb (11.3 kg) of pea gravel per 50 lb (22.7 kg) bag must be added to each bag of grout. **When extending HI-FLOW GROUT with pea gravel, the maximum allowable mixing water is 0.9 to 1.0 gal (3.4 to 3.8 L) in order to prevent segregation of aggregate during placement and initial set.**

Application: See the "Cementitious Grout Application Guide" for installation means and methods.

CLEAN-UP

Clean tools and equipment with water before material hardens.

PRECAUTIONS/LIMITATIONS

- Store materials in a dry place.
- Proper curing is required.
- Do not add admixtures or fluidifiers.
- Do not add sufficient water to promote bleeding of the grout.
- Do not use this product at a flow cone rate of less than 20 seconds if checking flow rate on the job site.
- Do not use material at temperatures that may cause premature freezing.
- Keep the grout from freezing until a minimum strength of 4000 psi (28 MPa) is reached.
- Do not use as a topping.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Shoulder cracking may occur on wide shoulders, improperly cured shoulders, or at stress points such as shimpacks, bolts or plate stiffeners. These cracks are of no structural significance.
- Rate of strength gain is significantly affected at temperature extremes.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

NC GROUT

NON-CORROSIVE, NON-SHRINK CEMENTITIOUS GROUT

EUCLID CHEMICAL

DESCRIPTION

NC GROUT is a non-shrink, non-staining grout. Its multi-flow quality allows this product to be used at various consistencies including pumping into inaccessible areas. NC GROUT may be packed, rodded, vibrated, poured or pumped. It has high compressive and flexural strengths and is non-rusting and non-corrosive.

PRIMARY APPLICATIONS

- Interior or exterior
- Machinery base plates
- Structural steel
- Columns
- Anchor bolts
- Precast structural members

FEATURES/BENEFITS

- Can be used in wet areas - will not rust
- Above or below grade
- Versatile flow capability

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	PLASTIC CONSISTENCY	FLOWABLE CONSISTENCY	FLUID CONSISTENCY
Flow Rate (ASTM C 230)	100% (Flow Table)	135% (Flow Table)	< 30 seconds (flow cone)
Compressive Strength (ASTM C109 Modified*) 2 in (50 mm) cubes	3 days 5500 psi (38 MPa) 7 days 7500 psi (52 MPa) 28 days 8000 psi (55 MPa)	3 days 4000 psi (28 MPa) 7 days 5000 psi (34 MPa) 28 days 7000 psi (48 MPa)	3 days 3000 psi (21 MPa) 7 days 4800 psi (33 MPa) 28 days 6000 psi (41 MPa)
Expansion (CRD C 621)	3 days 0.04% 28 days 0.04%	3 days 0.04% 28 days 0.04%	3 days 0.06% 28 days 0.07%
Setting Time (ASTM C 191)	Initial: 2.5 to 3.0 hrs Final: 3.0 to 4.0 hrs	Initial: 4.0 to 5.0 hrs Final: 5.0 to 6.0 hrs	Initial: 4.5 to 5.5 hrs Final: 5.0 to 6.0 hrs

*See ASTM C 1107 Section 11.5

PACKAGING

NC GROUT is packaged in 50 lb (22.7 kg) poly-lined bags

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

ASTM C 1107, “Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)”

YIELD

One 50 lb (22.7 kg) bag will yield approximately 0.43 ft^3 (0.012 m^3) of grout

DIRECTIONS FOR USE

Surface Preparation: Concrete surface must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Edges of concrete to be grouted that are less than 1“ (25 mm) thick must be vertically cut to form a uniform edge. Smooth substrates must be abraded to ensure proper bonding. Shim and anchor support elements to prevent movement. Steel must be free of oils, greases, dirt, old coatings or chemical contaminants. Saturate the prepared area with potable water for 12 to 24 hours before application. Remove excess water from holes and voids just before placement to prevent dilution of the grout.

Mixing: NC GROUT is factory-proportioned and comes ready to use by adding only potable water. Use approximately 0.9 gal (3.4L) of water per bag of grout for a plastic consistency; approximately 1 gal (3.8L) for a flowable consistency; approximately 1.2 gal (4.5L) for a fluid consistency. For a uniform mix, use a paddle type mortar mixer. Add 2/3 of the water for the mix consistency desired into the mixer. Add the grout and mix partially. Add the remaining water to achieve the final consistency. Thoroughly mix the entire quantity for 2 to 3 minutes. Do not mix more material than can be placed in 30 minutes.

Application: All grouting should be done using established procedures and recommendations of ACI for placing and curing concrete. The method of forming must provide for rapid continuous pouring of the grout and allow a clearance of at least 3” (76mm) for entry and a “grout head” box of 4” to 6” (100 to 152 mm). Avoid air entrapment by providing adequate venting at the high point and by pouring the grout from one side only. Forms should be 1 to 2” (25 to 50 mm) above the base plate. NC GROUT must be placed by pumping, pouring, rodding or vibrating. Lengths of small link chain laid in the form before placing the grout will assist in compacting the grout and eliminating air voids. The grout must be placed and compacted within 30 minutes after mixing. In applications where grout thickness exceeds 5” (12.7cm) up to 25 lbs(11.3 kg) of 3/8” (9.5 mm) clean and damp pea gravel may be added per 50 lb (22.7 kg) bag to extend the mix. After placement, rapid drying must be prevented by covering the grout with wet burlap or by applying a membrane forming curing compound from the Euclid Chemical series of products. The forms may be removed after the grout has hardened to an initial set (see material properties). When grouting at higher temperatures, use cold water, shade the area to be grouted and protect the placed grout from direct sunlight for at least 48 hours by covering with wet burlap. When grouting at low temperatures, raise the temperature of foundation bedplate by using steam or infrared heaters. Use warm mixing water and cover the grout to retain warmth. Do not apply heat directly to the grout after its placement.

CLEAN-UP

Clean tools and equipment with water immediately following. Clean drips with water while still wet. Dried NC GROUT will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Do not add anything but potable water.
- Do not add water in an amount that will cause bleeding or segregation. More or less water may be required to achieve a 25 second flow or the desired placing consistency, depending on temperature and other variables.
- Do not re-temper with additional water after the mixture has started to set.
- Do not add admixtures or fluidifiers.
- Do not add sand or cement to the grout since this action will change its precision grouting characteristics.
- Do not aerate the mix.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- Proper curing practices must be used.
- Apply at temperatures 40°F (4°C) and rising.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

NS GROUT

NON-SHRINK, NON-STAINING, NON-METALLIC GROUT

EUCLID CHEMICAL

DESCRIPTION

NS GROUT is designed for critical use where high strength, non-staining characteristics and positive expansion are required. NS GROUT contains only natural aggregate and an expansive cementitious binder. It is extremely flowable. When cured, it appears similar to concrete in appearance.

PRIMARY APPLICATIONS

- Pumps and fans
- Compressors & motors
- Generators
- Machine bases of all types
- Anchor bolts
- Column baseplates

FEATURES/BENEFITS

- Non-staining natural aggregate for better appearance
- Excellent bearing
- Compatible with galvanic anodes (Fluid consistency)
- Appearance of plain concrete
- Does not contain any added chloride ions
- Outstanding strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	FLOWABLE CONSISTENCY	FLUID CONSISTENCY
Flow Rate (ASTM C 939/CRD-C621)	120% (Flow Table)	20 to 30 seconds (Flow Cone)
Compressive Strength (ASTM C 109 Modified*) 2 in (50 mm) cubes	3 days 4500 psi (31 MPa) 7 days 6000 psi (41 MPa) 28 days 8500 psi (59 MPa)	3 days 3500 psi (24 MPa) 7 days 5000 psi (34 MPa) 28 days 6800 psi (47 MPa)
Expansion (CRD-C621)	3 days 0.02% 7 days 0.02% 14 days 0.03% 28 days 0.03%	3 days 0.01% 7 days 0.03% 14 days 0.05% 28 days 0.05%
Setting Time	Initial Set 3 to 5 hours Final Set 4 to 6 hours	

* See ASTM C 1107 Section 11.5

PACKAGING/YIELD

NS GROUT is packaged in 50 lb (22.7 kg) bags, 55 lb (25 kg) bags, and 50 lb (22.7 kg) pails.

50 lb (22.7 kg) yields 0.45 ft^3 (0.013 m^3) of fluid grout when mixed with 1.2 gal (4.6 L) of water.

55 lb (25 kg) yields 0.50 ft^3 (0.014 m^3) of fluid grout when mixed with 1.3 gal (4.9 L) of water.

50 lb (22.7 kg) of NS GROUT extended with 25 lbs (11.3 kg) of 3/8" (9.5 mm) pea gravel will yield approximately 0.60 ft^3 (0.017 m^3) of flowable consistency grout. 55 lb (25 kg) of NS GROUT extended with 27.5 lbs (12.5 kg) of 3/8" (9.5 mm) pea gravel will yield approximately 0.66 ft^3 (0.019 m^3) of flowable consistency grout.

Extend with pea gravel only for deep placements over 5" (12.7 cm).

SHELF LIFE

2 years in original, unopened package

APPEARANCE

NS GROUT is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten up substantially as it cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

SPECIFICATIONS/COMPLIANCES

- CRD-C621, Corps of Engineers Specification for Non-Shrink Grout
- ASTM C 1107, "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)"
- Canadian MTQ

DIRECTIONS FOR USE

Note: The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin: "Cementitious Grout Application Guide." The document offers instructions detailing the general installation of Euclid Chemical manufactured cement-based grout products. **Important:** If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical representative for additional information.

Mixing Consistency	Estimated Water Content, 50 lb bag*	Estimated Water Content, 55 lb bag*
Fluid	1.1 to 1.2 gal (4.2 to 4.6 L)	1.2 to 1.3 gal (4.6 to 4.9 L)
Flowable	0.9 to 1.0 gal (3.4 to 3.8 L)	1.0 to 1.1 gal (3.8 to 4.2 L)
Plastic	0.8 to 0.9 gal (3.0 to 3.4 L)	0.88 to 1.0 gal (3.3 to 3.7 L)

**** Do not add water in an amount that will cause bleeding or segregation. More or less water may be required to achieve a 25 second flow or the desired placing consistency, depending on temperature and other variables. Do not add sand or cement to the grout since this action will change its precision grouting characteristics.***

When NS GROUT will be placed at a depth over 5" (12.7 cm), up to 25 lb (11.3 kg) of pea gravel per 50 lb (22.7 kg) bag [27.5 lb (12.5 kg) of pea gravel per 55 lb (25 kg) bag] must be added to each bag of grout. Note that the water demand to achieve a certain flow level of the grout will change. Once the correct amount of water has been added to a clean mixing pail, mix the grout with a high speed drill and mixing paddle for 3 minutes. Quickly transport the grout to the placement area.

Application: See the "Cementitious Grout Application Guide" for installation means and methods.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not add sufficient water to promote bleeding of the grout.
- Do not use this product at a flow cone rate of less than 20 seconds if checking flow rates on the job site (see CRD-C611 or ASTM C 939 for flow cone method).
- Do not add admixtures or fluidifiers.
- Proper curing is required.
- Do not use material at temperatures that may cause premature freezing.
- Rate of strength gain is significantly affected at temperature extremes.
- Do not allow grout to freeze until 4000 psi (27.6 MPa) is attained.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Store materials in a dry place.
- For dry pack applications, mechanically mix NS GROUT at a minimum water content of 0.5 gal per 50 lb bag (1.9L/22.7 kg) or 0.55 gal per 55 lb bag (2.1 L/25 kg).
- Add pea gravel when placing NS GROUT at a depth greater than 5" (12.7 cm).
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EPOXY GROUT

APPLICATION GUIDE

EUCLID CHEMICAL

The following instructions detail the general installation procedures for epoxy grouts manufactured by The Euclid Chemical Company. The contractor and engineer are encouraged to consult the individual product's technical data sheet regarding possible additional suggestions for successful installations.

Note: If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical sales representative for additional information.

These instructions are written specifically for E³-FLOWABLE, E³-DEEP POUR, E³-HCR, and E³-XTREME.

General Guidelines

Careful preparation is a must for a successful grouting operation. Grouts generally work best at 50°F to 90°F (10°C to 32°C). Cold weather retards strength gain and set time. Hot weather accelerates setting time and causes premature curing of the grout. Provide heating or cooling, as necessary, to compensate for extremes in ambient temperatures and resulting variations in cure time. The testing data listed on the product technical data sheets was under laboratory conditions at a temperature of 70°F (21°C).

DIRECTIONS FOR USE

Surface Preparation: Surfaces to be grouted and the underside of the baseplate should be clean and free from rust, grease, oil, laitance, and other contaminants. Concrete should be mechanically roughened to a Concrete Surface Profile (CSP) of 5-9 in accordance with ICRI 310.2R. Any anchor bolt holes to be filled must also be clean and sound. Mechanical preparation is recommended with the holes being flushed with water and blown dry with oil-free compressed air. The baseplates of machinery that will be grouted must also be free of rust, grease, oil, and other contaminants. Sandblasting to a "white metal" finish is desired and recommended for full effectiveness of the grout.

Form Preparation: Forms must be liquid tight. Seal all joints with a joint sealant, putty, or other means to create a waterproof barrier. Forms must be strong and well braced. To facilitate stripping, forms should be coated with two coats of a paste wax or individually wrapped in polyethylene film. A head box should be used in conjunction with the form work to facilitate placement. A 45° slope angle on the head box will be sufficient and aid in flowing the grout under the equipment. Forms should be set slightly raised higher than the plate itself. This ensures that proper bearing is attained.

Mixing:DO NOT ADD WATER, SOLVENT OR ANY OTHER CHEMICALS TO THE PRODUCT! Mix the A & B components separately for 1 minute each prior to mixing together. Be sure to clean the mixing paddle in between. Secondly, using a drill and a prop mixer, mix the A & B components together for 2 minutes. For ease of mixing, add the Part B to the Part A (not the reverse). The epoxy must be well mixed to ensure the proper chemical reaction. After 2 minutes, place the epoxy into a clean and dry mortar mixer. Add the bags of Part C (aggregate) and mix for 2 or 3 minutes until the aggregate is completely wetted out. Place immediately.

Placement: If space permits, place the mortar directly into the voids and blockouts using a funnel to insure proper direct placement. When grouting machinery plates, pour mixed epoxy grout into the head box to aid in flow of material under the machinery. If a head box is not used, flow the grout across the shortest dimension of the baseplate. Pre-placing straps underneath the machinery can aid in moving the material across the area, especially if it is cooler and the grout is more viscous. Epoxy grouts should be placed at a minimum thickness of 1 inch (2.54 cm) and a maximum of 3-6 inches(7.6-15.2 cm), depending upon the product. E³-DEEP POUR epoxy grout can be placed up to 18 inches (46 cm) per lift. Please refer to the individual product data sheet for placement limitations. Epoxy products cure by exotherming. If the material is placed too thick, excessive heat buildup can cause the material to crack. Cracking occasionally occurs with epoxy grouts. This does not mean the grouting job was a failure. If it is possible for detrimental fluids to seep through the grout into the substrate, then the cracks in the grout may be filled with a low viscosity epoxy product produced by The Euclid Chemical Company. Note: Please bring all epoxy grout materials and working areas as close to 70°F (21°C) as possible. Colder temperatures will significantly reduce flowability of grout, thus making it more difficult for placement, which could have an effect on bearing. Higher temperatures will increase initial flowability, but it will also cut down on working time. Vibrating epoxy grout in any case is not acceptable.

Finishing: If a smooth finish to the visible area is desired, a light misting of EUCO SOLVENT on the surface followed by a trowel is acceptable.

Curing: Epoxy grouts do not require special curing procedures.

PRECAUTIONS/LIMITATIONS

- Wear protective gear, gloves, and safety goggles when handling epoxies.
- Do not use over frozen concrete.
- Grout should be placed at ambient temperatures of 50°F to 90°F (10°C to 32°C).
- Store all materials at room temperature hours prior to use; 70°F (21°C) is optimal.
- Rate of strength gain is significantly affected by temperature
- In all cases, consult the Safety Data Sheet for the product prior to use.

Rev. 01.19

E³-DEEP POUR

EPOXY GROUT FOR DEEP POUR APPLICATIONS WITH DL TECHNOLOGY™ AGGREGATE

EUCLID CHEMICAL

DESCRIPTION

E³-DEEP POUR is a high strength epoxy grout designed for grouting machine and equipment bases of all types. Formulated to be used in deep placements, E³-DEEP POUR provides maximum bearing for bases of numerous configurations. Additionally, our patent pending DL Technology™ aggregate greatly reduces the amount of dust released into the environment during mixing and handling. E³-DEEP POUR meets the requirements of the American Petroleum Institute Standard 610, Appendix L for Baseplate and Soleplate Grouting.

PRIMARY APPLICATIONS

- Large/deep volume precision placements
- Rebuilding foundations, bases and columns
- Vibration dampening for equipment
- Tanks, turbines and housings
- Pour-backs for post tension projects

FEATURES/BENEFITS

- DL Technology™ aggregate greatly reduces dust
- Low exotherm for large volume applications
- Expansive/non-shrink
- Excellent bearing
- Variable fill ratio
- Excellent bond to foundation and base plate
- Stable in deep placements
- Long working time

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

	Standard Unit			High Flow Mix		
PROPERTY	**1 DAY**	**7 DAYS**	**28 DAYS**	**1 DAY**	**7 DAYS**	**28 DAYS**
Compressive Strength ASTM C 579 Method B	11,000 psi (76 MPa)	14,000 psi (97 MPa)	15,000 psi (103 MPa)	11,100 psi (77 MPa)	14,500 psi (100 MPa)	15,100 psi (104 MPa)
Creep ASTM C 1181	400 psi (2.8 MPa) @ 140°F (60°C)		3.6×10^{-3} in/in/°F	400 psi (2.8 MPa) @ 140°F (60°C)		4.3×10^{-3} in/in/°F
Flexural Strength ASTM C 580	4,000 psi (28 MPa)	4,400 psi (30 MPa)	4,500 psi (31 MPa)	4,200 psi (29 MPa)	4,500 psi (31 MPa)	4,600 psi (32 MPa)
Tensile Strength ASTM C 307	1,800 psi (12 MPa)	2,000 psi (14 MPa)	2,100 psi (14 MPa)	1,800 psi (12 MPa)	2,000 psi (14 MPa)	2,100 psi (14 MPa)
Bond to Concrete ASTM C 882	------	3,400 psi (23 MPa)	3,600 psi (25 MPa)	------	3,450 psi (24 MPa)	3,700 psi (26 MPa)
Coefficient of Thermal Expansion ASTM C 531	2.8×10^{-6} in/in/°F (73° to 210°F) (23° to 99°C)			2.8×10^{-6} in/in/°F (73° to 210°F) (23° to 99°C)		
Chemical Resistance	Excellent resistance to most industrial chemicals					
Maximum Thickness Per Lift	Up to 18 in. (45 cm)			Up to 9 in. (23 cm)		
Effective Bearing Area ASTM C 1339	>95%			>95%		
FLDOT Peak Exotherm 12"x 12"x 3"	98.0°F (36.7°C)			113.0°F (45.0°C)		
Working Time	90 min.			70 min.		

PACKAGING/YIELD

E³-DEEP POUR is packaged in 1.4 ft³(0.039 m³) kits. To mix to a high flow consistency, remove 1 bag of aggregate.

	Resin, Part A:	Hardener, Part B:	Aggregate, filler Part C:	Yield:
Standard Unit:	1.17 gal (5.3 L)	0.98 gal (3.7 L)	5 - 32 lb (14.5 kg) bags	1.40 ft³ (0.039 m³)
High Flow Mix:	1.17 gal (5.3 L)	0.98 gal (3.7 L)	4 - 32 lb (14.5 kg) bags	1.15 ft³ (0.033 m³)

SHELF LIFE

2 years in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: Concrete must be a minimum of 28 days old. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be prepared mechanically using suitable equipment to give a surface profile of at least a CSP 5-7 in accordance with ICRI Guideline 310.2, exposing the coarse aggregate of the concrete. The final step in cleaning should be the complete removal of all dust and residue with a pressure washer and then vacuum until all water is gone. **Acid etching is acceptable only when mechanical preparation is impractical.** It is recommended that only contractors experienced in the acid etching process use this means of surface preparation. The salts of the reaction must be thoroughly pressure washed away. Allow the concrete to completely dry. **Note:** Even with proper procedures, an acid etched surface may not provide as strong a bond as mechanical preparation procedures. All concrete must possess an open surface texture with all curing compounds and sealers removed. **Base Plate Preparation:** Abrasive blast metal base plates to a commercial finish (SSPC-SP6) to enhance bond. Apply grout immediately to prevent re-oxidizing.

Form Preparation: Forms must be liquid tight to prevent leakage. They must be strong, well braced, and set slightly higher than the bottom of the base plate. To facilitate stripping, the forms should be coated with two applications of a paste wax or each form wrapped with polyethylene.

Anchor Bolt Holes and Blockouts: Holes and blockouts should be cleaned of all dust, dirt and debris and allowed to dry. If the sides are smooth, roughen the hole with a stiff bristle wire brush or with a rotary brush hammer if access permits.

Mixing: Slowly mix parts A & B (resin & hardener) for 2 minutes using a drill and mixing prop in a clean mixing pail. Add the Part B to the Part A (not the reverse). The epoxy must be well mixed to ensure proper chemical reaction. Do not whip air into the epoxy while mixing. After the epoxy has been mixed, directly pour the resin into a horizontal shaft mortar mixer. Add the part C (aggregate) to the mixture, one bag at a time and mix thoroughly for 2 to 3 minutes, until the aggregate is completely wetted out. Place immediately.

Placement: Pour into anchor bolt holes and blockouts through a funnel or directly if space permits. When grouting plates, pour grout into the headbox and allow to flow under the plate, working from one side only. Straps pre-placed under the plate will aid in working the grout across. Grout should be placed at a minimum of 1" (25 mm) thick and a maximum of 18" (46 cm) per lift when placed in a large mass. **Note:** Bring all E³-DEEP POUR materials as well as the foundation and baseplate as close to 75°F (23°C) as possible. Cold temperatures will significantly reduce flow characteristics and will increase the difficulty of baseplate grouting. Higher temperatures will increase initial flow but cut down on working time. **Curing**: E³-DEEP POUR does not require any special curing procedures. **Finish**: If a smooth finish is desired, the surface of the grout may be brushed and troweled with a light application of EUCO SOLVENT.

CLEAN-UP

Tools and mixer may be cleaned with soap and water.

PRECAUTIONS/LIMITATIONS

- Wear proper PPE (Personal Protective Equipment) when handling epoxies.
- Do not use over frost covered or frozen concrete.
- Store material at room temperature before use.
- Grout should be placed at ambient temperatures of 50°F to 90°F (10°C to 32°C).
- Rate of strength gain is significantly affected at temperature extremes.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

E³-FLOWABLE

HIGH FLOW EPOXY GROUT WITH DL TECHNOLOGY™ AGGREGATE

EUCLID CHEMICAL

DESCRIPTION

E³-FLOWABLE is a three-component, high flow, high strength, expansive epoxy grout designed for large plates and narrow configurations where flowability is critical. Additionally, our patent pending DL Technology™ aggregate greatly reduces the amount of dust released into the environment during mixing and handling.

PRIMARY APPLICATIONS

- Large or wide plates requiring precision grouting
- Machinery, equipment or structural elements needing maximum bearing support
- Rail grouting, keyways and inverted baseplates
- Narrow clearance situations including anchor bolts
- Precision alignment of generators, compressors, electric motors and pumps

FEATURES/BENEFITS

- DL Technology™ aggregate greatly reduces dust
- Positive effective bearing
- High early strengths, fast return to service
- User friendly placing characteristics
- >95% effective bearing
- High chemical resistance
- Clean tools with soap and water

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	STANDARD UNIT				HIGH FLOW MIX			
	1 DAY	7 DAYS	28 DAYS	POST CURE*	1 DAY	7 DAYS	28 DAYS	POST CURE*
Compressive Strength ASTM C 579 2 in (50 mm) cubes Method B @ 73°F (23°C)	10,000psi (69.4 MPa)	12,000 psi (83.3 MPa)	12,500 psi (86.8 MPa)	14,500 psi (100.7 MPa)	9,500 psi (70.0 MPa)	11,500 psi (80.0 MPa)	12,000 psi (83.3 MPa)	13,500 psi (93.8 MPa)
Compressive Creep ASTM C 1181 400 psi (2.8 MPa) @ 140°F (60°C)	----------	----------	6.4×10^{-3} in/in/°F	----------	----------	----------	5.8×10^{-3} in/in/°F	----------
Flexural Strength ASTM C 580	3,900 psi (27.0 MPa)	4,000 psi (27.7 MPa)	4,300 psi (30.0 MPa)	4,500 psi (31.3 MPa)	3,500 psi (24.3 MPa)	3,700 psi (25.7 MPa)	3,900 psi (27.0 MPa)	4,000 psi (27.7 MPa)
Tensile Strength ASTM C 307	1,500 psi (10.4 MPa)	1,700 psi (11.8 MPa)	1,900 psi (13.2 MPa)	----------	1,100 psi (7.6 MPa)	1,500 psi (10.4 MPa)	1,900 psi (13.2 MPa)	----------
Bond Strength ASTM C 882	N/A	3,000 psi (20.8 MPa)	3,500 psi (24.3 MPa)	----------	N/A	2,800 psi (19.4 MPa)	3,300 psi (23.0 MPa)	----------
Coefficient of Thermal Expansion ASTM C 531, 7 Days	16.0×10^{-6} (74 to 210°F) (23 to 99°C)				17.0×10^{-6} (74 to 210°F) (23 to 99°C)			
Effective Bearing Area ASTM C 1339	>95%				>95%			
Working Time ICRI PROTOCOL	95 minutes at 73°F (23°C)				68 minutes at 73°F (23°C)			
Peak Exotherm ASTM D 2471	84°F (29.3°C) at 140 minutes				96°F (35.0°C) at 162 minutes			
Chemical Resistance	Excellent resistance to most industrial chemicals							
Abrasion Resistance	Greater than concrete							

* Post Cure Procedure: Demold specimens after 24 hours; place in oven @140 °F (60°C) for 18 hours; remove from oven for 24 hours; perform test.

PACKAGING

E³-FLOWABLE is packaged in standard 1.5 ft³ (0.042 m³) units. **Part A,** resin: 22.04 lb (10 kg), **Part B**, hardener: 5.69 lb (2.29 kg), Part A and Part B are contained in a 5 gallon plastic pail, and **Part C**, aggregate: 5/30 lb (13.6 kg) bags. May also be ordered as a 4 bag high flow mix, which will yield 1.35 ft³.

E³-FLOWABLE is also packaged in 0.3 ft³ (0.0084 m³) units. **Part A,** resin: 4.4 lb (2 kg), **Part B**, hardener: 1.14 lb (0.52 kg), Part C, aggregate: 1/30 lb (13.6 kg) bag. Part A, Part B and Part C are all contained in a 6 gallon plastic pail. A maximum of 6 lbs of aggregate can be removed from this unit to achieve the high flow mix.

SHELF LIFE

2 years in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old. The concrete must be clean and rough. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be prepared mechanically using suitable equipment to give a surface profile of at least a CSP 5-7 in accordance with ICRI Guideline 310.2, exposing the coarse aggregate of the concrete. The final step in cleaning should be the complete removal of all dust and residue with a vacuum cleaner followed by pressure washing. Then, vacuum all water up and allow to dry completely. **Acid etching is acceptable only when mechanical preparation is impractical**. It is recommended that only contractors experienced in the acid etching process use this means of surface preparation. The salts of the reaction must be thoroughly pressure washed away. Allow the concrete to completely dry. **Note:** Even with proper procedures, an acid etched surface may not provide as strong a bond as mechanical preparation procedures. All concrete must possess an open surface texture with all curing compounds and sealers removed.

Form Preparation: Forms must be liquid tight to prevent leakage, and they should be strong and well braced. To facilitate stripping, the forms should be coated with two applications of paste wax or each piece wrapped with polyethylene.

Anchor Bolt Holes and Blockouts: Holes and blockouts must be cleaned of all dust, dirt, and debris and allowed to dry. If the sides are smooth, roughen the hole with a stiff bristle wire brush or with a rotary brush hammer.

Mixing: Mix parts A & B (resin & hardener) separately using a drill and mixing prop. Then, pour the Part B into the Part A container. Mix for 2-3 minutes, scraping the bottom and sides of the container, to ensure proper chemical reaction. Do not whip air into the epoxy while mixing. After the epoxy has been mixed, directly pour all of the mixed resin into a horizontal shaft mortar mixer. Add Part C (aggregate) to the mixture one bag at a time and mix for 2 to 3 minutes until the aggregate is completely wetted out. Place immediately.

Placement: Pour into anchor bolt holes and blockouts through a funnel or directly if space permits. When grouting plates, pour grout into the headbox and allow to flow under the plate. Straps pre-placed under the plate will aid in working the grout across. Grout can be placed at a minimum of 1/2" (12 mm) thick to a maximum of 6" (150 mm) per lift when placed in a large mass. **Note:** Bring all E³-FLOWABLE materials as well as foundation and baseplate as close to 75°F (23°C) as possible. Cold temperatures will significantly reduce flow characteristics and will increase the difficulty of baseplate grouting. Higher temperatures will increase initial flow but reduce working time.

Curing: E³-FLOWABLE does not require special curing procedures.

Finish: If a smooth finish is desired, the surface of the grout may be brushed and troweled with a light application of EUCO SOLVENT.

CLEAN-UP

Tools and mixer may be cleaned with soap and water.

PRECAUTIONS/LIMITATIONS

- Wear proper PPE when handling epoxies.
- Do not use over frost covered or frozen concrete.
- Store all materials at 75°F (23°C) for at least 24 hours before use.
- Grout should be placed at ambient temperatures of 50°F to 90°F (10°C to 32°C).
- Rate of strength gain is significantly affected at temperature extremes.
- Do not remove, our add more aggregate, than stated on this technical data sheet.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

E³-XTREME

ULTRA-HIGH PERFORMANCE EPOXY GROUT WITH DL TECHNOLOGY™ AGGREGATE

EUCLID CHEMICAL

DESCRIPTION

E³-XTREME is a three-component, high flow, ultra-high strength epoxy grout. A special resin and hardener formulation plus patent pending DL Technology™ aggregate, sets the E³-XTREME apart from competitive products. E³-XTREME has extremely high compressive strength, with ultra-low creep and outstanding Effective Bearing Area (EBA). DL Technology™ aggregate helps to greatly reduce the amount of dust released into the environment during mixing and handling.

PRIMARY APPLICATIONS

- Pumps and rotating equipment
- Wind turbine bases and crane rails
- Compressors and turbo-machinery
- Skid-mounted equipment
- Presses and stamping machines
- High dynamic load applications

FEATURES/BENEFITS

- DL Technology™ aggregate minimizes dust
- Positive effective bearing
- Very high early strengths, fast return to service
- User friendly placing characteristics
- >95% Effective bearing
- High chemical resistance
- Exceptional flexural and tensile strengths
- Very low creep
- Clean tools with soap and water

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	1 DAY	7 DAYS	28 DAYS	POST CURE*
Compressive Strength ASTM C 579 2 in (50 mm) cubes @ 73°F (23°C)	15,800 psi (109.0 MPa)	17,000 psi (117.2 MPa)	17,500 psi (120.7 MPa)	19,000 psi (132.0 MPa)
Compressive Creep ASTM C 1181, 28 day cure 400 psi (2.8 MPa) @ 140°F (60°C)	-------	-------	1.9×10^{-3} in/in/°F	-------
Flexural Strength ASTM C 580	5,550 psi (38.2 MPa)	5,600 psi (38.9 MPa)	5,650 psi (39.2 MPa)	5,700 psi (39.6 MPa)
Tensile Strength ASTM C 307	1,900 psi (13.1 MPa)	2,000 psi (13.9 MPa)	2,300 psi (15.9 MPa)	2,400 psi (16.5 MPa)
Bond Strength, ASTM C 882	N/A	3,300 psi (22.9 MPa)	3,900 psi (27.0 MPa)	-------
Coefficient of Thermal Expansion ASTM C 531, 7 days	2.2×10^{-5} in/in/°F (74 to 210°F) (23 to 99°C)			
Effective Bearing Area ASTM C 1339	>95%			
Approximate Working Time ICRI PROTOCOL	32 minutes at 73°F (23°C)			
Peak Exotherm 12 in x 12 in x 3 in specimen (30 cm x 30 cm x 8 cm) ASTM D 2471	168°F (75.6°C) at 65 minutes			
Chemical Resistance	Excellent resistance to most industrial chemicals			
Abrasion Resistance	Greater than concrete			
*Post Cure Procedure: De-mold specimens after 24 hours; place in oven @140°F (60°C) for 18 hours; remove from oven for 24 hours; perform test.				

PACKAGING

E^3-XTREME is packaged in 1.7 ft^3 (0.048 m^3) units. **Part A,** resin: 27.71 lb (12.6 kg), **Part B**, hardener: 6.32 lb (2.87 kg). Part A and Part B are contained in a 6 gallon plastic pail, and **Part C**, aggregate: 6/32 lb (14.5 kg) bags.

SHELF LIFE

2 years in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old. The concrete must be clean and rough. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be prepared mechanically using suitable equipment to give a surface profile of at least a CSP 5-7 in accordance with ICRI Guideline 310.2, exposing the coarse aggregate of the concrete. The final step in cleaning should be the complete removal of all dust and residue with a vacuum cleaner followed by pressure washing. Then vacuum all water up and allow to dry completely. **Acid etching is acceptable only when mechanical preparation is impractical**. It is recommended that only contractors experienced in the acid etching process use this means of surface preparation. The salts of the reaction must be thoroughly pressure washed away. Allow the concrete to completely dry. **Note:** Even with proper procedures, an acid etched surface may not provide as strong a bond as mechanical preparation procedures. All concrete must possess an open surface texture with all curing compounds and sealers removed.

Form Preparation: Forms must be liquid tight to prevent leakage, and they should be strong and well braced. To facilitate stripping, the forms should be coated with two applications of paste wax or each piece wrapped with polyethylene.

Anchor Bolt Holes and Blockouts: Holes and blockouts must be cleaned of all dust, dirt and debris and allowed to dry. If the sides are smooth, roughen the hole with a stiff bristle wire brush or with a rotary brush hammer.

Mixing: Mix parts A & B (resin & hardener) separately using a drill and mixing prop. Then pour the Part B into the Part A container. Mix for 2-3 minutes, scraping the bottom and sides of the container, to ensure proper chemical reaction. Do not whip air into the epoxy while mixing. After the epoxy has been mixed, directly pour all of the mixed resin into a horizontal shaft mortar mixer. Add Part C (aggregate) to the mixture, one bag at a time and mix for 2 to 3 minutes, until the aggregate is completely wetted out. Place immediately.

Placement: Pour into anchor bolt holes and blockouts through a funnel or directly if space permits. When grouting plates, pour grout into the headbox and allow to flow under the plate. Straps pre-placed under the plate will aid in working the grout across. Grout can be placed at a minimum of 1" (25 mm) thick to a maximum of 6" (150 mm) per lift when placed in a large mass. **Note:** Bring all E^3-XTREME materials as well as foundation and baseplate as close to 75°F (23°C) as possible. Cold temperatures will significantly reduce flow characteristics and will increase the difficulty of baseplate grouting. Higher temperatures will increase initial flow but reduce working time.

Curing: E^3-XTREME requires no special curing procedures.

Finish: If a smooth finish is desired, the surface of the grout may be brushed and troweled with a light application of EUCO SOLVENT.

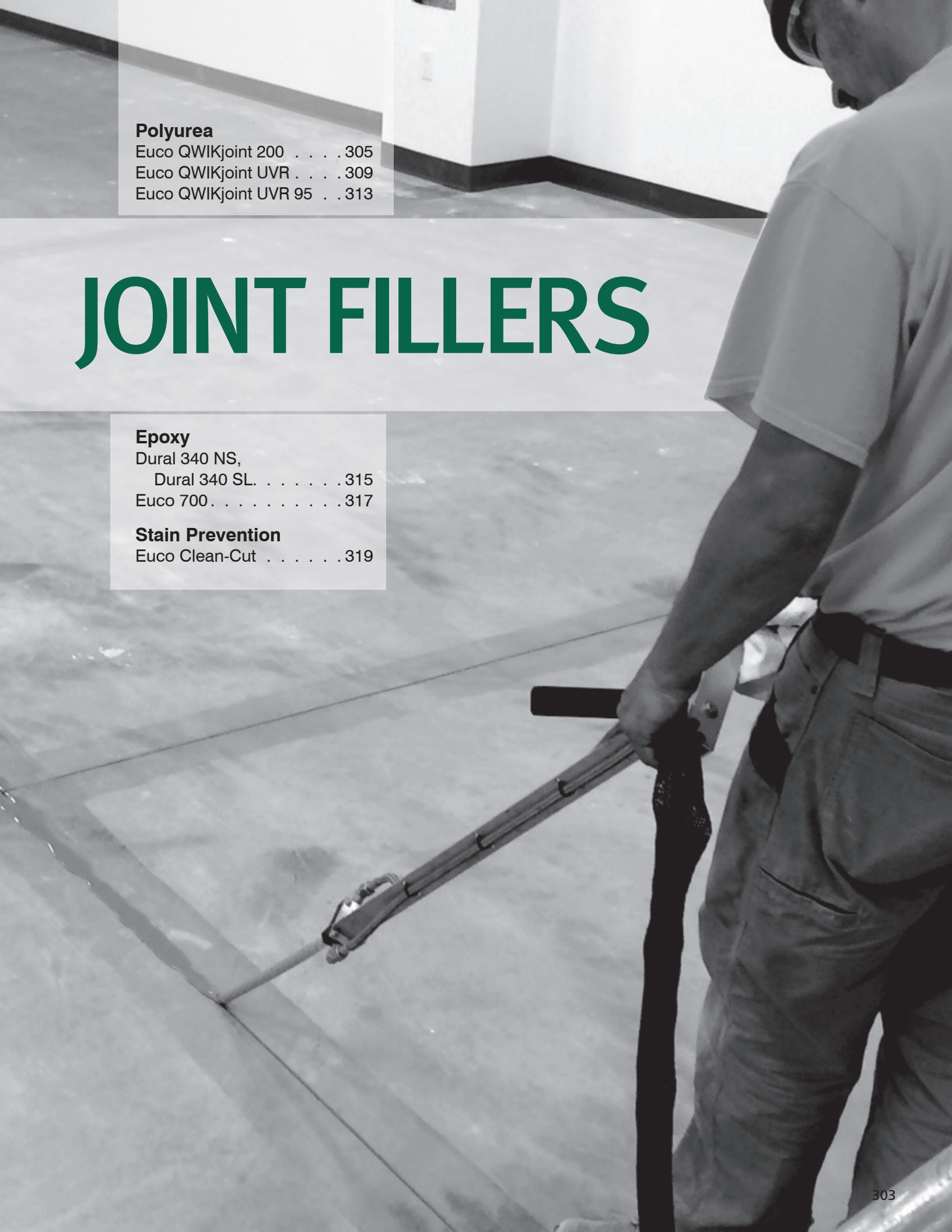
CLEAN-UP

Tools and mixer may be cleaned with soap and water.

PRECAUTIONS/LIMITATIONS

- Wear proper PPE when handling epoxies.
- Do not use over frost covered or frozen concrete.
- Store all materials at 75°F (23°C) for at least 24 hours before use.
- Grout should be placed at ambient temperatures of 50°F to 90°F (10°C to 32°C).
- Rate of strength gain is significantly affected at temperature extremes.
- Do not remove, our add more aggregate, than stated on this technical data sheet.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19



JOINT FILLERS

EUCO QWIKJOINT 200

POLYUREA FLOOR JOINT FILLER

EUCLID CHEMICAL

DESCRIPTION

EUCO QWIKjoint 200 is a fast-setting, semi-rigid polyurea used for filling control and construction joints in industrial concrete floors. EUCO QWIKjoint 200 represents a new generation of polyurea technology with features and benefits unlike any other polyurea joint filler on the market. Among these benefits are a super-fast set time and an extended shave time: EUCO QWIKjoint 200 can be trimmed flush with the floor immediately after placement or up to 24 hours later. EUCO QWIKjoint 200 supports and protects joint edges from heavy loads and wheel traffic, reducing spalling of the joint edges.

PRIMARY APPLICATIONS

- Concrete construction and control joints
- Crack repair for old floors
- Industrial and commercial floors
- Freezer floors

FEATURES/BENEFITS

- Fast-setting formula reduces downtime
- Large shave time window allows for greater flexibility in scheduling joint filling operations
- No bubbles - no foaming when used in damp joints
- Tough performance reduces floor joint repairs and maintenance
- Suitable for filling cracks in older floors to reduce the rate of joint deterioration
- Will cure in temperatures as low as -20° F (-29°C)
- Less moisture-sensitive than standard polyureas

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	TEST METHOD	RESULT
Gel Time	--	25 seconds
Shore D Hardness	ASTM D2240	34 to 36
Shore A Hardness	ASTM D2240	84 to 88
Tensile Strength @ 7 days	ASTM D412	660 psi (4.6 MPa)
Elongation @ 7 days	ASTM D412	220% to 260%
Shave “Window”	--	30 min to 24 hours
Tack-Free Time	--	1 to 3 minutes
Traffic Ready Time	--	Light Traffic: 15 min Heavy Traffic: 30 min

CHEMICAL RESISTANCE, ASTM D1308	
Acetic Acid, 5%	excellent
Alcohol, 10%	excellent
Alkalies	excellent
Ammonium Hydroxide, 10%	excellent
Brake Fluid	good
Diesel Fuel	excellent
Ethylene Glycol (antifreeze)	good
Gasoline	excellent
Hydrochloric Acid, 20%	excellent
JP-4 Jet Fuel	excellent
Used Motor Oil	excellent
Salt Water	excellent
Sodium Hydroxide, 10%	excellent
Sulfuric Acid, 10%	good
Xylene	poor

Chemical Ratings:
Excellent - no effect after 2 weeks
Good - no effect for 24 hours
Poor - affected within 24 hours

Appearance: EUCO QWIKjoint 200 is available in Standard Gray only. The product may discolor over time if exposed to either natural or artificial ultraviolet light. If aesthetics are an important issue or if another color is desired, use EUCO QWIKjoint UVR, which is UV resistant and available in 33 standard colors.

PACKAGING

EUCO QWIKjoint 200 is a two-component product packaged in 10 gal (37.9 L) and 100 gal (379 L) kits. 22 oz (600 mL) side-by-side cartridges are packaged 12 per case. Each cartridge yields 40 in^3 (655 cm^3). The mix ratio for all packaging sizes is 1:1.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

EUCO QWIKjoint 200 complies with ACI 302 performance recommendations regarding control and construction joint fillers.

Canadian Food Inspection Agency Compliant

COVERAGE

1 gallon (3.78 L) of EUCO QWIKjoint 200 yields 231 in^3 (3,785 cm^3) of material.

Six 22 oz (600 mL) cartridges equal approximately 1 gallon (3.78 L) of material.

The following table gives rough guidelines on estimating the amount of material needed. These numbers represent the length of joint that can be filled with 1 gallon (3.78 L) of material, based on the joints' width and depth.

	Joint Depth				
	1”	**1.5”**	**2”**	**2.5”**	**3”**
Joint Width					
3/32” (2.4 mm)	205 ft (62.5 m)	136 ft (41.5 m)	102 ft (31.1 m)	82 ft (25.0 m)	68 ft (20.7 m)
1/8” (3.2 mm)	154 ft (46.9 m)	102 ft (31.1 m)	77 ft (23.5 m)	61 ft (18.6 m)	51 ft (15.5 m)
3/16” (4.8 mm)	102 ft (31.1 m)	68 ft (20.7 m)	51 ft (15.5 m)	41 ft (12.5 m)	34 ft (10.4 m)
1/4” (6.4 mm)	77 ft (23.5 m)	51 ft (15.5 m)	38 ft (11.6 m)	30 ft (9.1 m)	25 ft (7.6 m)
3/8” (9.5 mm)	51 ft (15.5 m)	34 ft (10.4 m)	25 ft (7.6 m)	20 ft (6.1 m)	17 ft (5.2 m)
1/2” (12.7 mm)	38 ft (11.6 m)	25 ft (7.6 m)	19 ft (5.8 m)	15 ft (4.6 m)	12 ft (3.7 m)

DIRECTIONS FOR USE

Surface Preparation: All joints to be filled must be clean and dry. All oil, dirt, debris, paint and any other material that may be a bond breaker must be removed. The final step in cleaning must be the complete removal of all residue with a vacuum cleaner and oil-free compressed air. All joint facings must possess an open surface texture with all curing compounds and sealers removed. If this product will be used for filling floor cracks, the cracks must be routed out and cleaned before filling. For proper installation, all edges must be squared off.

Joint Backing: To provide proper load transfer, EUCO QWIKjoint 200 must be filled full depth of the joint or crack. Do not use backer rod or other fill material for the purpose of reducing volume. Dried silica sand, 1/16” to 1/8” (1.5 to 3 mm), may be used to fill the crack at the bottom of the joint and prevent three-sided adhesion.

Priming: EUCO QWIKjoint 200 does not require a primer before application.

Preparation of 10 gal (37.9 L) units

Mixing: Due to its extremely fast set time, EUCO QWIKjoint 200 requires machine mixing and placing. ****Slowly pre-mix Part B separately before using with a slow speed drill and mixing paddle for 2 to 3 minutes.** Do not whip air into the Part B while mixing. Follow mechanical pump manufacturer's equipment instructions for operation.

NOTE: If EUCO QWIKjoint 200 is to be stored in the dispensing pump overnight, place a sheet of plastic wrap directly on top of the liquid material in each tank to prevent exposure to air.

Preparation of 22 oz (600 mL) cartridges

QWIKjoint 200 cartridges must be shaken well before opening and using, as some settlement is normal during storage. Remove the threaded cartridge nut, then remove the white plastic plug from the top of the cartridge. The nut and plug can be set aside and later used to re-seal a partially used cartridge. To avoid cross contamination during re-sealing, clean the white plastic plug prior to re-inserting in the top of the cartridge. Thread the included static mixing nozzle onto the cartridge securely. Load the cartridge into a 1:1 ratio, dual-component dispensing gun, designed to accommodate 600 mL (300 mL x 300 mL) cartridges. Hold the gun with the mixing nozzle pointing straight upward, and pump EUCO QWIKjoint 200 up to the top of the static mixing nozzle. Then, tilt the gun downward and dispense the first 2 to 3 pumps (or until material appears uniform) of material into a disposable container. Discard this material. The cartridge is now prepared for the placement of EUCO QWIKjoint 200.

Placement for 10 gal (37.9 L) units and 22 oz (600 mL) cartridges

EUCO QWIKjoint 200 must be installed in the joint full depth. Joints should be slightly overfilled and shaved smoothly with the surrounding joint edges, giving the floor joints a flat appearance. Shaving of excess EUCO QWIKjoint 200 can begin approximately 1 hour after placement, and up to 24 hours later, depending on jobsite conditions such as the concrete and ambient temperatures.

CLEAN-UP

Tools, equipment and general clean-up can be done with EUCO SOLVENT or acetone. Clean equipment before EUCO QWIKjoint 200 has cured.

PRECAUTIONS/LIMITATIONS

- **Based on ACI 302 recommendations, joint fillers should be applied as late as possible after construction to allow for minimal additional slab shrinkage. Consult ACI 302 comments regarding concrete shrinkage, joint filling and user expectations.**
- EUCO QWIKjoint 200 material and all application equipment should be kept at ambient temperatures of 50°F (10°C) or above.
- Surface and ambient temperature during applications should be between -20°F and 90°F (-29°C and 32°C)
- For filling joints greater than 1/2 inch (1.3 cm) in width, the use of EUCO QWIKjoint UVR is strongly recommended.
- Do not use EUCO QWIKjoint 200 as an expansion joint sealant.
- Contact surfaces must be clean and dry for best adhesion.
- Joint edges must be thoroughly cleaned prior to filling, particularly if a floor sealer or densifier has been applied.
- Product may discolor in direct sunlight or artificial light.
- In all cases, consult the Safety Data Sheet before use.

EUCO QWIKJOINT UVR

UV-RESISTANT POLYUREA FLOOR JOINT FILLER

EUCLID CHEMICAL

DESCRIPTION

EUCO QWIKjoint UVR represents a new generation of polyurea technology with features and benefits unlike any other polyurea joint filler on the market. EUCO QWIKjoint UVR resists fading from ultraviolet light greater than any existing product. It is a fast-setting, semi-rigid polyurea, primarily used for filling construction and control joints in industrial and commercial concrete floors. EUCO QWIKjoint UVR can be shaved flush with the floor shortly after placement or up to 24 hours later. EUCO QWIKjoint UVR supports and protects joint edges from heavy loads and wheel traffic, reducing spalling of the joint edges. EUCO QWIKjoint UVR is available in 33 standard colors and in a Neutral Base, that can be colored on site with EUCLID UNIVERSAL COLOR PACKS; available in the same 33 colors.

PRIMARY APPLICATIONS

- Concrete construction & control joints
- Crack and joint repair for old floors
- Industrial and commercial floors
- Freezer floors

FEATURES/BENEFITS

- Unparalleled UV resistance
- Fast setting formula reduces downtime
- Large shave-time window allows for greater flexibility in scheduling joint filling operations
- Tough performance reduces floor joint repairs and maintenance
- Will cure in temperatures as low as -20° F (-29°C)
- No bubbles/foaming when used in damp joints
- Less moisture-sensitive than standard polyureas
- Available in 33 standard colors

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	TEST METHOD	RESULT
Gel Time	--	25-30 seconds
Shore D Hardness	ASTM D2240	34 to 36
Shore A Hardness	ASTM D2240	84 to 88
Tensile Strength @ 7 days	ASTM D412	660 psi (4.6 MPa)
Elongation @ 7 days	ASTM D412	220% to 260%
Shave “Window”	--	1 to 24 hours
Tack-Free Time	--	3 to 4 minutes
Traffic Ready Time	--	Light Traffic: 1 hour Heavy Traffic: 2 hours
Adhesion to Concrete @ 7 days	ASTM D4541	250 psi (1.7 MPa)
Viscosity	ASTM D2196	Part A: 2,000 cp Part B: 1,800 cp

CHEMICAL RESISTANCE, ASTM D1308	
Acetic Acid, 10%	no effect
Alcohol, 10%	no effect
Ammonium Hydroxide, 10%	no effect
Brake Fluid	swelled, softened
Diesel Fuel	discolored
Ethylene Glycol (antifreeze)	no effect
Gasoline	stained
Hydrochloric Acid, 20%	slight swelling
JP-4 Jet Fuel	no effect
Used Motor Oil	stained
Salt Water	no effect
Sodium Hydroxide, 10%	slightly discolored
Sulfuric Acid, 10%	no effect
Xylene	no effect

Appearance: EUCO QWIKjoint UVR is available in 33 standard colors and in a Neutral Base that can be colored on site using EUCLID UNIVERSAL COLOR PACKS, which are available in the same 33 standard colors. See the EUCLID UNIVERSAL COLOR CHART for available colors. The user should expect some batch to batch variability in color. If possible, “box” the Part B after pre-stirring each pail to ensure color uniformity.

PACKAGING

EUCO QWIKjoint UVR is a two-component product packaged in 22 oz (600 mL) side-by-side cartridges (12/case) and 10 gal (37.9 L) kits for all 33 standard colors. The mix ratio for all packaging sizes is 1:1.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

EUCO QWIKjoint UVR complies with ACI 302 performance recommendations regarding control and construction joint fillers

COVERAGE

1 gallon (3.78 L) of EUCO QWIKjoint UVR yields 231 in^3 (3,785 cm^3) of material.

Six 22 oz (600 mL) cartridges equal approximately 1 gallon (3.78 L) of material.

The following table gives rough guidelines on estimating the amount of material needed. These numbers represent the length of joint that can be filled with 1 gallon (3.78 L) of material, based on the joints' width and depth.

	Joint Depth				
	1"	**1.5"**	**2"**	**2.5"**	**3"**
Joint Width					
3/32" (2.4 mm)	205 ft (62.5 m)	136 ft (41.5 m)	102 ft (31.1 m)	82 ft (25.0 m)	68 ft (20.7 m)
1/8" (3.2 mm)	154 ft (46.9 m)	102 ft (31.1 m)	77 ft (23.5 m)	61 ft (18.6 m)	51 ft (15.5 m)
3/16" (4.8 mm)	102 ft (31.1 m)	68 ft (20.7 m)	51 ft (15.5 m)	41 ft (12.5 m)	34 ft (10.4 m)
1/4" (6.4 mm)	77 ft (23.5 m)	51 ft (15.5 m)	38 ft (11.6 m)	30 ft (9.1 m)	25 ft (7.6 m)
3/8" (9.5 mm)	51 ft (15.5 m)	34 ft (10.4 m)	25 ft (7.6 m)	20 ft (6.1 m)	17 ft (5.2 m)
1/2" (12.7 mm)	38 ft (11.6 m)	25 ft (7.6 m)	19 ft (5.8 m)	15 ft (4.6 m)	12 ft (3.7 m)

DIRECTIONS FOR USE

Surface Preparation: All joints to be filled must be clean and dry. All oil, dirt, debris, paint and any other material that may be a bond breaker must be removed. The final step in cleaning must be the complete removal of all residue with a vacuum cleaner and oil-free compressed air. All joint facings must possess an open surface texture with all curing compounds and sealers removed. If this product will be used for filling floor cracks, the cracks must be routed out and cleaned before filling. For proper installation, all edges must be squared off.

Joint Backing: To provide proper load transfer, EUCO QWIKjoint UVR must be filled full depth of the joint or crack. Do not use backer rod or other fill material for the purpose of reducing volume. Dried silica sand, 1/16" to 1/8" (1.5 to 3 mm), may be used to fill the crack at the bottom of the joint and prevent three-sided adhesion.

Priming: EUCO QWIKjoint UVR does not require a primer before application.

Preparation of 10 gal (37.9 L) units

Mixing: Due to its extremely fast set time, EUCO QWIKjoint UVR requires machine mixing and placing. ****Slowly pre-mix Part B separately before using with a slow speed drill and mixing paddle for 2 to 3 minutes.** Do not whip air into the Part B while mixing. Follow mechanical pump manufacturer's equipment instructions for operation.

NOTE: If EUCO QWIKjoint UVR is to be stored in the dispensing pump overnight, place a sheet of plastic wrap directly on top of the liquid material in each tank to prevent exposure to air.

Euclid Universal Color Packs: EUCO QWIKjoint UVR Neutral Base can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 10 gal (37.85 L) unit. Prior to mixing the unit together, stir the color pack into the part "B" side of the product while conducting the pre-mix as described above, until it is fully dispersed. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors.

Preparation of 22 oz (600 mL) cartridges

QWIKjoint UVR cartridges must be shaken well before opening and using, as some settlement is normal during storage. Remove the threaded cartridge nut, then remove the white plastic plug from the top of the cartridge. The nut and plug can be set aside and later used to re-seal a partially used cartridge. To avoid cross contamination during re-sealing, clean the white plastic plug prior to re-inserting in the top of the cartridge. Thread the included static mixing nozzle onto the cartridge securely. Load the cartridge into a 1:1 ratio, dual-component dispensing gun, designed to accommodate 600 mL (300 mL x 300 mL) cartridges. Hold the gun with the mixing nozzle pointing straight upward, and pump EUCO QWIKjoint UVR up to the top of the static mixing nozzle. Then, tilt the gun downward and dispense the first 2 to 3 pumps (or until material appears uniform) of material into a disposable container. Discard this material. The cartridge is now prepared for the placement of EUCO QWIKjoint UVR.

Placement for 10 gal (37.9 L) units and 22 oz (600 mL) cartridges

EUCO QWIKjoint UVR must be installed in the joint full depth. Joints should be slightly overfilled and shaved smoothly with the surrounding joint edges, giving the floor joints a flat appearance. Shaving of excess EUCO QWIKjoint UVR can begin approximately 1 hour after placement, and up to 24 hours later, depending on jobsite conditions such as the concrete and ambient temperatures.

CLEAN-UP

EUCO SOLVENT or acetone may be used for clean-up of tools and equipment. Clean excess material before EUCO QWIKjoint UVR has cured. Cured material will require removal by mechanical means.

PRECAUTIONS/LIMITATIONS

- **Based on ACI 302 recommendations, joint fillers should be applied as late as possible after construction to allow for minimal additional slab shrinkage. Consult ACI 302 comments regarding concrete shrinkage, joint filling and user expectations.**
- One EUCLID UNIVERSAL COLOR PACK (EUCO Pack) may be added per 10 gal (37.85 L) unit of Neutral Base; mix into the “B” side.
- EUCO QWIKjoint UVR material and all application equipment should be kept at ambient temperatures of 50°F (10°C) or above.
- Surface and ambient temperature during applications should be between -20°F and 90°F (-29°C and 32°C)
- Do not use EUCO QWIKjoint UVR as an expansion joint sealant.
- Contact surfaces must be clean and dry for best adhesion.
- Joint edges must be thoroughly cleaned prior to filling, particularly if a floor sealer or densifier has been applied.
- Product may slightly discolor if constantly exposed to exterior UV radiation.
- In all cases, consult the Safety Data Sheet before use.

EUCO QWIKJOINT UVR 95

HIGHER HARDNESS, UV-RESISTANT POLYUREA FLOOR JOINT FILLER

EUCLID CHEMICAL

DESCRIPTION

EUCO QWIKjoint UVR 95 is a polyurea joint filler designed for use in commercial and industrial concrete floors that receive heavy forklift and equipment traffic. The higher hardness of QWIKjoint UVR 95 provides increased protection from joint damage, while still offering a user-friendly shave time and resistance to color change from exposure to ultraviolet light. QWIKjoint UVR 95 is available in 33 standard colors and in a Neutral Base that can be colored on the jobsite with Euclid Universal Color Packs.

PRIMARY APPLICATIONS

- Concrete construction & control joints
- Crack and joint repair for old floors
- Industrial and commercial floors
- Freezer floors

FEATURES/BENEFITS

- Unparalleled UV resistance
- Fast setting formula reduces downtime
- Large shave-time window allows for greater flexibility in scheduling joint filling operations
- Tough performance reduces floor joint repairs and maintenance
- Will cure in temperatures as low as -20° F (-29°C)
- No bubbles/foaming when used in damp joints
- Less moisture-sensitive than standard polyureas
- Available in 33 standard colors

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	TEST METHOD	RESULT
Gel Time	--	31 seconds
Shore D Hardness	ASTM D2240	39 to 41
Shore A Hardness	ASTM D2240	95 to 97
Tensile Strength @ 7 days	ASTM D412	930 psi (6.4 MPa)
Elongation @ 7 days	ASTM D412	210% to 250%
Shave “Window”	--	30 min to 24 hours
Tack-Free Time	--	3 to 4 minutes
Traffic Ready Time	--	Light Traffic: 1 hour Heavy Traffic: 2 hours
Adhesion to Concrete @ 7 days	ASTM D4541	250 psi (1.7 MPa)
Viscosity	ASTM D2196	Part A: 1,850 cp Part B: 1,800 cp

CHEMICAL RESISTANCE, ASTM D1308	
Acetic Acid, 10%	no effect
Alcohol, 10%	no effect
Ammonium Hydroxide, 10%	no effect
Brake Fluid	swelled, softened
Diesel Fuel	discolored
Ethylene Glycol (antifreeze)	no effect
Gasoline	stained
Hydrochloric Acid, 20%	slight swelling
JP-4 Jet Fuel	no effect
Used Motor Oil	stained
Salt Water	no effect
Sodium Hydroxide, 10%	slightly discolored
Sulfuric Acid, 10%	no effect
Xylene	no effect

Appearance: EUCO QWIKjoint UVR 95 is available in 33 standard colors and in a Neutral Base that can be colored on site using EUCLID UNIVERSAL COLOR PACKS, which are available in the same 33 standard colors. See the EUCLID UNIVERSAL COLOR CHART for available colors. The user should expect some batch to batch variability in color. If possible, “box” the Part B after pre-stirring each pail to ensure color uniformity.

PACKAGING

EUCO QWIKjoint UVR 95 is a two-component product packaged in 10 gal (37.9 L) kits for all 33 standard colors. The mix ratio for all packaging sizes is 1:1.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

EUCO QWIKjoint UVR 95 complies with ACI 302 performance recommendations regarding control and construction joint fillers

COVERAGE

1 gallon (3.78 L) of EUCO QWIKjoint UVR 95 yields 231 in^3 (3,785 cm^3) of material.

Six 22 oz (600 mL) cartridges equal approximately 1 gallon (3.78 L) of material.

The following table gives rough guidelines on estimating the amount of material needed. These numbers represent the length of joint that can be filled with 1 gallon (3.78 L) of material, based on the joints' width and depth.

	Joint Depth				
	1”	**1.5”**	**2”**	**2.5”**	**3”**
Joint Width					
3/32” (2.4 mm)	205 ft (62.5 m)	136 ft (41.5 m)	102 ft (31.1 m)	82 ft (25.0 m)	68 ft (20.7 m)
1/8” (3.2 mm)	154 ft (46.9 m)	102 ft (31.1 m)	77 ft (23.5 m)	61 ft (18.6 m)	51 ft (15.5 m)
3/16” (4.8 mm)	102 ft (31.1 m)	68 ft (20.7 m)	51 ft (15.5 m)	41 ft (12.5 m)	34 ft (10.4 m)
1/4” (6.4 mm)	77 ft (23.5 m)	51 ft (15.5 m)	38 ft (11.6 m)	30 ft (9.1 m)	25 ft (7.6 m)
3/8” (9.5 mm)	51 ft (15.5 m)	34 ft (10.4 m)	25 ft (7.6 m)	20 ft (6.1 m)	17 ft (5.2 m)
1/2” (12.7 mm)	38 ft (11.6 m)	25 ft (7.6 m)	19 ft (5.8 m)	15 ft (4.6 m)	12 ft (3.7 m)

DIRECTIONS FOR USE

Surface Preparation: All joints to be filled must be clean and dry. All oil, dirt, debris, paint and any other material that may be a bond breaker must be removed. The final step in cleaning must be the complete removal of all residue with a vacuum cleaner and oil-free compressed air. All joint facings must possess an open surface texture with all curing compounds and sealers removed. If this product will be used for filling floor cracks, the cracks must be routed out and cleaned before filling. For proper installation, all edges must be squared off.

Joint Backing: To provide proper load transfer, EUCO QWIKjoint UVR 95 must be filled full depth of the joint or crack. Do not use backer rod or other fill material for the purpose of reducing volume. Dried silica sand, 1/16” to 1/8” (1.5 to 3 mm), may be used to fill the crack at the bottom of the joint and prevent three-sided adhesion.

Priming: EUCO QWIKjoint UVR 95 does not require a primer before application.

Mixing: Due to its extremely fast set time, EUCO QWIKjoint UVR 95 requires machine mixing and placing. ****Slowly pre-mix Part B separately before using with a slow speed drill and mixing paddle for 2 to 3 minutes.** Do not whip air into the Part B while mixing. Follow mechanical pump manufacturer's equipment instructions for operation.

NOTE: If EUCO QWIKjoint UVR 95 is to be stored in the dispensing pump overnight, place a sheet of plastic wrap directly on top of the liquid material in each tank to prevent exposure to air.

Euclid Universal Color Packs: EUCO QWIKjoint UVR 95 Neutral Base can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 10 gal (37.85 L) unit. Prior to mixing the unit together, stir the color pack into the part “B” side of the product while conducting the pre-mix as described above, until it is fully dispersed. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors.

Placement: EUCO QWIKjoint UVR 95 must be installed in the joint full depth. Joints should be slightly overfilled and shaved smoothly with the surrounding joint edges, giving the floor joints a flat appearance. Shaving of excess EUCO QWIKjoint UVR 95 can begin approximately 30 minutes after placement, and up to 24 hours later, depending on jobsite conditions such as the concrete and ambient temperatures.

CLEAN-UP

EUCO SOLVENT or acetone may be used for clean-up of tools and equipment. Clean excess material before EUCO QWIKjoint UVR 95 has cured. Cured material will require removal by mechanical means.

PRECAUTIONS/LIMITATIONS

- **Based on ACI 302 recommendations, joint fillers should be applied as late as possible after construction to allow for minimal additional slab shrinkage. Consult ACI 302 comments regarding concrete shrinkage, joint filling and user expectations.**
- One EUCLID UNIVERSAL COLOR PACK (EUCO Pack) may be added per 10 gal (37.85 L) unit of Neutral Base; mix into the “B” side.
- EUCO QWIKjoint UVR 95 material and all application equipment should be kept at ambient temperatures of 50°F (10°C) or above.
- Surface and ambient temperature during applications should be between -20°F and 90°F (-29°C and 32°C)
- Do not use EUCO QWIKjoint UVR 95 as an expansion joint sealant.
- Contact surfaces must be clean and dry for best adhesion.
- Joint edges must be thoroughly cleaned prior to filling, particularly if a floor sealer or densifier has been applied.
- Product may slightly discolor if constantly exposed to exterior UV radiation.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DURAL 340 NS, DURAL 340 SL

CONSTRUCTION AND CONTROL JOINT FILLER AND TRAFFIC LOOP SEALANT

EUCLID CHEMICAL

DESCRIPTION

DURAL 340 NS AND DURAL 340 SL are two-component, 100% solids, semi-rigid epoxy joint fillers. DURAL 340 NS & SL are available in a Standard Gray color and a Neutral Base, that can be colored with EUCLID UNIVERSAL COLOR PACKS; available in 33 standard colors.

PRIMARY APPLICATIONS

- Filling concrete construction joints
- Control joints
- Wire sealant
- Cracks in concrete
- Traffic loop sealant

FEATURES/BENEFITS

- Protects joint edges and prevents spalling in control joints
- High bond strength
- Resistance to mild acids/alkalis and incidental contact with aromatic solvents
- Excellent thermal shock resistance
- DURAL 340 NS is a non-sag version used for vertical surfaces or sloped horizontal surfaces
- DURAL 340 SL is a self-leveling formulation used for horizontal surfaces
- 33 colors available using color packs

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

	DURAL 340 SL	DURAL 340 NS
Mix Ratio (A:B by volume)	1:1	1:1
Mixed Viscosity (cp)	4,000 to 7,000	Gel
Gel Time (100 g), minutes	50 to 60	50 to 60
Pot Life (full unit), minutes	30 to 45	30 to 45
Tack Free Time hours	5 to 6	5 to 6
Shore A Hardness ASTM D2240	80 to 90	85 to 90
Tensile Strength ASTM D638 psi(MPa)	800 (5.5)	–
Tensile Elongation % ASTM D638	95 to 105	–

Appearance: DURAL 340 NS & SL are available in Standard Gray and in a Neutral Base, that can be colored using EUCLID UNIVERSAL COLOR PACKS, which are available in 33 standard colors. See the EUCLID UNIVERSAL COLOR CHART for available colors.

PACKAGING

DURAL 340 NS and DURAL 340 SL are packaged in 4 gal (15.5 L) and 10 gal (37.85 L) units.

SHELF LIFE

2 years in original, unopened, properly stored containers

SPECIFICATIONS/COMPLIANCES

DURAL 340 NS & DURAL 340 SL comply with ACI 302 performance recommendations regarding control and construction joint fillers

COVERAGE

1 gallon (3.78 L) of DURAL 340 NS or DURAL 340 SL yields 231 in^3 (3,785 cm^3) of material.

The following table gives rough guidelines on estimating the amount of material needed. These numbers represent the length of joint that can be filled with 1 gallon (3.78 L) of material, based on the joints' width and depth.

	Joint Depth				
	1"	1.5"	2"	2.5"	3"
Joint Width					
3/32" (2.4 mm)	205 ft (62.5 m)	136 ft (41.5 m)	102 ft (31.1 m)	82 ft (25.0 m)	68 ft (20.7 m)
1/8" (3.2 mm)	154 ft (46.9 m)	102 ft (31.1 m)	77 ft (23.5 m)	61 ft (18.6 m)	51 ft (15.5 m)
3/16" (4.8 mm)	102 ft (31.1 m)	68 ft (20.7 m)	51 ft (15.5 m)	41 ft (12.5 m)	34 ft (10.4 m)
1/4" (6.4 mm)	77 ft (23.5 m)	51 ft (15.5 m)	38 ft (11.6 m)	30 ft (9.1 m)	25 ft (7.6 m)
3/8" (9.5 mm)	51 ft (15.5 m)	34 ft (10.4 m)	25 ft (7.6 m)	20 ft (6.1 m)	17 ft (5.2 m)
1/2" (12.7 mm)	38 ft (11.6 m)	25 ft (7.6 m)	19 ft (5.8 m)	15 ft (4.6 m)	12 ft (3.7 m)

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, dry, clean, free of dust, dirt, grease, oil, coatings, laitance, and other contaminants that would interfere with proper adhesion. Surface should be abrasive blasted, or water blasted. Rout all cracks to at least 1/4 in (0.63 cm) wide and deep. Saw-cut joints should be thoroughly cleaned so that debris from sawing is removed from the joint. Joints must be completely dry before installing DURAL 340 NS and DURAL 340 SL.

Mixing: Premix Part A and Part B separately. Combine 1 part by volume of Part A to 1 part by volume of Part B and mix thoroughly with a slow speed motor and mixing blade. A drill and Jiffy mixer is acceptable. Do not thin. Scrape the side and bottom of the mixing container to assure uniform and complete mixing. Mix for 2 to 3 minutes. Do not aerate mix.

Euclid Universal Color Packs: DURAL 340 NS & SL can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 4 gal (15.5 L) unit and **2** EUCLID UNIVERSAL COLOR PACKS (EUCO Pack) per 10 gal (37.85 L) unit. Prior to mixing the unit together, stir the appropriate amount of colors packs into the part "A" side of the product until it is fully dispersed. Proceed with mixing as stated above. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors.

Application: Gun DURAL 340 NS and DURAL 340 SL into the joints with a bulk caulking gun, pressure extruder, or other low pressure extrusion methods. Apply the material from the bottom of the joint upward to minimize voids or air pockets. Any topping off or subsequent retooling of the joint filler should be done prior to the product achieving its initial set. When DURAL 340 is used as a traffic loop sealant, start at the highest elevation and pour into the sawed joint until it is filled to 2/3 of its full depth. Allow DURAL 340 to settle around the wires. Immediately thereafter make a second application to completely fill the slot. Do not apply when temperature is below 50°F (10°C). Allow to cure for 24 hours at 75°F (24°C), or longer at colder temperatures, before opening to traffic.

CLEAN-UP

Clean tools and equipment immediately after application with acetone. Clean up spills and drips while still wet. Dried DURAL 340 NS and DURAL 340 SL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- Do not apply to frozen or frost filled substrates, or when the temperature is below 50°F (10°C), or expected to fall below that temperature within 24 hours.
- Protect from moisture. Do not apply to exterior surfaces if rain is forcast within 24 hours.
  Not intended for areas subject to constant immersion.
- Not intended for areas subject to prolonged or strong chemical attack.
- Do not thin DURAL 340 NS and DURAL 340 SL.
- Cure concrete a minimum of 28 days before application since the sealant acts as a vapor barrier.
- **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 4 gal (15.5 L) unit and **2** EUCLID UNIVERSAL COLOR PACKS (EUCO Pack) per 10 gal (37.85 L) unit. DURAL 340 NS & SL are not UV stable. If aesthetics are a major issue, consider using EUCO QWIKJOINT UVR polyurea joint filler.
- DURAL 340 NS and DURAL 340 SL should not be used in expansion joints, or to repair any type of moving cracks.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO 700

SEMI-RIGID INDUSTRIAL FLOOR JOINT FILLER

EUCLID CHEMICAL

DESCRIPTION

EUCO 700 is a two-component, 100% solids semi-rigid epoxy for filling control and construction joints in industrial concrete floors. This product supports the joint edges and reduces spalling of the edges caused by wheel traffic. EUCO 700 has been designed for use in compliance with ACI 302 recommendations for epoxy joint fillers used in control and construction joints. EUCO 700 is available in Standard Gray and a Neutral Base, that can be colored with EUCLID UNIVERSAL COLOR PACKS; available in 33 standard colors.

PRIMARY APPLICATIONS

- Concrete construction & control joints
- Crack filling in concrete floors
- Industrial and commercial floors
- Interior applications

FEATURES/BENEFITS

- Semi-rigid formula that allows for limited temperature and humidity movement of concrete
- Tough performance reduces floor joint repairs and maintenance
- Suitable for filling cracks in older floors to reduce the rate of deterioration
- Available in selected color formulations for use with colored dry shake floor hardeners
- 33 colors available using color packs

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Pot Life @ 75°F (24°C) ..... 15 minutes
Tack-Free Time @75°F (24°C) .....12 hours
Compressive Strength, ASTM D695
72 hours .....3000 psi (20.7 MPa)
Tensile Strength, ASTM D638
7 days.....690 psi (4.6 MPa)

Elongation, ASTM D638
7 days.....55%
Water Absorption, ASTM D570
72 hour immersion 1.1%
Shore D Hardness ASTM D2240
7 days.....55
Shore A Hardness .....> 100

Chemical Resistance: Contact The Euclid Chemical Company for complete chemical resistance information.

EUCO 700 will accept normal traffic in 24 hours if ambient conditions are at 70°F (21°C) and 50% relative humidity. Expect complete cure within one week.

Appearance: EUCO 700 is a two-part epoxy available in Standard Gray and in a Neutral Base, that can be colored using EUCLID UNIVERSAL COLOR PACKS, which are available in 33 standard colors. See the EUCLID UNIVERSAL COLOR CHART for available colors.

PACKAGING/YIELD

EUCO 700 is a two part epoxy product packaged in 2 gal (7.6 L) kits which contain both the hardener and the resin. The premeasured mix ratio is 1:1. A 2 gal (7.6 L) unit yields 463 in^3 (7570 cm^3) of product. EUCO 700 is also available in 10 gal (37.9 L) and 100 gal (379 L) kits for use on large projects in machine placement applications.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

EUCO 700 is a semi-rigid joint filler designed to comply with ACI 302 recommendations regarding control and construction joints.

Canadian Food Inspection Agency Compliant

COVERAGE

1 gallon (3.78 L) of EUCO 700 yields 231 in^3 (3,785 cm^3) of material.

The following table gives rough guidelines on estimating the amount of material needed. These numbers represent the length of joint that can be filled with 1 gallon (3.78 L) of material, based on the joints' width and depth.

	Joint Depth				
	1”	**1.5”**	**2”**	**2.5”**	**3”**
Joint Width					
3/32” (2.4 mm)	205 ft (62.5 m)	136 ft (41.5 m)	102 ft (31.1 m)	82 ft (25.0 m)	68 ft (20.7 m)
1/8” (3.2 mm)	154 ft (46.9 m)	102 ft (31.1 m)	77 ft (23.5 m)	61 ft (18.6 m)	51 ft (15.5 m)
3/16” (4.8 mm)	102 ft (31.1 m)	68 ft (20.7 m)	51 ft (15.5 m)	41 ft (12.5 m)	34 ft (10.4 m)
1/4” (6.4 mm)	77 ft (23.5 m)	51 ft (15.5 m)	38 ft (11.6 m)	30 ft (9.1 m)	25 ft (7.6 m)
3/8” (9.5 mm)	51 ft (15.5 m)	34 ft (10.4 m)	25 ft (7.6 m)	20 ft (6.1 m)	17 ft (5.2 m)
1/2” (12.7 mm)	38 ft (11.6 m)	25 ft (7.6 m)	19 ft (5.8 m)	15 ft (4.6 m)	12 ft (3.7 m)

DIRECTIONS FOR USE

Surface Preparation: The joint must be clean and sound. All oil, dirt, debris, paint and any other material that may be a bond breaker must be removed. All joint facings must possess an open surface texture with all curing compounds and sealers removed. If this product will be used for filling floor cracks, the cracks should be routed out and cleaned before filling. Ideally, all crack edges should be squared. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or pressure washing.

Joint Backing: Avoid the use of backer rod, sand or other fill material for the purpose of reducing volume. The full depth of the joint or crack must be filled with EUCO 700 for proper load transfer.

Priming: EUCO 700 does not require a primer before application.

Mixing: EUCO 700 is a two-part product and requires mixing. Premix each part separately before combining the materials. Pour all of the Part B hardener into the Part A resin and mix with a mechanical mixer and prop for 2 to 3 minutes. Make sure that the sides of the can are scraped to assure that all of the resin and hardener are thoroughly mixed.

Euclid Universal Color Packs: EUCO 700 can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 2 gal (7.6 L) unit and **2** EUCLID UNIVERSAL COLOR PACKS (EUCO Pack) per 10 gal (37.85 L) unit. Prior to mixing the unit together, stir the appropriate amount of colors packs into the part “A” side of the product until it is fully dispersed. Proceed with mixing as stated above. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors.

Placement: After the liquids are thoroughly mixed, pour or gun the mixed material into the joint, filling it approximately 2/3 its full depth. Allow the joint filler to settle and then complete filling **within 1 hour** to the level of the floor. Use all material rapidly due to the short pot life.

Finishing/**Shaving**: Joints should be overfilled during placement. Cut flush with a razor knife or grind flush with the floor within 24 hours after placement. If EUCO 700 has completely hardened, heat may be used to soften the material for easier removal.

Curing: EUCO 700 will cure within 24 hours of placement @70°F (21°C). Lower temperatures will slow the curing rate.

CLEAN-UP

Clean tools and equipment before the epoxy has cured with a solvent such as acetone or xylene. Hardened EUCO 700 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- **Based on ACI 302 recommendations, joint fillers should be installed as late as possible after construction to allow for minimal additional slab shrinkage. Consult ACI 302 regarding concrete shrinkage, joint filling and user expectations.**
- **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per 2 gal (7.6 L) unit and **2** EUCLID UNIVERSAL COLOR PACKS (EUCO Pack) per 10 gal (37.85 L) unit. EUCO 700 is not UV stable. If aesthetics are a major issue, consider using EUCO QWIKJOINT UVR polyurea joint filler.
- Do not use EUCO 700 as an expansion joint sealant.
- Use only at temperatures above 40°F (4°C).
- Contact surfaces must be clean and dry.
- To ensure proper adhesion, joint edges must be thoroughly cleaned prior to filling, particularly if a floor sealer or liquid densifier has been applied.
- Product may discolor in direct or strong UV indoor or outdoor light.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO CLEAN-CUT

JOINT FILLER STAIN PREVENTION FILM

EUCLID CHEMICAL

DESCRIPTION

EUCO CLEAN-CUT is a water-based blend of film-forming polymers that prevents staining of concrete due to overfill of epoxy or polyurea joint fillers. When applied to concrete adjacent to floor joints prior to filling, EUCO CLEAN-CUT dries to form a clear, glossy film that seals and protects the surface. After joint filling and shaving, EUCO CLEAN-CUT is easily removed with water. EUCO CLEAN-CUT also acts as a release film, making joint filler shaving operations faster and less labor-intensive.

PRIMARY APPLICATIONS

- Concrete construction and control joints
- Expecially suitable for colored concrete where appearance is critical

FEATURES/BENEFITS

- Prevents unsightly stains caused by joint material overfill
- Makes joint filler shaving easier
- Can be removed from concrete and tools with water
- Water-based, very low odor formula

TECHNICAL INFORMATION

Typical Engineering Data

VOC Content: ≤5 g/L

Dry Time: 15 to 20 minutes @ 77°F (25°C), 40% RH

Appearance: Clear liquid

PACKAGING

EUCO CLEAN-CUT is packaged in 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

700 to 800 ft^2/gal (17.2 to 19.6 m^2/L), depending on the texture and porosity of the concrete, the type of joint filler used, and the width of film applied. One coat is normally adequate, but a second coat may be required if the concrete is extremely rough or porous. A test application is recommended to determine the required coverage rate.

DIRECTIONS FOR USE

Concrete surfaces should be clean and dry. Ambient and concrete temperature must be between 40°F to 90°F (4°C to 32°C). EUCO CLEAN-CUT should be applied the same day as the joint filler installation. Apply EUCO CLEAN-CUT to concrete next to the unfilled joint using a small, short-napped paint roller, brush, or sprayer. **DO NOT ALLOW EUCO CLEAN-CUT TO FLOW INTO THE JOINT.** The interior of the joint must be protected from run-off or overspray. The width of film applied to the concrete surface adjacent to the joint will depend on the expected amount of joint material overfill. Allow EUCO CLEAN-CUT to dry completely before installation of joint filler. Dry time will depend on application rate as well as ambient temperature and humidity conditions. After joint filler shaving is complete, the remaining EUCO CLEAN-CUT can be removed with clean water. Allow the water to soften and dissolve the EUCO CLEAN-CUT film, then wash away. Some scrubbing with a brush or abrasive pad may be required. Use a household alkaline cleaner or detergent such as TSP (trisodium phosphate) to help remove stubborn spots or thick applications of EUCO CLEAN-CUT. **REMOVAL OF EUCO CLEAN-CUT MUST BE DONE IMMEDIATELY AFTER JOINTS ARE FILLED AND SHAVED. IF THE EUCO CLEAN CUT IS ALLOWED TO REMAIN ON THE CONCRETE, REMOVAL MAY BE EXTREMELY DIFFICULT.**

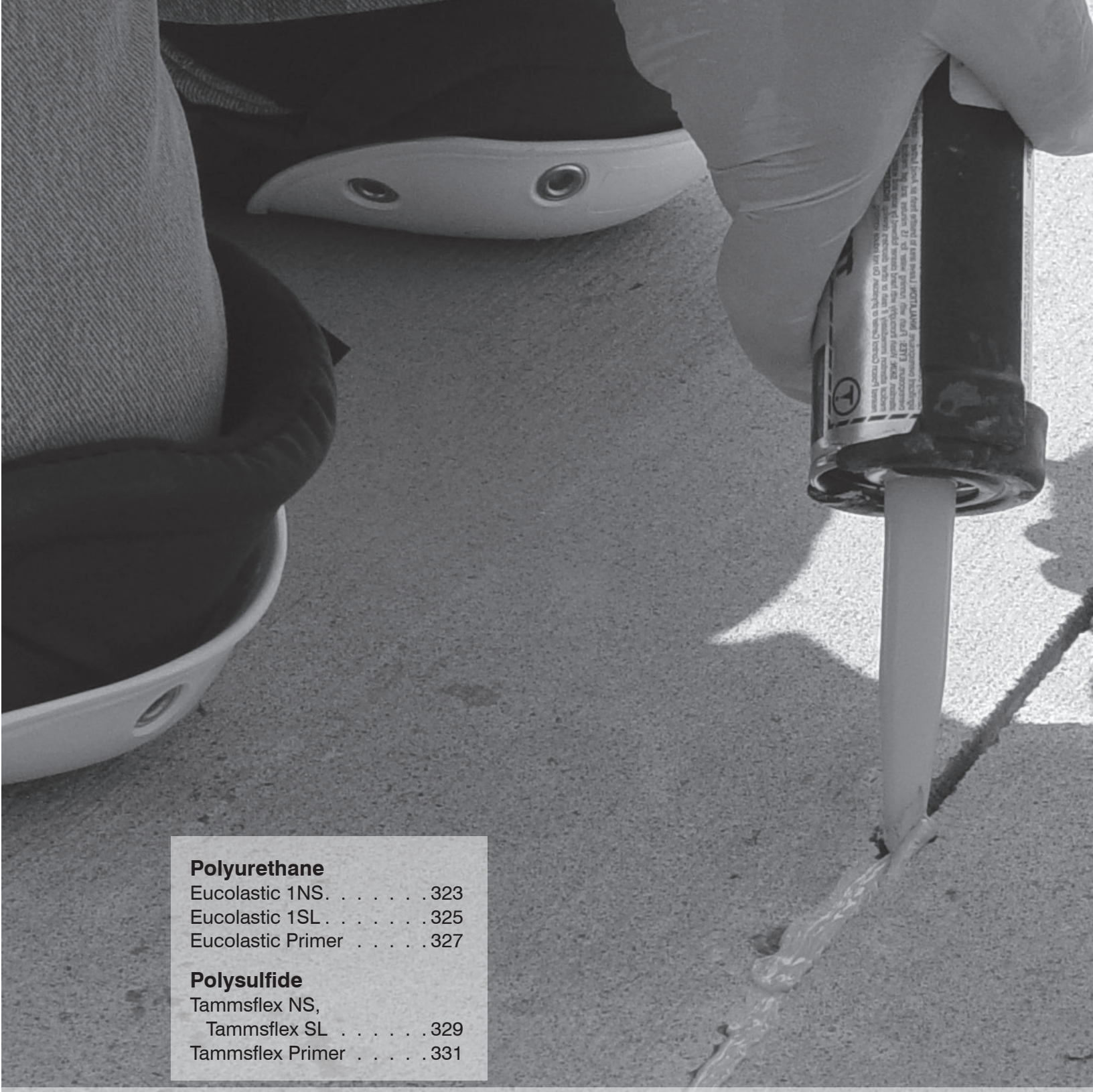
CLEAN-UP

Clean tools and equipment with water.

PRECAUTIONS/LIMITATIONS

- Do not use EUCO CLEAN-CUT at temperatures below 40°F (4°C).
- Do not allow EUCO CLEAN-CUT to freeze.
- The performance of EUCO CLEAN-CUT is dependent on the texture and porosity of the concrete and the type of joint filler used. A test section is strongly recommended to determine the thickness of EUCO CLEAN-CUT film required, and to estimate the overall effectiveness of the product given the site conditions.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19



JOINT SEALANTS

EUCOLASTIC 1NS

SINGLE-COMPONENT, NON-SAG POLYURETHANE HYBRID SEALANT

EUCLID CHEMICAL

DESCRIPTION

EUCOLASTIC 1NS is a single-component, non-sag, low-modulus, moisture-cured, polyurethane hybrid joint sealant. EUCOLASTIC 1NS is formulated with a unique silane-terminated polyurethane polymer, that provides unequaled performance against stand-alone polyurethane sealants. EUCOLASTIC 1NS is an extremely durable sealant in dynamic joints, offering persistent adhesion once fully cured.

PRIMARY APPLICATIONS

- Concrete control & expansion joints
- Precast concrete panels
- EIFS
- Window & door perimeters
- Masonry
- Interior and exterior applications
- Above and below grade

FEATURES/BENEFITS

- Skins rapidly and is tack-free in 3 to 4 hours @ 75° F (24° C)
- Service temperature range: -40°F to 185°F (-40°C to 85°C)
- Remains adhesively and cohesively bonded during temperature cyclic movement
- Extraordinary movement capability of +/- 35%
- Can be painted

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULTS
Rheology ASTM C639	Grade NS (Non-Sag), < 0.1875" (4.8 mm)
Extrusion Rate ASTM C1183	57.9 ml/min.
Hardness, Shore A ASTM C661	25
Movement Capability ASTM C719	+/- 35%
Skin Time	1 hr.
Tack Free Time ASTM C679	5-6 hr.
Adhesion-in-Peel ASTM C794	Concrete 18-22 Pli (31.5-38.5 N/cm) No adhesion loss
Stain & Color Change ASTM C510	No stain/No color change
Effects of Accelerated Aging ASTM C793	No Cracking or Chalking

Appearance: Eucolastic 1NS is a single-component sealant available in the following colors: Black, Bronze, Gray, Limestone, Off White, Redwood Tan, Stone, Tan, and White.

PACKAGING/YIELD

EUCOLASTIC 1NS is available in cases of 10.1 oz. (300 ml) cartridges (30 cartridges per case). One cartridge yields 18 in^3 (294 cm^3), and will cover 24 linear feet (7.3 m) in a 1/4" x 1/4" (6 mm x 6 mm) joint.

SHELF LIFE

18 months in original, unpunctured cartridge

SPECIFICATIONS/COMPLIANCES

- ASTM C920, Type S, Grade NS, Class 35, Use NT, M, A, and O
- U.S. Federal Specification TT-S-00230C Class A, Type II
- ASTM C1248
- CAN/CGSB 19.13-M87

DIRECTIONS FOR USE

Joint Dimensions: Joint width should be 4 times the expected joint movement, but not less than 1/4" (6 mm). Width to depth ratios should be equal for joints that are 1/4" (6 mm) to 1/2" (13 mm) in width. If joint width is 1/2" (13 mm) to 1" (25 mm), the depth of EUCOLASTIC 1NS should be 1/2 the width, with 1/2" (13 mm) being the maximum allowable depth of EUCOLASTIC 1NS. Use backer rod or bond breaker tape to limit the depth of application and to prevent three-sided adhesion. **Applications of EUCOLASTIC 1NS that are deeper than what is recommended can cause bubbling or incomplete curing of the material.**

Surface Preparation: New concrete must be minimum of 28 days old. The joint must be clean and sound. All oil, dirt, debris, paint and any other foreign material must be removed. The final step in cleaning should be the complete removal of all residue by solvent wiping the joint. Substrates must be dry at time of application. Wet or damp joints will cause bubbling of the sealant.

Priming: EUCOLASTIC 1NS typically bonds to common construction materials without a primer. However, due to the variance in surface textures of some non-porous materials (metal, glass, certain stones, etc.), a field adhesion test is recommended on these materials to verify adhesion or the need for a primer. The field adhesion test for joint sealants is described in ASTM C1193. EUCOLASTIC PRIMER is required to prime the joint facing when the sealant will be in service under water after application and curing. See Eucolastic Primer technical data sheet for use instructions.

Mixing: EUCOLASTIC 1NS is a single-component sealant and requires no pre-blending. It should be used directly from the cartridge.

Placement: Ensure that all the necessary preparation work is completed. Place backer rod or bond breaker tape into the joints and make sure they are secured in place. Using standard caulking guns, dispense the sealant directly from the cartridge into the joint. Once the joint is full, tool the sealant using a rounded spatula to create a concave surface. The concave shape will help the sealant stretch properly as the joint moves. Tooling will also put a little pressure on the sealant to aid with initial adhesion.

Curing: EUCOLASTIC 1NS requires no special curing. The moisture in the air and substrate will cure the sealant. A skin forms on the surface in about 1 hour at 75°F (24°C) and 50% relative humidity. It will be tack-free in 3-4 hours. EUCOLASTIC 1NS cures at rate of about 1/16" (1.6 mm) per day. The cure time will increase or decrease as temperatures and humidity levels fluctuate.

CLEAN-UP

Tools, equipment and general clean-up can be done with EUCO SOLVENT or xylene before the material dries. Removal of dried Eucolastic 1NS can only be done by mechanical means.

PRECAUTIONS/LIMITATIONS

- The surface temperature of the substrate must be at least 40°F (4°C) and rising, but below 150°F (66°C), at the time of application.
- For best results, store sealant at room temperature prior to application.
- Contact surfaces must be clean and dry.
- Do not use underneath a polyurethane deck coating unless the sealant has fully cured.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOLASTIC 1SL

SINGLE-COMPONENT, SELF-LEVELING POLYURETHANE HYBRID SEALANT

EUCLID CHEMICAL

DESCRIPTION

EUCOLASTIC 1SL is a single-component, low-modulus, moisture-cure, self-leveling, polyurethane joint sealant. EUCOLASTIC 1SL is formulated to be extremely durable in dynamic joints. It provides superior wear resistance to rubber tires and pedestrians in high traffic areas.

PRIMARY APPLICATIONS

- Concrete control & expansion joints
- Sidewalks
- Truck terminals
- Plazas
- Swimming pool decks
- Interior and exterior applications

FEATURES/BENEFITS

- Skins rapidly and is tack-free in less than 5 hours @ 75° F (24° C)
- Remains adhesively and cohesively bonded during temperature cyclic movement
- Service temperature range: -40°F to 185°F (-40°C to 85°C)
- Extraordinary movement capability of +100% / -50%
- Ease of application; dispense and walk away, up to a 6% slope

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULTS
Rheology ASTM C639	Grade P (Self-Leveling), will hold up to 6% slope
Hardness, Shore A ASTM C661	43-47
Movement Capability ASTM C719	+100% / -50%
Skin Time	1.5-2 hr.
Tack Free Time ASTM C679	7-8 hr.
Tensile Strength ASTM D412	250 psi (1.7 MPa)
Elongation ASTM D412	600%
Tear Strength ASTM D412	35 Pli (61.3 N/cm)
Adhesion to Concrete ASTM C794	Dry: 31 Pli (54.3 N/cm) Submersed: 28 Pli (49.0 N/cm) Green: >15 Pli (>26.3 N/cm) Saturated (SSD): >15 Pli (>26.3 N/cm)
Stain & Color Change ASTM C510	No stain/No color change
Effects of Accelerated Aging ASTM C793	No Cracking or Chalking

Appearance: EUCOLASTIC 1SL is a single-component sealant available in the colors Gray and Limestone.

PACKAGING/YIELD

EUCOLASTIC 1SL is available in 30 oz. (887 ml) cartridges (12 per case). One cartridge yields 54 in^3 (884 cm^3), and will cover 72 linear feet (22 m) in a 1/4" x 1/4" (6 mm x 6 mm) joint.

SHELF LIFE

1 year in original, unpunctured cartridge

SPECIFICATIONS/COMPLIANCES

ASTM C920, Type S, Grade P, Class 50, Use T, M, A, O, and I (Class 2)
CAN/CGSB 19.13-M87, MC-1-25-B-N

DIRECTIONS FOR USE

Joint Dimensions: Joint width should be 4 times the expected joint movement, but not less than 1/4" (6 mm). Width to depth ratios should be equal for joints that are 1/4" (6 mm) to 1/2" (13 mm) in width. If joint width is 1/2" (13 mm) to 1" (25 mm), the depth of EUCOLASTIC 1SL should be 1/2 the width, with 1/2" (13 mm) being the maximum allowable depth of EUCOLASTIC 1SL. Use backer rod or bond breaker tape to limit the depth of application and to prevent three-sided adhesion. **Applications of EUCOLASTIC 1SL that are deeper than what is recommended can cause bubbling or incomplete curing of the material.**

Surface Preparation: EUCOLASTIC 1SL can be installed in new concrete 24 hours after forms are stripped. The concrete can be damp during application, but do not apply sealant where there is standing water in or nearby the joints. Excess standing water will cause bubbling of the sealant. The joints must be clean and sound. All curing & sealing compounds, oil, dirt, debris, paint, form release agents and any other foreign material must be removed. The final step in cleaning should be the complete removal of all residue by solvent wiping the joint.

Priming: EUCOLASTIC 1SL typically bonds to common construction materials without a primer. However, due to the variance in surface textures of some non-porous materials (metal, glass, certain stones, etc.), a field adhesion test is recommended on these materials to verify adhesion or the need for a primer. The field adhesion test for joint sealants is described in ASTM C1193. EUCOLASTIC PRIMER is required to prime the joint facing when the sealant will be in service under water after application and curing. See Eucolastic Primer technical data sheet for use instructions.

Mixing: EUCOLASTIC 1SL is a single-component sealant and requires no pre-blending. It should be used directly from the cartridge.

Placement: Ensure that all the necessary preparation work is completed. Place backer rod or bond breaker tape into the joints and make sure they are secured in place. Using standard caulking guns, dispense the sealant directly from the cartridge into the joint. Once the joint is full, leave it alone and allow it to self level to a nice and smooth finish. EUCOLASTIC 1SL will hold a slope up to 6%.

Curing: EUCOLASTIC 1SL requires no special curing. The moisture in the air and substrate will cure the sealant. A skin forms on the surface in about 1.5 to 2 hours at 72°F (22°C) and 50% relative humidity. It will be tack-free in under 5 hours. EUCOLASTIC 1SL cures at rate of about 1/16" (1.6 mm) per day. The cure time will increase or decrease as temperatures and humidity levels fluctuate.

CLEAN-UP

Tools, equipment and general clean-up can be done with EUCO SOLVENT or xylene before the material dries. Removal of dried EUCOLASTIC 1SL can only be done by mechanical means.

PRECAUTIONS/LIMITATIONS

- Use only at temperatures above 40°F (4°C).
- The surface temperature of the substrate must be at least 40°F (4°C) and rising, but below 150°F (66°C), at the time of application.
- For best results, store sealant at room temperature prior to application.
- Contact surfaces must be clean.
- Do not use underneath a polyurethane deck coating unless the sealant has fully cured.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOLASTIC PRIMER

POLYURETHANE SEALANT PRIMER

EUCLID CHEMICAL

DESCRIPTION

EUCOLASTIC PRIMER is a single-component, fast drying liquid primer that prepares non-porous surfaces for the application of EUCOLASTIC 1NS and EUCOLASTIC 1SL. EUCOLASTIC PRIMER imparts a surface finish which is very receptive to urethane sealants.

PRIMARY APPLICATIONS

- To prepare surface for the adhesion of urethane sealants
- Assures a water resistant bond on porous and non-porous substrates

FEATURES/BENEFITS

- Provides primer base for adhesion of EUCOLASTIC sealants
- Increases adhesion for use in immersion situations
- Seals porous surfaces increasing water tightness

TECHNICAL INFORMATION

Typical Engineering Data

EUCOLASTIC PRIMER will dry in 30 to 45 minutes @ 70°F (21°C). Primer must be completely dry before installation of a Eucolastic sealant.

If the EUCOLASTIC PRIMER beomes hard and glossy, the surface must be cleaned with solvent and reprimed.

Appearance: EUCOLASTIC PRIMER is a clear, one component liquid with a slight amber color.

PACKAGING/YIELD

EUCOLASTIC PRIMER is available in 1 qt (0.95 L) units

SHELF LIFE

1 year in original, unopened container

COVERAGE

Estimated coverage is 2400 lineal ft/gal per 1/2" depth of double faced joint (193 linear m/L per 13 mm depth of double faced joint).

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old. The joint must be clean and sound. All oil, dirt, debris, paint and any other material that could be a bond breaker must be removed. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or by pressure washing. All joint facings must be dry and have an open surface texture with all curing compounds and sealers removed.

Application: EUCOLASTIC PRIMER should be applied liberally with a clean brush or roller, but do not allow the product to puddle or pond. Use with adequate ventilation.

CLEAN-UP

Tools, equipment and general clean-up can be done with EUCO SOLVENT, acetone or toluene.

PRECAUTIONS/LIMITATIONS

- Keep containers sealed until ready to use.
- Opened containers have limited shelf life (less than 1 month).
- This product is amber in color and is noticeable on some surfaces. Care must be taken to apply only to areas that will be covered by final product.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSFLEX NS, TAMMSFLEX SL

TWO-PART POLYSULFIDE JOINT SEALANTS

EUCLID CHEMICAL

DESCRIPTION

TAMMSFLEX sealants are two-part, elastomeric, polysulfide caulking and sealing compounds. TAMMSFLEX cures at normal temperatures creating a tough elastomeric seal that adheres tenaciously to masonry, concrete, metal and wood. TAMMSFLEX will withstand repeated expansion and contraction and remain resilient through daily and seasonal cyclic changes in temperature. TAMMSFLEX has excellent chemical, solvent, and water resistance and will withstand joint movement of up to ±25%.

PRIMARY APPLICATIONS

TAMMSFLEX NS is a non-sag gun grade sealant designed for use in vertical and non-traffic bearing horizontal joints subject to expansion resulting from temperature changes. TAMMSFLEX NS is used for all normal construction joints such as panel and curtain wall construction, copings, masonry joints, bridge abutments and building joints. TAMMSFLEX NS is formulated for use in joints subject to long term contact with water and may be used in water reservoirs, dams and foundation joints.

TAMMSFLEX SL is a flowable, self-leveling, traffic grade sealant designed for horizontal joints in patios, plazas, floors, sidewalks, roadways and other areas exposed to pedestrian or vehicular traffic.

FEATURES/BENEFITS

- Joint sealant between similar/dissimilar materials
- Glazing & caulking
- Resistant to splash & spill contact with jet fuel
- Perfect for dynamic joints subjected to chemicals
- Service temperatures from -50°F to 190°F (-45°C to 87°C)

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Specific gravity mixed 1.6
% Solids.....100
% Joint movement..... ±25
Hardness, Shore A (ASTM D2240) .....25 to 30
Pot life..... approx 2 hrs
Tack free.....12 to 24 hrs
% Elongation (ASTM D638) .....500 to 550

Tensile strength (ASTM D638) psi (MPa)
.....150 to 200 (3.68 to 4.91)
100% Modulus psi (MPa) 50 (1.23)
200% Modulus psi (MPa) 80 (1.96)
Chemical Resistance.....see full chemical resistance chart at euclidchemical.com
Appearance: TAMMSFLEX is gray/brown in color.

PACKAGING

TAMMSFLEX NS and TAMMSFLEX SL are packaged in 1.5 gal (5.68 L) units. TAMMSFLEX PRIMER is a two-part product; Part A and Part B are each packaged in 1 qt (0.95 L) containers.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

TAMMSFLEX NS: ASTM C920, Type M, Grade NS, Class 25, Use NT, M, G, A, and O
TAMMSFLEX SL: ASTM C920, Type M, Grade SL, Class 25, Use NT, M, G, A, and O
IAPMO/ANSI Standard 61 (TAMMSFLEX NS)

COVERAGE

Inches (cm)		Linear ft/gal (m/L)
Joint Width	**Joint Depth**	
1/4 (0.64)	1/4 (0.64)	308 (25)
3/8 (0.95)	3/8 (0.95)	102 (8)
1/2 (1.27)	1/2 (1.27)	77 (6.2)
5/8 (1.6)	1/2 (1.27)	61(4.9)
3/4 (1.9)	1/2 (1.27)	51 (4.1)
7/8 (2.2)	1/2 (1.27)	44 (3.5)
1 (2.5)	1/2 (1.27)	38 (3.1)

Note: TAMMSFLEX coverage rates are approximate and provided for estimating purposes only.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete or masonry surfaces for 28 days. Surface of the joint must be clean, sound, and dry. Contaminants such as previously applied sealants, form release agents, grease, oil, etc. must be removed by scarifying, wire brushing, or sanding. All traces of asphalt or other bituminous materials must be removed. Dust should be blown out of the joint with oil free, moisture free compressed air. Protective coatings of lacquer or oil must be removed from metal surfaces with MEK or xylene. Do not apply TAMMSFLEX if the temperature of the sealant, air, or substrate is below 40°F (4°C).

Priming: Priming is not normally required with common building materials. A primer may be required for optimum adhesion in demanding environments, continuous immersion for example, or for certain substrates. In these cases TAMMSFLEX PRIMER should be used and the sealant must be applied within 8 hours after priming. See TAMMSFLEX PRIMER technical data sheet for full instructions on use. A field trial is recommended to determine actual adhesion with and without a primer.

Joint Design: The minimum width of the joint should be 4 times the anticipated movement but not less than 1/4" (0.64 cm). Maximum recommended joint width is 1" (2.5 cm). In joints up to 1/2" (1.3 cm) wide, the sealant depth should be equal to the joint width. In joints from 1/2" (1.3 cm) to 1.0" (2.5 cm) wide, sealant depth should be 1/2" (1.3 cm). In joints deeper than 1/2" (1.3 cm), a flexible, non-asphaltic or non-oil impregnated backing material should be used to fill the lower part of the joint cavity. For traffic bearing areas, a round rod of synthetic rubber of the same Shore A as TAMMSFLEX SL (or harder) is recommended. The backing rod should be round to minimize the stress on the joint sealant. The sealant should not adhere to the bottom of the joint or the backing material. A strip of polyethylene film may be installed as a bond breaker between the filler or the bottom of the joint and the sealant.

Mixing - TAMMSFLEX PRIMER: Mix Part A with Part B for 3 minutes. After application, allow the primer to cure for 2 hours before applying TAMMSFLEX NS or TAMMSFLEX SL. See TAMMSFLEX PRIMER technical data sheet for further information.

Mixing - TAMMSFLEX NS or SL: Thorough mixing of the components is essential for maximum performance of TAMMSFLEX. Remove the activator (Part B) from the base material (Part A) container. Also remove the polyethylene sheet or tray. Mix Part A with a slow speed 1/2" (1.3 cm) drill (250 to 300 rpm) with a "Jiffy" mixing paddle. Then add Part B to Part A and mix for 3 to 4 minutes until the material is completely blended with a uniform color. While mixing, periodically scrape down the sides of the container and mixing paddle.

Caution: Do not mix base and activator components from one shipment with components from another.

Application: TAMMSFLEX sealants allow 1 to 2 hours of working time under normal conditions. Do not mix more than can be applied in this period. TAMMSFLEX NS can be applied with standard caulking equipment. Always fill the joint from the bottom up or from the inside out to avoid entrapping air. The gun nozzle should be the largest size which can be inserted to the bottom of the joint. Tooling is recommended immediately after application to ensure full contact with the joint surfaces. Dry tooling is preferred. TAMMSFLEX SL may be poured into the joint, as it is self-leveling.

CLEAN-UP

Clean tools and equipment immediately after application with xylene or acetone. Clean up spills and drips while still wet with the same solvents.

PRECAUTIONS/LIMITATIONS

- Store at tempatures between 50°F to 90°F (10°C to 32°C).
- Protect from moisture.
- Do not mix base and activator components from one shipment with components from another.
- For water immersion conditions allow TAMMSFLEX to cure for 7 days at 70°F (21°C) prior to filling with water.
- TAMMSFLEX is not resistant to swimming pool chlorinated water.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSFLEX PRIMER

POLYSULFIDE SEALANT PRIMER

EUCLID CHEMICAL

DESCRIPTION

TAMMSFLEX PRIMER is a two-component liquid primer that prepares non-porous surfaces and surfaces that will be subsequently submerged for the application of TAMMSFLEX NS and TAMMSFLEX SL. TAMMSFLEX PRIMER imparts a surface finish which is very receptive to polysulfide sealants.

PRIMARY APPLICATIONS

- To prepare surfaces for the adhesion of polysulfide sealants, like TAMMSFLEX NS & SL
- Assures a water-resistant bond on porous and non-porous substrates

FEATURES/BENEFITS

- Provides primer base for adhesion of TAMMSFLEX sealants
- Increases adhesion for use in immersion situations
- Seals porous surfaces increasing water tightness
- User-friendly 1:1 mix ratio
- Fast recoat times

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULTS
Mix Ratio (by Volume)	1:1
VOC Content	≤5 g/L
Pot Life @ 77°F (25°C)	3 hours
Recoat Window (Concrete) @ 77°F (25°C)	2 hours (minimum), 36 hours (maximum)
Recoat Window (Steel) @ 77°F (25°C)	4 hours (minimum), 36 hours (maximum)

Appearance: TAMMSFLEX PRIMER is a clear liquid with an amber tint.

PACKAGING/YIELD

TAMMSFLEX PRIMER is available in 2 qt (1.89 L) units

SHELF LIFE

1 year in original, unopened containers

COVERAGE

Estimated coverage is 960 linear ft/unit for a 1/2" deep, double faced joint (292 linear m/unit for a 13 mm deep, double faced joint). Coverage may vary from the above rate depending on surface porosity and texture.

DIRECTIONS FOR USE

Surface Preparation: New concrete must be a minimum of 28 days old. The joint must be clean and sound. All oil, dirt, debris, paint and any other material that could be a bond breaker must be removed. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or by pressure washing. All joint facings must be dry and have an open surface texture with all curing compounds and sealers removed. When applying to steel, the steel must be abraded to a “near white” condition prior to applying TAMMSFLEX PRIMER.

Mixing: Pre-mix Part A on its own prior to adding Part B. Pour Part A and Part B into a clean container and mix thoroughly for 3 minutes. Scrape the sides of the container while mixing to ensure the entire quantities of both parts have been properly mixed. Unmixed material will not cure properly.

Application: TAMMSFLEX PRIMER should be applied with a clean brush or roller, but do not allow the product to puddle or pond. Use with adequate ventilation. Allow TAMMSFLEX PRIMER to cure within the recommended recoat time before applying TAMMSFLEX NS or TAMMSFLEX SL.

CLEAN-UP

Tools, equipment and general clean-up can be done with EUCO SOLVENT, acetone or xylene.

PRECAUTIONS/LIMITATIONS

- Keep containers sealed until ready to use.
- Store in a dry area, in temperatures between 65°F and 80°F (18°C and 27°C).
- Do not thin this product.
- Do not apply when temperatures are below 40°F (4.5°C) or above 95°F (35°C).
- Opened containers have limited shelf life.
- This product is amber in color and is noticeable on some surfaces. Care must be taken to apply only to areas that will be covered by final product.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

LIQUID DENSIFIERS

EUCO DIAMOND HARD

LIQUID DENSIFIER AND SEALER FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EUCO DIAMOND HARD is a unique blend of silicate and siliconate polymers that penetrate concrete surfaces and chemically react to provide an increase in surface density, durability, and abrasion resistance. Concrete treated with EUCO DIAMOND HARD is dust-proofed, resists tire marks, and is easier to maintain. Over time, EUCO DIAMOND HARD provides an attractive, slip resistant sheen to concrete that never peels, fades, or wears away.

PRIMARY APPLICATIONS

- Interior or exterior
- Warehouse floors
- Commercial and retail floors
- Manufacturing plants
- Distribution centers
- Diamond polishing concrete

FEATURES/BENEFITS

- Reduces porosity and increases durability of the concrete surface
- Complies with VOC regulations across North America
- Treated surfaces have increased liquid repellency
- Equipment can be cleaned with water
- Minimizes tire marks and enables them to be more easily removed
- Can be applied to new or existing concrete

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

VOC Content.....≤5 g/L

Drying Time at 70°F (21°C):

Light Foot Traffic ..... 4 to 6 hours

Wheel Traffic .....24 hours

Abrasion/Wear Resistance, ASTM C779
(see adjacent table)

Coefficient of Friction, ASTM F609

Untreated Control (Wet/Dry).....0.78/0.77

Euco Diamond Hard (Wet/Dry).....0.74/0.77

Liquid Repellency, RILEM Method 11.4

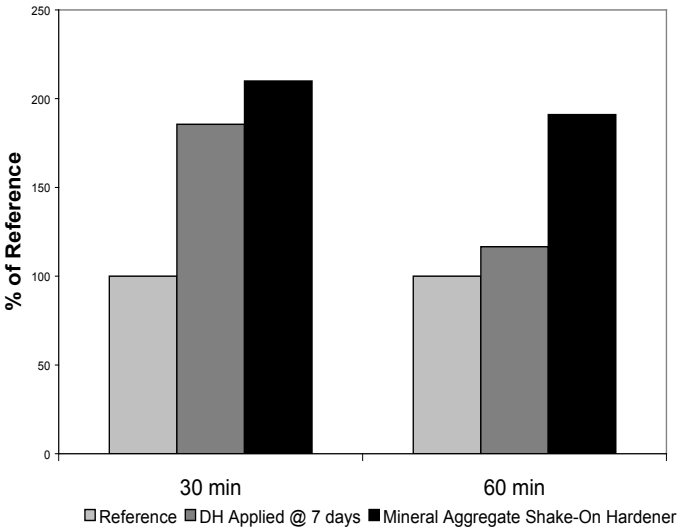
Water absorbed in 24 hours:

Untreated concrete: 5 mL

EUCO DIAMOND HARD treated concrete: 1 mL

Chemical Resistance: For a complete chemical resistance chart, contact The Euclid Chemical Co.

EUCO DIAMOND HARD
ASTM C 779 Wear Resistance Results @ 28 Days



Appearance: EUCO DIAMOND HARD is a clear, water-based liquid that cures without a significant change in concrete appearance. During placement, the color of the concrete may initially appear darker but will lighten upon drying. Tightly troweled concrete surfaces treated with EUCO DIAMOND HARD will achieve a glossy sheen over time with traffic and regular cleaning or buffing. If immediate gloss is desired, the floor may be dry buffed with a lambswool buffing pad after the sealer has cured for a minimum of 24 hours.

PACKAGING

EUCO DIAMOND HARD is packaged in 275 gal (1041 L) totes, 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

One gallon of EUCO DIAMOND HARD will cover 200 to 250 ft^2/gal (4.9 to 6.1 m^2/L) of steel troweled concrete depending on the surface porosity and texture.

DIRECTIONS FOR USE

EUCO DIAMOND HARD should be used directly from the container and requires no pre-mixing or blending.

Surface Preparation (Newly Placed Concrete): Cure the concrete by a wet or sheet cure method in accordance with ASTM C-171, or with a curing compound such as KUREZ DR VOX. New concrete should cure seven days or longer before application of EUCO DIAMOND HARD. For fast track projects, the wet cure time may be reduced at the discretion of the project engineer. Remove the curing method, including any laitance formed on the surface, and allow concrete to air dry a minimum of 24 hours prior to application of EUCO DIAMOND HARD. **If a curing compound is used, it must be fully removed before applying EUCO DIAMOND HARD.** Failure to follow these preparation steps will prevent full penetration of EUCO DIAMOND HARD, drastically reducing its effectiveness.

Surface Preparation (Existing/Older Concrete): Concrete that is already in service or older floors must be clean and free of any materials that could prevent penetration of EUCO DIAMOND HARD, such as curing compounds or cure & seals, paints, coatings, dirt/oil, waxes, etc. If necessary, use EUCO CLEAN & STRIP to remove these contaminants before applying EUCO DIAMOND HARD.

Application (New or Old Concrete): Air temperature during application must be between 35°F and 100°F (2°C and 38°C). At temperatures below 50°F (10°C), the reaction and "gelling" process of EUCO DIAMOND HARD is slower, so the concrete will need to remain wet with EUCO DIAMOND HARD for a longer period of time. In hot or windy conditions, the reaction may take less than the normal 30 to 60 minute period. Concrete should be pre-dampened in hot weather; apply EUCO DIAMOND HARD when all standing water has disappeared. Apply the EUCO DIAMOND HARD to the concrete surface by low pressure sprayer or by pouring directly onto the surface and distributing evenly by broom or squeegee. With soft bristle hand brooms or brushes on an auto-scrubber, work the EUCO DIAMOND HARD around the area to be treated and into the surface. The concrete must be kept wet with EUCO DIAMOND HARD for at least 30 minutes - add additional EUCO DIAMOND HARD if necessary to maintain a wet surface. As the EUCO DIAMOND HARD begins to thicken and gel underfoot, lightly spray the area with clean water to break up the thickened EUCO DIAMOND HARD and move the excess material on to the adjacent floor area next to be treated. Do not track EUCO DIAMOND HARD onto untreated concrete, as permanent footprints or tire marks can result. Continue the application process until the entire floor has been treated. When finished, completely remove all excess EUCO DIAMOND HARD from the surface. **If excess EUCO DIAMOND HARD is allowed to dry on the concrete surface, a white residue will form that can only be removed by mechanical means such as grinding or sanding. Prevent this by completely removing all excess EUCO DIAMOND HARD from the surface when application is complete.**

Floor Joints: If the floor joints are to be filled after EUCO DIAMOND HARD has been applied, they must be thoroughly cleaned before installation of joint filler. Cleaning joints by circular concrete saw or a drill equipped with a wire wheel is recommended.

Maintenance: Contact The Euclid Chemical Company for detailed maintenance procedures.

CLEAN-UP

Clean brooms, tools and all equipment and sprayers with clean water immediately after use. The residue from application and clean up process is non-toxic.

PRECAUTIONS/LIMITATIONS

- Protect containers of EUCO DIAMOND HARD from freezing. In the event of freezing, thaw and stir or agitate before use.
- EUCO DIAMOND HARD is not recommended for use as a curing compound. It does not meet the requirements of ASTM C309 or ASTM C1315.
- Protect freshly applied EUCO DIAMOND HARD from rain for at least 12 hours after application
- Although EUCO DIAMOND HARD has successfully demonstrated resistance to common chemicals in laboratory testing, the in-place performance will depend on surface porosity, application rate, chemical exposure and dwell time. If chemical resistance is of concern, a concrete sample treated with EUCO DIAMOND HARD should be constructed on the jobsite and subjected to the anticipated chemical exposure to verify in-place performance. This performance should be verified and approved by the owner prior to installation.
- Protect all adjacent surfaces including metals, glass, wood, paint or brick from contact with EUCO DIAMOND HARD. If accidentally over sprayed, wash adjacent surfaces with potable water immediately.
- Waste resulting from EUCO DIAMOND HARD application must be disposed of in accordance with local regulations.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOSIL

LIQUID DENSIFIER FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

EUCOSIL is a water-based sodium silicate solution used to densify and dustproof concrete. EUCOSIL chemically reacts within concrete and becomes an integral part of the surface, making treated concrete denser and easier to maintain.

PRIMARY APPLICATIONS

- Interior or exterior horizontal concrete
- Educational and medical facilities
- Office and multi-residential buildings
- Warehouse floors
- Food storage areas
- Diamond polishing concrete

FEATURES/BENEFITS

- Seals, densifies and dustproofs in one operation
- Water based, no odor
- Treated concrete resists penetration of water
- Can be tiled over
- Low VOC
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Application	Cure Time
Foot traffic	4 to 6 hours
Wheel traffic	24 hours
VOC content	≤5 g/L

Appearance: EUCOSIL is a clear liquid that does not change the appearance of concrete. Immediately after application, the color of the concrete may appear darker. As the EUCOSIL cures and dries out, the treated concrete will have a nearly unaffected appearance. Treated concrete will slightly bead water.

PACKAGING

EUCOSIL is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency

COVERAGE

1 gal (3.8 L) of EUCOSIL will cover from 150 to 600 ft^2 (14 to 56 m^2) of concrete surface depending upon the porosity of the concrete and job requirements. The following rates of coverage are approximate:

ft^2/gal (m^2/L)	Rough finish	Finely textured	Hard troweled
Newly cured bare concrete	200 (4.9)	300 (7.4)	400 (9.8)
Floors to be tiled	500 (12.3)	N/A	N/A
Dusting concrete or terrazzo	300 (7.4)	500 (12.3)	N/A

Additional coats: After initial coat, additional coats may be required to seal the surface. The coverage will increase with each additional coat.

DIRECTIONS FOR USE

Surface Preparation: The concrete surface must be clean, dry and free of any contaminant or coating which may interfere with the penetration of EUCOSIL. EUCOSIL is not a curing compound and should only be applied to concrete that has been cured with an industry accepted method, such as wet curing, sheet curing, or application of a curing compound. If a curing compound has been used, it must be completely removed before applying EUCOSIL.

Mixing: EUCOSIL is ready to use and requires no pre-mixing.

Placement: Apply EUCOSIL to a concrete surface in a continuous film. Scrub the EUCOSIL into the concrete and brush out all puddles and runs immediately. All of the EUCOSIL should soak into the concrete. Additional coats may be applied if the concrete surface is absorptive, but **do not allow excess EUCOSIL to dry on the surface**. If subsequent coats do not appear to be soaking in, immediately stop application and vacuum/squeegee excess EUCOSIL from the surface.

CLEAN-UP

Clean brushes, tools, equipment and flush sprayer with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- Protect EUCOSIL from freezing. In the event of freezing, thaw and stir or agitate before using.
- Protect metal, glass, wood, paint or brick from contact with EUCOSIL. If accidently oversprayed on these surfaces, wash surface with clean water immediately.
- If added abrasion resistance is required in new construction, consider the use of a dry shake floor hardener. See SURFLEX, EUCO-PLATE HD or DIAMOND-PLATE data sheets.
- Allow the product to dry 4 to 6 hours at 70°F (21°C) before exposure to foot traffic or rain.
- **If excess EUCOSIL is left on the concrete surface, a white residue may form and should be removed by scrubbing immediately. If this residue is allowed to dry, removal of the white discoloration may require mechanical means, such as grinding or sanding.**
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SURFHARD

LIQUID DENSIFIER AND DUSTPROOFER FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

SURFHARD is a water-based magnesium fluorosilicate solution that reacts chemically with alkaline materials in concrete producing a more dense, durable, and chemically resistant floor. SURFHARD is especially effective at strengthening weak, soft, or dusting concrete surfaces. A patented penetrating agent in SURFHARD assists in its penetration and reactivity, enabling SURFHARD to dustproof and densify at a greater depth.

PRIMARY APPLICATIONS

- Concrete floors, especially those with carbonated, soft, or dusting surfaces
- Schools
- Industrial floors
- Commercial buildings
- Residential basements

FEATURES/BENEFITS

- Densifies and dustproofs concrete surfaces
- Prolongs floor life
- Resists acids, alkalies, oils and salts
- Improves concrete that is carbonated, soft, or powdery
- Can be used without interrupting production schedules
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

	Dry Time
Foot traffic	4 to 6 hours
Wheel traffic	4 hours
VOC Content	≤5 g/L

SURFHARD helps protect concrete against the harmful effects of:

- Caustic soda
- Calcium chloride
- Sodium chloride
- Soap solutions
- Ammonium chloride
- Solvents
- Fuel oils
- Sugar solutions

Appearance: SURFHARD is a clear liquid that does not change the color or appearance of concrete. Immediately after application, the color of the treated concrete may initially appear darker. As SURFHARD cures and dries out, the treated concrete will have little change in appearance. Treated concrete will slightly bead water and other liquids.

PACKAGING

SURFHARD is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

The number of coats, dilution ratios, and coverage rates are dependent on the texture and porosity of the concrete. Coverage rates and material requirements below are approximations for steel-troweled concrete surfaces. Extremely porous or dusting surfaces may require less dilution, lower coverage rates, or additional coats and must be determined on the jobsite.

	DILUTION RATIO (SURFHARD:WATER)	COVERAGE RATE, DILUTED SURFHARD	VOLUME OF UNDILUTED SURFHARD REQUIRED FOR 1000 FT^2 (93 M^2)
1st coat	1:2	150 ft^2/gal (3.7 m^2/L)	2.2 gal (8.3 L)
2nd coat	1:1	200 ft^2/gal (4.9 m^2/L)	2.5 gal (9.5 L)
3rd coat	2:1	300 ft^2/gal (7.4 m^2/L)	2.2 gal (8.3 L)

DIRECTIONS FOR USE

Surface Preparation: The surface to be treated should be clean, free of curing compounds, sealers, paint or any other contaminants that could prohibit penetration of SURFHARD. Membrane forming curing compounds should not be used on new concrete if SURFHARD is to be applied, unless a dissipating curing compound such as KUREZ DR VOX is used and cleaned off the surface after the curing period. For best performance, concrete should be dry before applying SURFHARD. New concrete surfaces should be at least 7 days old prior to application. Extremely soft and porous surfaces should be saturated with water prior to application. When the surface is dry, apply the 1st coat of SURFHARD and proceed as indicated under Placement below. This pre-wetting concentrates the chemical at the top level of the concrete. The final coat will then harden at the top surface and yield maximum wearing and resistance qualities. In some instances, or in some selected areas, a surface may require an additional application of undiluted SURFHARD to complete hardening and dustproofing.

Mixing: SURFHARD is easily diluted in water with mild agitation.

Placement: Flood each coat of SURFHARD onto the surface and spread with a soft fiber broom, squeegee, or mop. Allow the solution to soak into the concrete for 10 to 15 minutes and redistribute any puddles that remain. Treated surfaces should be thoroughly dry between coats. Drying time may vary from 4 to 12 hours depending upon the temperature, humidity, and whether the concrete is indoors or outdoors. As the various coats of SURFHARD are applied, each succeeding coat will yield increased coverage because the concrete surface is in the process of hardening and becoming denser. After the third coat, the floor should be thoroughly flushed with water and scrubbed with a stiff broom to remove any residual material. If the floor should show patches of white upon drying, immediately flood with water and scrub the floor with a mechanical scrubber, rinse and dry. Do not attempt further treatment.

NOTE: All three coats may not be necessary to harden the floor. If the floor should show patches of white on drying, immediately flood with water and scrub the floor with a mechanical scrubber, rinse and dry. Do not attempt further treatment.

CLEAN-UP

Clean brushes, tools, equipment and flush sprayer with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- SURFHARD is not recommended for application to colored concrete surfaces.
- Allow the product to dry 4 to 6 hours at 70°F (21°C) before exposure to traffic or rain.
- SURFHARD is a water-based material and must be kept from freezing.
- If excess SURFHARD is left on the concrete surface, a white residue may form and should be removed by scrubbing immediately. If this residue is allowed to dry, removal may require mechanical means such as sanding or grinding.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

ULTRAGUARD

PROTECTANT AND DENSIFIER FOR CONCRETE FLOORS

EUCLID CHEMICAL

DESCRIPTION

ULTRAGUARD is a water-based polymeric protectant that improves the appearance and durability of concrete floors. ULTRAGUARD contains a powerful stain-resistant additive and is further enhanced with lithium silicate, which provides densification of the concrete surface. This product also contains UV absorbers that enable the ULTRAGUARD to protect colored or dyed concrete against UV degradation. ULTRAGUARD can be used alone or in combination with a reactive sealer such as EUCO DIAMOND HARD or ULTRASIL Li+ to give concrete floors a glossy finish, harder surface, and protective seal.

PRIMARY APPLICATIONS

- Interior concrete floors
- Commercial and retail floors
- Diamond polishing concrete
- Distribution centers
- Institutional floors
- Health care facilities
- Schools

FEATURES/BENEFITS

- Can provide instant gloss to concrete floors
- Water-based - low odor
- Treated concrete is more dense and durable
- Breathable
- Treated concrete is easier to maintain
- Protects colored or dyed concrete from UV degradation
- Can contribute to LEED points (EQ Credit 4.2)

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

APPEARANCE	Milky-white liquid	SOLIDS/ACTIVE CONTENT	21-23%
SPECIFIC GRAVITY	1.03	VOC CONTENT	99 g/L
pH	9.5 - 10.5	FREEZE POINT	32°F (0°C)
DRYING TIME (DRY-TO-TOUCH)	1 to 2 hours	FLASH POINT	NA

STAIN RESISTANCE (ASTM D1308)

STAINING AGENT	UNTREATED CONCRETE		AFTER REBUFFING	CONCRETE TREATED WITH ULTRASIL LI+ AND ULTRAGUARD		AFTER REBUFFING
	30 minutes	*8 hours*		*30 minutes*	*8 hours*	
Ketchup	2	1	Rebuffing resulted in no improvement in appearance.	4	4	Gloss Restored
Mustard	2	1		3	3	Gloss Restored
Pickle Juice	4 (absorbed into surface)	4 (absorbed into surface)		4	3	Gloss Restored
Balsamic Vinegar	2	1		3	3	Gloss Restored
Red Wine	1	1		3	3	Gloss Restored
Transmission Fluid	1	1		4	4	Gloss Restored
Brake Fluid	1	1		3	3	3
Used Motor Oil	1	1		4	4	4

KEY: 1 - stained, 2 - slight discoloration, 3 - loss of gloss, 4 - no effect

SPECIMEN PREPARATION: The untreated and ULTRAGUARD test specimens were honed to 600 grit. The ULTRAGUARD specimens were treated with ULTRASIL LI+ after the 220 grit pass. Two coats of ULTRAGUARD were applied after the 600 grit pass, buffing after each coat. Gloss was restored by re-applying ULTRAGUARD and buffing.

PACKAGING

ULTRAGUARD is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

COVERAGE

1 gallon (3.8 L) of ULTRAGUARD will cover from 500 to 1000 ft^2 (46 to 95 m^2) of concrete depending upon the texture and porosity of the surface.
The actual coverage rate required to achieve the appearance and protection desired should be determined by performing a small test application on-site.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete by a wet or sheet cure method in accordance with ASTM C171, or with a curing compound that meets the requirements of ASTM C309. Euclid Chemical's dissipating curing compound KUREZ DR VOX is recommended. To maximize strength and other physical properties of the concrete slab, the American Concrete Institute recommends new concrete cure seven days or longer before removal of the curing method. For fast track projects, the cure time may be reduced at the discretion of the project engineer. If a curing compound is used, it must be completely removed before application of UltraGuard. After the curing method is removed, allow the slab to air dry a minimum of 24 hours prior to application.

All concrete must be clean of dirt, oil, and other contaminants before applying ULTRAGUARD. **The performance of ULTRAGUARD is maximized when applied to concrete already densified with EUCO DIAMOND HARD or ULTRASIL LI+.** Allow at least 24 hours of drying time after densifier application before applying ULTRAGUARD.

Application to New or Old Concrete: Air temperature during application must be between 40°F and 100°F (4°C and 38°C). Prior to application, if the floor is very absorptive, light sprinkling with water is recommended for more uniform coverage and smoother appearance. Do not apply over standing water. ULTRAGUARD may be diluted up to 1:1 with potable water when applying in dry or windy environments to avoid premature drying of the product and streaking during application.

Using a pump-up sprayer, spray ULTRAGUARD on the surface and while wet, immediately spread with a microfiber pad. Ensure that the coverage rate is followed - do not apply too heavily. Keep a wet edge and do not overlap over dried areas to avoid lap marks. Allow the ULTRAGUARD to dry tack-free, about 30-60 minutes, then buff or burnish as desired. Best shine and stain resistance is achieved with a high speed burnisher equipped with a soft pad. Up to three coats can be applied following the same technique - spray, spread, let dry, then burnish.Under normal conditions, the floor will be traffic ready approximately one to two hours following final burnishing. Do not expose the floor to water for 72 hours.

Floor Joints: If the floor joints are to be filled after ULTRAGUARD has been applied, they must be thoroughly cleaned before installation of joint filler. Cleaning joints by concrete saw or a grinder equipped with a wire wheel is recommended.

CLEAN-UP

Clean brushes, tools, equipment and flush sprayer with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- Protect ULTRAGUARD from freezing. In the event of freezing, thaw and stir before using.
- Protect metal, glass, wood, paint or brick from contact with ULTRAGUARD. If accidently oversprayed on these surfaces, wash surface with clean water immediately.
- Acid-stained concrete must be thoroughly neutralized before application of ULTRAGUARD.
- Allow the product to dry 72 hours at 70°F (21°C) before exposure to water or rain.
- The stain resistance of ULTRAGUARD gradually develops over the first 5-7 days after application and is greatly increased by burnishing. Prevent spills as much as possible during this time. Immediate clean-up of spills will reduce the occurrence of staining.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

ULTRASIL 7

LIQUID DENSIFIER AND DUSTPROOFER FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

ULTRASIL 7 is a water-based lithium silicate solution used to densify and dustproof freshly troweled, or "green" concrete surfaces or older floors in need of treatment. ULTRASIL 7 penetrates and chemically reacts within the concrete surface, producing calcium silicate hydrate (CSH) in the pores. The result is concrete that is denser, more durable, and easier to clean. Because the product of the lithium silicate-concrete reaction is formed within the concrete surface, the protection of ULTRASIL 7 never peels or flakes off and lasts much longer than membrane sealers and coatings.

PRIMARY APPLICATIONS

- Interior concrete floors
- Commercial and retail floors
- Warehouse floors
- Manufacturing plants
- Distribution centers
- Transportation terminals
- Institutional floors
- Health care facilities
- Clean rooms
- Mechanical rooms

FEATURES/BENEFITS

- Densifies and dustproofs concrete in one operation
- Water-based, low VOC
- Easy to apply with no scrubbing, rinsing, or waste disposal
- Permanent treatment that never peels off
- Makes concrete easier to maintain
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

FORM	Clear, thin liquid
SPECIFIC GRAVITY	1.10
pH	11.7
DENSITY	9.2 lb/gal (1.1 kg/L)
SOLIDS/ACTIVE CONTENT	7%
VOC CONTENT	≤5 g/L
FREEZE POINT	32°F (0°C)

PACKAGING

ULTRASIL 7 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened package

COVERAGE

1 gallon (3.8 L) of ULTRASIL 7 will cover from 250 to 800 ft^2 (23 to 74 m^2) of concrete depending upon the finish and porosity of the surface.

DIRECTIONS FOR USE

ULTRASIL 7 should be used directly from the container and requires no dilution or pre-mixing.

Surface Preparation: ULTRASIL 7 may be applied to freshly placed concrete immediately following final finishing. Older concrete must be clean and free of any materials that could prevent penetration of ULTRASIL 7, such as curing compounds or cure & seals, paints, coatings, dirt/oil, waxes, etc.

Application to Freshly Placed, Steel Troweled Interior Concrete: Air temperature during application must be between 40°F and 100°F (4°C and 38°C) for proper chemical reaction of the ULTRASIL 7.

Apply a single coat of ULTRASIL 7 using a low pressure sprayer equipped with a 0.5 gal/min (1.9 L/min) spray tip. Apply at a coverage rate that results in a uniformly wet surface without puddles. While ULTRASIL 7 is still wet, use a soft-bristle broom or microfiber pad to redistribute and evenly spread out the material. No scrubbing is required. Do not continue to spread out ULTRASIL 7 once the product begins to dry. Keep the floor wet with ULTRASIL 7 for 5-10 minutes, then allow it to dry. Immediately apply the specified curing compound or initiate the specified curing procedure.

If additional surface sheen is desired, dry buff or burnish the floor with a polishing pad appropriate for the desired end gloss result.

Application to Older, Cured Steel Troweled Concrete: Surface must be clean, dry and absorbent, and must wet uniformly. Test surface absorbency with a light water spray. To slow dry times in hot, dry weather conditions, lightly pre-wet the concrete with fresh water and allow any standing water to evaporate.

Using a low pressure sprayer, apply a single coat sufficient to wet the surface without producing puddles. Use a clean microfiber pad to spread product evenly. Avoid spreading once the product has started to dry. Scrubbing is not necessary. If surfaces dry immediately, apply more product. Surface should remain wet for 5–10 minutes. Adjust rate of application to eliminate puddles. Allow treated surfaces to dry.

For immediate, enhanced shine, buff or burnish the dry concrete surface in both directions using an orbital floor machine or burnisher equipped with an appropriate polishing pad.

Floor Joints: If the floor joints are to be filled after ULTRASIL 7 has been applied, they must be thoroughly cleaned before installation of joint filler. Cleaning joints by circular concrete saw or a grinder equipped with a wire wheel is recommended.

CLEAN-UP

Clean brushes, tools, equipment and flush sprayer with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- Protect ULTRASIL 7 from freezing. In the event of freezing, thaw and stir or agitate before using.
- Protect metal, glass, wood, paint or brick from contact with ULTRASIL 7. If accidently oversprayed on these surfaces, wash surface with clean water immediately.
- If added abrasion resistance is required in new construction, consider the use of a dry shake floor hardener. such as SURFLEX, EUCO-PLATE HD, or DIAMOND-PLATE.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

ULTRASIL DC9

WATER BASED Ddensifier AND CURE FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

ULTRASIL DC9 is a water based silicate solution used to densify and cure concrete. It chemically reacts with the concrete surface to enhance hydration of portland cement, helping the concrete reach its design properties. ULTRASIL DC9 becomes an integral part of the concrete, resulting in floors that are denser, more durable, and easier to maintain. ULTRASIL DC9 may be applied to both freshly placed or existing concrete.

PRIMARY APPLICATIONS

- Interior, hard-troweled concrete floors

FEATURES/BENEFITS

- Water based, no odor
- Compatible with subsequent application of densifiers such as Eucosil, UltraSil Li+, UltraSil 7, and Euco Diamond Hard
- Meets the moisture retention requirement of ASTM C309 on hard-troweled concrete
- Treated concrete resists penetration of water
- Low VOC
- Breathable
- Will not inhibit the adhesion of sealers, coatings, toppings, or coverings

▲ Can contribute to LEED points

TECHNICAL INFORMATION

Specific Gravity	1.1
VOC Content	≤5 g/L

Appearance: ULTRASIL DC9 is a clear liquid that does not change the appearance of concrete.

PACKAGING

ULTRASIL DC9 is packaged in 275 gal (1,041 L) totes, 55 gal (208 L) drums, and 5 gallon (19 L) pails.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Meets the moisture retention requirement of ASTM C309 on hard-troweled concrete

COVERAGE

1 gal (3.8 L) of ULTRASIL DC9 will cover 300 to 800 ft^2 (28 to 74 m^2) depending upon the finish and porosity of the concrete.

DIRECTIONS FOR USE

ULTRASIL DC9 is for use on interior hard troweled concrete surfaces only. ULTRASIL DC9 may be applied on freshly placed concrete after final finishing and/or to existing cured concrete. It is ready to use and requires no pre-mixing or dilution.

On freshly placed concrete, apply by low pressure sprayer equipped with a fan tip immediately after final finishing operations and after disappearance of bleed water. Distribute the ULTRASIL DC9 evenly with soft bristle brooms/brushes or a microfiber pad. Over application and puddling may leave a white residue upon drying, which can be removed with stiff brooms or power scrubber after the concrete has hardened sufficiently.

When applying to existing, cured concrete, ensure the surface is free of curing compounds, bond breakers, oil, dirt, grease or other debris. If necessary, clean concrete surfaces with EUCO CLEAN & STRIP and thoroughly flush with water.

Apply ULTRASIL DC9 by low pressure sprayer equipped with a fan tip, and distribute evenly so that puddling does not occur. Apply additional ULTRASIL DC9 to porous areas of floor that may be more absorptive.

CLEAN-UP

Clean tools and equipment used to apply ULTRASIL DC9 with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- Prevent ULTRASIL DC9 from freezing. In the event of freezing, thaw and stir or agitate before using.
- Protect metal, glass, wood, paint or brick from contact with ULTRASIL DC9. If accidently oversprayed on these surfaces, wash surface with clean water immediately.
- Allow the product to dry 4 to 6 hours at 70°F (21°C) before exposure to heavy traffic.
- When a curing compound meeting all the requirements of ASTM C309 is required, KUREZ DR VOX is recommended.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

ULTRASIL LI+

LIQUID DENSIFIER, SEALER, AND DUSTPROOFER FOR CONCRETE

EUCLID CHEMICAL

DESCRIPTION

ULTRASIL LI+ is a water-based lithium silicate solution used to densify, seal and dustproof concrete surfaces. ULTRASIL LI+ penetrates and chemically reacts within the concrete surface, producing extremely hard and dense calcium silicate hydrate (CSH) in the pores. The result is concrete that is more durable, easier to clean, and more resistant to damage from water and mild chemicals. Because the product of the lithium silicate-concrete reaction is formed internally, the protection of ULTRASIL LI+ never peels or flakes off, is unaffected by moisture, and lasts much longer than surface sealers and coatings.

PRIMARY APPLICATIONS

- Interior concrete floors
- Commercial and retail floors
- Diamond polishing concrete
- Warehouse floors
- Manufacturing plants
- Distribution centers
- Transportation terminals
- Institutional floors
- Health care facilities
- Clean rooms
- Mechanical rooms

FEATURES/BENEFITS

- Seals, densifies and dustproofs concrete in one operation
- Water-based, low VOC
- Treated concrete is more dense and durable
- Permanent treatment that never peels off
- Makes concrete easier to maintain
- ♟ Can contribute to LEED points (EQ Credit 4.2)

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

FORM	Clear, thin liquid
SPECIFIC GRAVITY	1.10
pH	11.7
DENSITY	9.2 lb/gal (1.1 kg/L)
SOLIDS/ACTIVE CONTENT	15%
VOC CONTENT	≤5 g/L
FREEZE POINT	32°F (0°C)

PACKAGING

ULTRASIL LI+ is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

COVERAGE

1 gallon (3.8 L) of ULTRASIL LI+ will cover from 250 to 800 ft^2 (23 to 74 m^2) of concrete depending upon the texture and porosity of the surface.

DIRECTIONS FOR USE

ULTRASIL LI+ should be used directly from the container and requires no dilution or pre-mixing.

Surface Preparation (New Concrete): Cure the concrete by a wet or sheet cure method in accordance with ASTM C171, or with a curing compound that meets the requirements of ASTM C309. Euclid Chemical's dissipating curing compound KUREZ DR VOX is recommended. To maximize strength and other physical properties of the concrete slab, new concrete should cure seven days or longer before application of ULTRASIL LI+. For fast track projects, the cure time may be reduced at the discretion of the project engineer. If a curing compound is used, it must be completely removed before application of ULTRASIL LI+. Surfaces to be treated with ULTRASIL LI+ must be clean, dry and absorbent.

Surface Preparation (Existing/Older Concrete): Concrete must be clean and free of any materials that could prevent penetration of ULTRASIL LI+, such as curing compounds or cure & seals, paints, coatings, dirt/oil, waxes, etc. If necessary, use EUCO CLEAN & STRIP to remove these contaminants before applying ULTRASIL LI+.

Application (New or Old Concrete): Air temperature during application must be between 35°F and 100°F (2°C and 38°C) for proper chemical reaction of the ULTRASIL LI+. Apply a single coat of ULTRASIL LI+ using a low pressure sprayer equipped with a 0.5 gal/min (1.9 L/min) spray tip. Apply at a coverage rate that results in a uniformly wet surface without puddles. While ULTRASIL LI+ is still wet, use a soft-bristle broom or microfiber pad to redistribute and evenly spread out the material. Do not continue to brush or spread out ULTRASIL LI+ once the product begins to dry. Keep the floor wet with ULTRASIL LI+ for 5-10 minutes.

Do not allow excess ULTRASIL LI+ to puddle and dry on the floor. This may result in a white residue that must be removed immediately with scrubbing.

If immediate surface sheen is desired, dry buff or burnish the floor with a polishing pad appropriate for the desired end gloss result.

Floor Joints: If the floor joints are to be filled after ULTRASIL LI+ has been applied, they must be thoroughly cleaned before installation of joint filler. Cleaning joints by circular concrete saw or a grinder equipped with a wire wheel is recommended.

CLEAN-UP

Clean brushes, tools, equipment and flush sprayer with potable water immediately after use.

PRECAUTIONS/LIMITATIONS

- Protect ULTRASIL LI+ from freezing. In the event of freezing, thaw and stir or agitate before using.
- Protect metal, glass, wood, paint or brick from contact with ULTRASIL LI+. If accidently oversprayed on these surfaces, wash surface with clean water immediately.
- If added abrasion resistance is required in new construction, consider the use of a dry shake floor hardener. such as SURFLEX, EUCO-PLATE HD, or DIAMOND-PLATE.
- Allow the product to dry 4 to 6 hours at 70°F (21°C) before exposure to foot traffic or rain.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

PENETRATING SEALERS

BARACADE M.E.

SILICONE MICRO EMULSION WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

BARACADE M.E. is an oligomeric alkyl alkoxy siloxane concentrate. When diluted with water, BARACADE M.E. self-emulsifies into a unique product capable of repelling water on concrete or masonry surfaces. BARACADE M.E. is a breathable, non-staining, colorless material which penetrates deep into the surface to seal out moisture, reduce efflorescence and minimize the damaging effects of freeze-thaw cycles. BARACADE M.E. protects without altering the appearance or texture of the treated surface and improves resistance to airborne dirt, smog and other air pollutants.

PRIMARY APPLICATIONS

BARACADE M.E./9 is mixed 9 parts water to 1 part BARACADE M.E. for vertical applications such as:

- Precast & prestressed
- Above grade
- Exposed aggregate
- Poured-in-place
- Concrete block

BARACADE M.E./4.5 is mixed 4.5 parts water to 1 part BARACADE M.E. for horizontal applications such as:

- Sidewalks
- Ramps
- Parking decks
- Bridge decks
- Industrial floors

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties* @ 75°F (25°C)	
Flash point of concentrate	77°F
Flash point after dilution	None
Active Content (by weight) (after dilution)	
BARACADE M.E./9	10%
BARACADE M.E./4.5	18%
Appearance of Liquid	pale yellow
Appearance when dry	clear
Resistance to UV	excellent
Abrasion Resistance	excellent
Water permeance ASTM E 514	
BARACADE M.E./9	passes

Baracade M.E. Test Results NCHRP 244 Series II Tests

	Minimum Requirement	BARACADE M.E./4.5
Reduction in water absorption	75%	80%
Water vapor transmission	100%	121%
Reduction in chloride ion Intrusion	75%	83%
California Test Method (Cal trans)		
Water absorption, 24 hours	1% max	0.65%
Freeze thaw cycles	200 max	433
VOC Content, ASTM D3960	400 max	349 g/L

PACKAGING

BARACADE M.E. is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails and 1 gal (3.8 L) units.

SHELF LIFE

1 year in original, unopened container

COVERAGE

Because of variations in surface density, the following coverage rates are approximate and are intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Extremely porous surfaces may require two coats.

Vertical Applications	**BARACADE M.E./9**	**ft²/gal (m²/L)**	
Surface Type	**# of Coats**	**1st Coat**	**2nd Coat**
Poured and Precast Concrete	1	120 to 170 (2.9 to 4.2)	-
Slump Block	1	70 to 80 (1.7 to 2.0)	-
Brick and Stucco	1	80 to 125 (2.0 to 3.1)	-
Plaster and Stone/Tile	1	200 to 300 (4.9 to 7.4)	-
Standard Block ASTM C 90 Grade N Type I)	2	40 to 80 (0.98 to 2.0)	60 to 120 (1.5 to 2.9)
Split Faced Block	2	40 to 80 (0.98 to 2.0)	60 to 120 (1.5 to 2.9)
Horizontal Applications	**BARACADE M.E./4.5**		
Concrete	2	100 to 150 (2.4 to 3.7)	100 to 150 (2.4 to 3.7)

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry, structurally sound, free of curing or form release compounds, and other contaminants that will prevent the proper penetration of BARACADE M.E.. Prior to application, joints or cracks in movement must be properly sealed with an elastomeric joint sealant. Non-moving cracks or voids wider than 1/64 inch (0.4 mm) must be filled with a suitable patching material. Do not apply BARACADE M.E. to a wet surface. Surfaces must dry a minimum of 24 hours following rain or other moisture. Install caulking before BARACADE M.E. application. Mask or protect adjacent surfaces, including grass, plants, shrubs, glass, rubber, and asphalt from overspray or drips.

Mixing: BARACADE M.E. is supplied in a concentrated form and must be mixed with clean, potable water immediately before application. Prepared solutions must be applied within 12 hours of mixing.

Vertical Surfaces: BARACADE M.E./9 has a 9:1 mix ratio. (9 gal (34 L) water to 1 gal (3.8 L) BARACADE M.E.) **Horizontal Surfaces:** BARACADE M.E./4.5, has a 4.5:1 mix ratio. (4.5 gal (17 L) water to 1 gal (3.8 L) BARACADE M.E.) **Special Conditions:** For extremely dense, porous, or surfaces to be painted, contact your local Euclid Chemical representative.

Equipment: BARACADE M.E. should be applied with low pressure, non-atomizing, airless spray equipment using no more than 15 to 20 psi (0.103 to 0.138 MPa) air pressure. For proper application to most porous substrates, use spray tips with an orifice size no smaller than 0.035 inch (0.9 mm). Some dense vertical surfaces may require smaller orifice sizes to prevent sags and run downs.

Application: Each coat consists of a light fog spray followed immediately with a flood coat. The fog spray wets the surface to break the surface tension and allows the flood coat to deeply penetrate the surface. The flood coat must be applied before the fog coat dries.

Dense Vertical Surfaces: On precast concrete and other dense surfaces, apply BARACADE M.E. in several fog coats to the point of saturation with no “run down”. Roll out excess material to prevent surface build-up and curtaining.

Porous Vertical Surfaces: Spray a fog coat and follow immediately with the flood coat of BARACADE M.E. applied with uniform, overlapping, horizontal strokes. Use sufficient material for saturation and to cause an 8 to 10 inch (20.3 to 25.4 cm) rundown from the point of contact. Fully saturate mortar joints. One coat of material is generally sufficient, but very porous surfaces such as normal weight concrete block may require two coats. Excess material that remains on the surface may result in a glossy or discolored appearance.

Horizontal Surfaces: Apply two coats of BARACADE M.E. in a uniform coat “wet on wet basis” to the point of saturation. Do not apply more material than can be absorbed into the surface within 10 seconds. Remove excess material with a squeegee or paint roller.

CLEAN-UP

Clean drips, runs and overspray residue while still wet, with detergent and water. Dried material may require solvent for removal. Clean application and spray equipment with detergent and water immediately following use.

PRECAUTIONS/LIMITATIONS

- Do not overdilute BARACADE M.E.
- Do not apply BARACADE M.E. to frozen or frost filled surfaces, or when the ambient or surface temperature falls below 40°F (4°C).
- Do not apply BARACADE M.E. to surfaces warmer than 95°F (35°C).
- Store between 40°F to 85°F (4°C to 29°C).
- Do not apply BARACADE M.E. if rain is forecast within 12 hours.
- Do not apply BARACADE M.E. to non-absorbent materials such as glass, metal, glazed brick, or glazed tile.
- Do not allow BARACADE M.E. to puddle. All product should penetrate the substrate with no surface build-up.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

BARACADE SILANE 40

SOLVENT-BASED SILANE WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

BARACADE SILANE 40 is a breathable, ready-to-use, colorless, non-staining, non-yellowing, deep penetrating concrete and masonry water repellent compound. It protects concrete, block, stone and brick against the damaging effects of water intrusion, deicing chemicals, freeze-thaw exposure and airborne contaminants such as acid rain, smog and industrial fumes. BARACADE SILANE 40 protects without altering the appearance or texture of the treated surface. BARACADE SILANE 40 produces a non filming water repellent surface while penetrating deep into the capillaries of the subsurface. Chemical reactions within the capillaries form long lasting water repellent groups that crosslink into a silicone compound.

PRIMARY APPLICATIONS

- Sidewalks & ramps
- Exposed aggregate
- Precast, prestressed & poured in place concrete
- Parking and bridge decks
- Industrial floors
- Lightweight & air entrained concrete

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

MATERIAL PROPERTIES	
SILANE CONTENT	40%
VOC CONTENT	579 g/L
FLASH POINT (MINIMUM)	105°F (41°C)
DENSITY	6.9 lbs/gal (0.83 kg/L)
RESISTANCE TO UV	Excellent
AVERAGE DEPTH OF PENETRATION	3/8" (9.5 mm)
DRY TIME (FOOT TRAFFIC)	2 to 6 hours
DRY TIME (WHEEL TRAFFIC)	10 to 12 hours

NCHRP REPORT 244, SERIES II REDUCTION IN WATER ABSORPTION
87.6%
NCHRP REPORT 244, SERIES II REDUCTION IN CHLORIDE ION CONTENT
85.3%

NCHRP REPORT 244, SERIES IV ACCELERATED WEATHERING (SOUTHERN EXPOSURE)
No change
NCHRP REPORT 244, SERIES IV REDUCTION IN CHLORIDE ION CONTENT
97.6%

FREEZE THAW DURABILITY ASTM C666
93.5%

WATER PENETRATION REDUCTION (CMU) ASTM E514
90.9%

SCALING RESISTANCE ASTM C672	
25 CYCLES	0 - No scaling
50 CYCLES	1 - Very slight scaling

ACCELERATED WEATHERING @ 1,500 HOURS ASTM G154
Excellent

WATER VAPOR PERMEANCE ASTM D6490
5.93 perms

PACKAGING

BARACADE SILANE 40 is packaged in 5 gal (18.9 L) pails and 55 gal (208 L) drums.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

BARACADE SILANE 40 meets the performance standards of NCHRP 244

Complies with Federal AIM Rule VOC regulations

COVERAGE

Surface Type	ft²/gal (m²/L) per coat
Smooth Concrete	150 to 300 (3.68 to 7.36)
Exposed Aggregate	100 to 200 (2.45 to 4.91)
Bridge Decks/Ramps/Driveways	100 to 300 (2.45 to 7.36)
Resealing Bridge Decks/Ramps	150 to 350 (3.68 to 8.59)

Because of variations in surface density, the coverage rates are approximate and are intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Extremely porous surfaces may require two coats of BARACADE SILANE 40.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry and structurally sound. The substrate must also be free of all curing compounds, form release agents and any other contaminants which may prevent the proper penetration of BARACADE SILANE 40. Prior to application, joints or cracks in movement must be properly sealed with an elastomeric joint sealant. Surfaces must be dry for a minimum of 24 hours prior to application. Mask all adjacent surfaces including grass, plants, shrubs and asphalt to protect from drips or over spray.

Application: BARACADE SILANE 40 should be applied using low pressure, non-atomizing, airless spray equipment. A garden sprayer may be used for smaller projects only when an airless sprayer is not available. Do not use pressure pot or lacquer type paint sprayers. To produce the proper material flow, reduce air pressure on pumping equipment and use spray tips with orifice sizes no smaller than 0.035" (0.9 cm). Larger tips may be required with some spray equipment to get desired material flow. Flood the surface with BARACADE SILANE 40 using a low pressure sprayer, roller or broom. Distribute material evenly. After the surface absorbs the BARACADE SILANE 40, apply a second coat before the surface dries. Do not allow the material to puddle.

CLEAN-UP

Clean tools and equipment with mineral spirits or similar solvent immediately following use. Clean drips and over spray with mineral spirits while still wet. Clean glass and other non absorbent materials soon after application.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 40°F to 90°F (4°C to 32°C).
- Do not dilute
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply to a frost filled surface or when the temperature is below 40°F (4°C).
- Do not apply if rain is expected within 4 to 6 hours.
- Do not apply to non-absorbent surfaces such as glass, metal, glazed brick or tile.
- Use in a well ventilated area. Avoid breathing vapors or mist.
- A small (6' x 6') test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

BARACADE SILANE 40 IPA

ISOPROPYL ALCOHOL-BASED SILANE WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

BARACADE SILANE 40 IPA is a breathable, ready-to-use, colorless, non-staining, non-yellowing, deep penetrating concrete and masonry water repellent.

PRIMARY APPLICATIONS

- Brick walls
- Concrete block & CMU
- Brick pavers
- Bridge decks
- Concrete surfaces
- Precast concrete
- Parking decks
- Concrete ramps

FEATURES/BENEFITS

- Reduces intrusion of water, deicing chemicals, and airborne contaminants
- Penetrates deep into capillaries of treated surface
- Improves freeze-thaw resistance
- Will not alter texture or appearance of treated surface

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

MATERIAL PROPERTIES	
SILANE CONTENT	40%
VOC CONTENT	580 g/L
FLASH POINT (MINIMUM)	54°F (12°C)
DENSITY	6.8 lbs/gal (0.82 kg/L)
RESISTANCE TO UV	Excellent
DRY TIME (FOOT TRAFFIC)	2 to 6 hours
DRY TIME (WHEEL TRAFFIC)	10 to 12 hours

NCHRP REPORT 244, SERIES II REDUCTION IN WATER ABSORPTION
93.5%
NCHRP REPORT 244, SERIES II REDUCTION IN CHLORIDE ION CONTENT
93.4%

NCHRP REPORT 244, SERIES IV ACCELERATED WEATHERING (SOUTHERN EXPOSURE)
No change
NCHRP REPORT 244, SERIES IV REDUCTION IN CHLORIDE ION CONTENT
89.3%

ABSORPTION REDUCTION ASTM C642
90.3%

ACCELERATED WEATHERING @ 1,500 HOURS ASTM G154
Excellent

PACKAGING

BARACADE SILANE 40 IPA is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Canadian MTQ
Alberta Transportation B388 (Type 1b)
BARACADE SILANE 40 IPA meets the performance standards of NCHRP 244
Complies with Federal AIM Rule VOC regulations

COVERAGE

Surface Type	ft²/gal (m²/L) per coat
Concrete block	50 to 75 (1.23 to 1.84)
Smooth concrete	150 to 250 (3.68 to 6.14)
Exposed aggregate	100 to 200 (2.45 to 4.91)
Decks/ramps	100 to 125 (2.45 to 3.07)
Brick	100 to 250 (2.45 to 6.14)
Stone	100 to 250 (2.45 to 6.14)

Because of variations in surface density, these coverage rates are approximate and are intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Very porous surfaces may require two coats of BARACADE SILANE 40 IPA.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry, structurally sound, free of curing or form release compounds and other contaminants that will prevent the proper penetration of product. Protect windows, cars, and other important objects from overspray. Prior to application, joints and moving cracks must be properly sealed with an elastomeric joint sealant. Non-moving cracks and voids wider than 1/64 inch (0.4 mm) must be filled with a suitable patching material. Do not apply product to a wet surface. Surfaces must dry a minimum of 24 hours following rain or exposure to other sources of moisture. Install caulking before product application.

Application: Flood the surface with BARACADE SILANE 40 IPA using a low-pressure, non-atomizing, airless sprayer, roller, or broom. Use solvent-resistant equipment and gaskets. Distribute material evenly and do not allow the material to puddle. If a second coat is required, apply after the surface absorbs the initial coat of BARACADE SILANE 40 IPA. When applying to horizontal areas, brush out puddles or excess material. For vertical surfaces, apply from top down to product a 6” to 8” (15 to 20 cm) rundown.

CLEAN-UP

Clean tools and equipment with alcohol, mineral spirits, or similar solvent immediately following use. Clean drips and over spray while still wet. Clean overspray from glass and other non-absorbent materials immediately after application.

PRECAUTIONS/LIMITATIONS

- Store material between 40°F and 85°F (4°C and 29°C). Protect from moisture, direct sunlight, and freezing.
- BARACADE SILANE 40 IPA contains isopropyl alcohol and is FLAMMABLE, with a flash point of 53°F (12°C). Avoid fire, open flame and sparks.
- Use in a well-ventilated area.
- Caution should be taken to avoid contact with windows and vehicles.
- Do not dilute
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply to a frost filled surface or when the temperature is below 32°F (0˚C).
- Do not apply if rain is expected within 4 to 6 hours.
- Check compatibility before application of BARACADE SILANE 40 IPA. Certain types of concrete block, particularly those containing integral water repellents, may exhibit a darkening effect when product is applied.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

BARACADE SILANE 40 WB

WATER-BASED SILANE WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

BARACADE SILANE 40 WB is a water-based, breathable, ready-to-use, non-yellowing, deep penetrating concrete water repellent containing 40% silane. It protects concrete against the damaging effects of water intrusion, deicing chemicals, freeze-thaw exposure, and airborne contaminants such as acid rain and smog. BARACADE SILANE 40 WB will not change the appearance or texture of the treated surface. BARACADE SILANE 40 WB produces a water repellent surface by penetrating and reacting deep within the capillaries of the substrate, and does not form a film at the surface.

PRIMARY APPLICATIONS

- Parking decks
- Bridge decks
- Public sidewalks and ramps
- Concrete parapets and barriers
- Precast concrete

FEATURES/BENEFITS

- Reduces intrusion of water, deicing chemicals, and airborne contaminants
- Provides a chloride screen to help protect steel reinforcement from corrosion
- Penetrates deep into capillaries of treated surface
- Improves freeze-thaw resistance
- Will not alter texture or appearance of treated surface
- Water-based - low VOC content

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

MATERIAL PROPERTIES	
SILANE CONTENT	40%
VOC CONTENT	326 g/L
DENSITY	7.9 lbs/gal (0.95 kg/L)
RESISTANCE TO UV	Excellent
DRY TIME (FOOT TRAFFIC)	4 to 6 hours
DRY TIME (WHEEL TRAFFIC)	10 to 12 hours

NCHRP REPORT 244, SERIES II REDUCTION IN WATER ABSORPTION
87.0%
NCHRP REPORT 244, SERIES II REDUCTION IN CHLORIDE ION CONTENT
88.1%

NCHRP REPORT 244, SERIES IV ACCELERATED WEATHERING (SOUTHERN EXPOSURE)
No change
NCHRP REPORT 244, SERIES IV REDUCTION IN CHLORIDE ION CONTENT
91.3%

ABSORPTION REDUCTION ASTM C642	
WATER ABSORPTION @ 48-HOURS	0.40%
ABSORPTION REDUCTION VS. CONTROL @ 48-HOURS	87.9%

ACCELERATED WEATHERING @ 1,500 HOURS ASTM G154
Excellent

PACKAGING

BARACADE SILANE 40 WB is packaged in 55 gal (208 L) drums and in 5 gal (18.9 L) pails.

SHELF LIFE

18 months in original, unopened container

SPECIFICATIONS/COMPLIANCES

BARACADE SILANE 40 WB Meets the performance standards of NCHRP 244

COVERAGE

The coverage rate for BARACADE SILANE 40 WB is 125-250 ft^2/gal (3.07-6.14 m^2/L). Because of variations in surface density, this coverage rate is approximate, and is intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Very porous surfaces may require two coats of BARACADE SILANE 40 WB.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry, structurally sound, free of curing or form release compounds and other contaminants that will prevent the proper penetration of product. Protect windows, cars, and other important objects from overspray. Prior to application, joints and moving cracks must be properly sealed with an elastomeric joint sealant. Non-moving cracks and voids wider than 1/64 inch (0.4 mm) must be filled with a suitable patching material. Do not apply product to a wet surface. Surfaces must dry a minimum of 24 hours following rain or exposure to other sources of moisture. Install caulking before product application.

Application: Flood the surface with BARACADE SILANE 40 WB using a low-pressure, non-atomizing, airless sprayer, roller, or broom. Use solvent-resistant equipment and gaskets. Distribute material evenly and do not allow the material to puddle. If a second coat is required, apply after the surface absorbs the initial coat of BARACADE SILANE 40 WB, but before the initial coat fully dries. When applying to horizontal areas, brush out puddles or excess material. For vertical surfaces, apply from top down to produce a 6” to 8” (15 to 20 cm) rundown.

CLEAN-UP

Clean tools and equipment with water immediately following use. Clean drips and over spray while still wet. Clean overspray from glass and other non-absorbent materials immediately after application.

PRECAUTIONS/LIMITATIONS

- Store material between 40°F and 90°F (4°C and 32°C). Protect from moisture, direct sunlight, and freezing.
- Caution should be taken to avoid contact with windows and vehicles.
- Do not dilute
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply to a frost filled surface or when the temperature is below 45°F (7˚C).
- Do not apply if rain is expected within 4 to 6 hours.
- Check substrate compatibility before application of BARACADE SILANE 40 WB. Certain types of concrete block, particularly those containing integral water repellents, may exhibit a darkening effect when product is applied.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

BARACADE SILANE 100 C

HIGH-PERFORMANCE SILANE WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

BARACADE SILANE 100 C is a breathable, ready-to-use, colorless, non-yellowing, deep penetrating, concrete and masonry water repellent. BARACADE SILANE 100 C is a 100% silane formulation that produces a hydrophobic treatment to reduce water absorption. BARACADE SILANE 100 C protects concrete, block, stone, and brick against the damaging effects of water intrusion, deicing chemicals, freeze-thaw exposure, water-borne alkalis and acids, and atmospheric staining. Due to the 100% silane composition, BARACADE SILANE 100 C exhibits low volatility and higher coverage rates than solvent based silane materials.

PRIMARY APPLICATIONS

- Bridge decks
- Parking decks
- Ramps
- Driveways and sidewalks

FEATURES/BENEFITS

- Reduces water absorption
- Protects concrete against the damaging effects of water intrusion and deicing chemicals
- Protects against air-borne contaminants, such as acid rain

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

MATERIAL PROPERTIES	
SILANE CONTENT	100%
VOC CONTENT	341 g/L
FLASH POINT (MINIMUM)	154°F (67.8°C)
DENSITY	7.6 lbs/gal (0.91 kg/L)
RESISTANCE TO UV	Excellent
DRY TIME (FOOT TRAFFIC)	4 to 6 hours
DRY TIME (WHEEL TRAFFIC)	10 to 12 hours

NCHRP REPORT 244, SERIES II REDUCTION IN WATER ABSORPTION
91.7%
NCHRP REPORT 244, SERIES II REDUCTION IN CHLORIDE ION CONTENT
89.1%

NCHRP REPORT 244, SERIES IV ACCELERATED WEATHERING (SOUTHERN EXPOSURE)
No change
NCHRP REPORT 244, SERIES IV REDUCTION IN CHLORIDE ION CONTENT
91.9%

WATER PENETRATION REDUCTION (CMU) ASTM E514
91.4%

ABSORPTION REDUCTION ASTM C642
93.3%

FEDERAL SPECIFICATION SS-W-110C	
WATER REPELLENCY	0.53% water absorption
WEATHERING	0.60% water absorption
EFFLORESCENCE RESISTANCE	No visible efflorescence

PACKAGING

BARACADE SILANE 100 C is packaged in 5 gal (18.9 L) pails and 50 gal (189 L) drums.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

BARACADE SILANE 100 C meets the performance standards of NCHRP 244

Alberta Transportation B388 Type 1b (at 326 mL/m^2)

Alberta Transportation B388 Type 1c (at 155 mL/m^2)

Federal specification SS-W-110C

Canadian MTQ

COVERAGE

The coverage rate for BARACADE SILANE 100 C is 250-400 ft^2/gal (6.14-9.82 m^2/L) per coat.

Because of variations in surface density, this coverage rate is approximate, and is intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Very porous surfaces may require two coats of BARACADE SILANE 100 C.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry, open capillary, structurally sound, free of curing or form release compounds and other contaminants that will prevent the proper penetration of product. Prior to application, joints and moving cracks must be properly sealed with an elastomeric joint sealant. Non-moving cracks and voids wider than 1/64 inch (0.4 mm) must be filled with a suitable patching material. Do not apply product to a wet surface. Surfaces must dry a minimum of 24 hours following rain or exposure to other sources of moisture. Install caulking before product application. Mask or protect adjacent surfaces, including grass, plants, shrubs, glass, autos, and asphalt from overspray or drips.

Application: Use low pressure, non-atomizing, airless spray equipment with solvent resistant hose and gaskets. Garden type sprayers may be appropriate for smaller projects. Brushes and rollers on large projects may not achieve a uniform coverage rate. Apply BARACADE SILANE 100 C in a single application to the horizontal surface with enough material to saturate the surface. Remove excess material with a broom or squeegee. If a second coat is required it should be applied “wet on wet” before first coat dries.

Typical traffic-ready time for BARACADE SILANE 100 C is 4 hours after application at 75°F (24˚C) and 50% relative humidity. Cooler temperatures and/or high humidity will extend the dry time.

CLEAN-UP

Clean tools and equipment with alcohol, mineral spirits or similar solvent immediately following use. Clean drips and over spray while still wet. Clean glass and other non absorbent materials soon after application.

PRECAUTIONS/LIMITATIONS

- Store at temperatures below 90°F (32˚C).
- BARACADE SILANE 100 C is a DOT combustible liquid. Avoid fire, open flame and sparks.
- Do not dilute
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply to a frost filled surface or when the temperature is below 20°F (-6˚C).
- Do not apply if rain is expected within 4 to 6 hours.
- Not intended for use on below grade applications or applications where hydrostatic pressures exist. May not be effective on certain types of limestone or marble. Use in a well ventilated area.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

BARACADE WB 244

WATER-BASED, PENETRATING WATER REPELLENT FOR CONCRETE AND MASONRY

EUCLID CHEMICAL

DESCRIPTION

BARACADE WB 244 is a ready-to-use, water-based siloxane/silane penetrating water repellent sealer. BARACADE WB 244 soaks into the substrate and forms a water and chloride barrier that protects concrete and masonry from the damaging effects of water and salts, especially in freeze-thaw climates and marine environments. BARACADE WB 244 is a breathable sealer that does not alter the appearance or texture of the substrate.

PRIMARY APPLICATIONS

- Sidewalks
- Ramps
- Parking decks
- Bridge decks
- Industrial floors
- Walls

FEATURES/BENEFITS

- Low VOC content
- ▲ Can contribute to LEED points
- Breathable
- Non film-forming; leaves no gloss or shine

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75° F (24° C)
Flash Point ..... > 200°F (93° C)
Weight/gal ..... 8.4 lbs
VOC Content ..... 50 g/L
Active Content (by weight) 10%
Viscosity ..... 50 cp
Drying Time at 70°F (21°C) ..... 1 to 2 hours
Foot Traffic ..... 4 to 6 hours
Wheel Traffic ..... 10 to 12 hours

Average Depth of Penetration
(substrate dependent) ..... 3/8" (9.5 mm)
Absorption Reduction
Federal Specification SS-W-110C 88%
NCHRP Report No. 244
Reduction in Chloride Ion Content
21 days 89%
Reduction in Water Absorption
21 days 85%

PACKAGING

BARACADE WB 244 is packaged in 5 gal (18.9 L) pails and 55 gal (208 L) drums.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

BARACADE WB 244 meets the performance standards of NCHRP 244

Federal specification SS-W-110C

Complies with all U.S. EPA and local VOC regulations, including OTC, LADCO, Maricopa County, and California (CARB and SCAQMD)

Canadian MTQ

COVERAGE

Approximate Coverage ft²/gal (m²/L)

Surface	1st Coat	2nd Coat
Dense	100 to 150 (2.45 to 3.68)	—
Porous	100 to 150 (2.45 to 3.68)	100 to 150 (2.45 to 3.68)

Because of variations in surface density, the following coverage rates are approximate and are intended for estimating purposes only. Use test applications on actual surfaces to accurately determine coverage rates. Extremely porous surfaces may require two coats of BARACADE WB 244. When two coats are required, apply the second coat on the still wet BARACADE WB 244 by following a "wet on wet" technique.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface must be clean, dry and structurally sound. The substrate must also be free of all curing compounds, form release agents and any other contaminants which may prevent the proper penetration of BARACADE WB 244. Prior to application, moving joints or cracks must be properly sealed with an elastomeric joint sealant.

Non-moving cracks or voids wider than 1/64 inch (0.4 mm) must be filled with a suitable material. Surfaces must be dry for a minimum of 24 hours prior to application. Mask all adjacent surfaces including grass, plants, shrubs and asphalt to protect from drips or over spray.

Mixing: BARACADE WB 244 does not normally require mixing.

Application: For best results, BARACADE WB 244 should be applied using low pressure, non-atomizing, airless spray equipment. A garden sprayer may be used for smaller projects only when an airless sprayer is not available. To produce the proper material flow, reduce air pressure on pumping equipment and use spray tips with orifice sizes no smaller than 0.035 inch (0.9 mm). Larger tips may be required with some spray equipment to get desired material flow. Flood the surface with BARACADE WB 244 using a low pressure sprayer. A roller or broom may also be used. Distribute material evenly. Do not allow the material to puddle. When applying to vertical surfaces, work from the bottom up.

CLEAN-UP

Clean drips, runs, and overspray residue while still wet, using detergent and water. Dried material may require mechanical abrasion for removal. Clean application and spray equipment with detergent and water immediately following use.

PRECAUTIONS/LIMITATIONS

- Store material between 40°F to 90°F (4°C to 32°C).
- PROTECT FROM FREEZING.
- Temperature of air and surface must be at least 40°F (4°C) and rising.
- Do not dilute
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply if rain is expected within 12 hours.
- BARACADE WB 244 can be applied to pH neutral surfaces; however, longer cure times may be required to develop full repellency.
- BARACADE WB 244 is non-flammable and non-hazardous.
- BARACADE WB 244 may exhibit minor settling upon storage. Agitation prior to use may be necessary.
- A small (6' x 6') test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

CHEMSTOP WB REGULAR, HEAVY DUTY

WATER-BASED, SILANE/SILOXANE PENETRATING WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

CHEMSTOP WB is a water-based, ready to use, siloxane/silane water repellent. CHEMSTOP WB REGULAR is formulated for use on dense surfaces, such as pre-cast or poured-in-place concrete. CHEMSTOP WB HEAVY DUTY is used on porous surfaces such as light weight concrete, concrete block and mortar joints.

PRIMARY APPLICATIONS

- Concrete
- Concrete block
- Lightweight concrete
- Brick
- Mortar joints
- Precast structures
- Horizontal or vertical
- Interior or exterior
- New (28 days old minimum) and existing structures

FEATURES/BENEFITS

- Allows concrete/masonry repel water and salts
- Colorless & odorless
- Non-staining, non-yellowing, breathable
- Reduces efflorescence and spalling
- Will not alter texture or appearance of treated surface

▲ Can contribute to LEED points

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

	REGULAR	HEAVY DUTY
Viscosity	50 cp	50 cp
Depth of Penetration (substrate dependent)	3/8" (9.5 mm)	3/8" (9.5 mm)
Active Content (by weight)	6%	10%
Reduction in Water Leakage, ASTM E514		
Brick	N/A	100%
Mortar Block	N/A	> 91%
Reduction in Water Absorption, SS-W-110C	90.5%	92.3%
Flash Point	> 200°F (93°C)	> 200°F (93°C)
Accelerated Weathering, ASTM G154		
1500 hours	no change	no change
Abrasion Resistance	excellent	excellent
Dirt Pick-Up	none	none
VOC Content	≤5 g/L	≤10 g/L

Appearance: CHEMSTOP WB is a milky white liquid in the container. CHEMSTOP WB dries clear, does not change the appearance of the substrate, and leaves no gloss on the finished surface. A small test area is strongly recommended to confirm appearance prior to beginning full application.

PACKAGING

CHEMSTOP WB is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

Federal specification SS-W-110C

Complies with all U.S. EPA and local VOC regulations, including OTC, LADCO, Maricopa County, and California (CARB and SCAQMD)

COVERAGE

	Surface	1st Coat	2nd Coat
REGULAR	dense	80 to 150 ft^2/gal (2.0 to 3.7 m^2/L)	N/A
HEAVY DUTY	porous	40 to 60 ft^2/gal (1.0 to 1.5 m^2/L)	60 to 100 ft^2/gal (1.5 to 2.4 m^2/L)

Coverage rates are approximate and for estimating purposes only. Make test applications on actual surfaces to determine more accurately the coverage rates and effectiveness of water repellent.

DIRECTIONS FOR USE

Surface Preparation: Cure new concrete 28 days before application. Surface should be structurally sound, clean, dry, free of dust, dirt, paint, efflorescence, laitance and other contaminants that will prevent the proper penetration of CHEMSTOP WB. A dry substrate is required for proper penetration of the sealer. Prior to application, joints or cracks must be properly sealed or filled. If acid is used for cleaning, neutralize completely before application of CHEMSTOP WB.

Application: Low pressure airless spray equipment is the preferred method of application, although for smaller areas, application with brush or rollers may also be acceptable. Application should be from the bottom up to ensure uniform product distribution. Apply a saturation coat with a 6 to 8 in (15 cm to 20 cm) controlled rundown. For dense surfaces, one saturation coat of CHEMSTOP WB REGULAR is normally required. For porous surfaces two or more saturation coats of CHEMSTOP WB HEAVY DUTY may be required, applied using a “wet on wet” technique.

CLEAN-UP

Clean drips, runs, and overspray residue while still wet, using detergent and water. CHEMSTOP WB will not etch common glass; spills and overspray onto glass can be easily removed with a damp cloth. Dried material may require mechanical abrasion for removal. Clean application and spray equipment with detergent and water immediately following use.

PRECAUTIONS/LIMITATIONS

- Do not dilute
- Temperature of air and surface must be at least 45°F (7° C) and rising.
- Application at temperatures above 90°F (32°C) is not recommended.
- Do not apply if rain is expected within 12 hours of application.
- Water repellency properties will develop 24 hours to 5 days after application.
- CHEMSTOP WB is not intended to seal cracks or withstand hydrostatic pressure.
- Uneven application may result in a blotchy appearance of the surface.
- Mask off/cover windows, window frames, aluminum, steel, etc. before applying CHEMSTOP WB.
- Do not apply a “fog” coat
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Store between 40°F to 90°F (4° to 32°C)
- PROTECT FROM FREEZING
- CHEMSTOP WB may exhibit minor settling upon storage. Agitation prior to use may be necessary.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO-GUARD 100

SOLVENT-BASED, SILOXANE WATER AND CHLORIDE REPELLENT FOR CONCRETE AND MASONRY

EUCLID CHEMICAL

DESCRIPTION

EUCO-GUARD 100 is a deep penetrating siloxane sealer designed to protect concrete structures, decks, pavements and surfaces against the adverse effects of de-icing salts, moisture, weathering and freeze damage. EUCO-GUARD 100 reacts chemically with the concrete to provide a highly effective chloride screen and water barrier. In addition to its ease of application, EUCO-GUARD 100 has the added versatility to be used on both new and old concrete surfaces.

PRIMARY APPLICATIONS

- Parking structures
- Lane barriers & ramps
- Bridges
- Marine platforms
- Auto/truck repair bays
- Exterior concrete surfaces

FEATURES/BENEFITS

- Provides an efficient, continuous chloride barrier
- Blocks pores and capillaries for outstanding water repellency
- May be applied to new or old concrete
- Extremely high alkali resistance
- Suitable for use over dry or damp (not saturated) concrete
- Full protection in one treatment, but may be reapplied later at any time
- Provides a low cost protection system over the life of a structure
- Protects reinforcing steel against the corrosive effects of surface absorbed chlorides and moisture
- Renders new concrete virtually free of surface scaling

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Drying Time

Dry.....1 to 2 hrs
Foot traffic .....4 to 6 hrs
Wheel traffic.....10 to 12 hrs
Type ..... siloxane
Flash point..... 105°F (41°C)
Active Content (by weight) 10%
VOC Content.....730 g/L
Solvent ..... mineral spirits

Appearance: EUCO-GUARD 100 is a clear, solvent based material. After placement and drying, the product has virtually no effect on the appearance of dry concrete. EUCO-GUARD 100 treated concrete will cause water to "bead" at the surface.

NCHRP 244 Series IV @ 21days
4000 psi (27.6 MPa), 3"(76 mm) x 6"(152 mm) cylinders
5.25% air entrainment, 15% NaCl solution

Reduction in water uptake.....92.5%
Reduction in chloride ion uptake.....96.0%

	ASTM C642 Water absorption 24 hour results		ASTM C672 Scaling resistance	
	% weight gain	**water repellency factor**	**50 cycles**	**125 cycles**
Untreated	4.85%	----	4 moderate to severe	5 severe scaling
Euco-Guard 100	0.364%	92%	0 to no scaling	0 to no scaling

PACKAGING

EUCO-GUARD 100 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

EUCO-GUARD 100 meets the performance standards of NCHRP 244 Series IV

Complies with Federal AIM Rule VOC regulations

COVERAGE

Concrete Surface	Application Rate
Troweled smooth	125 to 150 ft^2/gal (3.1 to 3.7 m^2/L)
Broomed textured	75 to 125 ft^2/gal (1.8 to 3.1 m^2/L)

Material Requirements: A one coat application using a coverage rate of 125 ft^2/gal (3.1 m^2/L) will require approximately 8 gal (30.3 L) of material per 1000 ft^2 (92.9 m^2) of area. For exterior concrete with a textured finish, a coverage rate of 75 to 125 ft^2/gal (1.8 to 3.1 m^2/L) is required to achieve NCHRP #244 results. Higher coverage rates may be used depending on surface porosity and desired level of protection.

DIRECTIONS FOR USE

Surface Preparation (**New Concrete):** Surface should be well cured using water, wet burlap, polyethylene, curing paper, or a dissipating curing compound such as KUREZ DR VOX. Surfaces must be free of all dirt and debris. All joint sealants and caulks should be in place before applying EUCO-GUARD 100.

Surface Preparation (**Old Concrete):** Remove all foreign substances that could prevent absorption-dirt, dust, tar, oil, etc. Pressure wash with water and cleaners where appropriate. Membranes of any kind must be removed.

Mixing: EUCO-GUARD 100 is a one component material which requires no pre-blending prior to use. The product should be used directly from the container.

Placement: Horizontal Surfaces - Flood surface using low pressure, non-atomizing, airless sprayer, roller, brush or broom. Broom or squeegee material around for even distribution. Let the surface absorb the EUCO-GUARD 100 solution and follow immediately with a second application before the surface dries. Redistribute any puddles or free-standing EUCO-GUARD 100. **Vertical Surfaces -** Apply by low pressure, non-atomizing, airless sprayer, roller or brush in two applications from the bottom up. Be sure to apply "wet-on-wet" as described for horizontal surfaces. To apply the sealer to concrete, use a pump-up or airless sprayer for best results. A short nap roller or lambswool applicator may also be used.

CLEAN-UP

Use mineral spirits or acetone to clean tools and equipment.

PRECAUTIONS/LIMITATIONS

- Keep EUCO-GUARD 100 away from open flames, sparks, or other sources of ignition
- EUCO-GUARD 100 is a solvent-based product with a distinct odor. When used in enclosed areas or on extremely porous substrates, the solvent odor may dissipate slowly. If HVAC intake ducts will distribute solvent odor into adjoining occupied areas of the building, care should be taken to block these ventilation vents. If solvent odor is unacceptable, use a water-based product such as BARACADE WB 244.
- Do not dilute EUCO-GUARD 100 with solvents or thinners.
- Protect metal, glass and other surfaces from overspray.
- Do not use at temperatures below 40°F (4°C).
- Do not use over water saturated surfaces or curing membranes.
- All joint sealants and caulks should be in place before applying EUCO-GUARD 100.
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply if rain is expected within 8 hours.
- This product does not prevent oil stains or discoloration from fallen tree leaves.
- A small (6' x 6') test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO-GUARD 350

LOW-VOC, SOLVENT-BASED WATER REPELLENT FOR CONCRETE AND MASONRY

EUCLID CHEMICAL

DESCRIPTION

EUCO-GUARD 350 is a deep penetrating siloxane sealer designed to protect concrete structures, decks, pavement and surfaces against the adverse effects of de-icing salts, moisture, weathering and freeze damage. EUCO-GUARD 350 reacts chemically with the concrete to provide a highly effective chloride screen and water repellent surface. In addition to its ease of application, EUCO-GUARD 350 has the added versatility to be used on both new and old concrete surfaces.

PRIMARY APPLICATIONS

- Parking structures
- Lane barriers & ramps
- Bridges
- Marine platforms
- Auto/truck repair bays
- Exterior concrete surfaces

FEATURES/BENEFITS

- Provides an efficient, continuous chloride barrier
- Blocks pores and capillaries for outstanding water repellency
- May be applied to new or old concrete
- Complies with VOC standards in the OTC and LADCO states
- Full protection in one treatment, but may be reapplied later at any time
- Provides a low cost protection system over the life of a structure
- Protects reinforcing steel against the corrosive effects of surface absorbed chlorides and moisture
- Renders new concrete virtually free of surface scaling

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Active Content (by weight)	10%
Drying Time	Dry: 1 to 2 hours Foot Traffic: 4 to 6 hours Wheel Traffic: 10 to 12 hours
Type	Siloxane
VOC Content	109 g/L
Water Absorption, SS-W-110c	Percent Absorption: < 1%

Appearance: EUCO-GUARD 350 is a clear, solvent based liquid. Concrete treated with EUCO-GUARD 350 will "bead" water on the surface. EUCO-GUARD 350 may darken concrete, especially if applied heavily or to older, previously sealed, or contaminated surfaces. If appearance is critical, apply EUCO-GUARD 350 to a small test section first to observe the final dry appearance of the treated concrete.

PACKAGING

EUCO-GUARD 350 is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

Federal specification SS-W-110C

Complies with Federal AIM Rule VOC regulations and with VOC standards in the OTC and LADCO states

Canadian MTQ

COVERAGE

Concrete Surface	Application Rate
Troweled smooth	125 to 150 ft^2/gal (3.1 to 3.7 m^2/L)
Broomed textured	75 to 125 ft^2/gal (1.8 to 3.1 m^2/L)

Higher or lower coverage rates may be used depending on surface porosity and desired level of protection.

DIRECTIONS FOR USE

Surface Preparation: For best penetration and performance, concrete should be at least 28 days old before applying EUCO-GUARD 350. Surfaces must be clean and dry for best penetration. Remove all foreign substances that could prevent absorption such as dirt, dust, tar, oil, curing compounds, sealers, etc. Pressure wash with water and cleaners when needed to produce a clean, absorptive surface. Allow washed concrete to dry completely before sealing. Joint sealants should be in place before applying EUCO-GUARD 350.

Mixing: EUCO-GUARD 350 is a one component material which requires no pre-blending prior to use. The product should be used directly from the container without diluting.

Placement: Apply to the concrete surface using an industrial-grade, low pressure, non-atomizing, airless sprayer or short nap roller, carefully following the recommended coverage rate. Heavy or uneven application may cause excessive or uneven darkeining of the surface. If a second coat is desired, apply immediately after the first coat has absorbed into the surface, but while it is still wet. Redistribute or remove any EUCO-GUARD 350 that does not immediately soak into the surface. When applying to vertical surfaces, spray or roll from the bottom up.

CLEAN-UP

Use EUCO SOLVENT, mineral spirits, or acetone to clean tools and equipment.

PRECAUTIONS/LIMITATIONS

- EUCO-GUARD 350 is a flammable liquid. Use with adequate ventilation and keep away from heat, sources of spark or ignition, and open flames. Not recommended for interior use or use in enclosed areas. Block all HVAC ventilation ducts which may distribute solvent odor to interior spaces. When used on extremely porous exterior substrates, the solvent odor may dissipate slowly. If solvent odor is objectionable, use of a water-based, low odor product may be preferred.
- Do not dilute EUCO-GUARD 350 with solvents or thinners.
- Protect metal, glass and other surfaces from overspray.
- EUCO-GUARD 350 may darken some surfaces. A test section is recommended if appearance is critical.
- Do not use at temperatures below 40°F (4°C).
- Do not use over water saturated surfaces.
- All joint sealants and caulks should be in place before applying EUCO-GUARD 350.
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- Do not apply if rain is expected within 8 hours.
- This product does not prevent oil stains or discoloration from fallen tree leaves.
- A small (6' x 6') test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

WEATHER-GUARD

SOLVENT-BASED, PENETRATING SILOXANE WATER REPELLENT

EUCLID CHEMICAL

DESCRIPTION

WEATHER-GUARD is a siloxane penetrating sealer designed specifically for the treatment of masonry materials and concrete surfaces. WEATHER-GUARD protects concrete and masonry surfaces from the effects of exterior exposure and weathering. WEATHER-GUARD penetrates deep into the surface pores and reacts chemically to provide a durable, long lasting barrier against water and salt intrusion. This level of protection can substantially reduce the damaging effects of freeze/thaw cycling, precipitation, acid rain, efflorescence, and dust/dirt degradation.

PRIMARY APPLICATIONS

- Concrete and masonry block
- Natural stone
- Brick facings
- Precast concrete
- Clay brick
- Exposed aggregate
- Stucco
- Architectural concrete

FEATURES/BENEFITS

- Deep penetrating pore action for long lasting protection
- Preserves a natural appearance without membrane build-up
- Provides a highly efficient barrier to water and salt ingress
- Allows concrete and masonry surfaces to maintain breathability while providing high water repellency characteristics
- Easy to use requiring only low pressure spraying equipment
- Economical due its durability over many years

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Flash point .....104°F (40°C)
Active Content (by weight) 5%
VOC Content .....749 g/L
Water absorption ASTM C67
(multi-celled brick raked face, 24 hr immersion) 0.259%
Drying time at 70°F (21°C) ..... 1 to 2 hours
Foot Traffic..... 4 to 6 hours
Wheel Traffic. .....10 to 12 hours

Appearance: WEATHER-GUARD is a clear liquid that does not change the color or appearance of the substrate After application of WEATHER-GUARD, the color of the substrate may initially appear darker but will lighten upon drying.

PACKAGING

WEATHER-GUARD is available in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

2 years in original unopened container

SPECIFICATIONS/COMPLIANCES

Complies with Federal AIM Rule VOC regulations

COVERAGE

Required coverage rates will vary depending on surface density and porosity. In some cases, test sections may be necessary to develop a feel for adequate coverage. In general, coverage rates of 100 to 150 ft^2/gal (2.4 to 3.7 m^2/L) are recommended.

DIRECTIONS FOR USE

Surface Preparation: All surfaces to be treated should be clean and free from all dirt, dust, and other forms of contamination that could prevent WEATHER-GUARD penetration. Any membranes present on the surface must be completely removed. Protect adjacent glass and metal surfaces from overspray or accidental contamination. All joint materials should be installed before WEATHER-GUARD application. Surfaces should be in a dry or damp condition without being saturated.

Mixing: WEATHER-GUARD is ready to use and requires no pre-mixing.

Placement: The preferred method of application is with a low pressure, non-atomizing, airless sprayer. Brushes or rollers may also be used if enough material can be applied to assure uniform coverage. Use WEATHER-GUARD directly from the container. No dilution is necessary or permissible. Apply in a uniform manner working back and forth lapping the previous pass. On vertical surfaces, apply from the bottom up. Avoid extra heavy build-up in isolated areas. One application in two passes is recommended to assure complete, uniform coverage. After the first pass has been completed, apply the second pass so that a wet-on-wet process

CLEAN-UP

Tools and equipment may be cleaned with acetone or mineral spirits.

PRECAUTIONS/LIMITATIONS

- Do not use over previously applied membrane-forming curing compounds or sealers.
- Masonry temperature at the time of application should be above 40°F (4°C). Drying time in cool weather will be extended.
- New concrete and masonry surfaces should be a minimum of 14 days old and have undergone some drying before WEATHER-GUARD application.
- Confined or inside areas must be properly ventilated.
- Protect adjacent areas from overspray.
- COMBUSTIBLE - Keep material away from open flames, sparks, or other sources of ignition.
- WEATHER-GUARD is a solvent-based product with a distinct odor. When used in enclosed areas, or on extremely porous substrates, the solvent odor may dissipate slowly. Where solvent odors are not acceptable, use a water-based product such as BARACADE WB 244 or CHEMSTOP WB.
- All joint sealant materials should be installed before WEATHER-GUARD application.
- Do not apply if rain is expected within 8 hours.
- Do not allow to puddle. All product should penetrate the substrate with no surface build-up.
- This product does not prevent oil stains or discoloration from fallen tree leaves.
- A small (6’ x 6’) test area is strongly recommended prior to starting full application, in order to ensure desired performance results, aesthetics, and coverage rates. Allow 5 to 7 days for product to fully react before evaluating.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

REPAIR- HORIZONTAL

CONCRETE-TOP SUPREME

SINGLE COMPONENT CEMENTITIOUS TOPPING & REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

CONCRETE-TOP SUPREME is a latex and microsilica modified, cementitious mortar designed for use as a concrete repair mortar at thicknesses of 3/8" to 2" (9.5 mm to 50 mm). This product is a single-component formula which incorporates a powder latex technology, providing protection from corrosion and excellent durability under freeze-thaw cycles as well as reducing ingress by water and de-icing salts.

PRIMARY APPLICATIONS

- Parking decks
- Pavements
- Warehouse floors
- Light industrial floors
- Shoulder repairs
- Ramps
- Walkways

FEATURES/BENEFITS

- Provides a strong, wear resistant overlay
- Contains an integral corrosion inhibitor
- Excellent bond to properly prepared sound concrete
- Compatible with galvanic anodes
- Suitable for both interior and exterior use
- Formulated for easy placement

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes

Age	Strength
1 day	4,000 psi (27.6 MPa)
7 days	7,000 psi (48.3 MPa)
28 days	9,000 psi (62.1 MPa)
56 days	9,500 psi (65.5 MPa)

Flexural Strength ASTM C 348

7 days	1,200 psi (8.3 MPa)
28 days	1,250 psi (8.6 MPa)

Linear Shrinkage ASTM C 157 50% RH @ 23°C (73°F) (specimens were removed from molds @ 24 hours)

14 days	-0.10%
56 days	-0.13%

Chloride Permeability ASTM C 1202
28 days.....1,200 coulombs

Freeze/Thaw Resistance ASTM C 666 Procedure A
300 Cycles..... 92% relative dynamic modulus

Working Time ..... approx. 30 min

Initial Set .....approx. 1 hour
Final Set ..... approx. 3 hours

Unit Weight.....approx. 140 lb/ft^3 (2243 kg/m^3)

CONCRETE-TOP SUPREME is a free-flowing powder as packaged. After mixing and placing, the color may initially appear darker than the surrounding concrete, but will lighten substantially as it cures.

PACKAGING/YIELD

CONCRETE-TOP SUPREME is packaged in 50 lb (22.7 kg) moisture resistant bags. **Yield:** is 0.40 ft^3/bag (0.011 m^3) when mixed with 2.5 qt (2.4 L) of water. Typical water requirement is 2.0 to 3.0 qt (1.9 to 2.8 L)/bag. A unit of material may be extended with 15 lb (6.8 kg) of 3/8" (9.5 mm) pea gravel. This will yield 0.47 ft^3 (0.013 m^3) and may be used for overlay placements that exceed 2" (50 mm) in depth.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency, MTQ, MTO

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of CONCRETE-TOP SUPREME to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Mixing: A single bag of CONCRETE-TOP SUPREME may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All material should be in the proper temperature range of 45°F (7°C) to 90°F (32°C). Add the appropriate amount of water, 2 to 3 qt (1.9 to 2.8 L)/bag, then slowly add the dry product. Mix for 3 to 5 minutes.

Placement: For patching, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. When used as an overlay, use screed strips along with vibratory screeding to level.

Finishing: Finish the repair material to the desired texture. This product is designed for finishing with a float or broom texture. A steel trowel finish may be applied but timing of the final trowel is critical. For a hard, flat troweled surface, delay finishing until the product is near final set to reduce the risk of blistering during troweling. Do not add additional water to the surface during the finishing operation. If additional liquid is required, use EUCOBAR evaporation retarder. **NOTE:** Always re-establish joints when using this product as an overlay.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To reduce surface cracking, cure the floor with a high solids curing compound, such as SUPER AQUA-CURE VOX or SUPER DIAMOND CLEAR VOX. Note: Do not use a solvent based curing compound on this product. If a curing compound is not desired, cover with quality plastic sheeting for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not allow repairs to freeze until the material has reached a minimum 1,000 psi (7 MPa) compressive strength.
- Use only potable water for mixing.
- Do not use material at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Always mix full units.
- Do not use a solvent based curing compound on this product.
- Do not use DURALPREP A.C. as a bonding agent for toppings and overlays done with CONCRETE-TOP SUPREME.
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DURALTOP FLOWABLE MORTAR

TWO PART HORIZONTAL REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

DURALTOP FLOWABLE MORTAR is a two component, polymer modified, highly flowable, cementitious repair mortar. DURALTOP FLOWABLE MORTAR is a proprietary compound of portland cements, finely graded aggregates, corrosion inhibitors and specific chemical additives formulated with polymer based binders and modifiers providing superior horizontal repair performance.

PRIMARY APPLICATIONS

- Interior and exterior
- Leveling and repair of horizontal concrete surfaces
- Structural repairs
- Parking & bridge decks
- Industrial floors

FEATURES/BENEFITS

- Highly flowable repair mortar for hard to reach places
- Polymer modified
- Contains an integral corrosion inhibitor
- Excellent adhesion and durability
- Resistant to abrasion, freeze-thaw and deicing chemicals
- Pre-proportioned unit for ease of use

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109 (Mod) psi (MPa)
1 day.....2,500 (17.2)
3 days.....4,600 (31.7)
7 days.....6,000 (41.4)
28 days.....7,200 (49.6)

Flexural Strength ASTM C 293 psi (MPa)
7 days.....1,750 (12.1)
28 days.....2,000 (13.8)

Bond Strength, ASTM C 882 (Mod) psi (MPa)
7 days.....1,100 (7.6)
28 days.....2,450 (16.9)

Tensile Bond Strength
CAN A23.2-6B (28 days) ..... greater than concrete

Splitting Tensile Strength, ASTM C 496 psi (MPa)
28 days.....710 (4.9)

Chloride Perm ASTM C 1202
28 days.....120 coulombs “very low”

Freeze Thaw Durability ASTM C 666
300 cycles 99.4%

PACKAGING

DURALTOP FLOWABLE MORTAR Part A (powder) is packaged in 52 lb (23.6 kg) bags. Part B (liquid), is packaged in a 1 gal (3.8 L) jug.

SHELF LIFE

1 year in original, unopened package

COVERAGE/YIELD

One kit of DURALTOP FLOWABLE MORTAR will yield approximately 0.5 ft^3 (0.014 m^3) of mortar

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of DURALTOP FLOWABLE MORTAR to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of DURALTOP FLOWABLE MORTAR to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Mix only one kit of DURALTOP FLOWABLE MORTAR at a time. In a clean container, add 2/3 of liquid (Part B). Using a 1/2" slow speed (400 to 600 rpm) drill and a "Jiffy" mixer, gradually add the powder (Part A) to produce a mortar with a smooth consistency and without lumps. Add remaining liquid (Part B) to get desired consistency. Do not mix longer than 3 minutes. The aggregate should be added after the powder is added to the liquid. To fill areas deeper than 1½" (3.8 cm), use clean, damp 3/8" (0.95 cm) pea gravel. DO NOT USE LIMESTONE AGGREGATE. Do not exceed 35 lb (15.9 kg) of aggregate for each unit of DURALTOP FLOWABLE MORTAR.

Application: Air and surface temperature must be at least 45°F (7°C) and rising. Apply DURALTOP FLOWABLE MORTAR immediately after mixing. The approximate working life is 30 minutes depending on the temperature. Apply DURALTOP FLOWABLE MORTAR to the prepared surface, consolidate and screed as necessary. Apply the mortar in lifts of not more than 1½" (3.8 cm). Follow standard procedures for finishing.

Curing: Follow standard ACI guidelines for curing. In case of high temperature, high wind or low humidity causing rapid surface drying, use wet burlap, plastic or a water based curing compound. Protect from rain and freezing. DO NOT use solvent based curing compounds.

CLEAN-UP

Clean tools and equipment immediately after use with water. Clean up spills or drips while still wet. Dried product will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Apply immediately after mixing. Minimum application thickness 1/4"(6.4 mm), maximum thickness 1½" (38.1 mm) neat; greater than 1½ "(38.1 mm) extended.
- Store at temperatures between 40°F to 90°F (4°C to 32°C). Protect from freezing.
- Do not allow liquid (Part B) component to freeze.
- Do not apply DURALTOP FLOWABLE MORTAR below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Mix only one unit at a time.
- DO NOT MIX DURALTOP FLOWABLE MORTAR LONGER THAN 3 MINUTES.
- SSD surface before applying.
- Do not use limestone aggregate.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO RE-COVER

FIBER REINFORCED CONCRETE RESURFACER

EUCLID CHEMICAL

DESCRIPTION

EUCO RE-COVER is a polymer modified, fiber-reinforced concrete resurfacing mortar. Adding only water, EUCO RE-COVER provides a fresh, aesthetically pleasing appearance to new concrete that has been marred by rain or plastic covering, old or spalled concrete, and salt damaged concrete.

PRIMARY APPLICATIONS

- Driveways
- Sidewalks
- Pool decks
- Garage floors
- Elevated slabs
- Vertical concrete surfaces

FEATURES/BENEFITS

- Excellent working time at 70°F (21°C)
- Micro-fiber reinforced
- Polymer modified
- Suitable for freeze-thaw environments
- Open to foot traffic in 4 hours, rubber tire traffic in 12 hours at 75°F (24°C)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PHYSICAL PROPERTY	TEST METHOD	RESULT
Working Time	-	30 minutes at 70°F (21°C)
Initial Set	ASTM C 266	approx. 1 hour
Final Set	ASTM C 266	approx. 2.5 hours
Compressive Strength	ASTM C 109	4000 psi (28 MPa) at 28 days

PACKAGING/YIELD

EUCO RE-COVER is packaged in 40 lb (18 kg) moisture resistant bags. The yield of EUCO RE-COVER is 0.48 ft^3 (0.01 m^3) per bag.

A mixed unit of EUCO RE-COVER will cover approximately 92 ft^2 (8.6 m^2) at 1/16" (1.6 mm).

SHELF LIFE

2 years in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and be free of curing and sealing compounds, dust, dirt, paint, efflorescence, oil and all other contaminants. Typically, pressure washing the surface with a commercial pressure washer (3000 psi, 4 GPM) (21MPa, 0.25 L/s) and allowing to fully dry will be sufficient for preparation. In areas of heavy contamination, preparing the concrete through mechanical means is recommended. Abrade the surface to a profile of at least CSP 2, in accordance with ICRI Guideline 310.2-1997.

Priming: Apply EUCO RE-COVER to dry surfaces. Although a primer is typically not needed, if the concrete is very porous TAMMSWELD bonding adhesive must be used to prevent pinholes from forming in the EUCO RE-COVER. Please refer to the TAMMSWELD technical data sheet for further instructions.

Mixing: All materials should be conditioned to the appropriate temperature range of 50°F - 90°F (10°C - 32°C) prior to mixing and placement. EUCO RE-COVER mixes with 4.5 quarts (4.3 L) of clean, potable water for standard overlay applications. Up to an additional pint (0.4 L) can be added when the temperature exceeds 80°F (27°C). For repairing deeper spalls prior to overlaying, EUCO RE-COVER can be mixed with 3.5 to 4 quarts (3.3-3.8 L) of water to make a stiff paste suitable for spall repairs. Place 80% of the mixing water into a clean pail. Slowly add the dry EUCO RE-COVER powder into the mixing pail. During this time, the material should be mixed with a drill and "jiffy" type mixing paddle. Slowly add the remaining 20% of the mixing water to the pail and mix for 3 minutes to achieve the desired consistency. Place immediately.

Coloring: EUCO RE-COVER can be integrally colored. Add the desired liquid or dry colorant to the mixing water and stir until colorant evenly disperses throughout the water. Continue mixing in the EUCO RE-COVER as directed. The Euclid Chemical Company does not warrant any colored application. For even results, it is a best practice to "box" all mixing water that has been colored prior to mixing individual bags of EUCO RE-COVER. Colored results vary based on the colorant and amount used.

Placement: Place the mixed EUCO RE-COVER onto the concrete in the desired area. For best adhesion to the concrete, use a scrub brush or stiff street broom to scrub the material onto the prepared substrate. Following the initial placement of the material to the concrete, finish as desired, using either a trowel or a broom. The maximum placement depth of EUCO RE-COVER is 3/8" (9.5 mm). If multiple lifts are to be applied, score the previous lift after placing; this will provide a great surface to mechanical bond subsequent lifts over. Since EUCO RE-COVER is a thinly applied material, surface and air temperatures greatly effect the working time of the material. On hotter days, it is best practice to work in small, controlled areas to avoid cold joints. Use Euclid Chemical's EUCOBAR evaporation retardant to retain moisture in the material and to provide longer finishing time. Working from joint to joint in the base concrete is a good practice. All saw cuts and joints in the base concrete will have to be honored through the EUCO RE-COVER material.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. As soon as the material can be walked on without harming the finish, apply a water-based cure and seal compound to the EUCO RE-COVER. If you can apply a cure and seal sooner from the sides of the project, then do so. The use of Euclid Chemical's DIAMOND CLEAR VOX or SUPER DIAMOND CLEAR VOX is highly recommended for use on this product.

CLEAN-UP

Clean all tools and equipment with water prior to the material hardening. EUCO RE-COVER develops a tenacious bond and is difficult to remove after drying.

PRECAUTIONS/LIMITATIONS

- Avoid applying material in direct sun.
- Mixing partial bags will give variable results; always mix full units.
- Use only potable water for mixing.
- DO NOT use this material below 50°F (10°C).
- When using in warm conditions, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting".
- DO NOT use a solvent-based cure and seal on this product.
- DO NOT use plastic or other covering means to cure EUCO RE-COVER, for discoloration will occur.
- Store product in a cool, dry place.
- In all cases, consult the Safety Data Sheet before use

Rev. 01.19

EUCO-SPEED

RAPID SETTING HORIZONTAL REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCO-SPEED is a rapid setting, rapid hardening, cementitious material for repairing horizontal concrete surfaces. Requiring only the addition of water, EUCO-SPEED is easy to use and can be installed with standard equipment and procedures. It has excellent adhesion to properly prepared concrete and provides a durable repair.

PRIMARY APPLICATIONS

- Bridge decks
- Ramps
- Parking garages
- Pavements
- Formed vertical & horizontal patching
- Marine structures

FEATURES/BENEFITS

- Rapid setting for quick repairs
- Rapid, high early strength for quick turnaround time
- Easy to use single-component mortar
- Suitable for both interior and exterior applications
- Versatility in thickness from 1/2" (12 mm) to 6" (15 cm)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strengths ASTM C109 2"(50mm) cubes
3 hours.....1,100 psi (8 MPa)
1 day.....5,000 psi (35 MPa)
7 days.....6,000 psi (41 MPa)
28 days.....7,000 psi (48 MPa)

Final set time ASTM C266.....approx. 30 minutes

Wheeled traffic.....approx. 6 to 8 hours

Flow after 5 min per ASTM C 109.....122%

Scaling per ASTM C 672 25 cycles.....0 rating

Length change in water per ASTM C 157
(3"x3"x11" specimens were removed from mold @ 2 hrs)
28 days.....+0.100%

Length change in air per ASTM C 157
(3"x 3"x11" specimens were removed from mold @ 2 hrs)
28 days..... - 0.065%

Appearance: EUCO-SPEED is a free-flowing powder as packaged. After mixing and placing, the color may initially appear slightly darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the repair may always appear somewhat darker than the surrounding concrete. This product is designed to be finished with a float or broom appearance. A steel trowel finish may be applied, but timing of the final trowel is critical and the contractor may have difficulty achieving a smooth finish over a large area.

PACKAGING/YIELD

One 50 lb (22.7 kg) bag of EUCO-SPEED, mixed with .75 gal (2.85 L) of water, will yield approximately 0.4 ft^3 (0.011 m^3) of mortar. EUCO-SPEED may be extended with up to 25 lb (11.3 kg) of 3/8" (9.5 mm) pea gravel per bag for deeper areas. Yield with pea gravel will increase to approximately 0.56 ft^3 (0.016 m^3) per bag.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

ASTM C 928: Standard Specification for Packaged, Dry, Rapid-Hardening, Cementitious Materials for Concrete Repairs

Canadian Food Inspection Agency, MTQ, MTO

COVERAGE

One unit of EUCO-SPEED will cover approximately 9.8 ft^2 (0.91 m^2) when placed at an average depth of 1/2" (12 mm). When one unit of material is extended with 25 lb (11 kg) of 3/8" (9.5 mm) pea gravel, the mixed material will cover 13.4 ft^2 (1.24 m^2) when placed at an average depth of 1/2" (12 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCO-SPEED to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Add the appropriate amount of water, 0.70 - 0.75 gal (2.65 - 2.85 L) per bag, for the batch size and then add the EUCO-SPEED. Mix material for about 2 minutes. The mixed product should be quickly transported to the repair area and placed immediately. For deeper repairs, 1" (2.5 cm) to 6" (15 cm), extend EUCO-SPEED with 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) rounded pea gravel (#8, ASTM C33). The pea gravel must be dense and non-absorbtive per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260.

Placement: EUCO-SPEED sets quickly; the time available for placement and finishing will be very limited. For repairs; spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. Float to even out mortar.

Finishing: Finish EUCO-SPEED to the desired float or broom finish. Do not add additional water to the surface during the finishing operation; use EUCOBAR evaporation retarder on sunny, hot & windy days.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure EUCO-SPEED with a high-solids curing compound, such as SUPER AQUA-CURE VOX or SUPER DIAMOND CLEAR VOX. In hot, windy or direct sunlight situations, re-wet the surface after the curing compound has dried and cover with polyethylene for a minimum of 3 days. If a curing compound is not desired, wet cure for a minimum of 3 days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- If used in cold weather, the repair must be kept from freezing for at least 8 hours.
- Do not apply over frozen concrete.
- Do not place material at temperatures below 40°F (4°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- No heavy traffic until the product has reached a minimum of 2,000 psi (14 MPa).
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO-SPEED MP

MAGNESIUM PHOSPHATE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCO-SPEED MP is a rapid-setting, rapid hardening, magnesium phosphate material used to repair concrete and masonry surfaces. EUCO-SPEED MP requires only the addition of water and can be installed with standard equipment and procedures. It bonds tenaciously to properly prepared concrete and provides a durable repair which is resistant to freeze-thaw cycles and deicing salts. For temperatures above 85°F (29°C), EUCO-SPEED MP HOT WEATHER should be used. For large placements use EUCO-SPEED MP HOT WEATHER extended with pea gravel.

PRIMARY APPLICATIONS

- Bridge decks
- Anchoring
- Parking garages
- Floors
- Hand rail grouting
- Pavements
- Marine structures
- Joint repairs

FEATURES/BENEFITS

- Rapid-setting for quick turnaround
- Suitable for both interior and exterior applications
- Durable under freeze-thaw cycles and salt exposure
- Versatility in thickness from 1/2" (12 mm) to 8" (20 cm) when extended with aggregate
- May be placed down to 0°F (-17°C)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes @72°F (22°C)

Age	Strength
2 hours	3,500 psi (24 MPa)
3 hours	5,000 psi (35 MPa)
1 day	5,500 psi (38 MPa)
7 days	7,000 psi (48 MPa)
28 days	7,500 psi (52 MPa)

Flexural Strength ASTM C 78

7 days	400 psi (2.8 MPa)
28 days	500 psi (3.4 MPa)

Freeze/Thaw Resistance ASTM C-666 Procedure A

300 Cycles..... 90% relative dynamic modulus

Bond Strength ASTM C 882 (modified)

3 hours	1,000 psi (7 MPa)
1 day	1,300 psi (9 MPa)
7 days	1,600 psi (11 MPa)
28 days	1,700 psi (12 MPa)

Wheel Traffic ..... approx. 2 hours

Setting Time (Gillmore Needles)

Initial Set	8 to 12 min
Final Set	10 to 20 min

***** All testing was conducted on neat material under controlled laboratory conditions. Do not expect similar compressive strength results using cylinder type molds. Also, strengths will be affected by the amount and type of aggregate added to extend EUCO-SPEED MP.

Appearance: EUCO-SPEED MP is a free flowing powder as packaged. After mixing and placing, the color may initially appear slightly darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the repair may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

EUCO-SPEED MP is available in 50 lb (22.7 kg) bags or pails. **Yield:** Approximately 0.42 ft^3 (0.012 m^3) of mortar when mixed with 0.45 gal (1.7 L) of water. For areas deeper than 1" (25.4 mm), EUCO-SPEED MP must be extended with up to 30 lb (13.6 kg) of 3/8" (9.5 mm) pea gravel*****. Yield will increase to approximately 0.57 ft^3 (0.016 m^3) per unit. *** Use only dust free, properly graded hard aggregate. Never extend EUCO-SPEED MP with limestone or aggregate containing limestone.**

SHELF LIFE

18 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

ASTM C 928, Standard Specifications for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repair

Canadian Food Inspection Agency, MTQ, MTO

COVERAGE

One unit of EUCO-SPEED MP will cover approximately 10 ft^2 (0.93 m^2) when placed at an average depth of 1/2" (13 mm). When one unit of material is extended with 30 lb (13.6 kg) of 3/8" (9.5 mm) pea gravel, the mixed material will cover 13.7 ft^2 (1.3 m^2) when placed at an average depth of 1/2" (13 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area. **Priming:** Clean and prime exposed steel using a spray or brush coat of DURAPREP A.C.

Bonding: EUCO-SPEED MP requires no bond coat.

Mixing: Single bags may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. Add the appropriate amount of water for the batch size and then add the EUCO-SPEED MP. **The amount of water to be mixed with EUCO-SPEED MP is critical. Add between 0.4 to 0.5 gal (1.5 to 1.9 L) of water per 50 lb (22.7 kg) unit.** Mix material for about 2 minutes as close to the repair site as possible. Quickly place in the repair area and float immediately. For patches greater than 1" (25 mm) in depth, pea gravel must be used. Add the pea gravel (up to 30 lb (13.6 kg)) after the neat material has mixed, then mix for 1 additional minute. In hot weather, greater than 85°F (29°C), the use of EUCO-SPEED MP HOT WEATHER is recommended. For large placements, regardless of the temperature, EUCO-SPEED MP HOT WEATHER is recommended along with the use of cold water to extend setting time.

Placement: EUCO-SPEED MP requires a minimum depth of 1/2" (13 mm). Spread with a trowel, screed, come-a-long or square tipped shovel to a thickness that matches the surrounding concrete. EUCO-SPEED MP sets quickly; the time available for placement and finishing will be very limited.

Finishing: Finish EUCO-SPEED MP to the desired float or broom finish texture. Do not add additional water to the surface during the finishing operation.

Curing and Sealing: EUCO-SPEED MP is self-curing; no curing is needed for this product.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- DUE TO THE CHEMICAL NATURE OF EUCO-SPEED MP, DO NOT LET IT COME IN CONTACT WITH GALVANIZED STEEL OR ALUMINUM.
- Do not overwater.
- Do not add limestone to EUCO-SPEED MP.
- As EUCO-SPEED MP cures, a chemical reaction generates excessive heat. Mixed material must be maintained at or below 180°F (82°C) if satisfactory results are to be expected.
- Although EUCO-SPEED MP may be used down to 0°F (-17°C), the material must be stored at a room temperature of 60-70°F (16-21°C) for at least 24 hours prior to use.
- Do not add sand or cement.
- Do not place EUCO-SPEED MP over an ice covered substrate.
- When mixing in an enclosed area, provide adequate ventilation.
- Do not featheredge.
- For repairs deeper than 1" (25 mm), pea gravel must be used to extend the product.
- No heavy traffic until the product has reached a minimum of 2,000 psi (13.8 MPa).
- Do not place over carbonated concrete. All carbonation must be removed to assure a good bond.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOCRETE

HIGH PERFORMANCE CONCRETE WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

EUCOCRETE is a versatile, single component, microsilica modified repair mortar that contains an integral corrosion inhibitor for concrete repair projects of all types. Requiring only the addition of water, EUCOCRETE is a high strength material with an extended working time for ease of placement. It is similar in appearance to concrete and is suitable for use as a topping or repair mortar concrete structures from 1" (2.5 cm) to full depth.

PRIMARY APPLICATIONS

- Parking decks
- Joint repairs
- Balconies
- Equipment bases
- Pavements
- Beams
- Vertical & overhead form & pour repairs

FEATURES/BENEFITS

- Microsilica modified for high strength
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze-thaw resistance
- Long working time
- Compatible with galvanic anodes
- Interior or exterior
- Contains an integral corrosion inhibitor

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes @ 0.5 gal/50 lb bag.

Age	Strength
1 day	5,000 psi (35 MPa)
7 days	8,800 psi (61 MPa)
28 days	9,750 psi (67 MPa)

Compressive Strength ASTM C 39, 3"x6" cyl. @ 0.5 gal/50 lb. bag.

1 day	4,500 psi (31 MPa)
7 days	7,000 psi (48 MPa)
28 days	8,500 psi (59 MPa)

Freeze/Thaw Resistance ASTM C 666 Procedure A
300 cycles ..... 96% relative dynamic modulus

Sulfate Resistance ASTM C 1012
6 months..... +0.011%

Volumetric Resistivity.....15,400 ohm-cm

Flexural Strength ASTM C 348

7 days	900 psi (6 MPa)
28 days	1,050 psi (7 MPa)

Rapid Chloride Permeability ASTM C 1202
28 days.....718 coulombs

Length Change ASTM C 157, 50% RH @ 23°C (73°F) (3" x 3" x 11" beam specimens were removed from molds @ 24 hours)
28 days.....-0.072%

Working Time .....2 hrs 30 min

Consistency:

Initial slump	10" (254 mm)
30 minute slump	9.5" (241 mm)
1 hour slump	9" (229 mm)

Set Time ASTM C 403

Initial	approx. 3 hrs
Final	approx. 4 hrs

EUCOCRETE is a free-flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear somewhat darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the repair may always appear slightly darker than the surrounding concrete.

PACKAGING/YIELD

EUCOCRETE is packaged in 50 lb (22.7 kg) bags. **Yield:** 0.37 ft^3 (0.01m^3) per bag when mixed with 0.5 gal (1.9 L) of water. Bulk bags suitable for mixing in ready-mix trucks are also available.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

COVERAGE

One unit of EUCOCRETE will cover approximately 4.5 ft^2 (0.42 m^2) when placed at an average depth of 1" (2.5 cm). EUCOCRETE may be extended with up to 15 lb (6.8 kg) of clean, SSD (saturated surface dry), 3/8" (9.5 mm) pea gravel for placements over 6" (15 cm), which will yield 0.46 ft^3 (0.013 m^3). This may alter certain engineering properties.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of at least CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOCRETE to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: All materials should be in the proper temperature range of 60°F (15°C) to 90°F (32°C). Single 50 lb (22.7 kg) bags may be mixed with a drill and "jiffy" mixer. Use a horizontal shaft, paddle type mortar mixer for mixing multiple bags simultaneously. Add the appropriate amount of water, 0.45 - 0.50 gal (1.7 - 1.9L) per bag, for the batch size and then add the dry product. Mix a minimum of 3 minutes. If additional pea gravel is to be added, mix an additional 2 to 3 minutes. **Mixing Bulk Bags**: Add the additional pea gravel, if desired, and approximately 80% of the appropriate water for the batch size to the ready-mix concrete truck. Fully open the top of the bulk bag. Position the bulk bag over the truck opening using a forklift or crane. While the drum is turning at slow speed, cut the bottom of the bulk bag to release contents into truck. Use the remaining mix water to wash down any dry, stuck material into the drum. Mix for a minimum of 5 minutes after last bulk bag is added. Reverse drum and check consistency. **Note:** It is recommended to keep 50 lb (22.7 kg) bags on hand to adjust consistency if needed. The mixed product should be transported to the repair area and placed immediately.

Placement: To make repairs, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. **Note:** On large floor areas, use screed strips as guides in combination with vibratory screeding to level. Compact and finish by hand or machine trowel.

Finishing: This product is designed for finishing with a float or broom appearance. A steel trowel finish may be applied but timing of the final trowel is critical and the contractor may have difficulty achieving a smooth finish over a large area. Do not add water to the surface during the finishing operation; use EUCOBAR evaporation retarder.

Curing and Sealing: To prevent surface cracking, cure the repair with a high-solids curing compound from The Euclid Chemical Company. In hot, windy or direct sunlight situations, re-wet the surface after the curing compound has dried and cover with polyethylene for a minimum of three days. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- No heavy traffic until the product has fully cured.
- Keep repair from freezing until a minimum strength of 1,000 psi (6.90 MPa) is reached.
- EUCOCRETE requires a primer/bond coat and proper curing.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOCRETE SUPREME

POLYMER MODIFIED, HIGH PERFORMANCE CONCRETE WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

EUCOCRETE SUPREME is a versatile, single-component, latex and microsilica modified, repair mortar containing a migratory corrosion inhibitor, designed to provide protection from corrosion for repair projects of all types. Requiring only the addition of water, EUCOCRETE SUPREME is a high strength material which is easy to use with an extended working time for ease of placement. It is similar in appearance to concrete and is suitable for use as a topping or repair mortar on horizontal surfaces and formed vertical and overhead repairs.

PRIMARY APPLICATIONS

- Parking decks
- Balconies
- Pavements
- Form & pour jobs
- Joint repairs
- Equipment bases
- Beams

FEATURES/BENEFITS

- Microsilica modified for high strength
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze/thaw resistance
- Contains an integral corrosion inhibitor
- Applications from 1" (2.5 cm) to full depth
- Interior or exterior
- Form and pour repairs

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes @ 0.5 gal/50 lb bag.

Age	Strength
1 day	4,700 psi (32 MPa)
7 days	7,250 psi (50 MPa)
28 days	10,300 psi (71 MPa)

Compressive Strength ASTM C 39, 3"x 6' cyl. @ 0.5 gal/50 lb bag.

1 day	4,530 psi (31 MPa)
7 days	6,820 psi (47 MPa)
28 days	8,500 psi (59 MPa)

Flexural Strength ASTM C 348

7 days	950 psi (6.6 MPa)
28 days	1,050 psi (7.2 MPa)

Rapid Chloride Permeability ASTM C 1202
28 days ..... 437 coulombs

Freeze/Thaw Resistance ASTM C 666 Procedure A
300 Cycles ..... 81% relative dynamic modulus

Unit Weight ..... approx. 145.0 lb/ft^3 (2,323 kg/m^3)

Consistency, Slump Cone ..... >9" (229 mm)

Set Time ASTM C 403

Initial	approx. 6 hr
Final	approx. 7 hr

Volumetric Resistivity
28 days ..... 34,275 ohm-cm

EUCOCRETE SUPREME is a free-flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear somewhat darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the repair may always appear slightly darker than the surrounding concrete.

PACKAGING/YIELD

EUCOCRETE SUPREME is packaged in 50 lb (22.7 kg) bags. **Yield:** 0.37 ft^3 (0.01m^3) per bag when mixed with 0.5 gal (1.9 L) of water. Bulk bags suitable for mixing in ready-mix trucks are also available.

SHELF LIFE

2 years in original, unopened package

COVERAGE

One unit of EUCOCRETE SUPREME will cover approximately 4.5 ft^2 (0.42 m^2) when placed at an average thickness of 1" (2.5 cm).

EUCOCRETE SUPREME may be extended with up to 15 lb (6.8 kg) of clean, SSD (saturated surface dry), 3/8" (9.5 mm) pea gravel for placements over 6" (15 cm), which will yield 0.46 ft^3 (0.013 m^3).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOCRETE SUPREME to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: All materials should be in the proper temperature range of 60°F (15°C) to 90°F (32°C). Single 50 lb (22.7 kg) bags may be mixed with a drill and "jiffy" mixer. Use a horizontal shaft, paddle type mortar mixer for mixing multiple bags simultaneously. Add the appropriate amount of water, 0.45 - 0.50 gal (1.7 - 1.9L) per bag, for the batch size and then add the dry product. Mix a minimum of 3 minutes. If additional pea gravel is to be added, mix an additional 2 to 3 minutes. **Mixing Bulk Bags**: Add the additional pea gravel, if desired, and approximately 80% of the appropriate water for the batch size to the ready-mix concrete truck. Fully open the top of the bulk bag. Position the bulk bag over the truck opening using a forklift or crane. While the drum is turning at slow speed, cut the bottom of the bulk bag to release contents into truck. Use the remaining mix water to wash down any dry, stuck material into the drum. Mix for a minimum of 5 minutes after last bulk bag is added. Reverse drum and check consistency. **Note:** It is recommended to keep 50 lb (22.7 kg) bags on hand to adjust consistency if needed. The mixed product should be transported to the repair area and placed immediately.

Placement: For patching, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. **Note:** On large floor areas, use screed strips as guides in combination with vibratory screeding to level. Compact and finish by hand or machine trowel.

Finishing: This product is designed for finishing with a float or broom. A steel trowel finish may be applied, but timing of the final trowel is critical and the contractor may have difficulty achieving a smooth finish over a large area. Do not add water to the surface during the finishing operation; use EUCOBAR evaporation retarder.

Curing and Sealing: To prevent surface cracking, cure the repair with a curing and sealing compound from The Euclid Chemical Company, or cure a minimum of three days with a moisture retaining covering, such as polyethylene film. In hot, windy or direct sunlight situations, re-wet the surface and cover with a moisture retaining covering.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- No heavy traffic until the product has fully cured.
- Keep repair from freezing until a minimum strength of 1,000 psi (6.90 MPa) is reached.

Rev. 01.19

EUCOREPAIR SCC

SELF-CONSOLIDATING CONCRETE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCOREPAIR SCC is a versatile, one component, self-consolidating repair mortar that is shrinkage-compensated, polymer and microfiber modified, and contains an integral corrosion inhibitor. It is designed for horizontal and formed vertical/overhead structural repairs in applications from 1 inch (2.5 cm) to full depth.

PRIMARY APPLICATIONS

- Parking decks
- Joint repairs
- Balconies
- Equipment bases
- Pavements
- Beams
- Vertical and overhead formed repairs

FEATURES/BENEFITS

- Shrinkage compensation and reduction to minimize cracking
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze-thaw resistance
- Polymer and microfiber modified
- Interior or exterior use
- Contains an integral corrosion inhibitor
- Long working time

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C39, 3 x 6" cylinder @ 0.5 gal/50 lb. bag.
Age
1 day.....2,750 psi (19 MPa)
3 days.....4,100 psi (28 MPa)
7 days.....4,800 psi (33 MPa)
28 days.....5,600 psi (39 MPa)

Freeze/Thaw Resistance ASTM C666 Procedure A
300 cycles.....>98% relative dynamic modulus

Sulfate Resistance ASTM C1012
6 months.....+0.005%

Surface Resistivity @ 28 days.....31,200 ohm-cm

Flexural Strength ASTM C78
1 day.....450 psi (3 MPa)
7 days.....800 psi (6 MPa)
28 days.....900 psi (6 MPa)

Rapid Chloride Permeability ASTM C1202
28 days.....1,800 coulombs

Length Change ASTM C157, 50% RH @ 23°C (73°F) (3" x 3" x 11" specimens were removed from molds @ 24 hours)
28 day shrinkage.....<0.050%

Slump Flow ASTM C1611
Initial.....24 - 33 inches (66 cm)
30 minutes.....24 - 33 inches (66 cm)

J-Ring Slump Flow ASTM C1621

25 inches (63.5 cm)
Passing Ability: 0.75 inch (1.9 cm) no visible blocking

Set Time ASTM C403
Intial.....approx. 9 hrs

Fresh Wet Density ASTM C138
144.4 lb/ft^3 (2313.1 kg/m^3)

Slant Shear Bond Strength ASTM C882

7 days.....2,400 psi (17 MPa)
28 days.....2,560 psi (18 MPa)

Crack Resistance ASTM C1581
Net Time Until Cracking: 15.5 days
Stress Rate: 16 psi/day
Potential for Cracking: Moderate-Low

PACKAGING/YIELD

EUCOREPAIR SCC is packaged in 50 lb (22.7 kg) bags.

Yield: Approximately 0.375 ft^3 (0.01 m^3) per bag when mixed with 0.5 gal (4 pints) of water. Bulk bags suitable for mixing in ready-mix trucks are also available.

SHELF LIFE

1 year in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of at least CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Substrate shall be saturated surface dry (SSD) without standing water.

Formwork: For building forms, refer to ACI 347R - Guide to Formwork for Concrete. Forms should be filled with water 24 hours prior to placement of EUCOREPAIR SCC to ensure tightness and adequate saturation. Ensure forms are completely drained before pouring of product and any drainage outlets are sealed.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOREPAIR SCC to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: All materials should be in the proper temperature range of 60°F (15°C) to 90°F (32°C). Single 50 lb (22.7 kg) bags may be mixed with a drill and "jiffy" mixer. Use a horizontal shaft, paddle type mortar mixer for mixing multiple bags simultaneously. Add the appropriate amount of water, 0.45 - 0.50 gal (1.7 - 1.9L) per bag, for the batch size and then add the dry product. Mix a minimum of 3 minutes. **Mixing Bulk Bags**: Add approximately 80% of the appropriate water for the batch size to the ready-mix concrete truck. Fully open the top of the bulk bag. Position the bulk bag over the truck opening using a forklift or crane. While the drum is turning at slow speed, cut the bottom of the bulk bag to release contents into truck. Use the remaining mix water to wash down any dry, stuck material into the drum. Mix for a minimum of 5 minutes after last bulk bag is added. Reverse drum and check consistency. **Note:** It is recommended to keep 50 lb (22.7 kg) bags on hand to adjust consistency if needed. The mixed product should be transported to the repair area and placed immediately.

Placement: Pump or pour product immediately after mixing. Vibration is typically not required, but form vibration can be used to ensure proper consolidation in situations which restrict flowability. If vibration is used, do not vibrate in excess as this can lead to segregation of the aggregate. When placing material, refer to ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

Curing and Sealing: Cure exposed surfaces of EUCOREPAIR SCC with a high-solids curing compound from The Euclid Chemical Company. In hot, windy, or direct sunlight situations, re-wet the surface after the curing compound has dried and cover with polyethylene for a minimum of three days. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use material at temperatures below 45°F (7°C).
- Keep repair from freezing until a minimum strength of 1,000 psi (6.90 MPa) is reached.
- Do not extend with aggregate.
- Do not use as a topping.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

EUCOREPAIR SCC FAST

FAST SETTING, SELF-CONSOLIDATING CONCRETE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCOREPAIR SCC FAST is a fast setting, one component, self-consolidating repair mortar that is shrinkage compensated, pozzolan and microfiber modified, and contains an integral corrosion inhibitor. It is designed for horizontal and formed vertical and overhead structural repairs in applications from 1 inch (2.5 cm) to full depth where a faster return to service is required.

PRIMARY APPLICATIONS

- Parking decks
- Joint repairs
- Balconies
- Equipment bases
- Pavements
- Beams
- Vertical & overhead formed repairs

FEATURES/BENEFITS

- Shrinkage compensation and reduction to minimize cracking
- Pre-mixed with pea gravel, ready-to-use
- Low permeability with excellent freeze-thaw resistance
- Pozzolan and microfiber modified
- Contains an integral corrosion inhibitor
- Rapid-hardening allows user to strip forms same day
- Can be coated 5 hours after final set

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C39, 3 x 6 in cylinder
Age
2 hour.....2,500 psi (17 MPa)
1 day.....4,500 psi (31 MPa)
7 days.....6,000 psi (41 MPa)
28 days.....8,000 psi (55 MPa)

Freeze/Thaw Resistance ASTM C666 Procedure A
300 cycles.....>95% relative dynamic modulus

Flexural Strength ASTM C78
1 day.....500 psi (3 MPa)
7 days.....900 psi (6 MPa)
28 days.....1000 psi (7 MPa)

Rapid Chloride Permeability ASTM C1202
28 days.....<300 coulombs

Length Change ASTM C157, 50% RH @ 23°C (73°F)
(3" x 3" x 11" specimens were removed from molds @ 24 hours)
28 day shrinkage.....<0.020%

Slump Flow ASTM C1611
Initial.....24-29 inches (61-74 cm)

J-Ring Slump Flow ASTM C1621
26.5 inches (67.3 cm)
Passing Ability: 1 inch (2.5 cm) no visible blocking

Working Time
approx. 20 - 30 minutes

Set Time ASTM C403
Initial.....approx. 50 minutes

Fresh Wet Density ASTM C138
146.0 lb/ft^3 (2338 kg/m^3)

Slant Shear Bond Strength ASTM C882
(3" x 6" specimens per TXDOT)

1 day.....2,200 psi (15 MPa)
7 days.....3,200 psi (22 MPa)
28 days.....3,500 psi (24 MPa)

Crack Resistance ASTM C1581
Net Time Until Cracking: >60 days
Stress Rate: 9.1 psi/day
Potential for Cracking: Low

PACKAGING/YIELD

EUCOREPAIR SCC FAST is packaged in 50 lb (22.7 kg) bags. **Yield:** Approximately 0.37 ft^3 (0.010 m^3) per bag when mixed with 4.25 pints (2.01L) of water.

SHELF LIFE

1 year stored properly in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP (Concrete Surface Profile) 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean the profiled area.

Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. The SSD concrete should be primed with a scrub coat of EUCOREPAIR SCC FAST. The repair must be made before the EUCOREPAIR SCC FAST scrub coat dries out. On large placements or in steel-congested areas where a scrub coat is not possible, contact Euclid Chemical Technical Support for recommendations. For priming and protection of reinforcing steel use DURALPREP A.C.

Formwork: For building forms, refer to ACI 347R - Guide to Formwork for Concrete. Forms should be filled with water 24 hours prior to placement of EUCOREPAIR SCC to ensure tightness and adequate saturation. Ensure forms are completely drained before pouring of product and any drainage outlets are sealed.

Mixing: Single bags may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60˚F (15˚C) to 85˚F (29˚C). Add the appropriate amount of water for the batch size and then add the EUCOREPAIR SCC FAST**. The amount of water to be mixed with the EUCOREPAIR SCC FAST is critical. Initially add 3.5 pints [56 fl.oz.] (1.6 L) of water per 50 lb (22.7 kg) bag and mix for 2 minutes. If after the initial 2 minutes of mixing the desired flow is not obtained, no more than 0.75 pints [12 fl.oz.] (355 mL) of additional water should be added to the mix in order to achieve more flow.** Mix an additional 2 minutes after adding extra water.

Placement: IMPORTANT: The application temperature range of EUCOREPAIR SCC FAST is from 45 to 95˚F (7 to 35˚C)**.** Allow approximately 30 minutes to mix, place, and finish EUCOREPAIR SCC FAST repair mortar at 72°F (22°C). To make repairs, spread with a float, come-a-long, or square tipped shovel to a thickness that is level with the surrounding concrete. Do not use EUCOREPAIR SCC FAST for repairs less than 1 inch (2.5 cm) deep. Pump or pour product immediately after mixing. Vibration is typically not required, but form vibration can be used to ensure proper consolidation in situations which restrict flowability. If vibration is used, do not vibrate in excess as this can lead to segregation of the aggregate. When placing material, refer to ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

Finishing: Finish the repair material to the desired texture. Do not add water to the surface during the finishing operation. When placing under hot and windy conditions, the use of EUCOBAR evaporation retarder is recommended to prevent the loss of surface moisture.

Curing & Sealing: If an epoxy coating will not be applied, wet cure the surface with water and polyethylene sheets at least one day, or use a curing compound. If applying an epoxy coating, it is important to wet cure with polyethylene sheets for at least 3 hours and then allow to air dry for 2 hours before coating. EUCOREPAIR SCC FAST can be coated with epoxy 5 hours after final set at 70°F (21° C).

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- The application temperature range of EUCOREPAIR SCC FAST is 45 to 95°F (7 to 35°C).
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- Do not extend with aggregate.
- Do not use as a topping.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

EXPRESS REPAIR

RAPID SETTING REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

EXPRESS REPAIR is a cementitious, ready to use, rapid strength gaining repair mortar containing an integral corrosion inhibitor. EXPRESS REPAIR is capable of being extended up to 100% with pea gravel. Requiring only the addition of water, EXPRESS REPAIR is easy to use for fast track projects.

PRIMARY APPLICATIONS

Interior and exterior, horizontal concrete repairs on:

- Highways
- Bridge decks
- Parking decks
- Loading docks
- Pavement joints
- Industrial floors

FEATURES/BENEFITS

- Fast setting
- Rapid strength gain
- Contains an integral corrosion inhibitor
- Excellent durability
- Compatible with galvanic anodes

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Initial Set, ASTM C 266
Gilmore Needle .....20 to 30 min

Compressive Strength, ASTM C 109 psi (MPa)
3 hours 3,200 (22.0)
24 hours 5,800 (40.0)
7 days.....7,000 (48.3)
28 days.....9,000 (62.1)

Flexural Strength, ASTM C 348 psi (MPa)
1 day.....800 (5.5)
7 days.....1,500 (10.3)
28 days.....1,700 (11.7)

Volumetric Resistivity.....13,390 ohm-cm

Split Tensile Strength, ASTM C 496 psi (MPa)
1 day.....300 (2.1)
7 days.....550 (3.8)
28 days.....800 (5.5)

Scaling Resistance ASTM C 672
100 cycles ..... no scaling

Freeze Thaw, Durability Factor..... ASTM C 666
300 cycles.....95%

Shrinkage, ASTM C 157
3 days.....-0.040%
7 days.....-0.078%
28 days.....-0.093%

PACKAGING

EXPRESS REPAIR is packaged in 50 lb (22.7 kg) poly-lined bags

SHELF LIFE

18 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C 928, Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs

COVERAGE

One 50 lb (22.7 kg) bag yields approximately 0.42 ft^3 (0.01m^3) when mixed with 3 qt (2.8 L) of potable water. Extending with 50 lb (22.7 kg) of 3/8" (9.5 mm) pea gravel per bag increases the yield to approximately 0.75 ft^3 (0.02 m^3).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EXPRESS REPAIR to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: EXPRESS REPAIR requires 2.75 to 3 qt (2.6 to 2.8 L) of mix water per 50 lb (22.7 kg) bag. Use a drill with a "jiffy" type mixer for mixing single bags. For larger applications use a paddle type mortar mixer or a standard concrete mixer. Do not add additional water. For repair areas over 1½" (38.1 mm) deep, extend by adding up to 50 lbs (22.7 kg) of 3/8" (9.5 mm) clean, well-graded SSD pea gravel per 50 lb (22.7 kg) of EXPRESS REPAIR. Proper mixing sequence involves first, adding the measured quantity of water to the mortar mixer; second, adding the pea gravel; and third, adding the EXPRESS REPAIR and thoroughly mixing for 2 to 4 minutes. Do not mix longer than 4 minutes.

Application: EXPRESS REPAIR should be mixed, placed and finished within 15 minutes. Place the mixed material into the prepared area to be repaired. Work the material firmly into the bottom and sides of the repair area to ensure good adhesion. Screed and trowel the material level with the existing concrete, and finish the surface as desired. Thickness of EXPRESS REPAIR must be a minimum of ½" (12.7 mm) and a maximum of 1½" (38.1 mm) neat. Repair areas over 1½" (38.1 mm) must be extended or applied in multiple lifts. When applying multiple lifts, allow the initial repair to reach final set, score the surface and then place the subsequent lift. Do not overtrowel or featheredge. Follow ACI guidelines for proper curing. On windy or hot days or when under direct sunlight, wet curing is recommended.

Cold Weather Application: Application at temperatures below 45°F (7°C) extends the set time. Heating the repair area, using warm water for mixing, and tenting or insulating the repair area after application will increase rate of strength development. Do not use direct, unvented heat on the repair after installation.

CLEAN-UP

Clean application tools and mixer with water immediately after use. Hardened EXPRESS REPAIR will be difficult to remove.

PRECAUTIONS/LIMITATIONS

- Do not featheredge, overwork, retemper or overtrowel the patching material.
- Minimum depth of patching is 1/2" (13 mm).
- Do not add any admixtures or bonding agents to EXPRESS REPAIR.
- The repair area should be frost free prior to application.
- Do not apply at temperatures below 35°F or above 90°F (1.7°C or above 32°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Store in covered storage away from all moisture.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SPEED CRETE 2028

RAPID SETTING HORIZONTAL REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

SPEED CRETE 2028 is a cement-based, ready to use, repair mortar that sets quickly, and achieves rapid strength gain. SPEED CRETE 2028 is a proprietary formulation of blended cements, selected aggregates and it contains an integral corrosion inhibitor.

PRIMARY APPLICATIONS

- Highways
- Loading docks
- Bridge decks
- Pavement joint repairs
- Parking decks
- Industrial floors

FEATURES/BENEFITS

- Fast-setting, with rapid strength gain
- Very low permeability
- Contains an integral corrosion inhibitor
- Develops a tenacious bond
- Excellent resistance to freeze-thaw conditions and deicing chemicals
- Repair can be coated with an epoxy or urethane after a 24 hour cure

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Initial Set Time, min ASTM C266...approx. 20 min.
Final Set Time, min ASTM C266....approx. 50 min.
Compressive Strength, psi (MPa) ASTM C109
3 hours 3,000 (20.7)
24 hours 5,000 (34.5)
7 days.....6,000 (41.4)
28 days.....7,000 (48.3)
Compressive Strength, ASTM C39
Extended 50% with 3/8" (9.5 mm) pea gravel, psi (MPa)
3 hour 2,500 (17.2)
24 hours 4,000 (27.6)
Flexural Strength, psi (MPa) ASTM C348
7 days.....1,050 (7.2)
28 days.....1,200 (8.3)

Bond Strength, psi (MPa) ASTM C 882 (mod)
1 day.....1,800 (12.4)
28 days.....2,400 (16.5)
Scaling Resistance, ASTM C672
100 cycles .....No scaling
Freeze-Thaw, Durability Factor ASTM C666
300 cycles 96%
Chloride Permeability ASTM C1202
400 coulombs .....very low
Volumetric Resistivity
28 days..... 65,000 ohm-cm

PACKAGING

SPEED CRETE 2028 is packaged in 50 lb (22.7 kg) poly-lined bags

SHELF LIFE

18 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

Complies with ASTM C 928, Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs

COVERAGE/YIELD

One 50 lb (22.7 kg) bag yields approximately 0.42 ft^3 (0.012 m^3). Extending with 40 lb (18.1 kg) of 3/8" (9.5 mm) pea gravel increases the yield to approximately 0.70 ft^3 (0.02 m^3).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of SPEED CRETE 2028 to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: SPEED CRETE 2028 requires 2.25 to 2.5 qt (2.13 to 2.37 L) of water per 50 lb (22.7 kg) bag. Use a drill with a "jiffy" type mixer for optimal mixing of single bags. For larger applications use a paddle type, horizontal shaft mortar mixer. The material is stiff initially but relaxes after 4 to 5 minutes of mixing. Do not add any additional water to loosen up the mix. For repair areas over 1½" (38 mm) deep, extend by adding up to 40 lb (18.1 kg) of 3/8" (9.5 mm) clean, well-graded, damp pea gravel per 50 lb (22.7 kg) of SPEED CRETE 2028. Proper mixing sequence involves; first, adding the measured quantity of water to the mortar mixer, second, adding the SPEED CRETE 2028 and mixing for 4 minutes to thoroughly wet it out, and third, adding pea gravel, if required.

Application: SPEED CRETE 2028 should be mixed, placed and finished within 15 minutes. Place the mixed material into the prepared area to be repaired. Work the material firmly into the bottom and sides of the repair area to ensure good adhesion. Screed and trowel the material so as to level with the existing concrete, and finish the surface as desired. Thickness of SPEED CRETE 2028 repair must be a minimum of 1/2" (12 mm) and a maximum of 1½" (38 mm) per lift. When applying multiple lifts, allow the repair to reach final set, score the surface and then place the subsequent lift. Repair areas over 1½" (38 mm) deep should either be extended or applied in multiple lifts. Do not over-trowel or featheredge. Follow ACI guidelines for proper curing. On windy or hot days or when under direct sunlight, wet curing is recommended.

Cold Weather Application: Application at temperatures below 45°F (7°C) extends the set time. Heating the repair area until warm, using warm water for mixing and tenting or insulating the repair area after application will assist in reaching higher strength development. Do not use direct heat on the repair after its installation.

CLEAN-UP

To prevent product build-up, clean application tools and mixer with water immediately after use.

PRECAUTIONS/LIMITATIONS

- Do not featheredge, overwork, retemper or over-trowel the repair material.
- Minimum depth of patching is 1/2" (12 mm).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Do not add any admixtures or bonding agents to SPEED CRETE 2028.
- The repair area should be frost free prior to application.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

TAMMS FORM AND POUR

FLOWABLE, SHRINKAGE COMPENSATED REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

TAMMS FORM AND POUR is a flowable, single component cementitious concrete repair mortar. It is formulated for structural repairs from 3/4 inch (1.9 cm) to 3 inches (7.6 cm) neat, and full depth when extended. TAMMS FORM AND POUR utilizes a smaller aggregate size, which makes it highly flowable and pumpable.

PRIMARY APPLICATIONS

- Interior and exterior
- Repair and replacement of concrete elements
- Structural/column repairs where a highly flowable material is required
- Filler for large voids and cavities

FEATURES/BENEFITS

- Can be extended with pea gravel
- Excellent freeze-thaw resistance
- Requires only the addition of water
- High bond strength
- Contains an integral corrosion inhibitor
- Flowability enables pouring or pumping into rebar-filled cavities

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength, psi (MPa) ASTM C 109
1 day.....5,000 (34.5)
3 days.....7,000 (48.3)
7 days.....8,000 (55.1)
28 days.....10,000 (69.0)

Flexural Strength, psi (MPa) ASTM C 348
7 days.....1,500 (10.3)
28 days.....2,000 (13.8)

Splitting Tensile Strength, psi (MPa) ASTM C 496
7 days.....400 (2.8)
28 days.....550 (3.8)

Shrinkage, % ASTM C 157 (3"x3"x11" specimens were removed from molds @ 24 hours)
3 days.....-0.022
7 days.....-0.033
28 days.....-0.064

Freeze-Thaw Durability, ASTM C 666
300 cycles.....97 relative dynamic modulus

Chloride Permeability ASTM C 1202
Coulombs.....3,000

Surface Resistivity FM 578
28 days.....16.5 kΩ-cm

PACKAGING

TAMMS FORM AND POUR is packaged in 50 lb (22.7 kg) poly-lined bags

SHELF LIFE

2 years in original, unopened package

COVERAGE

One 50 lb bag yields approximately 0.42 ft^3 (0.01 m^3)

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 7 - 9 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMS FORM AND POUR to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: TAMMS FORM AND POUR requires 2.75 to 3 qt (2.6 to 2.8 L) of mix water per 50 lb (22.7 kg) bag. Use a drill with a "jiffy" type mixer to mix single bags. For larger applications use a paddle type mortar mixer or a standard concrete mixer. Do not add additional water. Mix for 2 to 3 minutes until a smooth flowable consistency is achieved. For application depths in excess of 3" (7.6 cm), add 30 lb of 3/8" (0.95 cm) clean, saturated surface dry (SSD) pea gravel.

Application: The unrestrained surface area of the repair should be kept to a minimum. TAMMS FORM AND POUR should be mixed, placed and finished within 30 minutes. Pour the mixed material into the prepared area to be repaired. Screed and trowel the material so as to level with the existing concrete. Finish the surface as desired. Do not over-trowel or featheredge. Follow ACI guidelines for proper curing. On windy or hot days or when under direct sunlight, wet curing is recommended.

CLEAN-UP

Clean application tools and mixer with water immediately after use. Hardened TAMMS FORM AND POUR will be difficult to remove.

PRECAUTIONS/LIMITATIONS

- Minimum depth of repair is 3/4" (1.9 cm).
- For applications over 3" (7.6 cm) extend with pea gravel.
- Do not add any admixtures to TAMMS FORM AND POUR.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- The repair area should be frost free prior to application.
- Do not apply at temperatures below 40°F (4°C).
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMS THIN PATCH

POLYMER MODIFIED, MULTI-USE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

TAMMS THIN PATCH is a polymer modified, cement based mortar formulated for repairing defects in concrete and masonry surfaces from featheredge up to 1" (2.54 cm).

PRIMARY APPLICATIONS

- Horizontal, vertical or overhead repairs
- Interior and exterior use
- Fill small holes, honeycomb and spalled areas
- Repoint mortar joints

FEATURES/BENEFITS

- Single component
- Long-term durability
- Outstanding bond strength

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Set Times ASTM C 266
Initial set.....approx. 30 to 60 min
Final set.....approx. 1 to 2 hr

Compressive Strength psi (MPa) ASTM C 109
1 day.....1,200 (8.3)
28 day.....3,500 (24.1)

Split Tensile Strength psi (MPa) ASTM C 496
7 day.....200 (1.4)
28 day.....290 (2.0)

Flexural Strength psi (MPa) ASTM C 348
7 day.....630 (4.3)
28 day.....725 (5.0)

Shrinkage % ASTM C 157 (3"x3"x11" specimens removed from molds @ 24 hours)
7 day.....-0.006%
28 days.....-0.021%

Scaling Resistance ASTM C 672
50 cycles.....0% loss

SHELF LIFE

18 months in original, unopened package

PACKAGING

TAMMS THIN PATCH is packaged in 25 lb (11.3 kg) plastic pails, and 50 lb (22.7 kg) poly lined bags

COVERAGE/YIELD

A 50 lb (22.7 kg) bag of TAMMS THIN PATCH will yield approximately 0.4 ft^3 (0.01 m^3) of material. Applied at the following thicknesses, one 50 lb (22.7 kg) bag of TAMMS THIN PATCH will cover:

1/4" (6.3 mm)	19.2 ft^2 (1.78 m^2)
1/2" (12.7 mm)	9.6 ft^2 (.891 m^2)
1" (25.4 mm)	4.8 ft^2 (.445 m^2)

Note: Coverage rates are approximate and are for estimating purposes only

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency compliant

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of CSP 4 or greater in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMS THIN PATCH to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMS THIN PATCH to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical Skim Coats/Toppings): Apply a scrub coat of TAMMS THIN PATCH to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: One 50 lb (22.7 kg) bag of TAMMS THIN PATCH will require 3.25 to 3.5 qt (3.1 to 3.3 L) of potable water. Mix TAMMS THIN PATCH in a clean container using a slow speed drill and mixing blade. Pour potable water into the clean container and then gradually add the TAMMS THIN PATCH. Mix thoroughly to disperse all ingredients and to achieve a trowelable consistency. Do not use excess water, and do not retemper TAMMS THIN PATCH.

Application: Apply sufficient pressure to fill all holes and voids, then trowel to a smooth finish. On large areas, use a screed to obtain a uniform level before troweling. Do not overtrowel. TAMMS THIN PATCH will achieve initial set in approximately 40 minutes; final set in approximately 1 hour, and cures within 24 hours under normal drying conditions. Maximum thickness of application is 1" (25 mm) per lift. When applying multiple lifts, allow prior lift to reach final set, score the surface then place the subsequent lift.

CLEAN-UP

Clean all mixing and application equipment with water immediately following use. If material is allowed to dry on a surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces, at temperatures below 40°F (4°C) or if temperature is expected to fall below 40°F (4°C) within 24 hours.
- Application temperatures below 60°F (16°C) will extend set time.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- On windy or hot days or for application in direct sunlight, use wet burlap or plastic sheet for curing.
- Do not use DURALPREP A.C. as a bonding agent for toppings and overlays done with TAMMS THIN PATCH.
- Do not use TAMMS THIN PATCH in joints or cracks that are subject to movement.
- Do not apply TAMMS THIN PATCH in more than 1" (25 mm) deep lifts.
- Do not over-work or over-trowel the repair.
- Do not add more water than recommended.
- Protect from rain for 24 hours after placement.

Rev. 01.19

TAMMSPATCH II

TWO COMPONENT REPAIR MORTAR AND UNDERLAYMENT

EUCLID CHEMICAL

DESCRIPTION

TAMMSPATCH II is a two component, polymer modified cementitious repair mortar and flowable underlayment. When the two components are combined, TAMMSPATCH II becomes a versatile mortar for numerous applications, due to its ability to be mixed to different consistencies. From flowable to firm, TAMMSPATCH II provides an aesthetically pleasing surface in multiple applications.

PRIMARY APPLICATIONS

- Resurfacing worn concrete walkways
- Trowelable repair mortar
- Decorative overlays
- Horizontal or vertical repairs
- Pointing mortar joints
- Flowable underlayment

FEATURES/BENEFITS

- Apply from featheredge to 1" (2.5 cm) per lift neat, up to 2.5" (6.3 cm) if extended
- Highly durable
- Outstanding bond strength
- High strength
- User friendly

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Initial Set, hrs.....approx. 1.5 to 3
Final Set, hrs.....approx. 4 to 5

Compressive strength,psi (MPa) ASTM C 109
7 days.....3,000 (20.7)
28 days.....5,000 (34.5)

Direct Tensile strength, psi (MPa) ASTM C 1583
7 days.....525 (3.6)
28 days.....650 (4.5)

Flexural strength, psi (MPa) ASTM C 348
7 days.....600 (4.1)
28 days.....900 (6.2)

Bond strength, psi (MPa)ASTM C 882
7 days.....950 (6.6)
28 days.....1,450 (10.0)

Shrinkage, % ASTM C 157 (3"x3"x11" specimens were removed from molds @ 24 hours)
28 days.....-0.023%

Freeze thaw durability factor, ASTM C 666
300 cycles.....91.0%

PACKAGING/YIELD

TAMMSPATCH II Part A (powder) is packaged in a 45 lb (20.4 kg) bag. Part B (liquid) is packaged in a 1 gal (3.7 L) jug. A mixed unit will yield approximately 0.42 ft^3 (0.011 m^3).

SHELF LIFE

18 months in original, unopened packaging

SPECIFICATIONS/COMPLIANCES

Canadian MTQ

Canadian Food Inspection Agency compliant

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of at least CSP 4 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMSPATCH II to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMSPATCH II to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical Skim Coats/Toppings): Apply a scrub coat of TAMMSPATCH II to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: In a clean container, add 3/4 of liquid (Part B). Using a 1/2" slow speed (400 to 600 rpm) drill and a "Jiffy"mixer, gradually add the powder (Part A) to produce a mortar with a smooth consistency and without lumps. Add remaining liquid to obtain desired consistency. Do not mix longer than 3 minutes. Do not add water. If extending with an aggregate, the use of a mortar mixer is recommended. The aggregate should be added after the powder is added to the liquid. To fill areas deeper than 1" (2.5 cm), TAMMSPATCH II should be extended with up to 20 lb (9.1 kg) of clean, 3/8" (0.95 cm) pea gravel. When extended, TAMMSPATCH II can be applied in lifts of up to 2.5" (6.3 cm). Use multiple lifts for deeper repairs.

Application: Expansion and control joints must be extended up through TAMMSPATCH II. Moving cracks will "telegraph" a crack through TAMMSPATCH II if they are covered over. Apply TAMMSPATCH II with a trowel using sufficient pressure to fill surface holes and voids and to ensure maximum bond to the substrate. A broom, float or steel trowel finish may be applied to the surface. Avoid excessive troweling, as this will weaken the surface. When using as a wearing surface, mix to a stiffer consistency (use less than full container of mixing liquid) and install to a minimum thickness of 3/8" (0.95 cm). Do not featheredge when using as a wearing surface.

Curing: For best results cure with wet burlap, plastic or a water-based curing compound. Take precautions when placing during difficult conditions when the chance for rapid surface drying is evident such as: high winds, high temperatures, or low humidity. Do not use solvent based curing compounds on this product.

CLEAN-UP

Clean tools and equipment with water before TAMMSPATCH II hardens. Hardened TAMMSPATCH II will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store in protected, dry storage at temperatures between 40°F to 90°F (4˚C to 32˚C).
- Protect from freezing.
- Do not apply TAMMSPATCH II below 40°F (4°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Do not use DURALPREP A.C. as a bonding agent for toppings and overlays done with TAMMSPATCH II.
- Do not apply to a frost filled surface.
- Prior to coating TAMMSPATCH II with an epoxy or other non-breathable coating, verify that all moisture is out of the product prior to application.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

THIN-TOP SUPREME

SINGLE COMPONENT CEMENTITIOUS TOPPING & REPAIR MORTAR FOR THIN APPLICATIONS

EUCLID CHEMICAL

DESCRIPTION

THIN-TOP SUPREME is a latex and microsilica modified cementitious mortar designed for use as a floor or deck topping at thicknesses of 1/16" to 3/8" (1.6 mm to 9.5 mm). This product is a single-component formula which incorporates a powder latex technology. It provides excellent durability under freeze-thaw cycling as well as reducing the ingress of water and de-icing salts. THIN-TOP SUPREME offers normal set times in a trowelable consistency for easy workability.

PRIMARY APPLICATIONS

- Parking decks
- Pavements
- Joints
- Marine structures
- Curbs and gutters
- Ramps
- Floors
- Walkways

FEATURES/BENEFITS

- Provides a strong, wear resistant thin overlay
- Excellent durability in freeze-thaw cycles
- Contains an integral corrosion inhibitor
- Excellent bond to prepared concrete
- Reduces the penetration of water and de-icing salts for substrate protection
- Suitable for both interior and exterior use

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109, 2" (50 mm) cubes @ 2.9 qts (2.7 L)/50 lb (22.7 kg) bag.

Age	Strength
1 day	2,000 psi (13.8 MPa)
7 days	4,000 psi (27.6 MPa)
28 days	6,000 psi (41.3 MPa)

Linear Shrinkage ASTM C 157
28 days.....-0.15%

Unit Weight.....approx. 130 lb/ft^3 (2082 kg/m^3)

Flexural Strength ASTM C 348
7 days .....1,000 psi (6.9 MPa)
28 days.....1,200 psi (8.3 MPa)

Split Tensile Strength ASTM C 496
7 days.....300 psi (2.1 MPa)
28 days.....400 psi (2.8 MPa)

Freeze/Thaw Resistance ASTM C 666 Procedure A
300 cycles ..... 89% relative dynamic modulus

Working Time .....30 to 40 minutes

Initial Set .....1 to 1.5 hours

Final Set ..... approx. 3 hours

Appearance: THIN-TOP SUPREME is a free-flowing powder as packaged. After mixing and placing, the color may initially appear darker than the surrounding concrete. The color will lighten up substantially as it cures and dries out, though it may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

THIN-TOP SUPREME is packaged in 50 lb (22.7 kg) moisture resistant bags. Yield: 0.43 ft^3/bag (0.012 m^3) when mixed with 3 qt (2.8 L) of water. Typical water requirement is 2.75 to 3.5 qt (2.6 to 3.3 L)/bag.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency, MTQ and MTO

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 4-6 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of THIN-TOP SUPREME to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All material should be in the proper temperature range of 60˚F (15˚C) to 90˚F (32˚C). Add the appropriate amount of water 2.75 to 3.5 qt (2.6 to 3.3 L) per bag for the batch size and then add the dry product. Mix for 3 to 5 minutes.

Placement: Discharge material from mixer immediately and place on to the repair area. For repairs, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. Work material into place by floating or troweling. On large areas, use screed strips with a vibratory screeding to level.

Finishing: This product is designed for finishing with a float or broom appearance. Do not add additional water to the surface during the finishing operation; use EUCOBAR evaporation retarder. For a hard, flat troweled surface, delay finishing until the product is near final set (approx. 3 hours) to reduce the risk of blistering during troweling.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure the material with a high solids curing compound, such as SUPER AQUA-CURE VOX or SUPER DIAMOND CLEAR VOX. Note: **Do not use a solvent based curing compound on this product.** If a curing compound is not desired, cover with polyethylene for a minimum of 3 days. **Do not wet cure.** Always re-establish floor and slab joints when using this product as an overlay.

CLEAN-UP

Clean tools and equipment with water before the material hardens. Hardened THIN-TOP SUPREME will require removal by mechanical means.

PRECAUTIONS/LIMITATIONS

- Do not wet cure. Do not use a solvent based curing compound on this product.
- Do not allow repairs to freeze until the material has reached a minimum of 1,000 psi (7 MPa) compressive strength.
- Use only potable water for mixing.
- Do not add admixtures or sand.
- Do not use DURALPREP A.C. as a bonding agent for toppings and overlays done with THIN-TOP SUPREME.
- Do not use material at temperatures below 45°F (7°C) or above 100˚F (38˚C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- No heavy traffic until the product has cured.
- Mixing partial bags may yield variable results; always mix full units.
- Store product in a dry place.
- For repairs and toppings thicker than 3/8" (9.5 mm), use CONCRETE-TOP SUPREME.

Rev. 01.19

VERSASPEED 100

RAPID-HARDENING HORIZONTAL REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

VERSASPEED 100 is a versatile, single component, rapid strength gaining repair mortar for horizontal, and form and pour repair projects. Requiring only the addition of water, VERSASPEED 100 is a low shrinkage, high early strength material that is easy to use for fast turnaround projects. Repaired areas may be open to standard tire traffic just 2 hours following the final set, and non-breathable coatings can be applied after 4 hours. VERSASPEED 100 is similar in appearance to concrete and is suitable for use in repairing concrete surfaces from approximately 1/4" to 6" (6 mm to 15 cm) in thickness.

PRIMARY APPLICATIONS

- Multi-unit residential
- Bridges
- Loading docks
- Highways
- Warehouses
- Pavements
- Roads
- Parking decks and ramps
- Industrial / commercial / institutional floors
- Vertical/overhead form and pour applications

FEATURES/BENEFITS

- Rapid set time and strength gain
- Suitable for interior or exterior applications
- Open to light duty traffic as soon as 1 hour
- Coat with epoxy after 4 hours at 70°F (21° C)
- Micro-fiber reinforced
- Shrinkage compensated
- Can be placed up to 2 in. (5 cm) neat
- Can be extended up to 50% by weight

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	VALUES
Compressive Strength ASTM C109	1 hour.....2,600 psi (17.9 MPa) 2 hours.....3,600 psi (24.8 MPa) 3 hours.....5,000 psi (34.5 MPa) 1 day.....6,000 psi (41.4 MPa) 7 days.....7,500 psi (51.7 MPa) 28 days.....10,500 psi (72.4 MPa)
Flexural Strength ASTM C348	1 day.....830 psi (5.7 MPa) 7 days.....1,000 psi (6.9 MPa) 28 days.....1,500 psi (10.3 MPa)
Splitting Tensile Strength ASTM C496	7 days.....530 psi (3.7 MPa) 28 days.....780 psi (5.4 MPa)
Slant Shear Bond Strength ASTM C882 (modified per TXDOT DMS 4655)	1 day.....1,800 psi (12.4 MPa) 7 days.....2,300 psi (15.9 MPa) 28 days.....2,700 psi (18.6 MPa)
Crack Resistance ASTM C1581	Net Time Until Cracking....>140 days Stress Rate.....4.7 psi/day
Length Change (28 days) ASTM C157*	Air cure.....- 0.042% Water cure.....+0.007%
Set Time (ASTM C266)	Initial set.....10 - 20 minutes Final set.....20 - 40 minutes
Freeze/Thaw Resistance ASTM C666 Procedure A	300 cycles.....98%
Modulus of Elasticity (ASTM C469)	28 days.....4.76 x 10^6 psi
Abrasion Resistance (ASTM C779)	28 days.....0.018 inches of wear at 1 hr

*****Based on initial length @ 24 hours; 3" x 3" x 11" (7.6 cm x 7.6 cm x 27.9 cm) beams*

PACKAGING/YIELD

VERSASPEED 100 is packaged in 50 lb (22.7 kg) bags and 50 lb (22.7 kg) pails. **Yield:** 0.39 ft^3 (0.011m^3) per bag/pail when mixed with 5.25 pints (2.48 L) of water. VERSASPEED 100 may be extended with up to 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) pea gravel. Approximate Extended Yield: 0.52 ft^3 (0.0147 m^3) per bag/pail.

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS/COMPLIANCES

- Alberta Transportation Technical Standards - Specification B391
- ASTM C928 Standard Specification for Rapid Hardening Cementitious Materials for Concrete Repairs

COVERAGE/YIELD

VERSASPEED 100 is packaged in 50 lb (22.7 kg) bags and 50 lb (22.7 kg) pails. **Yield:** 0.39 ft^3 (0.011m^3) per bag/pail when mixed with 5.25 pints (2.48 L) of water. VERSASPEED 100 may be extended with up to 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) pea gravel. Approximate Extended Yield: 0.52 ft^3 (0.0147 m^3) per 50 lb bag/pail.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP (Concrete Surface Profile) 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of VERSASPEED 100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of VERSASPEED 100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags/pails may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60˚F (15˚C) to 85˚F (29˚C). Add the appropriate amount of water for the batch size and then add the VERSASPEED 100**. The amount of water to be mixed with the VERSASPEED 100 is critical. Initially add 5 pints [80 fl.oz.] (2.37 L) of water per 50 lb (22.7 kg) bag/pail and mix for 2 minutes. If after the initial 2 minutes of mixing, the desired flow is not obtained, no more than 0.25 pints [4 fl.oz.] (118 mL) of additional water should be added to the mix in order to achieve more flow.** Mix an additional 2 minutes after adding extra water. For deeper repairs, 2" (5 cm) to 6" (15 cm), extend VERSASPEED 100 with 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) rounded pea gravel (#8, ASTM C33). The pea gravel must be dense and non-absorbtive per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260.

Placement: ***Important*****-**The application temperature range of VERSASPEED 100 is from 35 to 85˚F (2 to 29˚C)**.** For temperatures above 85˚F (29˚C) use VERSASPEED LS100**.** Allow approximately 15 minutes to mix, place, and finish VERSASPEED 100 repair mortar at 72°F (22°C). To make repairs, spread with a float, come-a-long, or square tipped shovel to a thickness that is level with the surrounding concrete. Do not use VERSASPEED 100 for repairs less than 1/4"(6 mm) deep.

Finishing: Finish the repair material to the desired texture. Do not add water to the surface during the finishing operation. When placing under hot and windy conditions the use of EUCOBAR evaporation retarder is recommended to prevent the loss of surface moisture.

Curing & Sealing: If an epoxy coating will not be applied, wet cure the surface with water and polyethylene sheets at least one day, or use a curing compound. If applying an epoxy coating, it is important to wet cure with wet burlap for at least 2 hours and then allow to air dry for at least 2 hours before coating. VERSASPEED 100 can be coated with epoxy systems after 4 hours at 70°F (21°C).

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- The application temperature range of VERSASPEED 100 is 35 to 85°F (2 to 29°C)**.**
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

VERSASPEED LS100

RAPID HARDENING HORIZONTAL REPAIR MORTAR WITH EXTENDED WORKING TIME

EUCLID CHEMICAL

DESCRIPTION

VERSASPEED LS100 is a versatile, single component, rapid strength gaining repair mortar for horizontal, and form and pour repair projects. Requiring only the addition of water, VERSASPEED LS100 is a low shrinkage, high early strength material that is easy to use for fast turn-around projects. Repaired areas may be open to standard tire traffic 5 hours following the final set. VERSASPEED LS100 is similar in appearance to concrete and is suitable for use in repairing concrete surfaces from approximately 1/4" to 6" (6 mm to 15 cm) in thickness. VERSASPEED LS100 is a slower setting version of our popular VERSASPEED 100 material.

PRIMARY APPLICATIONS

- Multi-unit residential
- Bridges
- Loading docks
- Highways
- Warehouses
- Pavements
- Roads
- Parking decks and ramps
- Industrial / commercial / institutional floors
- Vertical & overhead form and pour applications

FEATURES/BENEFITS

- Rapid strength gain with extended working time
- Suitable for interior or exterior applications
- Open to light duty traffic as soon as 4 hours
- Coat with epoxy after 5 hours at 70° F (21° C)
- Micro-fiber reinforced
- Shrinkage compensated
- Can be placed up to 2 in. (5 cm) neat
- Can be extended up to 50% by weight

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	VALUES
Compressive Strength ASTM C109	3 hours.....1,200 psi (8.3 MPa) 5 hours.....2,800 psi (19.3 MPa) 1 day.....4,000 psi (27.6 MPa) 7 days.....5,000 psi (34.5 MPa) 28 days.....8,000 psi (55.2 MPa)
Flexural Strength ASTM C348	1 day.....540 psi (3.7 MPa) 7 days.....1,000 psi (6.9 MPa) 28 days.....1,100 psi (7.6 MPa)
Splitting Tensile Strength ASTM C496	7 days.....300 psi (2.1 MPa) 28 days.....480 psi (3.3 MPa)
Slant Shear Bond Strength ASTM C882 (modified per TXDOT DMS-4566)	1 day.....1,500 psi (10.3 MPa) 7 days.....2,100 psi (14.5 MPa) 28 days.....2,800 psi (19.3 MPa)
Crack Resistance ASTM C1581	Net Time Until Cracking.....>90 days Stress Rate.....7.1 psi/day
Length Change (28 days) ASTM C157*	Air cure.....- 0.030% Water cure.....+0.013%
Set Time (ASTM C266)	Initial set.....30 - 60 minutes Final set.....60 - 100 minutes
Freeze/Thaw Resistance ASTM C666 Procedure A	300 cycles.....>95%
Modulus of Elasticity (ASTM C469)	28 days.....5.28 x 10^6 psi
Resistivity (FM 5-578)	28 days.....31,300 ohm-cm
Abrasion Resistance (ASTM C779)	28 days.....0.019 inches of wear at 1 hr

**Based on initial length @ 24 hours; 3" x 3" x 11" (7.6 cm x 7.6 cm x 27.9 cm) beams*

SHELF LIFE

1 year in original, unopened package

PACKAGING/YIELD

VERSASPEED LS100 is packaged in 50 lb (22.7 kg) bags and 50 lb (22.7 kg) pails. **Yield:** 0.39 ft^3 (0.011m^3) per bag/pail when mixed with 5.25 pints (2.48 L) of water. VERSASPEED LS100 may be extended with up to 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) pea gravel. Approximate Extended Yield: 0.52 ft^3 (0.0147 m^3) per 50 lb bag/pail.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP (Concrete Surface Profile) 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of VERSASPEED LS100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of a scrub coat of VERSASPEED LS100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags/pails may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60˚F (15˚C) to 85˚F (29˚C). Add the appropriate amount of water for the batch size and then add the VERSASPEED LS100**. The amount of water to be mixed with the VERSASPEED LS100 is critical. Initially add 5 pints [80 fl.oz.] (2.37 L) of water per 50 lb (22.7 kg) bag/pail and mix for 2 minutes. If after the initial 2 minutes of mixing the desired flow is not obtained, no more than 0.25 pints [4 fl.oz.] (118 mL) of additional water should be added to the mix in order to achieve more flow.** Mix an additional 2 minutes after adding extra water. For deeper repairs, 2" (5 cm) to 6" (15 cm), extend VERSASPEED LS100 with 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) rounded pea gravel (#8, ASTM C33). The pea gravel must be dense and non-absorbtive per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260.

Placement: ***Important*****-**The application temperature range of VERSASPEED LS100 is from 45˚ to 95˚F (7˚ to 35˚C)**.** Allow approximately 30 minutes to mix, place, and finish VERSASPEED LS100 repair mortar at 72°F (22°C). To make repairs, spread with a float, come-a-long, or square tipped shovel to a thickness that is level with the surrounding concrete. Do not use VERSASPEED LS100 for repairs less than 1/4"(6 mm) deep.

Finishing: Finish the repair material to the desired texture. Do not add water to the surface during the finishing operation. When placing under hot and windy conditions, the use of EUCOBAR evaporation retarder is recommended to prevent the loss of surface moisture.

Curing & Sealing: If an epoxy coating will not be applied, wet cure the surface with water and polyethylene sheets at least one day, or use a curing compound. If applying an epoxy coating, it is important to wet cure with polyethylene sheets for at least 3 hours and then allow to air dry for 2 hours before coating. VERSASPEED LS100 can be coated with epoxy systems after 5 hours at 70°F (21° C).

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- The application temperature range of VERSASPEED LS100 is 45 to 95°F (7 to 35°C)**.**
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

DURALFLEX FASTPATCH

LOW MODULUS EPOXY REPAIR MORTAR KIT

EUCLID CHEMICAL

DESCRIPTION

DURALFLEX FASTPATCH is a three component, 100% solids, low modulus, moisture insensitive, epoxy repair kit designed to provide a high strength, wear resistant surface to worn and damaged high use floors. DURALFLEX FASTPATCH can be colored with EUCLID UNIVERSAL COLOR PACKS; available in 33 standard

PRIMARY APPLICATIONS

- Warehouse floors
- Loading docks
- Mechanical rooms
- Parking decks and ramps
- Food storage areas
- Bridge decks and nosings
- Runways

FEATURES/BENEFITS

- No measuring of components
- Pre-measured resin, hardener and specially blended “non-dusting” aggregate
- Low modulus resin binder used for stress relief and resistance to impact
- Resistant to thermal and mechanical movements
- Rapid cure, minimizes down time
- May be applied as low as 40°F (4°C)
- 33 colors available using color packs

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Pot Life, kit, minutes.....20 to 30

Initial Cure, 1/2” (13mm) thick, hrs.....3 to 4

Tensile Strength, ASTM D638 psi (MPa)
.....2,700 (18.6)

Tensile Elongation, %.....45

Tensile Strength, ASTM C307 psi (MPa)
.....1,250 (8.6)

Flexural Strength, ASTM C580 psi (MPa)
.....3,600 (24.8)

Hardness, Shore D, min. ASTM D2240 **.....** 85

Water Absorption, ASTM D570 24 hrs %..... <0.5

Thermal Compatibility ASTM C884 **.....**passes

Effective Shrinkage ASTM C883**.....**passes

Adhesion to Concrete
ACI Method 503R-30 .....concrete failure

Compressive Strength, psi (MPa), ASTM C109 (modified)

Duration	75°F	40°F
18 hours	7,000 (48.7)	4,000 (27.6)
3 days	9,400 (64.8)	6,800 (46.9)
7 days	9,800 (67.6)	8,000 (55.1)

Appearance: Neat DURALFLEX FASTPATCH resembles light brown sugar when applied on a concrete floor. DURALFLEX FASTPATCH can be colored using a EUCLID UNIVERSAL COLOR PACK, which is available in 33 standard colors.

PACKAGING

DURALFLEX FASTPATCH is packaged in 0.4 ft^3 (.011 m^3) kit consisting of premeasured components of Part A (Base), Part B (Hardener) and Part C (Aggregate) all contained in a 5 gal (18.7 L) bucket.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

DURALFLEX FASTPATCH PART A & PART B: ASTM C881, Type III, Grade 1, Classes A & B
Canadian Food Inspection Agency compliant

COVERAGE/YIELD

One kit yields 0.4 ft^3 (0.011 m^3). Applied at 1/4" (6.3 mm) thickness, one kit will cover approximately 18 to 20 ft^2 (1.6 to 1.8 m^2)

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 3 - 5 in accordance with ICRI Guideline 310.2. Any exposed steel must be cleaned to a "white" metal finish.

Mixing: Remove the contents from the DURALFLEX FASTPATCH kit. Premix can containing Part A (base) and Part B (hardener) separately. Pour the entire contents of Part A and Part B into the supplied pail. Mix thoroughly using a slow speed ½" drill and a "Jiffy" mixer. Mix for 3 minutes. Make sure to scrape the bottom and sides of mixing container while mixing. Do not whip air into the product while mixing. Gradually add the supplied aggregate to premixed epoxy and blend thoroughly. BE SURE TO MIX THE EPOXY THOROUGHLY BEFORE ADDING THE AGGREGATE.

Application: For best results, condition the DURALFLEX FASTPATCH to 75°F (24°C) for at least 24 hours prior to application. Apply epoxy repair kit immediately after mixing with a trowel or screed. Material should be scrubbed into a dry surface for best adhesion. Trowel the material against the edge and gradually work toward the center of the repair area. Immediately after the mortar has been placed, aggregate can be broadcast into the wet resin to provide a more textured finish. Minimum application thickness of DURALFLEX FASTPATCH is 1/4" (6 mm); the maximum thickness is 3" (7.62 cm).

Euclid Universal Color Packs: DURALFLEX FASTPATCH can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per unit. Prior to mixing the unit together with aggregate, stir **1 color pack** into the part "A" side of the product until it is fully dispersed. Proceed with mixing as stated above. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors.

CLEAN-UP

Clean tools and application equipment immediately after use with methyl ethyl ketone or acetone. Clean spills or drips while still wet with same solvent. Dried DURALFLEX FASTPATCH will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10 to 32°C).
- Do not apply at application temperatures below 40°F (4°C).
- The materials should be conditioned at 75°F (24°C) when used for low temperature applications.
- This material should not be exposed to water during initial cure.
- If the repaired area is to be exposed to severe chemical abuse, it should be top coated with a chemical resistant coating from Euclid Chemical.
- Do not aerate during mixing.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO 456 PRIMER/SEALER

EPOXY PRIMER AND SEALER FOR EUCO 456S MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCO 456 PRIMER/SEALER is a two-component, 100% solids, epoxy primer and seal coat. It is specifically formulated for use with EUCO 456S Mortar.

PRIMARY APPLICATIONS

- Priming concrete substrates that are to receive EUCO 456S Mortar installations
- Seal coating EUCO 456S Mortar after installation and finishing

FEATURES/BENEFITS

- Low odor - 100% solids

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

VISCOSITY PART A, CP	5,300
VISCOSITY PART B, CP	65
MIXED VISCOSITY, CP	350-900

WORKING TIME	15 minutes
GEL TIME	23 minutes
TACK FREE TIME	3 to 4 hours

PACKAGING

EUCO 456 PRIMER/SEALER is available in 1.12 gal (4.24 L) kits. It is also available in 4.50 gal (17.03 L) kits.

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

ASTM C881, Types II & IV, Grade 1, Classes B & C

COVERAGE

Priming: 100 to 150 ft^2/gal (2.46 to 3.69 m^2/L)

Sealing: 150 to 200 ft^2/gal (3.69 to 4.92 m^2/L)

Note: Product coverage rates are approximate and for estimating purposes only. Surface temperature, porosity, and texture will determine actual material quantities.

DIRECTIONS FOR USE

Surface Preparation: PRIMING: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete, and free of dust, dirt, paint, efflorescence, oil, and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

SEALING: Previously installed EUCO 456S Mortar must be structurally sound, and free of dust, dirt, paint, oil, and all other contaminants. If EUCO 456S Mortar was installed more than 24 hours prior, perform a solvent wipe on the area to remove any contaminants.

Mixing: Use clean containers and clean mixers for mixing EUCO 456 PRIMER/SEALER. Separately mix Part A and Part B individually for approximately 1 minute. Using a low-speed “jiffy” type mixer, mix Parts A and B together for 2 minutes. For ease of mixing, add the Part B to the Part A (not the reverse).

Application: PRIMING: The ambient and surface temperature should be between 50°F to 90°F (10°C to 32°C). EUCO 456 PRIMER/SEALER can be applied using a short nap roller, squeegee, brush, or an airless spray. EUCO 456S Mortar should be applied 10-30 minutes after the EUCO 456 PRIMER/SEALER has been applied, while the EUCO 456 PRIMER/SEALER is still tacky.

SEALING: The ambient and surface temperature should be between 50°F to 90°F (10°C to 32°C). EUCO 456 PRIMER/SEALER can be applied using a short nap roller, squeegee, brush, or an airless spray. The seal coat can be installed as soon as the EUCO 456S Mortar has become tack free, but no later than 24 hours after primer application. See surface preparation instructions above if more than 24 hours have passed since EUCO 456S Mortar installation.

CLEAN-UP

Clean tools and equipment with solvent such as acetone, xylene, or MEK. Do not allow the epoxy to harden on tools or equipment. Hardened EUCO 456 PRIMER/SEALER will require mechanical removal.

PRECAUTIONS/LIMITATIONS

- Interior use only
- EUCO 456 PRIMER/SEALER is not a decorative product, and should not be used where aesthetics are an issue.
- Not recommended where floor temperature will exceed 170°F (77°C) on a continual basis.
- Store at 60°F to 70°F (16°C to 21°C) for 24 hours prior to use for ease of product placement.
- Not suitable for use where topping will be exposed to acids.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO 456S MORTAR

IRON AGGREGATE EPOXY REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCO 456S MORTAR is an epoxy repair material for use where exceptional strength and durability are needed. It consists of a two-component epoxy resin system and a specially graded iron aggregate. EUCO 456S MORTAR has excellent adhesion and provides maximum abrasion and impact resistance on floors with extra heavy duty traffic.

PRIMARY APPLICATIONS

- Floor joint repairs and overlays
- New installations to armor floor surfaces and joints
- Floor areas subject to cutting from steel flanges
- High impact areas in steel mills and other plants
- Repairing metallic shake floors
- Areas needing superior abrasion resistance

FEATURES/BENEFITS

- The most durable mortar available for high impact and abrasive conditions
- Fast and economical repair system
- Excellent bonding to concrete
- Extremely high early strength
- 100% solids epoxy mortar

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Temperature	**Working Time**
90°F (32°C)	30 min
75°F (24°C)	75 min
60°F (16°C)	90 min

Maximum Continuous Service Temperature
170°F (77°C)

Appearance: EUCO 456S MORTAR will appear as a charcoal gray metallic surface when applied over a concrete floor. It is not intended to be used as a decorative overlay.

Compressive Strength ASTM C109 2" (50 mm) cubes

1 day	12,000 psi (83 MPa)
3 days	12,500 psi (86 MPa)
7 days	13,000 psi (90 MPa)
14 days	13,500 psi (93 MPa)

Bond Strength ASTM C882 ..... 2,200 psi (15 MPa)

Abrasion Resistance ASTM C779 Procedure A

Euco 456S	**Plain Concrete**
30 minutes: 0.008" (.20 mm)	0.048" (1.22 mm)
60 minutes: 0.013" (.33 mm)	0.102" (2.59 mm)

PACKAGING/YIELD

EUCO 456S MORTAR is available in a .35 ft³ (.01 m³) kit. **Part A (resin):** 0.97 gal (3.7 L), **Part B (hardener):** 0.25 gal (0.95 L), **Part C (aggregate):** 53 lb (24 kg)

SHELF LIFE

2 years in original, unopened containers

SPECIFICATIONS/COMPLIANCES

EUCO 456S MORTAR PART A & PART B: ASTM C881, Types II & IV, Grade 1, Classes B & C

COVERAGE

Thickness	**Coverage**
1/4" (6 mm)	16.8 ft² (1.6 m²)
1/2" (13 mm)	8.4 ft² (0.8 m²)

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area. **Priming:** Concrete must be primed with a coat of EUCO 456 PRIMER/SEALER. See product data sheet for EUCO 456 PRIMER/SEALER for full instructions.

Joints and Edges: Edges should be sawcut to 1/4" (6 mm) more than the overlay thickness and notched at the edge of the overlay to provide a locked edge. Moving joints as in the case of expansion joints should be brought up through the overlay by sawcutting or with the use of a divider strip. All cracks over 1/16" (2 mm) wide should be routed out to a 1/4" (6 mm) width and 1/4" (6 mm) depth prior to application of the mortar.

Mixing: All materials should be in the proper temperature range of 60°F to 90°F (16°C to 32°C). Separately mix Part A and part B individually before mixing together. Mix parts A and B (resin & hardener) for 2 minutes using a drill and mixing prop. For ease of mixing, add the Part B to the Part A (not the reverse). Slowly add Part C (iron aggregate). Mix for an additional 2 minutes or until all aggregate pieces are completely covered by the epoxy. For large placements, mix the epoxy separately in a 5 gallon pail then mix the epoxy and aggregate together in a mortar mixer. Place immediately.

Placement: For large overlays, use of vibratory screed is strongly recommended to maximize product density and ultimate performance. Finish by machine trowel. For patching, spread with a trowel, come-a-long, or square-tipped shovel to a thickness of about 1/8" (3 mm) higher than the final desired height of the overlay. Compact and finish by hand or machine trowel. EUCO 456S MORTAR may be sealed with a coat of EUCO 456S PRIMER/SEALER. See product data sheet for EUCO 456 PRIMER/SEALER for full instructions.

CLEAN-UP

Clean tools and equipment with solvent such as acetone, toluene or MEK. Do not allow the epoxy to harden on tools or equipment. Hardened EUCO 456S MORTAR will require mechanical removal.

PRECAUTIONS/LIMITATIONS

- Interior use only
- EUCO 456S MORTAR is not a decorative product and should not be used where aesthetics are an issue.
- Not recommended where floor temperature will exceed 170°F (77°C) on a continual basis.
- Keep at room temperature 60°F to 70°F (16°C to 21°C) 24 hours prior to use for ease of product placement.
- Not suitable for use where the topping will be exposed to acids.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO QWIKSTITCH

RAPID SETTING URETHANE CRACK & SPALL REPAIR

EUCLID CHEMICAL

DESCRIPTION

EUCO QWIKstitch is a two-component hybrid urethane repair liquid used to mend cracks in concrete, repair spalled joints and repair damaged or uneven concrete surfaces. EUCO QWIKstitch is an ultra-low viscosity material formulated to penetrate deep into cracks, mending them back together. Its fast cure time makes quick work of repair jobs; concrete repaired with EUCO QWIKstitch can be opened to heavy traffic in less than one hour. EUCO QWIKstitch can be mixed with aggregate to make a tough mortar perfect for quickly repairing pop-outs and spalls. In addition, bulk EUCO QWIKstitch can be colored with EUCLID UNIVERSAL COLOR PACKS.

PRIMARY APPLICATIONS

- Cracked concrete surfaces, interior and exterior
- Spalled floor joints
- Repair of pop-outs and delaminations on floors

FEATURES/BENEFITS

- Can be applied at a range of thicknesses with the use of clean, oven-dried silica
- Very fast cure time
- 33 colors available through the use of color packs
- Static mixers available with needle tips - for neatly injecting very narrow cracks
- Low viscosity - deep penetration into cracks
- Wide application temperature range: 0ºF to 110°F (-18ºC to 44°C)
- Low VOC and no solvent odor

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULT
Mix Ratio, Part A to Part B Mix Ratio, sand to mixed liquid	1:1 by volume 2:1 by volume
Neat color	Part A: Clear/Amber Part B: Black Mixed: Dark Gray/Black
Gel Time at 75°F (24°C)	2 - 3 minutes
Tack Free Time at 75°F (24°C)	10 minutes
Viscosity	Part A: 60 cp Part B: 60 cp Mixed: 60 cp
VOC Content	≤5 g/L
Shore D Hardness ASTM D2240	70
Tensile Strength, 7 days, psi (MPa) ASTM D638	3,830 (28)
Tensile Elongation, % ASTM D638	16.3
Compressive Strength, psi (MPa) ASTM D695	1.5 hour: 4,590 (33) 24 hours: 4,835 (35)
Bond Strength, psi (MPa) ASTM C882	1,847 (12.8)
Water Absorption, % ASTM D570	0.25

Appearance: EUCO QWIKstitch is initially dark gray/black upon mixing but turns light gray after curing. When used with sand, the final color of the repair will depend on the type, color, and gradation of the sand. Manufactured or colored quartz can be blended on the jobsite to match the color of the floor. Neat EUCO QWIKstitch is not UV stable and will discolor when exposed to sunlight or interior UV light. Two gal (7.6 L) units can be pigmented through the use of EUCLID UNIVERSAL COLOR PACKS, which are available in 33 standard colors.

PACKAGING

EUCO QWIKstitch is packaged in cases of (12) 20 oz (0.59 L) dual cartridges with static mixers and retaining nuts included. Needle tip static mixers are available separately, in packages of 5. EUCO QWIKstitch is also available in 2 gal (7.6 L) bulk units consisting of 1 gal (3.8 L) Part A and 1 gal (3.8 L) Part B.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

Suitable for use in USDA and Canadian Food Inspection Agency inspected facilities

COVERAGE/YIELD (NEAT)

20 oz (0.59 L) cartridge: 33 in^3 (540 cm^3)

2 gal (7.6 L) bulk unit: 462 in^3 (7577 cm^3)

DIRECTIONS FOR USE

Surface Preparation: All dirt, oil, dust, foreign contaminants, and laitance must be removed to assure a good bond to the concrete. For repair of spalled concrete or pop-outs, a stiff wire brush or twisted wire wheel on a grinder can be used to remove all loose or unsound concrete. Cracks should be similarly cleaned with a diamond blade saw, wire brush or wire wheel. After preparing area, remove all dust and debris with an industrial vacuum and oil-free compressed air. All surfaces must be clean and dry before installation of QWIKstitch.

Environment: Condition EUCO QWIKstitch to room temperature, 60°F to 80°F (16°C to 27°C) before using. Any sand used with the product must be dry and kept at room temperature. Warmer material and/or application on hot concrete or in a warm environment will accelerate curing of EUCO QWIKstitch. Cold material, cold concrete, or application in a cold environment will delay curing. Heat cold concrete to remove any visible frost before application of EUCO QWIKstitch.

Readying Cartridges: Cartridges of EUCO QWIKstitch must be shaken well before using. After shaking, let cartridge stand for one minute to allow any entrapped air to disperse. Insert cartridge into a dual component, 300 ml x 300ml manual dispenser with a 1:1 mix ratio. Open the cartridge by first removing the clear retaining nut. After removing the retaining nut, remove the red plug. Save the retaining nut and plug; they can be re-inserted to save a partially used cartridge. Hold cartridge at a slightly upward angle and slowly dispense a small amount of material into a disposable container until both materials flow evenly from cartridge. Continue to hold cartridge & gun at an upward angle and install flow control and mixing nozzle onto cartridge. Next, point mixing nozzle straight up and slowly begin gunning material through the mixing nozzle until it reaches the tip. Point upwards at a 45° angle and dispense one stroke into a disposable container.

Crack/Spall Repair, Cartridges: Gun EUCO QWIKstitch directly into cracks, allowing adhesive to penetrate into the crack and top-off as needed. Kiln-dried medium grade (30 mesh) silica sand or dry floor grindings can be sprinkled on top of the wet EUCO QWIKstitch to add texture and closely match the appearance of the surrounding concrete. Alternately, larger cracks can be filled with dry, medium grade silica sand then saturated with EUCO QWIKstitch. Keep EUCO QWIKstitch flowing to prevent material from hardening in the nozzle. Mixed EUCO QWIKstitch will be tack-free in 10 minutes at 75°F (24°C). Excess material may be removed immediately or within 20 to 30 minutes after installation by scraping/shaving with a sharp blade. If necessary, cured EUCO QWIKstitch can be ground smooth with a brick rub or hand grinder approximately one hour after application.

Crack/Spall Repair, 2 gal (7.6 L) unit: EUCO QWIKstitch can be mixed with kiln dried medium grade (30 mesh) silica sand to create a mortar suitable for repairs ½ inch to 3 inches (1.3 to 7.6 cm) in thickness per lift. EUCO QWIKstitch mortars must be mixed, placed, and finished in less than 3 minutes, so only prepare an amount of EUCO QWIKstitch mortar that can be mixed and placed within that time. Thoroughly but quickly, mix Part A with Part B with a "Jiffy" mixing blade and drill at low speed for 20 seconds maximum. While one person is mixing A & B, have a second person swiftly add the sand at a ratio of 2 parts sand to one part mixed EUCO QWIKstitch, by volume. Make sure all sand is saturated and there are no clumps of dry sand remaining. Scrape bottom and sides of pail to assure good mix. Place and finish immediately.

Euclid Universal Color Packs: 2 gal (7.6 L) units of EUCO QWIKstitch can be colored using **1** EUCLID UNIVERSAL COLOR PACK (EUCO Pack) per unit. Prior to mixing the unit together with aggregate, stir **1 color pack** into the part "A" side of the product until it is fully dispersed. Proceed with mixing as stated above. EUCLID UNIVERSAL COLOR PACKS are available in 33 standard colors, see EUCLID UNIVERSAL COLOR CHART for available colors. **NOTE:** *EUCO QWIKstitch cures very rapidly. For this reason, do not allow mixed material to stop flowing for more than 3 minutes. If EUCO QWIKstitch cures inside the cartridge static mixer, remove cartridge from dispenser and replace mixer.*

CLEAN-UP

Tools, equipment and general clean-up can be done before the product cures with MEK or acetone.

PRECAUTIONS/LIMITATIONS

- Wet substrates or wet sand can cause foaming of the EUCO QWIKstitch and result in a low strength, less durable repair.
- When used without sand, EUCO QWIKstitch will discolor when exposed to UV light.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOFLOOR SL160

CEMENTITIOUS, SELF-LEVELING UNDERLAYMENT

EUCLID CHEMICAL

DESCRIPTION

EUCOFLOOR SL160 is a single-component, cement based, free-flowing, self-leveling compound specially designed for easy application over concrete floors as an underlayment for subsequent placement of floor coverings. It is suitable for use as a repair and leveling course and may be applied at thicknesses from featheredge to 1" (25 mm) neat. EUCOFLOOR SL160 may be used as an indoor, light-duty (foot traffic only) wearing surface, when protected by a Euclid Chemical epoxy/urethane system.

PRIMARY APPLICATIONS

- Leveling interior or exterior (see precautions/ limitations) sound concrete surfaces
- Leveling wood subfloors
- Over radiant heat systems
- Indoor light duty wearing surface (see precautions/limitations)

FEATURES/BENEFITS

- Fluid consistency for ease in application
- Pumpable through standard equipment
- Self-leveling for smooth, flat floors
- Minimal shrinkage and outstanding resistance to cracking
- High early strength for early turnaround
- Excellent bond strength
- Outstanding self-healing properties

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions on product mixed with 6.5 quarts (6.2 L) of water. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109 2" (50 mm) cubes

4 hours.....900 psi (7 MPa)
24 hours.....2,000 psi (14 MPa)
7 days.....3,000 psi (21 MPa)
28 days.....3,500 psi (24 MPa)
Shrinkage ASTM C 157 (24 hr cure).....-0.040%
Flow Time.....approx. 15 min

Unit Weight .....approx. 122 lb/ft^3 (1,954 kg/m^3)

Set Time ASTM C 191

Initial.....approx. 45 min
Final.....approx. 1 hr

Flexural Strength ASTM C 348

7 days.....550 psi (3.8 MPa)
28 days.....600 psi (4.1 MPa)

Surface Burning Characteristics ASTM E 84-13a

Flame Spread Index.....0
Smoke Developed Index.....5

PACKAGING/YIELD

EUCOFLOOR SL160 is packaged in 50 lb (22.7 kg) bags that yield approximately 0.52 ft^3 (0.015 m^3) of material.

SHELF LIFE

1 year in original, unopened bag

SPECIFICATIONS/COMPLIANCES

EUCOFLOOR SL160 meets ASTM E 84-13a Surface Burning Characteristics of Building Materials as a class A or I building material.

COVERAGE

Coverage (neat) is approximately 25 ft^2 (2.3 m^2) at 1/4" (6 mm) thickness

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose and deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 3 - 5 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming: For the best adhesion to the concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the prime coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for instructions. Alternately, concrete can be primed with a spray or brush coat of TAMMSWELD. Allow TAMMSWELD to fully dry prior to the application of EUCOFLOOR SL160 (see TAMMSWELD technical data sheet).

Mixing: All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Single bags of EUCOFLOOR SL160 may be mixed in a pail with a drill and "jiffy" mixer at low speeds to avoid entrapping air into the mixed product. Larger projects are best mixed and placed with standard grouting or self-leveling equipment. Add the correct amount of water, 6.0 to 6.5 qt (5.7 to 6.2 L) per bag and then add the dry product. Do not use excessive water, which will cause bleeding or segregation. UNDER NO CIRCUMSTANCES USE MORE THAN 6.5 QT (6.2 L) OF WATER PER 50 LB (22.7 KG) BAG. Mix a minimum of 3 minutes. If bucket mixed, the product should be quickly transported to the repair area and placed immediately.

Application: Featheredge to 1" (2.5 cm) neat. For applications over 1" (25.4 mm) in thickness, add 20 to 25 lb (9.1 to 11.3 kg) of 3/8" (9.5mm) pea gravel to extend the initial layer (Note: Self-healing and flow properties will decrease with addtion of pea gravel). Placement options include screeding or the use of pre-placed aggregate. Apply a bond coat to the surface of the initial layer and place additional underlayment to achieve the final smooth surface.

Placement: The product must be continuously placed to provide a smooth and uniform surface. Start in one corner placing a continuous stream of material along one edge of the area and back lap as soon as possible for a uniform, smooth surface. Tools such as spiked rollers, notched squeegees, trowels and smoothers may be used to assist placement. If placing over radiant heat systems, ensure the system is off and cool prior to installation. Place EUCOFLOOR SL160 as described above and allow to fully cure prior to turning the system on.

Finishing: This product is self-leveling and requires no finishing or troweling operation.

Curing: EUCOFLOOR SL160 does not require curing with standard methods for most applications. Under hot, windy or rapid drying conditions, the use of EUCOBAR is recommended during placement to minimize rapid evaporation and plastic shrinkage.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use EUCOFLOOR SL160 as a heavy-duty wearing surface for industrial floors.
- If used as an indoor, light-duty wearing surface, the use of a Euclid Chemical clear epoxy topcoat is recommended for added wear resistance.
- EUCOFLOOR SL160 is not a vapor barrier and will allow free passage of moisture.
- Do not add admixtures or calcium chloride.
- Do not use if ambient temperatures will fall below 40°F (4°C) within 72 hours after placement.
- Contact and rely upon floor covering manufacturer for specific requirements regarding maximum moisture content, adhesive selection and intended end use of the product prior to application of floor coverings.
- Store in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

FLO-TOP

PUMPABLE, SINGLE COMPONENT, SELF-LEVELING UNDERLAYMENT

EUCLID CHEMICAL

DESCRIPTION

FLO-TOP is a free-flowing, self-leveling compound specially designed for easy application over concrete and wooden floors as an underlayment for the subsequent placement of floor coverings. It may be applied at thicknesses from featheredge to 1" (25 mm). FLO-TOP is a one-part underlayment requiring only the addition of water for mixing.

PRIMARY APPLICATIONS

- Interior, sound, concrete sub-flooring
- Unlevel floors
- Repair of old, worn concrete that will receive a decorative topping
- Wood floors

FEATURES/BENEFITS

- Flowable consistency for self-leveling application
- Pumpable through standard equipment
- Self-leveling for smooth, flat floors
- Exceptional coverage rate for maximum yield and value
- Minimal shrinkage for outstanding resistance to cracking
- High early strength for early turnaround
- Excellent bond strength for a composite floor section

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C 109 2" (50 mm) cubes

Age	Strength
2 hours	1,500 psi (10 MPa)
24 hours	2,300 psi (16 MPa)
3 days	2,800 psi (19 MPa)
7 days	3,600 psi (25 MPa)
28 days	5,000 psi (34 MPa)

Unit Weight..... 115 lb/ft^3 (1842 kg/m^3)

Bond Strength ASTM C 1042

Age	Strength
7 days	700 psi (5 MPa)
14 days	1,000 psi (7 MPa)

Set Time ASTM C 191 @ 70°F (21°C)

Initial	approx. 45 mins
Final	approx. 70 mins

PACKAGING/YIELD

FLO-TOP is packaged in 50 lb (22.7 kg) bags that yield approximately 0.51 ft^3 (0.014 m^3) of material when mixed with 7 quarts (6.6 L) of potable water

SHELF LIFE

1 year in original, unopened package

COVERAGE

Coverage is approximately 25 ft^2 (2.3 m^2) at a 1/4" (6 mm) thickness

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface. Preparation should be done by mechanical means to achieve a surface profile equal to CSP 3 - 5 in accordance with ICRI Guideline 310.2. Properly clean profiled area. **IMPORTANT:** For wood floors, secure metal lathe over the floor that has been fully braced and secured so that it is stable, without flexibility. **Priming:** For the best adhesion to the concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the prime coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for instructions. Alternately, concrete can be primed with a spray or brush coat of TAMMSWELD. Allow TAMMSWELD to fully dry prior to the application of FLO-TOP (see TAMMSWELD technical data sheet).

Mixing: All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Single bags of FLO-TOP may be bucket mixed with a drill and "jiffy" mixer. Larger projects are best placed with standard grouting or underlayment equipment. Add the appropriate amount of water for the batch size and then add the dry product. Do not over water, for that will cause bleeding or segregation. Add 6.5 to 7 qts (6.15 to 6.6 L) of water per 50 lb (22.7 kg) bag. Mix a minimum of 3 minutes. If mixed in a pail, the product should be quickly transported to the repair area and placed immediately.

Application: For applications over 1" (25.4 mm) in thickness, add 20 to 25 lb (9.1 to 11.3 kg) of 3/8" (9.5 mm) pea gravel to extend the initial layer. Placement options include screeding or the use of pre-placed aggregate grouting techniques. After 24 hours, prime the surface of the initial layer and place additional underlayment to achieve the final smooth surface.

Placement: The product must be placed continuously to provide a smooth and uniform surface. Start in one corner placing a continuous stream of material along one edge of the area and back lap as soon as possible for a uniform, smooth surface. Tools such as spiked rollers, notched squeegees, trowels and smoothers may be used to assist placement.

Finishing: This product is self-leveling and requires no finishing or troweling operation.

Curing: (See Precautions/Limitations) FLO-TOP does not require curing with standard methods for most applications. Under hot, rapid-drying conditions or if there is much air movement, the use of EUCOBAR, evaporation retardant, is recommended after placement.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Designed for interior use only
- FLO-TOP is not a vapor barrier and will allow free passage of vapor.
- Do not use for exterior applications or in areas continuously subjected to moisture or water.
- Do not use FLO-TOP as a wearing surface.
- Do not add admixtures or calcium chloride.
- Do not use at ambient temperatures that will fall below 40°F (4°C) within 72 hours.
- Do not allow to freeze for 7 days after placement.
- FLO-TOP must be well cured before application of floor coverings.
- Contact and rely upon floor covering manufacturer for specific requirements regarding maximum moisture content, adhesive selection and intended end use of the product prior to application of floor coverings.
- Store in a dry place
- If placing FLO-TOP over a wood floor, it is very important to secure the floor to prevent all movement.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

LEVEL MAGIC LIGHTWEIGHT

PUMPABLE SELF-LEVELING UNDERLAYMENT

EUCLID CHEMICAL

DESCRIPTION

LEVEL MAGIC LIGHTWEIGHT is a cement-based, self-leveling, high strength underlayment designed for leveling floors without adding the weight of traditional cementitious leveling products. LEVEL MAGIC LIGHTWEIGHT can be featheredged and has properties similar to that of concrete, but at a much lower load weight. LEVEL MAGIC LIGHTWEIGHT eliminates the need for trowelling. It requires the addition of only potable water to achieve a fluid consistency and produces a smooth, level and hard surface after curing. LEVEL MAGIC LIGHTWEIGHT can be applied in multiple lifts with each lift being no greater than 1" (2.5 cm).

PRIMARY APPLICATIONS

- Repair, fill, or level surfaces in new construction or restoration
- Underlayment for structures not designed for much additional load prior to installation of floor coverings

FEATURES/BENEFITS

- Can receive floor coverings within 24 hours of installation
- Compatible with commonly used flooring adhesives

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PHYSICAL PROPERTY	TEST METHOD	RESULT
Self-Healing Time	ASTM C 191	10 to 15 minutes
Final Set Time	ASTM C 191	approx. 1 to 3 hours
Compressive Strength	ASTM C 109	7 days: 3,200 psi (22 MPa) 28 days: 4,000 psi (27 MPa)
Unit Weight	-	80 lb/ft^3 (1280 kg/m^3)
Flammability	ASTM E 84	Flame Spread: 0 Fuel Contribution: 0 Smoke Development: 0

PACKAGING

LEVEL MAGIC LIGHTWEIGHT is packaged in 25 lb (11.3 kg) polylined bags

SHELF LIFE

1 year in original, unopened package

COVERAGE/YIELD

One 25 lb (11.3 kg) bag of LEVEL MAGIC LIGHTWEIGHT will yield approximately 0.42 ft^3 (0.012 m^3) of mixed material. TAMMSWELD is used as the bonding agent for LEVEL MAGIC LIGHTWEIGHT. TAMMSWELD will cover approximately 250 to 300 ft^2/gal (6.1 to 7.3 m^2/L).

DIRECTIONS FOR USE

Surface Preparation: Surface must be dry, structurally sound, clean, free of dust, dirt, wax, oil, grease, mastic, latex compounds, adhesives, paint, gypsum-based products, form releases, curing/sealing compounds and other contaminants. Deeply contaminated substrates must be abraded to a clean and sound surface. Repair large cracks and holes with TAMMSPATCH II or other suitable repair mortar. Porous surfaces should be primed with TAMMSWELD.

Wood Surfaces must be structurally sound and thoroughly cleaned to remove shellac, varnish, paint and other contaminants. Wood floors must be fully braced and nailed to provide a stable, non-flexible surface. Use wire mesh as an artificial key for fills over wood. Apply TAMMSWELD as a primer to the wood surface.

Priming: For the best adhesion to the concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the prime coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for instructions. Alternately, concrete can be primed with a spray or brush coat of TAMMSWELD. Allow TAMMSWELD to fully dry prior to the application of LEVEL MAGIC LIGHTWEIGHT (see TAMMSWELD technical data sheet). Wood/plywood surfaces should be primed using TAMMSWELD.

Mixing: LEVEL MAGIC LIGHTWEIGHT requires 9 pints (4.3 L) of water per 25 lb (11.3 kg) bag. Use power drill with a "jiffy" type mixer to mix small quantities. For larger applications use a paddle type mortar mixer or a standard concrete mixer.

Application Techniques: Pump or hand pour LEVEL MAGIC LIGHTWEIGHT on to primed surface. Move it into approximate position with an underlayment spreader, and allow the material to seek its own level. Place LEVEL MAGIC LIGHTWEIGHT soon after mixing. During cure, protect the surface from direct sunlight and winds to prevent rapid hydration.

CLEAN-UP

Clean mixing and application equipment with water immediately following use. Remove splatter or spills with water before material sets. LEVEL MAGIC LIGHTWEIGHT contains cementitious materials, and if allowed to dry, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- New concrete must be fully cured for 28 days.
- Joints or cracks in movement must be detailed through the LEVEL MAGIC LIGHTWEIGHT to prevent cracking.
- Do not overwater, overmix, or retemper LEVEL MAGIC LIGHTWEIGHT.
- Do not add cement, lime, gypsum, plaster, bonding agents, or other materials except specified aggregates.
- Clean mixer after each batch to avoid material build up.
- Do not mix or apply LEVEL MAGIC LIGHTWEIGHT when temperatures are below or expected to fall below 40°F (4°C) or above 90°F (32°C) for at least 24 hours after application.
- Do not apply LEVEL MAGIC LIGHTWEIGHT over frozen or frost filled surfaces.
- Not recommended over particle board, gypsum, asphalt, or very porous surfaces.
- Do not apply LEVEL MAGIC LIGHTWEIGHT over very warm surfaces such as radiant heated floors or over boiler rooms.
- Test applications are recommended.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SUPER FLO-TOP

CEMENTITIOUS, SELF-LEVELING UNDERLAYMENT

EUCLID CHEMICAL

DESCRIPTION

SUPER FLO-TOP is a single-component, cement based, free-flowing, self-leveling compound specially designed for easy application over concrete floors as an underlayment for subsequent placement of floor coverings. It is suitable for use as a repair and leveling course and may be applied at thicknesses from featheredge to 1" (25 mm) neat. SUPER FLO-TOP may be used as a light-duty (foot traffic only) wearing surface, when protected by a Euclid Chemical epoxy/urethane system.

PRIMARY APPLICATIONS

- Leveling interior or exterior (see precautions/limitations) sound concrete surfaces
- Leveling wood subfloors
- Over radiant heat systems
- Light duty wearing surface

FEATURES/BENEFITS

- Fluid consistency for self-leveling applications
- Pumpable through standard equipment
- Self-leveling for smooth, flat floors
- High early strength for early turnaround
- Excellent bond strength
- Excellent self-healing properties

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C109 2" (50 mm) cubes

Age	Strength
4 hours	1,300 psi (9 MPa)
24 hours	2,200 psi (15 MPa)
7 days	3,000 psi (21 MPa)
28 days	3,500 psi (24 MPa)
56 days	4,000 psi (27 MPa)

Bond Strength ASTM C 1583

Age	Strength
7 days	250 psi (1.7 MPa)
28 days	280 psi (1.9 MPa)

Unit Weight ..... approx. 118 lb/ft^3 (1890 kg/m^3)

Final Set Time ASTM C 191 ..... 1 to 1.5 hrs

Appearance: SUPER FLO-TOP is a free-flowing powder designed to be mixed with water that dries to a light gray finish.

PACKAGING/YIELD

SUPER FLO-TOP is packaged in 50 lb (22.7 kg) bags that yield approximately 0.52 ft^3 (0.015 m^3) of material.

SHELF LIFE

9 months in original, unopened package

COVERAGE

Coverage is approximately 25 ft^2 (2.3 m^2) at a 1/4" (6 mm) thickness

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 3 - 5 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming: For the best adhesion to the concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the prime coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for instructions. Alternately, concrete can be primed with a spray or brush coat of TAMMSWELD. Allow TAMMSWELD to fully dry prior to the application of SUPER FLO-TOP (see TAMMSWELD technical data sheet).

Mixing: All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Single bags of SUPER FLO-TOP may be mixed in a pail with a drill and "jiffy" mixer. Larger projects are best placed with standard grouting or underlayment equipment. Add the appropriate amount of water, 6.0 to 6.5 qt (5.7 to 6.2 L) per bag and then add the dry product. Do not use water at a rate that will cause bleeding or segregation. UNDER NO CIRCUMSTANCES USE MORE THAN 6.5 QT (6.2 L) OF WATER PER 50 LB (22.7 KG) BAG. Mix a minimum of 3 minutes. If bucket mixed, the product should be quickly transported to the repair area and placed immediately.

Application: For applications over 1" (25.4 mm) in thickness, add 20 to 25 lb (9.1 to 11.3 kg) of 3/8" (9.5mm) pea gravel to extend the initial layer. Placement options include screeding or the use of pre-placed aggregate. Apply a bond coat to the surface of the initial layer and place additional underlayment to achieve the final smooth surface.

Placement: The product must be continuously placed to provide a smooth and uniform surface. Start in one corner placing a continuous stream of material along one edge of the area and back lap as soon as possible for a uniform, smooth surface. Tools such as spiked rollers, notched squeegees, trowels and smoothers may be used to assist placement. If placing over radiant heat systems, ensure the system is off and cool prior to installation. Place SUPER FLO-TOP as described above and allow to fully cure prior to turning the system on.

Finishing: This product is self-leveling and requires no finishing or troweling operation.

Curing: (See Precautions/Limitations) SUPER FLO-TOP does not require curing with standard methods for most applications. Under hot, windy or rapid drying conditions, the use of EUCOBAR is recommended after placement.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use SUPER FLO-TOP as a heavy-duty wearing surface for industrial floors.
- If used as a light-duty wearing surface, the use of a Euclid Chemical clear epoxy topcoat is recommended for added wear resistance.
- SUPER FLO-TOP is not to be used in areas of constant water exposure or in areas exposed to permanent or intermittent substrate moisture, for this could jeopardize the performance of the underlayment and floor covering.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- SUPER FLO-TOP is not a vapor barrier and will allow free passage of moisture.
- Do not add admixtures or calcium chloride.
- Do not use if ambient temperatures that will fall below 40°F (4°C) within 72 hours after placement.
- Do not allow freshly placed SUPER FLO-TOP to freeze for 7 days.
- Contact and rely upon floor covering manufacturer for specific requirements regarding maximum moisture content, adhesive selection and intended end use of the product prior to application of floor coverings.
- Store in a dry place.
- Not for use in freeze-thaw environments.
- If placing SUPER FLO-TOP over a wood floor, it is very important to secure the floor to prevent all movement.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

REPAIR - VERTICAL & OVERHEAD

Cementitious

Shotcrete

DURALTOP GEL

VERTICAL AND OVERHEAD STRUCTURAL REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

DURALTOP GEL is a rapid-setting, two-component, polymer modified, silica fume enhanced, cementitious repair mortar for vertical/overhead applications. DURALTOP GEL contains an integral corrosion inhibitor for added protection.

PRIMARY APPLICATIONS

- Structural concrete repairs
- Exterior or interior, above or below grade
- Vertical and overhead concrete and masonry repairs

FEATURES/BENEFITS

- Rapid setting, polymer modified repair mortar
- Achieves high compressive, flexural and bond strengths quickly
- Contains an integral corrosion inhibitor
- Non-sag, high build properties
- Pre-proportioned unit
- Silica fume enhanced

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength, psi (MPa) ASTM C 109 (Mod.)
4 hours 1,150 (7.9)
1 day.....4,000 (27.6)
3 days.....6,100 (42.1)
7 days.....7,050 (48.6)
28 days.....8,500 (58.6)
Flexural Strength, psi (MPa) ASTM C 293
1 day.....2,000 (13.8)
28 days.....2,180 (15.0)
Bond Strength, psi (MPa) ASTM C 882 (Mod.)
7 days.....2,100 (14.5)
28 days.....2,475 (17.1)

Tensile Bond Strength CAN A23.2-6b
28 days..... greater than concrete
Splitting Tensile Strength, psi (MPa) ASTM C 496
28 days.....750 (5.2)
Freeze/Thaw Resistance NYSDOT 502.3P
50 cycles ..... 0.18% Weight Loss
Length Change ASTM C 157
7 days.....-0.040%
28 days.....-0.062%
Vertical/Overhead Patching NYS DOT 701.08
..... passes
Chloride Permeability ASTM C 1202
160 coulombs .....“very low”

PACKAGING/YIELD

Part A (powder) 44 lb (20 kg) bag. Part B (liquid) 1 gal (3.8 L) container. One kit of DURALTOP GEL will yield approximately 0.4 ft^3 (0.01 m^3).

SHELF LIFE

1 year in original, unopened package

COVERAGE

Applied at the following thicknesses, one bag will cover:

1/4” (6.3mm) 19.2 ft^2 (1.78 m^2)

1/2” (12.7 mm) 9.6 ft^2 (0.89 m^2)

Coverage rates are approximate and are for estimating purposes only.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of DURALTOP GEL to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of DURALTOP GEL to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Mix only one kit of DURALTOP GEL at a time. In a clean container, add 80% of liquid Part B. Using a slow speed (400 to 600 rpm) drill and a "Jiffy" mixer, gradually add the powder (Part A) to produce a mortar with a smooth, no lumps consistency. Add remaining liquid, if necessary, to get desired consistency. Do not mix longer than 3 minutes.

Application: Air and surface temperature must be above 45°F (7°C). Apply DURALTOP GEL immediately after mixing. The working time is about 15 minutes, and finish time about 20 to 30 minutes, depending on temperature, humidity and finish desired. The surface must be SSD at the time of application. Before the scrub coat dries, trowel the material against the edge, and gradually work towards the center of the repair area. Apply at a minimum thickness of 1/8 in (0.32 cm) and in lifts of no more than 2 in (5.08 cm). Each lift should be allowed to reach final set, then scored to produce a roughened surface before applying the next lift. Consolidate, screed, and then finish following standard practices.

Curing: Follow standard ACI guidelines for curing. In the case of high temperature, high wind, or low humidity causing rapid surface drying, use wet burlap/plastic or a water based curing compound. Protect from rain and freezing temperatures before the product is sufficiently cured. DO NOT use solvent based curing compounds.

CLEAN-UP

Clean tools and equipment with water before DURALTOP GEL hardens. Hardened DURALTOP GEL will need to be mechanically removed from equipment.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 45°F and 90°F (7°C to 32°C), protected from moisture.
- Protect from freezing.
- Mix only one kit at a time.
- DO NOT MIX DURALTOP GEL LONGER THAN 3 MINUTES.
- Do not apply DURALTOP GEL below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Apply immediately after mixing.
- Delayed application will reduce adhesion.
- Minimum thickness 1/8" (3.2 mm), maximum per lift 2" (50.8mm).
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOPATCH

SINGLE-COMPONENT, RAPID-SETTING REPAIR MATERIAL

EUCLID CHEMICAL

DESCRIPTION

EUCOPATCH is a single-component, rapid-setting, repair mortar for use on new and existing concrete and masonry surfaces. This product is designed for the reconstruction of damaged vertical and overhead concrete and masonry structures, both interior and exterior. EUCOPATCH can also be used in light-duty, pedestrian, horizontal applications. The light color of EUCOPATCH closely resembles aged, sun-bleached concrete.

PRIMARY APPLICATIONS

- Walls
- Curbs and gutters
- Precast panels
- Columns
- Overhead patching
- Masonry units

FEATURES/BENEFITS

- Rapid-setting for repairs up to 4" (10 cm)
- High compressive strength
- Excellent resistance to freeze-thaw cycles and de-icing salts
- Suitable for both interior and exterior applications
- Light gray color blends well with aged concrete
- Compatible with galvanic anodes

TECHNICAL INFORMATION

The following results were developed under laboratory conditions using 0.7 gal water/50 lb bag (2.65 L/22.7 kg). Expect reasonable variation under field conditions.

Set Times 70°F (21°C) ASTM C 266

Initial set	8 min
Final set	20 min

Compressive Strength ASTM C 109 2" (50 mm) cubes

Age	Strength
1 day	2,000 psi (14 MPa)
7 days	4,500 psi (31 MPa)
28 days	5,500 psi (38 MPa)
56 days	6,500 psi (45 MPa)

Appearance: EUCOPATCH is a free-flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear darker than the surrounding concrete. This color will lighten up substantially as the EUCOPATCH cures, resulting in the repair area very closely matching the surrounding concrete.

PACKAGING/YIELD

EUCOPATCH is packaged in 50 lb (22.7 kg) bags which yield 0.44 ft^3 (0.013m^3) when mixed with 0.7 to 0.75 gal (2.65 to 2.81L) of water. EUCOPATCH is also available in 60 lb (27.2 kg) pails which yield 0.56 ft^3 (0.016 m^3) when mixed with 0.84 to 0.90 gal (3.2 to 3.4 L) of water.

SHELF LIFE

2 years in original, unopened package

COVERAGE

One 50 lb (22.7 kg) unit of EUCOPATCH will cover approximately 11.3 ft^2 (1.05 m^2) when placed at an average depth of 1/2" (13 mm). One 60 lb (27.2 kg) unit of EUCOPATCH will cover approximately 13.6 ft^2 (1.26 m^2) when placed at an average depth of 1/2" (13 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a minimum surface profile of CSP 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOPATCH to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of EUCOPATCH to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 60°F to 90°F (16°C to 32°C). Add the appropriate amount of water for the batch size and then add the dry product. The mixed product should be quickly transported to the repair area and placed immediately.

Placement: Place EUCOPATCH onto the prepared concrete or masonry surface at a minimum depth of at least 1/16" (1.6mm). Float or trowel flush with adjacent surface and allow to set. Finish to match the surrounding surfaces. **Place EUCOPATCH while the scrub coat is still wet.**

Finishing: Finish the repair material to the desired texture. Do not add additional water to the surface during the finishing operation. Use EUCOBAR evaporation retarder.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure the material with a high solids curing compound, such as SUPER AQUA-CURE VOX or SUPER REZ-SEAL. Allow the curing compound to dry. In hot, windy or direct sunlight situations, apply a second coat of curing compound. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Only mix as much material that can be used in 10 minutes.
- Do not use for a topping or overlay.
- Do not use material at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Keep repair from freezing until a minimum strength of 1000 psi (7 MPa) is reached.
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOREPAIR V100

LOW SHRINKAGE, FIBER REINFORCED, NSF/ANSI STANDARD 61 CERTIFIED VERTICAL & OVERHEAD REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

EUCOREPAIR V100 is a single-component, quick-setting, low shrinkage repair mortar formulated with unique polymers and fiber reinforcement for vertical and overhead repairs requiring high performance.

PRIMARY APPLICATIONS

- Vertical and overhead repairs
- Parking structures & bridges
- Water and wastewater treatment facilities
- Marine structures, tunnels, and dams
- Above and below grade applications

FEATURES/BENEFITS

- Single-component for easy mixing and handling
- Excellent freeze-thaw resistance for difficult climates
- Polymer modified with fiber reinforcement
- NSF/ANSI Standard 61 certified
- Contains an integral corrosion inhibitor
- Low permeability helps protect rebar from corrosion
- High bond strength provides excellent adhesion

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	RESULTS
Compressive Strength ASTM C 109 modified, 2" (5 cm) cubes, psi (MPa)	3 hours 2,000 (13.8) 1 day 3,000 (20.7) 7 days 4,500 (31.0) 28 days 6,000 (41.4)
Split Tensile Strength ASTM C 496, psi (MPa)	28 days >400 (2.8)
Flexural Strength ASTM C 348, psi (MPa)	7 days >500 (3.4) 28 days >600 (4.1)
Bond Strength ASTM C 882, psi (MPa)	7 days >1,400 (9.7) 28 days >1,800 (12.4)
Length Change ASTM C 157 modified (3"x3"x11.25" specimens)	28 days -0.020%
Unit Weight	~ 120 lb/ft³ (1,922 kg/m³)
Set Times	Initial: ~ 20 min. Final: ~ 35 min.

Appearance: EUCOREPAIR V100 is a free-flowing powder designed to be mixed with water. After mixing and placing, the color may appear darker than the surrounding concrete. While this color will lighten as EUCOREPAIR V100 cures and dries out, the repair may always appear darker than the surrounding concrete.

PACKAGING/YIELD

EUCOREPAIR V100 is packaged in 46 lb (21 kg) moisture resistant bags, and 46 lb (21 kg) pails. **Yield:** 0.45 ft³ (0.013 m³) per 46 lb (21 kg) bag/pail when mixed with 1 gal (3.79 L) of water.

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS/COMPLIANCES

EUCOREPAIR V100 is NSF/ANSI Standard 61 certified for use with potable water

COVERAGE

One unit of EUCOREPAIR V100 will cover approximately 10.5 ft^2 (1.0 m^2) when placed at an average depth of 1/2" (13 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOREPAIR V100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of EUCOREPAIR V100 to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and "jiffy" type mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Add the appropriate amount of water, 0.9 to 1 gal (3.40 to 3.79 L)/bag into a clean mixing vessel, then add the dry product. Mix for 3 to 5 minutes. Do not mix more material than can be placed within 15 minutes.

Placement: Place in 1/8" to 4" (3 to 100 mm) lifts for vertical surfaces and 1/8" to 2" (3 to 50 mm) lifts for overhead applications. Trowel into place and allow to reach final set before the next lift. If additional lifts are required, score the surface of the placed mortar before it reaches final set.

Finishing: Finish the repair material to the desired texture. Do not add additional water to the surface during the finishing operation. Use EUCOBAR evaporation retarder.

Curing and Sealing: Curing is required. Cure with a Euclid Chemical high solids, water-based curing compound. (NOTE: A SOLVENT BASED CURING COMPOUND SHOULD NOT BE USED ON THIS PRODUCT). Under hot, windy or direct sunlight situations, apply a second coat of curing compound after the first has dried. If a curing compound is not desired, wet cure for a minimum of three days. When curing EUCOREPAIR V100 in potable water vessels, it is recommended to wet cure for 3 days, followed by 4 days of air cure prior to filling the vessel.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not allow repairs to freeze until the material has reached a minimum of 1,000 psi (7 MPa) compressive strength.
- Do not use as a horizontal topping.
- Do not add admixtures or aggregate extension.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Use only potable water for mixing.
- Minimum application thickness 1/8" (3 mm).
- Minimum surface and ambient temperature 45°F (7°C) and rising at time of application.
- For optimum results, condition material to 65°F to 85°F (18°C to 29°C) at least 24 hours prior to use.
- Do not use a solvent based curing compound on this product.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SPEED CRETE PM

SINGLE COMPONENT, VERTICAL/OVERHEAD MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

SPEED CRETE PM is a single-component, polymer-modified, ready-to-use, cement based concrete and masonry repair mortar that requires only potable water for mixing. SPEED CRETE PM is a proprietary formulation of portland cement, finely graded aggregates and special polymer modifiers used to increase adhesion, strength, and aid in curing.

PRIMARY APPLICATIONS

- Repair of numerous interior/exterior, above/below grade, vertical/overhead structural surfaces without forming

FEATURES/BENEFITS

- Compatible with galvanic anodes
- Excellent workability
- Contains an integral corrosion inhibitor
- Repairs from featheredge to 3" (7.6 cm)
- Develops high strength and tenacious bond
- Excellent resistance to freeze-thaw conditions
- After initial set, may be shaved to conform to contours of the surrounding surface

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Set Time, ASTM C 266, Gilmore
Initial Set approx ..... 15 min
Final Set approx ..... 40 min
Working Time ..... 10 to 15 min
Compressive Strength psi (MPa) ASTM C 109
1 day 2,500 (17.2)
7 days 6,500 (44.8)
28 days 7,000 (48.3)

Volumetric Resistivity ..... 7,980 ohm-cm

Flexural Strength psi (MPa) ASTM C 78
7 Day 650 (4.5)
28 Days 1,300 (9.0)
Shear Bond Strength psi (MPa) ASTM C 882
28 Day 2,650 (18.3)
Splitting Tensile Strength psi (MPa) ASTM C 496
7 day 450 (3.1)
28 day 550 (3.8)
Freeze Thaw Resistance ASTM C 666
320 cycles ..... 99.0% RDF

PACKAGING

SPEED CRETE PM is packaged in 50 lb (22.7 kg) poly-lined bags.

SHELF LIFE

1 year in unopened package

COVERAGE/YIELD

One 50 lb (22.7 kg) bag yields approximately 0.5 ft^3 (0.014 m^3).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of SPEED CRETE PM to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of SPEED CRETE PM to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: SPEED CRETE PM will require approximately 4.0 to 4.25 qt (3.8 to 4.0L) of potable water per 50 lb bag (22.7 kg) to achieve the proper mix consistency. Pour the measured amount of water into a clean mixing container, slowly add the SPEED CRETE PM, and thoroughly mix for 2 to 3 minutes to a stiff, no slump, putty-like consistency. Use a rotary mixer with rubber tip blades for mixing quantities up to 100 lb (45.4 kg).

Application: Apply a scrub coat of neat mortar to the prepared SSD substrate. Before the scrub coat dries, apply SPEED CRETE PM. To ensure complete bond with the entire surface, force the SPEED CRETE PM firmly into the repair area by hand or with a trowel. Place the SPEED CRETE PM so that the material conforms to the contours of the surrounding surface. Always finish the SPEED CRETE PM toward the common bonding edge between the repair material and the existing surface. For repairs deeper than 3" (7.6cm) apply in multiple lifts. Score surface between lifts. Cure material using standard curing practices.

Curing: Follow standard ACI guidelines for curing. In case of high temperature, high wind, or low humidity causing rapid surface drying, use wet burlap/plastic or a water-based curing compound.

CLEAN-UP

Clean application tools and mixing equipment with water immediately following use.

PRECAUTIONS/LIMITATIONS

- Use only potable water with SPEED CRETE PM.
- Do not re-temper or add sand to SPEED CRETE PM.
- Do not over-work or over-trowel the repair material.
- Do not apply at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

SPEED CRETE RED LINE

RAPID SETTING REPAIR MATERIAL

EUCLID CHEMICAL

DESCRIPTION

SPEED CRETE RED LINE is a rapid-setting, cement-based concrete and masonry repair mortar. SPEED CRETE RED LINE is a proprietary formulation of blended portland cements, finely processed selected aggregates, and specific chemical additives that undergo a chemical "hyper hydration" and produces a stable, low permeability, cementitious matrix. SPEED CRETE RED LINE can be “shaved” for detailed repairs.

PRIMARY APPLICATIONS

- Interior and exterior
- Vertical and overhead repairs
- Used at no slump consistency
- Outstanding repair material for concrete pipe, formed and precast concrete

FEATURES/BENEFITS

- Initial set in 8 to 20 minutes
- Final set within 30 minutes
- Can be “shaved” to desired shape
- High strength
- Excellent durability
- Compatible with galvanic anodes

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength, psi (MPa) ASTM C109
24 Hour.....2,550 (17.6)
7 Day.....4,000 (27.6)
28 Day.....5,700 (39.3)

Set Time, ASTM C266
Initial.....8 - 20 Min
Final.....15 - 30 Min

Split Tensile Strength,psi (MPa) ASTM C496
7 Day.....240 (1.7)
28 Day.....290 (2.0)

Flexural Strength, psi (MPa) ASTM C348
7 Day.....700 (4.8)
28 Day.....918 (6.3)

Freeze Thaw Durability Factor ASTM C666
300 Cycles.....96.75%

Shrinkage 50% RH ASTM C157 (3”x3”x11” specimens were removed from molds @ 24 hours)
28 Day.....-0.069%

Expansion 100% RH ASTM C157 (3”x3”x11” specimens were removed from molds @ 24 hours)
28 Day.....0.142%

Scaling Resistance ASTM C672
50 Cycles.....0% loss

Volumetric Resistivity.....5,250 ohm-cm

Appearance: Available in 6 shades of gray

PACKAGING

SPEED CRETE RED LINE is packaged in 50 lb (22.7 kg) poly-lined bags, and 50 lb (22.7 kg) pails

SHELF LIFE

18 months in original, unopened packaging

COVERAGE

One 50 lb (22.7 kg) bag yields approximately 0.47 ft^3 (0.013 m^3) when mixed with 5.5 qt (5.2 L) water

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of SPEED CRETE RED LINE to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: SPEED CRETE RED LINE will require approximately 5 to 5.5 qt (4.7 to 5.2 L) of potable water per 50 lb (22.7 kg) bag to achieve the proper mix consistency. Pour the measured amount of water into a clean mixing container, then add the SPEED CRETE RED LINE, and thoroughly mix for no more than 60 seconds to a stiff, no slump, putty-like consistency. Mix small quantities of SPEED CRETE RED LINE in a clean pail with a hand trowel. Use a rotary mixer with rubber tip blades for mixing quantities up to 100 lbs. (45.4 kg). To fill patches 2" (5.1 cm) deep or greater, add clean, pre-dampened, 3/8" (0.96 cm) size pea gravel. DO NOT USE LIMESTONE AGGREGATE. The mix ratio must not exceed 40 lbs. (18 kg) of pea gravel to each 50 lb (22.7 kg) bag or pail of SPEED CRETE RED LINE. **Mixing procedure:** Start mixer, load water, load pea gravel, and then load the SPEED CRETE RED LINE. MIX FOR NO MORE THAN 60 SECONDS.

Application: For vertical repairs, place SPEED CRETE RED LINE in 1/8" - 2" (3.2mm - 50.0 mm) lifts. To ensure a complete bond with the entire surface, force the SPEED CRETE RED LINE firmly into the SSD area by hand or with a trowel. Slightly overfill the repair, and following initial set, shave the material to conform to the contour of the surrounding surface. Always shave SPEED CRETE RED LINE toward the common bonding edge between the repair mortar and the existing surface. Cure material using standard curing practices.

Cold Weather Installation: Application at temperatures below 40°F (4°C) extends the set time. Heating the repair area until warm, using warm water for mixing, and tenting/insulating the repair area after application will increase strength development. Do not use direct heat on the repair after it is installed.

CLEAN-UP

Clean application tools and mixing equipment with water immediately following use.

PRECAUTIONS/LIMITATIONS

- Keep in covered storage away from all moisture.
- Mix no more than 60 seconds.
- Use only potable water with SPEED CRETE RED LINE.
- Mix to a stiff, putty-like, no slump consistency. Do not add more water than recommended.
- Do not apply SPEED CRETE RED LINE as a horizontal topping or as a tile setting mortar.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Do not re-temper or add sand to SPEED CRETE RED LINE.
- In all cases, consult the Safety Data Sheet before use.

Rev. 03.19

TAMMS CEMENT WASH

POLYMER MODIFIED, CEMENTITIOUS VERTICAL FINISHING MATERIAL

EUCLID CHEMICAL

DESCRIPTION

TAMMS CEMENT WASH is a single-component, polymer-modified, cement based material used for achieving a smooth finish on precast, cast-in-place, tilt-up or other unfinished concrete surfaces. This fast setting mortar offers superior adhesion and durability. It is not a vapor barrier, contains no added gypsum, has excellent workability for trowel application. With its smooth consistency, TAMMS CEMENT WASH is an excellent product for filling in bugholes and other small imperfections in newly placed concrete surfaces.

PRIMARY APPLICATIONS

- Skim coat on interior, exterior, vertical or overhead surfaces for filling bugholes and honeycombs
- Finishing newly cast concrete surfaces with imperfections, where a smooth finish is desired

FEATURES/BENEFITS

- Single-component
- Rapid setting
- Trowels very easily
- Superior adhesion and durability
- Has no added gypsum

PACKAGING

TAMMS CEMENT WASH is packaged in 20 lb (9.1 kg) pails, 50 lb (22.7 kg) pails, and 50 lb (22.7 kg) poly-lined bags.

SHELF LIFE

2 years in original, unopened packaging

COVERAGE/YIELD

50 lb (22.7 kg) of TAMMS CEMENT WASH will yield approximately 0.45 ft^3 (0.01 m^3). **Note:** Coverage rates are approximate and are for estimating purposes only.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Abrade the surface by mechanical means to achieve a surface profile equal to CSP 2 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Mixing: TAMMS CEMENT WASH requires 6.75 to 7 qt (6.4 to 6.6 L) of potable water per 50 lb (22.7 kg) of material. Use a power drill with a “jiffy” type mixer to mix single bags for 3 minutes. For larger applications, a paddle type mortar mixer is recommended. The material is stiff initially but relaxes as it mixes. Do not add additional water to loosen the mix. Properly mixed product will have a smooth, thick, pancake batter like consistency.

Application: At the time of application, the surfaces should be Saturated Surface Dry (SSD). Brush or trowel TAMMS CEMENT WASH onto the substrate, scrubbing or forcing the material into all pores and voids. After reaching the desired consistency, double back with additional material and press firmly in place. Trowel to a smooth finish.

Curing: Follow ACI guidelines for curing. In the case of high temperatures, high wind, or low humidity causing rapid surface drying, use a fog curing system or a water based curing compound. DO NOT use solvent based curing compounds.

CLEAN-UP

Clean all mixing and application equipment with water immediately following use. If allowed to dry on a surface, removal is extremely difficult.

PRECAUTIONS/LIMITATIONS

- Store TAMMS CEMENT WASH between 50°F to 90°F (10°C to 32°C) in dry conditions.
- TAMMS CEMENT WASH is not a wearing surface.
- Minimum ambient and surface temperature must be 45°F (7°C) and rising at the time of application.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- TAMMS CEMENT WASH can be applied to a maximum thickness of 1/8” (3.2 mm) per application.
- Do not add more water, re-temper or over-trowel.
- Portions of the surface treated with TAMMS CEMENT WASH will have a different appearance than untreated surfaces. If a uniform appearance is desired, a decorative coating may be applied over the entire surface.
- Do not use solvent based curing compounds on this product.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMS STRUCTURAL MORTAR

FIBER REINFORCED, NSF/ANSI 61 CERTIFIED LOW PRESSURE SPRAY OR HAND APPLIED REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

TAMMS STRUCTURAL MORTAR is a single-component repair mortar applied by low pressure spray or by hand for structural concrete repairs. TAMMS STRUCTURAL MORTAR is a proprietary formulation of portland cement, graded aggregates, unique fibers, and polymers used to increase adhesion, strength, and sprayability.

PRIMARY APPLICATIONS

- Vertical and overhead concrete repairs
- Interior and exterior use
- Bridge, parking garages, and tunnels
- Compatible with galvanic anodes
- Manholes, pipelines, dams and other waste water structures

FEATURES/BENEFITS

- Low pressure spray or trowel applied
- 30 minute working time
- Single-component, micro-fiber enhanced
- Silica fume and polymer enhanced
- 3/8” (0.95 cm) to 2.0” (5 cm) applications
- Contains an integral corrosion inhibitor
- Freeze-thaw resistant
- NSF/ANSI Standard 61 certified

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Set Time ASTM C 266, Gilmore
Initial Set approx hrs.....1
Final Set approx hrs.....2

Compressive Strength psi (MPa) ASTM C 109
1 day.....3,200 (22.0)
7 days.....6,200 (42.7)
28 days.....8,500 (58.6)

Flexural Strength psi (MPa) ASTM C 78
7 days.....1,500 (10.3)
28 days.....1,650 (11.4)

Volumetric Resistivity.....11,300 ohm-cm

Shear Bond Strength psi (MPa) ASTM C 882
28 days.....3,250 (22.4)

Splitting Tensile Strength psi (MPa) ASTM C 496
7 days.....480 (3.3)
28 days.....660 (4.5)

Freeze Thaw Resistance ASTM C 666)
300 cycles .....96% RDF

Chloride Permeability
ASTM C 1202.....1,050 coulombs

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SHELF LIFE

18 months in original, unopened package

PACKAGING

TAMMS STRUCTURAL MORTAR is packaged in 50 lb (22.7 kg) poly-lined bags

COVERAGE/YIELD

One 50 lb (22.7 kg) bag yields approximately 0.45 ft^3 (0.012 m^3)

SPECIFICATIONS/COMPLIANCES

TAMMS STRUCTURAL MORTAR is NSF/ANSI Standard 61 certified for use with potable water

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 9 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of TAMMS STRUCTURAL MORTAR to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats): Apply a scrub coat of TAMMS STRUCTURAL MORTAR to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

If using low pressure spray equipment, TAMMS STRUCTURAL MORTAR can be applied over an SSD substrate.

Mixing: TAMMS STRUCTURAL MORTAR will require approximately 2.5 to 3.5 qt (2.4 to 3.3 L) of potable water per 50 lb bag (22.7 kg) to achieve the proper mix consistency. Pour the measured amount of water into a clean mixing container, then add the TAMMS STRUCTURAL MORTAR, and mechanically mix for 3 to 4 minutes. For hand applications, the lower end of the water range is recommended.

Application: TAMMS STRUCTURAL MORTAR may be hand applied or with low-pressure spray equipment commonly used for plastering. It is always recommended to use spray equipment for larger repairs. Succeeding lifts may be placed after material reaches initial set. Prior to application, follow surface preparation and priming instructions above.

Curing: TAMMS STRUCTURAL MORTAR is a cementitious repair mortar and must be cured per ACI guidelines using a Euclid Chemical curing/cure and seal compound or appropriate water curing methods, such as wet burlap/burlene.

CLEAN-UP

Clean application tools and mixing equipment with water immediately following use.

PRECAUTIONS/LIMITATIONS

- Protect stored bags from moisture.
- Protect repair from direct sunlight, wind, and other conditions that could cause rapid drying.
- Not to be used as a horizontal topping.
- Minimum ambient and surface temperature should be 40°F (4°C) and rising at the time of application.
- When necessary, follow the recommendations in ACI 305R “Guide to Hot Weather Concreting” or ACI 306R “Guide to Cold Weather Concreting”.
- Curing according to ACI guidelines is required for optimum performance and durability.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSCRETE

POLYMER MODIFIED, CEMENTITIOUS FINISHING MATERIAL

EUCLID CHEMICAL

DESCRIPTION

TAMMSCRETE is a single-component, polymer-modified, cement based material used for achieving a smooth finish on precast, cast-in-place, tilt-up or other unfinished concrete surfaces with imperfections.

PRIMARY APPLICATIONS

- Fills bug holes and honeycombs
- Skimcoats
- Brightens and restores vertical and overhead concrete surfaces

FEATURES/BENEFITS

- Featheredge to 1/8" (3.1 mm), 1/4" (6.4 mm) when extended with sand
- Smooth, creamy consistency
- User friendly
- Low shrinkage
- Long working time
- Interior or exterior use

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Initial Set min. ASTM C 266 ..... 20 to 30

Compressive Strength, psi (MPa) ASTM C 109
7 days.....3,000 (20.7)
28 days.....4,500 (31.0)

Flexural Strength, psi (MPa) ASTM C 78
7 days.....500 (3.4)
28 days.....750 (5.2)

Bond Strength, psi (MPa) ASTM C 1042
7 days.....1,000 (6.9)
28 days.....1,450 (10.0)

PACKAGING

TAMMSCRETE is packaged in 40 lb (18.1 kg) poly-lined bags

SHELF LIFE

2 years in original, unopened package

COVERAGE/YIELD

One 40 lb (18.1 kg) bag will yield approximately 0.40 ft^3 (0.011 m^3) and cover approximately 40 ft^2 (3.7 m^2) at 1/8" (3.2 mm) thickness.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 3 - 4 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of TAMMSCRETE to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Add TAMMSCRETE to the measured water, using only enough water to produce a mixture with a soft creamy putty-like consistency. Water requirements are 4 to 5 qt (3.79 to 4.73 L) per 40 lb (18.1kg) bag. Use a power drill with a "jiffy" mixer to mix single bags. For larger applications, a paddle type mortar mixer is recommended. Do not entrap air while mixing. TAMMSCRETE can be extended with up to 15 lb (6.8 kg) of clean and dried silica sand for a coarser texture and deeper repairs. For improved properties replace 25% of the mix water with AKKRO 7T.

Application & Finish: Apply TAMMSCRETE to walls with a float or trowel in a smooth uniform coat. Deep repair areas should be patched to within 1/8" (3.2 mm) of the surface using a compatible repair mortar such as SPEED CRETE RED LINE. Neat TAMMSCRETE can be used from featheredge to 1/8" (3.2 mm). If extended with sand, TAMMSCRETE can be applied up to 1/4" (6.4 mm).

Curing: Moist cure for best results in hot windy weather. Do not use solvent based curing compounds.

CLEAN-UP

Clean tools and application equipment immediately after use with water before TAMMSCRETE hardens. Hardened TAMMSCRETE will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store in dry conditions at temperatures between 50°F to 90°F (10°C to 32°C).
- Unextended TAMMSCRETE should be applied to a maximum thickness of 1/8" (3.2 mm) per lift.
- Do not retemper or over trowel.
- Minimum ambient and surface temperature must be 40°F(4°C) and rising at the time of application.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Protect from rain for 24 hours after application.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VERTICOAT

TWO COMPONENT, TROWEL GRADE VERTICAL & OVERHEAD CONCRETE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

VERTICOAT is a polymer modified cementitious mortar for vertical and overhead concrete and masonry repairs. It sets rapidly to allow quick, easy repairs of concrete surfaces both interior and exterior. VERTICOAT is a two component mortar designed for trowel applied repairs.

PRIMARY APPLICATIONS

- Vertical and overhead repair of scaled and spalled concrete
- Repair of honeycombed surfaces
- Parking structures & bridges
- Retaining walls
- Ceilings and sloped surfaces

FEATURES/BENEFITS

- Fast setting for rapid repairs up to 4" (10 cm)
- High compressive strengths
- Excellent resistance to freeze-thaw cycling
- Suitable for both interior and exterior applications
- Excellent bond to sound concrete
- Compatible with galvanic anodes

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength ASTM C109, 2"(50 mm) cubes

Age	Strength
1 day	4,000 psi (28 MPa)
3 days	5,000 psi (38 MPa)
7 days	6,000 psi (41 MPa)
28 days	6,500 psi (45 MPa)

Split Tensile Strength ASTM C496 @ 72°F (22°C)

7 days	700 psi (4.8 MPa)
28 days	800 psi (5.5 MPa)

Volumetric Resistivity.....6,730 ohm-cm

Flexural Strength ASTM C348

7 days	1,200 psi (8.3 MPa)
28 days	1,300 psi (9.0 MPa)

Set Time 70°F (21°C), ASTM C 191

Initial Set	approx. 25 min.
Final Set	approx. 40 min.

Working Time .....approx. 20 min.

Freeze/Thaw Resistance ASTM C666 Procedure A
300 cycles Relative Durability Modulus..... >80%

Appearance: VERTICOAT is a free-flowing powder designed to be mixed with a white latex liquid (VERTICOAT LIQUID). After mixing and placing, the color may initially appear darker than the surrounding concrete. While this color will lighten up substantially as the VERTICOAT cures and dries out, the repair may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

VERTICOAT is packaged in a pail containing a 54 lb (24 kg) pail of dry powder and 1 gal (3.8 L) of VERTICOAT LIQUID. Additionally, the powder is available in a 54 lb (24 kg) bag and mixed with 1 gal (3.8 L) of the liquid, that is sold separately. **Yield:** 0.48 ft^3 (0.014 m^3) per kit.

SHELF LIFE

VERTICOAT (Powder): 2 years in original, unopened package

VERTICOAT LIQUID: 18 months in original, unopened package

COVERAGE

One unit of VERTICOAT will cover approximately 23 ft^2 (2 m^2) when placed at an average depth of 1/4" (6 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile of at least CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of VERTICOAT to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats/Toppings): Apply a scrub coat of VERTICOAT to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single units may be mixed with a drill and "jiffy" type mixer. Use a paddle type mortar mixer for large jobs. NOTE: VERTICOAT HAS A WORKING TIME OF 20 MINUTES. DO NOT MIX MORE MATERIAL THAN CAN BE USED IN THAT TIME FRAME. All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Add the appropriate amount of VERTICOAT LIQUID for the batch size, and then add the dry product. Mix for 2 to 3 minutes. The mixed product should be quickly transported to the repair area and placed immediately.

Placement: Place the VERTICOAT while the scrub coat is still wet. Trowel VERTICOAT onto the prepared surface at a minimum of 1/8" (3 mm), up to a maximum of 4" (10 cm). Trowel flush with surface and allow to stiffen. Finish to match the surrounding concrete surfaces.

Finishing: Finish the repair material to the desired texture. Do not add additional water to the surface during the finishing operation. Use EUCOBAR evaporation retarder.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure the repair mortar with a high solids curing compound, such as SUPER AQUA-CURE VOX or SUPER DIAMOND CLEAR VOX. (**NOTE:** A SOLVENT BASED CURING COMPOUND SHOULD NOT BE USED ON THIS PRODUCT.) Under hot, windy or direct sunlight situations, apply a second coat of curing compound after the first has dried. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not use at temperatures below 45°F (7°C).
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Store material in a dry place, above freezing.
- Cool temperatures slow setting while warm temperatures speed up set times.
- Keep repair from freezing until a minimum strength of 1000 psi (7 MPa) is reached.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VERTICOAT SUPREME

SINGLE COMPONENT, VERTICAL & OVERHEAD REPAIR MORTAR WITH CORROSION INHIBITOR

EUCLID CHEMICAL

DESCRIPTION

VERTICOAT SUPREME is a single component, microsilica and latex modified, non-sag concrete repair mortar designed for trowel applied vertical and overhead repairs requiring structural strength and high performance.

PRIMARY APPLICATIONS

- Vertical and overhead repairs
- Marine structures, tunnels and dams
- Parking structures & bridges
- Parapet walls
- Above and below grade applications

FEATURES/BENEFITS

- One component for easy mixing and handling
- Excellent freeze-thaw resistance for difficult climates
- Microsilica and latex modified
- Contains an integral corrosion inhibitor
- Low permeability helps protect rebar from corrosion
- High bond strength provides excellent adhesion

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Working Time .....approx. 30 minutes
Set Times 70°F (21°C) ASTM C266
Initial Set .....approx. 1 hour
Final Set .....approx. 3 hours

Unit Weight .....approx. 115 lb/ft^3 (1836 kg/m^3)

Compressive Strength
ASTM C109 modified, 2" (50 mm) cubes
1 day.....2,000 psi (13.8 MPa)
7 days.....3,500 psi (24.1 MPa)
28 days.....5,500 psi (37.9 MPa)

Flexural Strength ASTM C348
7 days..... 900 psi (6.2 MPa)
28 days.....1,000 psi (6.9 MPa)

Linear Shrinkage (3" x 3" x 11" beams)
ASTM C157 50% RH @ 73°F(23°C)
3 days.....-0.03%
7 days.....-0.06%
14 days.....-0.08%
28 days.....-0.10%
56 days.....-0.11%

Freeze/Thaw Resistance ASTM C666 Procedure A
300 cycles Relative Durability Modulus.....90%

Appearance: VERTICOAT SUPREME is a free-flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear darker than the surrounding concrete. While this color will lighten up substantially as the VERTICOAT SUPREME cures and dries out, the repair may always appear somewhat darker than the surrounding concrete.

PACKAGING/YIELD

VERTICOAT SUPREME is packaged in 50 lb (22 kg) moisture resistant bags. **Yield:** 0.48 ft^3 (0.014 m^3) per bag when mixed with 2.75 qts (2.6L) of water.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

Canadian Food Inspection Agency, MTQ and MTO

COVERAGE

One unit of VERTICOAT SUPREME will cover approximately 11.5 ft^2 (1.1 m^2) when placed at an average depth of 1/2" (13 mm).

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area. **Priming & Bonding (Saw Cut & Chipped Out Repairs):** Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of VERTICOAT SUPREME to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Vertical & Overhead Skim Coats): Apply a scrub coat of VERTICOAT SUPREME to the saturated surface dry (SSD) concrete surface. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and "jiffy" type mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 60°F (16°C) to 90°F (32°C). Add the appropriate amount of water for the batch size 2.5 to 3.0 qt (2.4 to 2.8 L)/bag, then add the dry product. Mix for 3 to 5 minutes. Do not mix more material than can be placed within 20 minutes.

Placement: Place in 1/4" to 2" (6 to 50 mm) lifts. Trowel into place and allow to stiffen before the next lift. If additional lifts are required after material has hardened, score the surface before proceeding to the next lift.

Finishing: Finish the repair material to the desired texture. Do not add additional water to the surface during the finishing operation. Use EUCOBAR evaporation retarder.

Curing and Sealing: Curing is required. Cure with a Euclid Chemical high solids, water-based curing compound. (NOTE: A SOLVENT BASED CURING COMPOUND SHOULD NOT BE USED ON THIS PRODUCT). Under hot, windy or direct sunlight situations, apply a second coat of curing compound after the first has dried. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not allow repairs to freeze until the material has reached a minimum of 1000 psi (7 MPa) compressive strength.
- Use only potable water for mixing.
- Minimum application thickness 1/4" (6 mm).
- Minimum surface and ambient temperature 45°F (7°C) and rising at time of application.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- For optimum results, condition material to 65°F to 85°F (18°C to 29°C) at least 24 hours prior to use.
- Do not use a solvent based curing compound on this product.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO DIAMOND SHOT

HIGH-STRENGTH SHOTCRETE MIX

EUCLID CHEMICAL

DESCRIPTION

EUCO DIAMOND SHOT is a high strength dry shotcrete mix that uses a proprietary technology to offer high early and ultimate strengths. EUCO DIAMOND SHOT can develop 3,500 psi (23 MPa) within two hours, and over 14,000 psi (96.5 MPa) in 28 days. Dust generation and rebound are similar to wet shotcrete mixes. Cohesion of the mix, allows high build and higher shear bond strengths than conventional shotcrete mixes. EUCO DIAMOND SHOT also offers higher resistance to hydrogen sulfide making it ideal for use in municipal wastewater projects.

PRIMARY APPLICATIONS

- Rapid tunnel development
- Utility structures
- Mining applications requiring fast cycle times

FEATURES/BENEFITS

- Vertical build >9" (225mm) in single pass
- Overhead build >6" (150mm) in single pass
- High early strength could allow an extra mining cycle per day
- High ultimate strength could allow a thinner application
- Approximately 2 times the abrasion resistance of conventional shotcrete
- Resistant to hydrogen sulfide
- Extremely low permeability
- Rebound is typically < 3%
- 90% less dust than conventional dry shotcrete

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength

ASTM C 109 2" (50 mm) Cubes

2 hours	3,500 psi (23.4 MPa)
4 hours	4,500 psi (31.0 MPa)
24 hours	6,750 psi (46.5 MPa)
3 days	8,000 psi (55.2 MPa)
7 days	10,200 psi(70.3 MPa)
28 days	14,250 psi (98.2 MPa)

Flexural Strength ASTM C 348 (modified)

2 hours	760 psi (4.6 MPa)
4 hours	775 psi (5.3 MPa)
24 hours	1,190 psi(8.2 MPa)
3 days	1,615 psi (11.1 MPa)
7 days	1,820 psi (12.5 MPa)
28 days	2,048 psi (14.1 MPa)

Shear Bond Strength ASTM C 882 (modified)

2 hours	1,245 psi (8.6 MPa)
4 hours	1375 psi (9.5 MPa)
7 days	3,167 psi (21.8 MPa)

Length Change ASTM C 157, 50% R.H.

2 days	-0.045%
7 days	-0.084%
14 days	-0.096%
21 days	-0.101%

Freeze/Thaw Resistance

ASTM C 666 Procedure A

300 cycles	>98% RDM

Appearance: EUCO DIAMOND SHOT is a free flowing powder as packaged.

PACKAGING

EUCO DIAMOND SHOT is packaged in 50 lb (22.7 kg) moisture resistant bags and is also available in 3,300 lb (1,500 kg) bulk bags. Yield will vary according to the amount of water added during the shotcreting operation.

SHELF LIFE

1 year in original, unopened package.

DIRECTIONS FOR USE

Surface Preparation: The substrate should be clean and rough. All oil, dirt, debris, paint and any unsound surface must be removed. The surface must be prepared mechanically to achieve a surface profile similar to CSP 7 or greater in accordance with ICRI Guideline 310.2. The final step in preparation should be the complete removal of all residue by pressure washing.

Exposed Reinforcement Steel: Remove all loose rust and scaling, preferably by sandblasting to white metal prior to application.

Bonding: No bond coat should be used for this product.

Dry Shotcrete/Gunite: Set up dry process equipment in an area convenient to the placement site. Conventional Pre-dampening is not recommended when using EUCO DIAMOND SHOT. For best results use a Hydromix or Pre-dampening nozzle.

Application of Dry Shotcrete/Gunite: In general EUCO DIAMOND SHOT should be applied in accordance with the recommendations of ACI 506R "Guide to Shotcrete". Pay special attention to the angle of the application (i.e. 90°) and distance from the substrate, normally 2 ft (0.6 m) to 6 ft (1.8 m). Typical application depths range from 1/2" to 6" (12 to 150 mm). If placement at a depth greater than 6" (150 mm) is required, cross hatch the surface of the initial layer. After the surface has sufficiently hardened additional layers may be placed.

Caution: EUCO DIAMOND SHOT is not intended to be mixed with water and used as a wet-mix shotcrete material. At 70°F (21°C), initial set is achieved in approximately 45 minutes allowing for finishing of architectural surfaces. Heat generation after initial set is similar to conventional shotcrete.

PRECAUTIONS/LIMITATIONS

- For optimum results, condition material to 65 to 85°F (18 to 29°C).
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOSHOT

SILICA FUME MODIFIED SHOTCRETE MIX

EUCLID CHEMICAL

DESCRIPTION

EUCOSHOT is a microsilica-modified, single-component, shotcrete material, that is designed for use on vertical and overhead surfaces by dry-mix shotcrete (gunite) application or by mixing with water and applying as a wet-mix shotcrete. EUCOSHOT has been formulated to produce much less "rebound" than cheaper shotcrete materials offered by the competition.

PRIMARY APPLICATIONS

- Shotcrete projects
- Parking decks
- Mining applications
- Bridge structures
- Marine environments
- Retaining walls
- Dams
- Piers/docks
- Tunnels

FEATURES/BENEFITS

- Single-component, ready to use with only the addition of water
- Helps protect rebar and welded wire mesh from corrosion
- Low chloride salt permeability
- Compatible with galvanic anodes
- Excellent freeze-thaw resistance
- Low shrinkage properties
- High abrasion resistance
- ▲ Can contribute to LEED points

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength
ASTM C 109 2" (50 mm) cubes

1 day	3,500 psi (24 MPa)
3 days	5,000 psi (34 MPa)
7 days	7,000 psi (48 MPa)
28 days	9,500 psi (65 MPa)

Flexural Strength ASTM C 348 (modified)

1 day	550 psi (3.8 MPa)
7 days	775 psi (5.3 MPa)
28 days	1,100 psi (7.6 MPa)

Shear Bond Strength ASTM C 882 (modified)

3 days	2,000 psi (14 MPa)
7 days	2,500 psi (17 MPa)
14 days	2,800 psi (19 MPa)
28 days	3,000 psi (21 MPa)

Direct Tensile Bond (Germann Test)

14 days	350 psi (2.4 MPa)
28 days	425 psi (2.9 MPa)

Length Change ASTM C 157, 50% R.H.

2 days	-0.003%
7 days	-0.003%
14 days	-0.007%
21 days	-0.025%
28 days	-0.033%

Rapid Chloride Permeability ASTM C 1202

7 days	4,000 coulombs
14 days	1,600 coulombs
21 days	975 coulombs
28 days	575 coulombs

Freeze/Thaw Resistance
ASTM C 666 Procedure A
300 cycles ..... >98% RDM

Scaling Resistance ASTM C 672

10 cycles	0
20 cycles	0
30 cycles	0
50 cycles	0

Volumetric Resistivity.....11,490 ohm-cm

Appearance: EUCOSHOT is a free flowing powder as packaged. After application, the color may appear darker than the surrounding concrete. **Note:** Color may lighten as the EUCOSHOT cures and dries out. The final finish appearance can be any texture consistent with that expected from sprayed concrete.

PACKAGING/YIELD

EUCOSHOT is packaged in 50 lb (22.7 kg) moisture resistant bags, 2,200 lb (1000 kg) and 3,300 lb (1,500 kg) bulk bags. Yield will vary according to the amount of water added during the shotcreting operation. Approximate yield is 0.42 ft^3 (0.012 m^3) per 50 lb bag when mixed with 2 to 2.4 qt (1.9 to 2.3 L) of water.

SHELF LIFE

1 year in original, unopened package

DIRECTIONS FOR USE

Surface Preparation: The concrete must be clean and rough. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be mechanically prepared to achieve a profile similar to CSP 7 or greater in accordance with ICRI Guideline 310.2, exposing the coarse aggregate of the base concrete. The final step in cleaning should be the complete removal of all residue by pressure washing.

Exposed Reinforcement Steel: Remove all loose rust and scaling, preferably by sandblasting to white metal prior to application.

Bonding: No bond coat should be used for this product.

Mixing Dry Shotcrete/Gunite: Set up dry process equipment in an area convenient to the placement site. Pre-dampening is recommended prior to adding material to gun. Gauge water at the nozzle and adjust to the desired consistency.

Placing Dry Shotcrete/Gunite: In general, EUCOSHOT should be applied in accordance with the recommendations of ACI 506R "Guide to Shotcrete". Pay special attention to the angle of the application (i.e. 90°) and distance from the substrate, normally 2 ft (0.6 m) to 6 ft (1.8 m). Typical application depths range from 1" to 6" (2.54 to 15.24 cm). If placement at a depth greater than 6" (150 mm) is required, cross hatch the surface of the initial layer. After the surface has sufficiently hardened, additional layers may be placed.

Mixing Wet Shotcrete: Add EUCOSHOT to water in the mixer drum [35 gal (130 L) of water per 3,300 lb (1500 kg)] bag of EUCOSHOT. Mix for 2 minutes and add remaining water up to 5 gal (20 L). EUCON 37 can be used to reduce the amount of water required.

Placing Wet Shotcrete: In general, EUCOSHOT should be applied in accordance with the recommendation of ACI 506R "Guide to Shotcrete".

Finishing: A natural gun finish is preferred; however, conventional finishing methods such as screeding, troweling, or brooming are acceptable. Do not add additional water to surface for finishing. If an evaporation retarder is necessary, use EUCOBAR. **Note**: Over-finishing can cause debonding.

Curing and Sealing: Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure with water spray or a curing compound such as KUREZ W VOX or KUREZ DR VOX.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS

- Do not allow applied shotcrete to freeze until the material has reached a minimum of 1,000 psi (7 MPa) compressive strength.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Use only potable water at the nozzle.
- Minimum application thickness is 1" (2.54 cm).
- Minimum surface and ambient temperatures are 40°F (5°C) and rising at the time of application.
- For optimum results, condition material to 65°F to 85°F (18°C to 29°C) at least 24 hours prior to use.
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOSHOT F

SILICA FUME MODIFIED SHOTCRETE WITH MICRO FIBERS

EUCLID CHEMICAL

DESCRIPTION

EUCOSHOT F is a microsilica modified, one component, shotcrete material that incorporates a 1/4" (6.5 mm) polypropylene micro-fiber. This cement based, modified mortar is designed for use on vertical and overhead surfaces by dry shotcrete (gunite) application or by mixing with water and applying as a wet-mix shotcrete. EUCOSHOT F is specially formulated for interior or exterior uses.

PRIMARY APPLICATIONS

- Gunite projects
- Utility structures
- Tunnels
- Mining applications

FEATURES/BENEFITS

- One component material-ready to use with only the addition of water
- Helps protect rebar and welded wire mesh from corrosion
- Low chloride salt permeability
- Excellent freeze/thaw resistance
- Sulfate resistant
- Low shrinkage properties
- High abrasion resistance

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength

ASTM C 109 2" (50 mm) Cubes

1 day	3,500 psi	(24 MPa)
3 days	5,000 psi	(34 MPa)
7 days	7,000 psi	(48 MPa)
28 days	9,500 psi	(65 MPa)

Flexural Strength ASTM C 348 (modified)

1 day	550 psI	(3.8 MPa)
7 days	775 psi	(5.3 MPa)
28 days	1,100 psi	(7.6 MPa)

Shear Bond Strength ASTM C 882 (modified)

3 days	2,000 psi	(14 MPa)
7 days	2,500 psi	(17 MPa)
4 days	2,800 psi	(19 MPa)
28 days	3,000 psi	(21 MPa)

Appearance:

EUCOSHOT F is a free flowing powder as packaged. The final finish appearance can be any texture consistent with that expected from sprayed concrete.

Direct Tensile Bond (Germann Test)

14 days	350 psi	(2.4 MPa)
28 days	425 psi	(2.9 MPa)

Length Change ASTM C 157, 50% R.H.

2 days	-0.003%
7 days	-0.003%
14 days	-0.007%
21 days	-0.025%
28 days	-0.033%

Rapid Chloride Permeability ASTM C 1202

7 days	4,000 coulombs
14 days	1,600 coulombs
21 days	975 coulombs
28 days	575 coulombs

Freeze/Thaw Resistance

ASTM C 666 Procedure A

300 cycles	>98% RDM

Scaling Resistance ASTM C 672 (Visual Rating)

10 cycles	0
20 cycles	0
30 cycles	0
50 cycles	0

PACKAGING

EUCOSHOT F is packaged in 50 lb (22.7 kg) moisture resistant bags, 2200 lb (1000 kg) spout-bottom bags and is 3,300 lb (1,500 kg) bulk bags. Yield will vary according to the amount of water added during the shotcreting operation. Approximate yield is 0.42 ft^3 (0.012 m^3) per 50 lbs bag when mixed with 2 to 2.4 qt (1.9 to 2.3 L) of water.

SHELF LIFE

1 year in original, unopened package.

DIRECTIONS FOR USE

Dry Shotcrete/Gunite: Set up dry process equipment in an area convenient to the placement site. Add EUCOSHOT F powder directly to the gun. If dusting is objectionable, material may be pre-dampened prior to adding to gun. Gauge water at the nozzle and adjust to the desired consistency.

Placing:

Dry Shotcrete/Gunite: In general EUCOSHOT F should be applied in accordance with the recommendations of ACI 506R "Guide to Shotcrete". Pay special attention to the angle of the application (i.e. 90°) and distance from the substrate, normally 2 ft (0.6 m) to 6 ft (1.8 m). Typical application depths range from 1/2" to 6" (12 to 150 mm). If placement at a depth greater than 6" (150 mm) is required, cross hatch the surface of the initial layer. After the surface has sufficiently hardened additional layers may be placed.

Mixing Wet Shotcrete:

Add EUCOSHOT F to water in the mixer drum (35 gallons [130 L] of water per 3,300 lb [1,500 kg] bulk bag of EUCOSHOT F), mix for 2 minutes and add remaining water (up to 5 gal [20 L]). EUCON 37 can be used to reduce the amount of water required.

Placing-Wet Shotcrete:

In general EUCOSHOT F should be applied in accordance with the recommendations of ACI 506R "Guide to Shotcrete".

PRECAUTIONS/LIMITATIONS

- Do not allow applied shotcrete to freeze until the material has reached a minimum of 500 psi (3.5 MPa) compressive strength.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Use only potable water at the nozzle.
- Minimum application thickness is 1/2" (13 mm).
- Minimum surface and ambient temperatures are 40°F (5°C) and rising at the time of application.
- For optimum results, condition material to 65 to 85°F (18 to 29°C).
- Store product in a dry place.

Rev. 01.19

REPAIR- UNDERWATER

SPEED CRETE BLUE LINE

RAPID SETTING UNDERWATER CONCRETE REPAIR MORTAR

EUCLID CHEMICAL

DESCRIPTION

SPEED CRETE BLUE LINE is a proprietary formulation of blended portland cements, finely processed select aggregates, and specific chemical additives designed to provide a rapid set, particularly for underwater use. SPEED CRETE BLUE LINE undergoes a chemical "hyper hydration" and produces a very stable, low permeable, cementitious matrix.

PRIMARY APPLICATIONS

- Underwater and below grade repairs
- Vertical, overhead and horizontal restoration
- Outstanding material for repair of dams, piers, reservoirs, pilings, seawalls, tunnels, sewer pipe and other underwater surfaces

FEATURES/BENEFITS

- Initial set in 3 to 5 minutes
- Underwater cure
- High strength
- Durable in fresh and salt water
- Placed without forming, at no slump consistency
- Can be “shaved” to desired contour

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Compressive Strength psi (MPa) ASTM C 109
24 hours 3,200 (22.1)
7 days.....4,000 (27.6)
28 days.....6,015 (41.5)
Set Time Gilmore ASTM C 266
Initial ..... approx. 3 to 5 min
Final.....approx. 20 min
Flexural Strength psi (MPa) ASTM C 348
7 days.....600 (4.1)
28 days.....700 (4.8)

Freeze Thaw Durability Factor ASTM C 666
300 cycles 98.05%
Shrinkage ASTM C 928
7 days.....-0.020%
28 days.....-0.060%
Scaling Resistance ASTM C 672
25 cycles ..... 0% loss
Bond Strength psi (MPa) ASTM C 321
1 day .....80 psi (0.55)
7 days.....140 psi (0.96)
28 days.....165 psi (1.14)

PACKAGING

SPEED CRETE BLUE LINE is packaged in 50 lb (22.7 kg) poly-lined bags, and 50 lb (22.7 kg) pails.

SHELF LIFE

18 months in original, unopened package

COVERAGE/YIELD

Approximately 0.47 ft^3 (0.013 m^3) when mixed with 5.5 qt (5.2L) of water per 50 lb (22.7 kg) bag

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area. **Priming:** Clean and prime exposed steel above water with DURALPREP AC. Concrete that is and will remain above water throughout the repair should be primed with a spray or brush coat of DURALPREP AC. DURALPREP AC must be allowed to fully dry prior to the application of SPEED CRETE BLUE LINE. Alternatively, a Saturated Surface Dry (SSD) concrete surface can be primed with a scrub coat of SPEED CRETE BLUE LINE. The repair must be made before the scrub coat dries out.

Mixing: SPEED CRETE BLUE LINE will require approximately 5 to 5.5 qt (4.7 to 5.2 L) of potable water per 50 lb (22.7 kg) bag or pail to achieve the proper mix consistency. Pour the measured amount of water into a clean container. Add the measured amount of SPEED CRETE BLUE LINE, and thoroughly mix for no more than 60 seconds to a stiff, no slump, putty-like consistency. Because of fast initial set time, do not mix more than 50 lb (22.7 kg) at a time. Mix small quantities of SPEED CRETE BLUE LINE in a clean pail with a hand trowel.

Application: To ensure complete bond with the entire surface, force the SPEED CRETE BLUE LINE firmly into the Saturated Surface Dry area by hand or with a trowel. Underwater applications may be smoothed or finished by hand. **For out-of-water applications**: Slightly overfill the patch, and following initial set, shave the material to conform to the contour of the surrounding surface. Always shave SPEED CRETE BLUE LINE toward the common bonding edge between the patching material and the existing surface. Cure the material using standard curing practices. For additional information, contact your local Euclid Chemical representative.

CLEAN-UP

Clean application tools and mixing equipment with water immediately following use. Hardened SPEED CRETE BLUE LINE is difficult to remove.

PRECAUTIONS/LIMITATIONS

- Store material undercover and away from all moisture.
- Mix no more than 60 seconds.
- Use only potable water with SPEED CRETE BLUE LINE.
- Mix to a stiff, putty-like, no slump consistency.
- Do not re-temper or add sand to SPEED CRETE BLUE LINE.
- Minimum application 3/4 in. (19 mm), maximum application is 3 in. (7.6 cm) per lift.
- Do not overwork.
- Do not featheredge SPEED CRETE BLUE LINE.
- Clean mixing equipment between batches.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

AQUASEAL EPOXY SYSTEM

UNDERWATER EPOXY COATING AND REPAIR SYSTEMS

EUCLID CHEMICAL

DESCRIPTION

The AQUASEAL family of products are two-part, 100% solids epoxy systems specifically designed for underwater applications on concrete or masonry surfaces. These products are suitable for applications in both fresh and saltwater. AQUASEAL MV is a high build protective coating for structures below water. AQUASEAL LV is a low viscosity version that can be mixed with aggregate to form a mortar for repair or can also be used "neat'' for crack repair using pressure injection techniques.

PRIMARY APPLICATIONS

- Coating concrete, steel piers and piles
- Grouting pile jackets
- Underwater pressure injection
- Grouting and pointing of granite block
- Anchor bolt grouting

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

	AQUASEAL MV	AQUASEAL LV	AQUASEAL GEL
Mixing Ratio A:B by volume	1:1	1:1	1:1
Viscosity A & B mixed, cps	5,000 to 7,000	1,000 to 1,500	Gel
Gel Time 100 grams	60 min	40 min	60 min
Pot Life 2 gal (7.6 L)unit	30 to 40 mins	15 to 30 mins	30 to 35 mins
Tensile Strength min psi (MPa) ASTM D 638			
7 Day	3,000 (20.7)	6,500 (44.82)	–
Tensile Elongation %	1 to 5	6 to 12	–
Compressive Strength psi (MPa) ASTM D 695			
7 Day	7,000 to 8,000 (48.3 to 55.2)	8,000 to 9,000 (55.2 to 62.1)	7,000 to 8,000 (48.3 to 55.2)
Compressive Mortar Strength psi (MPa) ASTM C 109			
7 Day	9,000 to 10,000 (62.1 to 69.0)	7,000 to 8,000 (48.3 to 55.2)	8,000 to 9,000 (55.2 to 62.1)
Parts sand, by volume	3	3	1
Shore D Hardness ASTM D 2240,	85 to 90	90 to 95	85 to 90
Flexural Strength psi (MPa) ASTM C 580 (3 parts sand)	2,200 (15.2)	3,000 (20.7)	–
Tensile Strength psi (MPa) ASTM C 307 (3 parts sand)	–	1,250 (8.6)	–

Appearance: AQUASEAL epoxies are manufactured in light gray. Special colors are available subject to minimum quantities.

PACKAGING

AQUASEAL LV, MV & GEL are packaged in 10 gal (37.9 L) and 4 gal (3.8 L) units.

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

AQUASEAL LV: ASTM C 881, Type III, Grade 1, Class C

AQUASEAL MV: ASTM C 881, Type IV, Grade 2, Class C

AQUASEAL GEL: ASTM C 881, Type IV, Grade 3, Class C

COVERAGE

ft²/gal (m²/L)	AQUASEAL MV	AQUASEAL LV	AQUASEAL GEL
bond coat	100 (2.45)	150 (3.68)	100 (2.45)
1st coat	50 (1.23)	–	–
2nd coat	75 (1.84)	–	–

Note: AQUASEAL product coverage rates are approximate and for estimating purposes only.

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, and clean of laitance, dirt, marine growth, scale, oil, coatings and other contaminants. All surfaces should be sandblasted, water-blasted or mechanically abraded to remove all contaminants and provide a roughened, structurally sound substrate. Application of the appropriate AQUASEAL product should begin promptly to avoid re-contamination of the surface.

Mixing: The AQUASEAL products should be conditioned to 75°F (24°C) for 24 hours prior to mixing above water. Premix Part A (Base) and Part B (Hardener) individually. Then combine Part A and Part B 1:1 by volume in a clean container. Mix thoroughly with a slow speed motor and "Jiffy'' Mixer. Make sure to scrape the sides and bottom of the mixing container. Do not aerate the mix. **Mortar:** AQUASEAL LV and AQUASEAL GEL can be mixed with clean, dry silica aggregate to make a mortar. Gradually add an appropriate aggregate to the mixed binder and blend thoroughly. **Mix Ratios for Mortar:** Mixed binder to aggregate (by volume). AQUASEAL LV 1:3 and AQUASEAL GEL 1:1 maximum. (May be varied depending upon desired consistency).

Application: The AQUASEAL products should be applied at water and surface temperatures of at least 55°F (13°C) and rising. The mixed AQUASEAL system should be transported underwater after mixing. Agitation while underwater must be minimized. **Coating:** Apply a thin coat of AQUASEAL MV as a primer, by brush or gloved hand working and scrubbing the coating into the pores of the substrate in order to displace the water. Follow with a regular heavy coat of AQUASEAL MV, applied by gloved hand, brush or roller.

Grouting/Patching: Horizontal: Prime by scrubbing the surface with neat AQUASEAL LV in order to displace the water. Place the prepared AQUASEAL LV mortar by pouring from the bottom and one side and finish with a trowel. The material's density should displace the water. **Pile Jacket Grouting:** Pump or pour the prepared AQUASEAL LV mortar, starting at the bottom of the jacket and work up. The density of the material should displace the water from the jacket. **Vertical and Overhead:** Prime the surface by scrubbing or working the surface with neat AQUASEAL GEL. Apply by pressing the AQUASEAL GEL; neat or mixed with aggregate, firmly on the substrate with gloved hand or trowel so as to displace the water. Build up the material to the desired thickness. For deep patching, the repairs should be made in lifts of no more than 1 in. (2.5 cm) at a time, allowing each lift to achieve an initial set prior to applying the next lift. **Anchor Bolt Grouting:** Before grouting, ensure that the anchor hole is free of all debris and foreign objects. **Vertical Anchor Bolt Holes:** Place the anchor bolt into the hole and pour the neat AQUASEAL LV around the bolt allowing the air to vent before filling completely. **Horizontal Anchor Bolt Holes:** Prime by scrubbing the anchor bolt hole with neat AQUASEAL GEL. Fill approximately half the hole with the gel, and push the anchor bolt into the hole, twisting the bolt to make sure full contact is made. Pack the hole with additional gel to finish flush with the substrate.

CLEAN-UP

Clean tools and application equipment immediately after use with methyl ethyl ketone or acetone. Clean spills and drips while still wet with solvent. Dried AQUASEAL will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Do not thin or dilute AQUASEAL materials.
- Do not mix and apply below 55°F (13°C).
- Store between 50°F to 90°F (10°C to 32°C).
- Use only clean oven-dry aggregates.
- AQUASEAL is not designed to resist hydrostatic pressure from the negative side.
- Agitation of the product once under water must be kept to a minimum.
- Due to the many variables which can exist under water, a test application under jobsite conditions is recommended prior to the start of every project to evaluate both application techniques and adhesion after cure.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

CATHODIC PROTECTION

EUCOREPAIR CP

FLOWABLE REPAIR MORTAR FOR CATHODIC PROTECTION DEVICES

EUCLID CHEMICAL

DESCRIPTION

EUCOREPAIR CP is a flowable mortar, suitable for pumping or pouring into formed areas to repair concrete substrates. Formulated with a very low resistivity to be compatible with cathodic protection devices used to protect the steel within concrete structures.

PRIMARY APPLICATIONS

- Galvanic jackets used to protect marine piles and other structural components
- Parking structures
- Bridge repairs
- Balconies

FEATURES/BENEFITS

- Appropriate permeability, resistivity in range for use with galvanic jackets
- Extended placement time for difficult to reach areas
- Can be hand applied or mechanically pumped
- Does not contain microsilica, fly ash, slag or substances corrosive to metals
- Contains an anti-washout agent

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

PROPERTY	VALUES
Compressive Strength ASTM C 109	1 day 3,100 psi (21.4 MPa) 3 days 5,100 psi (35.2 MPa) 7 days 7,100 psi (49.0 MPa) 28 days 8,500 psi (58.6 MPa)
Slant Shear Bond Strength FM 5-587	7 days 3,000 psi (20.7 MPa) 28 days 3,300 psi (22.8 MPa)
Tensile Strength ASTM C 307	7 days 320 psi (2.2 MPa) 28 days 400 psi (2.8 MPa)
Flexural Strength ASTM C 580	7 days 1,200 psi (8.3 MPa) 28 days 1,800 psi (12.4 MPa)
Length Change ASTM C 157*	28 day air cure - 0.064% 28 day water cure + 0.000%
Set Time ASTM C 191	Initial set approx. 5 1/2 hr. Final set approx. 6 1/2 hr.
Volumetric Resistivity (28 days) FM 5-578/AASHTO T 358-17	8,200 ohm-cm

**Based on initial length @ 24 hours; 3" x 3" x 11" (7.6 cm x 7.6 cm x 27.9 cm) beams*

PACKAGING

EUCOREPAIR CP is packaged in 50 lb (22.7 kg) bags

SHELF LIFE

2 years in original, unopened package

SPECIFICATION/COMPLIANCES

EUCOREPAIR CP meets Florida DOT specification 930-7.2.1 for use as a filler in/around cathodic protection devices.

COVERAGE/YIELD

0.40 ft^3 (0.011m^3) per 50 lb bag

A unit of EUCOREPAIR CP may be extended with 50 lb (22.7 kg) of 3/8" (9.5 mm) pea gravel which will yield 0.74 ft^3 (0.021 m^3). NOTE: This extension may alter certain engineering properties. The pea gravel must be dense, non-absorptive per ASTM C 127 and non-reactive (ASR) per ASTM C 227, 289, or 1260.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 6 - 8 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of a scrub coat of EUCOREPAIR CP to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Mixing: Single bags may be mixed with a drill and "jiffy" mixer. Use a horizontal shaft mortar mixer for multiple bag batches. All materials should be in the proper temperature range of 60 - 90°F (15 - 32°C). Add appropriate amount of water, 0.74 to 0.84 gallons (2.84 to 3.18 L) into a clean mixing vessel, then add the dry product. Mix for 3 minutes. If placement is over 5" (127 mm) thick, add 50 lb. (22.7 kg) of SSD pea gravel and mix an additional 1-2 minutes until mixture is homogeneous. The mixed product should be transported to the repair area and placed immediately. Place material in a continuous pour to avoid cold joints.

Placement (pile jackets): Discharge material from mixer and place by pouring or pumping into form. EUCOREPAIR CP may be placed in annular spaces from 1/8" to 5" (3 to 127 mm) thick, or up to 10" (250 mm) thick when extended with pea gravel. EUCOREPAIR CP may be poured the full height of the pile jacket form in one placement. NOTE: Contact technical support for placements greater than 10" (250 mm).

Placement (horizontal patching): Discharge material from mixer and place by pouring or pumping into form. Place in 1/8" to 5" (3 to 127 mm) thick lifts, or up to 10" (250 mm) thick lifts when extended with pea gravel. NOTE: Contact technical support for placements greater than 10" (250 mm).

Curing and Sealing: To prevent surface cracking in horizontal patching applications, cure EUCOREPAIR CP with an appropriate curing compound conforming to ASTM C 309 or an appropriate curing and sealing compound conforming to ASTM C 1315. If a curing compound is not desired, wet cure for a minimum of three days.

CLEAN-UP

Clean tools and equipment with warm, soapy water before material hardens.

PRECAUTIONS/LIMITATIONS

- EUCOREPAIR CP is not a non-shrink grout.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the product's Safety Data Sheet before use.

Rev. 01.19

SENTINEL GALVANIC ANODES

SELF-GENERATING CATHODIC PROTECTION

EUCLID CHEMICAL

DESCRIPTION

SENTINEL GALVANIC ANODES are designed to mitigate the corrosion of reinforcing steel in concrete. Their principal function is to counteract the "anode ring effect" (see CORROSION PREVENTION brochure) and significantly extend the service life of concrete repairs. They are used in locations where new concrete or concrete repair materials are placed adjacent to existing chloride-contaminated concrete. SENTINEL anodes generate an effective current to the surrounding reinforcing steel, thus protecting the steel from corrosion. SENTINEL GL contains 38 grams of zinc. For projects where more zinc is required, SENTINEL SILVER contains 100 grams of zinc and SENTINEL GOLD contains a massive 200 grams of zinc.

PRIMARY APPLICATIONS

- Parking structures
- Bridges
- Pier & dock supports
- Balconies

FEATURES/BENEFITS

- Offers the highest self-generating protective current output of any cathodic protection device on the market ensuring long service life and large coverage area
- Allows the use of repair materials with resistivity values up to 30,000 ohm-cm
- Unique v-notch design snugly fits against any size rebar and minimizes removal of concrete assuring easy, efficient placement using standard tools, reduces labor requirements and lowers installation costs
- Exclusive insulating barrier design will not "dump" current into attachment bar extending the coverage area and service life of the cathodic protection device
- Engineered to provide long lasting service that maximizes the life of the repair and delivers an excellent cost benefit advantage. SENTINEL anodes are designed to deliver beneficial protective current for 10 to 20 years*, thus allowing the owner to skip a repair cycle or two
- Galvanized tie wire will not rust and mounts tightly to rebar forming a secure connection
- Many successful project references available

Current required to completely prevent corrosion of steel in concrete will vary with conditions, as will effective service life

TECHNICAL INFORMATION

SENTINEL anodes deliver a protective current equal to or greater than 1.0 milliamps after 90 days when tested at 70°F (21°C), and 50% relative humidity in a concrete test block containing not more than 0.70 ft^2 (0.065 m^2) of reinforcing steel.

ANODE	DIMENSIONS	MASS OF ZINC
SENTINEL GL	3 in x 2.25 in x 1.125 in (76 mm x 57 mm x 28 mm)	38 grams
SENTINEL SILVER	4.25 in x 2.25 in x 1.25 in (108 mm x 57 mm x 32 mm)	100 grams
SENTINEL GOLD	4.625 in x 2.25 in x 1.5 in (117 mm x 57 mm x 38 mm)	200 grams

PACKAGING

SENTINEL GL: 20 units per box; SENTINEL SILVER and SENTINEL GOLD: 10 units per box.

SHELF LIFE

12 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

- ASTM B418 Type II (Previously ASTM B418-95a), ASTM A82 (Previously ASTM A82-97a), and ASTM B6/B69
- Listed under US Patents 6,217,742, 6,958,116 and 7,488,410
- SENTINEL GL passes the requirements of **M82 Protocol to Evaluate the Performance of Corrosion Mitigation Technologies in Concrete Repairs** (USA Bureau of Reclamation)

SPACING REQUIREMENTS

Place SENTINEL anodes as close as practical to the edge of the repair area (within 6 in. [15cm]). Provide sufficient clearance for the anode to be completely surrounded by the repair material.

Anode spacing shall be as specified by the designer, but anode spacing must not exceed 30 in. (75cm) on center. Spacing is dependent on steel density, the corrosive nature of the environment, and electrical resistivity of the repair materials.

The density of the reinforcing steel is the total surface area of the bar within a given area of concrete:

$ft^2(m^2)$ of steel / $ft^2(m^2)$ of concrete (regardless of depth)

Corrosion levels in the concrete can be broken into three measurable categories based on ASTM C 1152 Acid-Soluble Chloride of Mortar and Concrete:

Low corrosion levels: < 4 lb/yd^3 (< 2.4 kg/m^3)

Moderate corrosion levels: 4 - 8 lb/yd^3 (2.4 - 4.7 kg/m^3)

High corrosion levels: > 8 lb/yd^3 (> 4.7 kg/m^3)

In the event the volumetric resistivity of the repair material is higher than 15,000 ohm-cm, a spacing correction factor must be used. If the resistivity is higher than 15,000 ohm-cm and equal to or less than 20,000 ohm-cm, a correction factor of 0.9 must be used. If the repair material is greater than 20,000 ohm-cm and equal to or less than 30,000 ohm-cm, a correction factor of 0.7 must be used. For example: the anode spacing has been determined to be 24 in. (61 cm) due to the corrosive environment the concrete is in and the steel density within the concrete. However, the resistivity of the repair material is 25,000 ohm-cm. Therefore, the spacing would be 24 x 0.7 = approx. 17 inch (43 cm) spacing.

INSTALLATION PREPARATION

Prepare concrete repair area in accordance with industry (ICRI & ACI) guidelines. Remove concrete from around and behind the steel reinforcement inside the repair area. Provide sufficient clearance between the anode and the substrate concrete (minimum of 3/4 in. (19 mm) or 1/4 in. (6 mm) larger than the top size aggregate in the repair material, whichever is greater).

Where anodes will be attached, clean exposed rebar to bright metal to facilitate electrical connection. Confirm electrical continuity of the reinforcing steel within the repair area through the use of a high impedance multimeter. Electrical discontinuity (a resistance reading greater than 3.0 Ohms) can be resolved by wiring discontinuous bars to adjacent bars using steel tie wire.

INSTALLATION PROCEDURE

Complete the repair following proper concrete repair procedures, taking care not to create any voids around the anode. Repair material must have a volumetric resistivity below 30,000 ohm-cm when tested at 28 days and maintained at 70°F (21°C) and 80% relative humidity. For optimal performance, The Euclid Chemical Company recommends that its specially formulated line of repair materials: EUCOREPAIR CP, EUCOREPAIR V100, EUCOCRETE, EUCOPATCH, CONCRETE-TOP SUPREME, VERTICOAT, EXPRESS REPAIR, TAMMS FORM & POUR, SPEED CRETE PM, SPEED CRETE RED LINE, TAMMS STRUCTURAL MORTAR, NS GROUT and EUCOSHOT be used with SENTINEL anodes as a complete corrosion prevention system. **Caution:** Repair materials with significant polymer modification and/or silica fume content may not be suitable for use with Sentinel anodes. If you are unsure of the volumetric resistivity of the cover material, please contact Euclid Chemical Technical Services.

Note: See installation procedures included in each box of the SENTINEL anodes.

Although not required, the use of insulating rebar coatings (such as epoxy coatings) in the repair area will increase the effectiveness and service life of SENTINEL anodes by directing protective current to reinforcing steel outside the patch. If such coatings are used, coat reinforcing steel after installation of the anodes, taking care not to apply any coating to the anode itself. In this case, electrical continuity between the anode wires and the rebar must be checked thoroughly.

PRECAUTIONS/LIMITATIONS

- SENTINEL anodes should be installed and covered as soon as possible after removal from their original sealed packaging. Any anodes removed from their original packaging must be protected from excessive moisture and/or contaminants until time of repair material placement.
- DO NOT allow the Sentinel anodes to freeze.

Rev. 01.19

WATERPROOFING AND DAMPPROOFING

CONCRETE FINISHER

CEMENT-BASED DECORATIVE AND DAMPPROOFING COATING

EUCLID CHEMICAL

DESCRIPTION

CONCRETE FINISHER is a portland cement-based dampproofing coating.

PRIMARY APPLICATIONS

- Interior/exterior
- Above/below grade
- Precast
- Masonry units
- Brick
- Stone
- Stucco
- Cement plaster

FEATURES/BENEFITS

- Trowel or spray applied
- Excellent adhesion
- Becomes an integral part of the wall
- Fills and levels surface
- Provides uniform surface textures and color
- Highly durable
- Breathable, decorative finish
- Eliminates the high cost of hand rubbed finishing

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C)
Compressive Strength, ASTM C109 psi (MPa)
7 days 2,700 (18.6)
28 days 4,000 (27.6)
Flexural Strength, ASTM C348 psi (MPa)
7 days 400 (2.8)
28 days 850 (5.9)
Tensile Strength, ASTM C190 psi (MPa)
7 days 310 (2.1)
28 days 398 (2.7)
Impact Resistance, ASTM D2794 in. lb 28
Pull-off Strength, ASTM D4541 psi(MPa) ... 310 (2.1)
Absorption, ASTM C67
24 hour soak 4.9%
5 hour boil 5.3%
Freeze-Thaw Resistance, %
50 cycles .....-0.67% Loss

Durability Factor, ASTM C666
300 cycles 97.6%
Chloride Content, ASTM C144 0.0098%
Fungus growth Fed Test 141
Method 6271-1 ..... resistant
Weatherometer ASTM G 26 6000 hours:
No crazing, cracking, chipping,or flaking. Light chalk and color change. No other deterioration.
Salt Spray Resistance
5% solution @ 90°F (32°C) 300 hour exposure:
No adhesion loss or deterioration at completion of the test

Appearance: CONCRETE FINISHER is available in White, and Oyster Gray. It is also available in Gray, which should only be used as a base coat for other finish coats. Various textures may be developed by the applicator using either trowel and float or spray equipment during application.

PACKAGING

CONCRETE FINISHER is packaged in 70 lb (31.8 kg) poly-lined bags.

SHELF LIFE

18 months in original, unopened package.

COVERAGE

One 70 lb (31.8 kg) bag of CONCRETE FINISHER will cover approximately 55 ft^2 to 70 ft^2 when applied at 1/8 in. (5.1m^2 to 6.5m^2 at 3.2 mm). Leveling uneven surfaces will require more material.

Note: Coverage rates are approximate and for estimating purposes only. Surface texture, porosity, and thickness of coating will determine actual material requirements. Apply samples to all surfaces to be protected. Obtain approval of Architect or Owner for color, texture, and coverage before proceeding with work. Retain sample or mock-up through completion of project.

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, and free of contaminants including dust, dirt, curing compounds, form release agents, oil, paint, and old coatings. Cure new concrete and masonry surfaces 28 days. Provide an absorptive surface by abrading all substrates including smooth precast or formed concrete. Concrete honeycombs, cavities, joints, cracks, voids, tie holes, and other defects must be opened and routed to sound material. Remove and replace broken or uneven brick/block. Remove form marks and other protrusions to prevent "show through". Repair surface defects, cracks, and voids before applying CONCRETE FINISHER. Cure patches or other surface preparations 1/2 in. (1.3 cm) or less a minimum of 24 hours before applying CONCRETE FINISHER. Deeper fills will require longer curing periods. Dampen surface with potable water immediately before CONCRETE FINISHER application.

Mixing: Mechanically mix using a slow speed motor and mixing blade to thoroughly disperse ingredients. A mortar mixer may be used for larger quantities. Do not aerate the CONCRETE FINISHER mix. Make mixing liquid by blending 3 parts potable water with 1 part AKKRO-7T in a clean container. Pour approximately one half of the required mixing liquid into an empty, clean container, and begin slow speed power mixing while slowly adding CONCRETE FINISHER. Gradually add more CONCRETE FINISHER and mixing liquid to bring the mixture to the consistency of a heavy, completely blended "pancake batter." Stop mixing, and allow material to "fatten" for 10 minutes, then remix, and if necessary, add more mixing liquid to adjust to proper application consistency. One 70 lb (31.8 kg) bag of CONCRETE FINISHER will require approximately 8 to 9 qt (7.6 L to 8.6 L) of mixing liquid when mixed for spray consistency, and 6 to 7 qt (5.7 L to 6.7 L) when mixed to trowel consistency. For estimating purposes, one bag of CONCRETE FINISHER will require approximately 2 to 3 qt (1.9 L to 2.8 L) of AKKRO-7T.

Application: Dampen surface with potable water before starting application. CONCRETE FINISHER should be applied while the wall is damp. **Trowel:** Used when the wall surface is uneven, and when it is necessary to level and hide varying surface textures. Trowel apply a base coat, and when partially set, double back with additional material. After the surface has set sufficiently, lightly float to an even, uniform texture using a sponge rubber float. Do not exceed 3/8 in. (0.95 cm) for each lift. To prevent "shadowing" or "photographing" caused by joints, small holes, or uneven absorption, the first coat must air cure a minimum of 5 days before the finish coat is applied. Proper trowel and float procedures will result in an even, uniform, attractive sand finish. A complete range of textures can be obtained by using standard plaster finishing techniques. Do not wet cure CONCRETE FINISHER. **Spray:** Used primarily when large areas are to be coated and when it is not necessary to level the wall. Spray applications will seal and decorate, but will not level the surface or fill holes. Some variance in the spray texture can be expected. Apply a light spray coat to retard surface absorption. Then, double back with additional material before the base coat has lost its sheen. For best results, use an overlapping, circular spray pattern. Do not exceed 3/8 in. (0.95 cm) for each lift. Two coats of CONCRETE FINISHER will be necessary to prevent "shadowing" or "photographing" caused by joints, small holes, or uneven absorption. Air cure the first coat for a minimum of 5 days before the final coat is applied. Use only high production plaster spray machines or hopper-type texture spray guns. Do not use high pressure or airless spray equipment. The AKKRO-7T to water ratio may require adjustment when spraying CONCRETE FINISHER. Do not wet cure CONCRETE FINISHER.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. CONCRETE FINISHER is extremely difficult to remove if allowed to dry.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces or when temperature is below, or expected to fall below 40°F (4°C) in 24 hours.
- Do not use on traffic bearing surfaces.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application.
- When using CONCRETE FINISHER containing AKKRO-7T in enclosed tanks or reservoirs, ensure that adequate ventilation is available during application and the total curing period.
- Allow minimum 24 hours drying time before application of a liquid polymer decorative coating.
- CONCRETE FINISHER is not recommended where hydrostatic pressure is present.
- Some colors of CONCRETE FINISHER may chalk or show water marks upon weathering.
- Protect from moisture.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

SPEED PLUG

RAPID-SETTING HYDRAULIC CEMENT

EUCLID CHEMICAL

DESCRIPTION

SPEED PLUG is a rapid-setting hydraulic cement compound used to instantly stop running water or seepage in masonry or concrete. SPEED PLUG is ready to use and requires only the addition of water before plugging and sealing active leaks. SPEED PLUG is available in a standard 1-3 minute set time formula, as well as a faster setting 45 second version and a slower setting 3-5 minute formulation.

PRIMARY APPLICATIONS

- Concrete and masonry walls and floors
- Dams, swimming pools, cisterns, reservoirs, water tanks and manhole repairs

FEATURES/BENEFITS

- Initial set in 1 to 3 minutes
- Stops running water or seepage leaks
- High strength
- Controlled expansion
- Can be applied underwater

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties at 75°F (24°C)

Test Method

Compressive Strength ASTM C109 psi (MPa)

1 hour.....1,000 (6.9)
1 day.....1,500 (10.3)
28 days.....3,000 (20.7)

Flexural Strength ASTM C348

7 days.....300 (2.1)
28 days.....350 (2.4)

Expansion/Shrinkage ASTM C157

28 Day Test Chg. Length

Moist Room (100% RH).....0.10%
Dry Room (50% RH).....-0.25%

Appearance: SPEED PLUG is a gray hydraulic cement compound.

Values presented are typical and not necessarily referenced to create specifications.

PACKAGING

SPEED PLUG is packaged in 20 lb (9.2 kg) pails, 50 lb (22.7 kg) pails, and in cases of 10 lb (4.5 kg) tubs (4 tubs per case).

SHELF LIFE

18 months in original, unopened package

COVERAGE/YIELD

1 lb (0.45 kg) of SPEED PLUG yields approximately 17 in^3 (171 cm^3) of repair material

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP >3 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming: Clean and prime exposed steel with DURALPREP A.C. and allow to fully dry prior to the application of SPEED PLUG.

Mixing: Pour potable water into a clean mixing container and gradually add SPEED PLUG. Use approximately 1 quart of water to 8 to 9 lbs (3.8 to 4.3 kg/L) of material. Mix rapidly with a trowel to the consistency of stiff putty with no slump for no more than 30 seconds. SPEED PLUG will flash set in 1 to 3 minutes. Properly mixed, SPEED PLUG can be hand formed into a ball.

Application: SSD areas for repair with potable water immediately before application of SPEED PLUG.

General Patching: Force SPEED PLUG into the crack or hole by hand or with a trowel. Rapidly fill to the full depth of the opening. **Patching Active Leaks:** Start at the top of the crack or hole, and force the SPEED PLUG to the full depth of the prepared area. Apply direct pressure to the new patch until the SPEED PLUG has taken a firm set. Mix fresh material, and continue patching toward the area of the greatest pressure. When extreme water pressure is encountered, physically hold the mixed SPEED PLUG with a hand against the leak and apply continuous pressure until the SPEED PLUG has set, and the water has stopped running. Do not use a twisting motion. **Floor-Wall Patching:** Follow above methods for the specific conditions encountered. Use a rounded tool to force the SPEED PLUG into the joint, and construct a 45° transitional cove between the floor and wall at the same time. **Expansion/Contraction Cracks:** Do not use SPEED PLUG to treat dynamic cracks. Consult the technical data sheets for the DURAL AQUA LINE of chemical/urethane grouts.

CLEAN-UP

Clean tools and mixing equipment with water immediately after use.

PRECAUTIONS/LIMITATIONS

- Do not retemper SPEED PLUG. Do not apply SPEED PLUG to frozen or frost filled surfaces.
- Do not twist SPEED PLUG into the hole while plugging running water leaks.
- In warm weather, mix SPEED PLUG with ice water. In cold weather, mix SPEED PLUG with warm water and use a torch to preheat the area to be patched.
- Do not use in dynamic (moving) cracks or expansion joints. Use a chemical grout from the DURAL AQUA Line
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

TAMMS SBC

CEMENT-BASED, FIBER-REINFORCED WATERPROOFING COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMS SBC (Surface Bonding Cement) is a trowel or spray applied, decorative, fiber-reinforced, breathable, waterproofing coating. The high flexural strength of TAMMS SBC provides excellent resistance to cracking and superior durability against weathering. TAMMS SBC can be used on exterior or interior projects, whether they are above or below grade. TAMMS SBC is an excellent waterproof parge coating for dry stack construction.

PRIMARY APPLICATIONS

- Concrete block
- Brick
- Precast or formed concrete
- Stone
- Stucco
- Cement plaster

FEATURES/BENEFITS

- Crack-resistant
- Levels and fills surface voids
- Excellent parge for dry stack construction
- Easily troweled for a smooth finish

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

Compressive Strength ASTM C109		**Flexural Strength** ASTM C348	
1 day	1,950 psi (13.4 MPa)	3 day	930 psi (6.4 MPa)
7 day	3,170 psi (21.9 MPa)	7 day	970 psi (6.7 MPa)
28 day	4,010 psi (27.7 MPa)	28 day	980 psi (6.8 MPa)

Appearance: TAMMS SBC is available in natural gray and natural white.

PACKAGING

TAMMS SBC is packaged in 60 lb (27.2 kg) poly-lined bags.

SHELF LIFE

1 year in original, unopened package

COVERAGE

One 60 lb (27.2 kg) bag of TAMMS SBC will yield 40 to 50 ft^2 (3.72 to 4.65 m^2) applied at approximately 1/8 in. (3.22 mm) thickness. Leveling uneven surfaces will require additional material. For estimating purposes, 12 to 14 lbs of TAMMS SBC per yd^2 (6.52 to 7.61 kg/m^2) will generally result in a finished coating 1/8 in. to 1/4 in. (3.22 to 6.4 mm) thick.

Note: *The coverage rates are approximate and for estimating purposes only. Surface texture, porosity, and thickness of coating determines the total amount of TAMMS SBC required.*

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, clean, and free of contaminants including paint, sealers, and efflorescence. Cure new concrete for a minimum of 28 days. Repair surface defects, cracks, and voids before applying. Cure patches and other surface preparations for a minimum of 24 hours before coating. Provide an absorptive surface on all substrates, including smooth precast or formed concrete by abrading the surface. Dampen surface with potable water immediately before applying TAMMS SBC. For maximum performance and adhesion, use AKKRO-7T in the mixing liquid.

Mixing: Mix TAMMS SBC in a slow-speed rotary mortar mixer with rubber tipped blades, to thoroughly disperse all ingredients and obtain a uniform consistency. Use only potable water for mixing and for dampening the surface. To improve physical properties, adhesion, and curing of TAMMS SBC, blend 1 part AKKRO-7T with 3 parts water to use as the mixing liquid. With the mixer running, add one half of the required liquid, and then slowly add TAMMS SBC. Gradually add more TAMMS SBC and liquid to obtain a smooth, workable consistency. Mix for 3 to 4 minutes. Stop the mixer, and allow material to “fatten” for 5 minutes. Re-start the mixer and mix TAMMS SBC for 2 more minutes.

If necessary, add mixing liquid to bring the mix to the proper trowel or spray application consistency. One 60 lb (27.2 kg) bag of TAMMS SBC will require approximately 6 qt to 7 qt (5.7 L to 6.6 L) of mixing liquid. When using AKKRO-7T in the mix, each bag of TAMMS SBC will require approximately 1.5 qt to 2 qt (1.4 L to 1.9 L) of AKKRO-7T.

Application: Uniformly dampen surface with potable water immediately before starting application. Do not saturate substrate. Re-dampen the surface as needed during application. **Trowel Application:** Apply TAMMS SBC with a steel trowel. Use sufficient pressure and material to ensure a good bond, uniform thickness, and complete coverage of the surface. Maintain a minimum thickness of 1/8 in. (3.2 mm) for each application. When heavier coats are required, build up to the desired thickness in successive applications. Allow 24 hours drying time between coats. Do not exceed a maximum thickness of 3/16 in. (4.8 mm). **Spray Application:** Dampen the wall as indicated above. Apply TAMMS SBC by spray when large areas are to be coated. For best results, use an overlapping, circular spray pattern. The finished two-coat system should be approximately 1/4 in. to 5/16 in. thick (6.4 mm to 8.0 mm). **Structural Application:** Spray applications of TAMMS SBC may be used to convey large amounts of material to the wall; however, the material must be steel troweled to ensure a firm mechanical bond of the base coat to the surface. This method is also used for surface bonding application. Additional coats may be spray troweled or float finished, or left with the spray applied texture.

Surface Bonding: TAMMS SBC may be used to build unit masonry walls without mortar. Concrete block must be dry, clean, sound, and free of contaminants that would prevent proper adhesion. Level the first course of block in a full bed of mortar or TAMMS SBC. Stack the remaining courses of block, without mortar, in a running bond pattern. To plumb and level the wall, use mortar or TAMMS SBC. Do not use wood shims or sand for leveling. Use TAMMS SBC or mortar to fill gaps 1/4 in. (6.4 mm) or larger. Lay the top course of the wall in a full mortar bed. Dampen wall with potable water immediately before the application. Trowel on a minimum 1/8 in. (3.2 mm) thickness of TAMMS SBC. Continue to wet the wall as needed to maintain a damp surface ahead of the trowel application. Should the surface dry out, and the material start to pull, dampen the wall again. For surface bonding construction, TAMMS SBC must be applied to both sides of the wall. Apply the material to each complete wall section without interruption. When this is not possible, cut the material straight and square in the middle of one course to form a butt joint, so that the horizontal joint will not be overlapped when the application is resumed. Do not exceed 45 ft^2/60 lb bag (6.5 m^2/27.2 kg).

Curing: To prevent the development of shrinkage cracks from very rapid drying, the finished work should be periodically fog spray cured with water for 24 to 48 hours following application. Weather and jobsite conditions will dictate the amount and frequency of dampening required. Protect finished work from rain and other adverse weather conditions for 48 hours following application. **Cold Weather Protection:** When temporary heaters are required to maintain temperature, ensure that the heat and fumes face away from the finished work. Use fans for proper air movement and circulation as needed. **Hot Weather Protection:** Protect surfaces with wind screens and shade screens during periods of high temperatures, low humidity, sun, or wind.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. TAMMS SBC with AKKRO-7T in the mixing liquid becomes extremely difficult to remove if allowed to dry on a surface.

PRECAUTIONS/LIMITATIONS

- Do not retemper TAMMS SBC.
- Spray using only high production plaster spray machines or hopper-texture spray guns.
- Do not use high pressure or airless spray equipment.
- Protect application surface during weather extremes.
- Do not apply TAMMS SBC to frozen or frost filled surfaces, or when temperatures are expected to fall below 40°F (4 °C) or rise above 100°F (37°C) in 72 hours without proper protection and temperature control.
- When using TAMMS SBC containing AKKRO-7T in enclosed tanks or reservoirs, ensure that adequate ventilation is available during application and the full curing period.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application. Wait a minimum of 72 hours after curing before applying a decorative coating.
- In all cases, consult the Material Data Sheet before use.

Rev. 02.19

TAMOSEAL

CEMENT-BASED WATERPROOFING TREATMENT

EUCLID CHEMICAL

DESCRIPTION

TAMOSEAL is a cement-based, polymer-modified material designed to waterproof concrete and masonry. When mixed with AKKRO-7T or FLEX-CON acrylic admixture, it becomes suitable to seal vertical and light duty horizontal surfaces.

PRIMARY APPLICATIONS

- Concrete and block foundations
- Water tanks
- Reservoirs
- Interior/exterior
- Balconies

FEATURES/BENEFITS

- Waterproofs and decorates
- Tenacious bond
- Becomes an integral part of substrate
- Durable
- Breathable
- Slightly flexible to seal static cracks

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

PROPERTY	VALUES
Compressive Strength, ASTM C 109	7 days: 4,500 psi (31.0 MPa) 28 days: 6,400 psi (44.1 MPa)
Flexural Strength, ASTM C 348	7 days: 350 psi (2.4 MPa) 28 days: 810 psi (5.6 MPa)
Tensile Strength, ASTM C 190	7 days: 330 psi (2.3 MPa) 28 days: 390 psi (2.7 MPa)
Absorption, ASTM C 67	24 hour soak: 4.4% 5 hour boil: 3.9%
Freeze-Thaw Resistance, ASTM C 672	Loss at 50 cycles: 1.20%
Durability Factor ASTM C 666	After 300 cycles: 101.0
Working Time	1 hour
Water Permeance ASTM E 514 (after coating leaking wall)	Extent of damp area @ 72 hours: 0.0% Maximum leakage: 1 hour: none Leakage rate mL/hr: none Permeance rating: Excellent
Salt Spray Resistance	300 hour exposure at 5% solution at 90°F (32°C) resulted in no adhesion loss or deterioration at completion of test.
Fungus Growth Resistance, Fed. Test 141, Method 6272	Resistant
Resistance to Wind Driven Rain, Fed. Spec TT-C-00555	Excellent
Weatherometer, ASTM G 96, 6000 hrs	No crazing, cracking, chipping, flaking, light chalking or color change. No other deterioration.

Minimum # of Coats: 2	Maximum # of Coats: 2	Induction Time: 10 minutes
Recoat Cure Time: 12 to 24 hrs		Recoat Cure Temp: >40°F (4.4°C)
Final Cure Time: 7 days minimum		Final Cure Temp: > 40°F (4.4°C)

Appearance: TAMOSEAL is available in two standard colors: Gray and White. Special colors subjected to minimum order quantities include: Oyster, Alpine, Navajo, Pearl, Silver, and Summer. Custom colors are also available.

PACKAGING

TAMOSEAL is packaged in 50 lb (22.7 kg) plastic pails and 50 lb (22.7 kg) poly-lined bags.

SHELF LIFE

18 months in original, unopened package

SPECIFICATIONS/COMPLIANCES

TAMOSEAL is NSF/ANSI Standard 61 certified for use with potable water.

Note: TAMOSEAL is NSF/ANSI Standard 61 certified in the Gray and White colors only. AKKRO-7T must be used in the mixing liquid to maintain certification. FLEX-CON is not NSF/ANSI Standard 61 certified and may not be used on projects requiring NSF/ANSI Standard 61 certification.

COVERAGE

Under normal waterproofing conditions, apply the TAMOSEAL base coat at 2 lb/yd^2 (1.08 kg/m^2), which equals 225 ft^2/50 lb bag (21 m^2/22.7 kg bag). Add a finish coat at 1 lb/yd^2 (0.5 kg/m^2), which equals 450 ft^2/50 lb bag (42 m^2/22.7 kg bag). The total thickness of the two coats will be approximately 1/16 to 1/8 inch, or 125 mils (1.6 to 3.22 mm).
Note: Coverage rates are approximate and will depend on the texture and porosity of the substrate.

DIRECTIONS FOR USE

Surface Preparation: New concrete and masonry must be cured 7 days before application of TAMOSEAL. The surface must be structurally sound, clean and free of dirt, oil, and other contaminants. Abrade the surface to provide an absorptive surface. Repair all surface defects including cracks and voids. Allow patches and other surface preparations to cure for 24 hours. Saturate surface dry (SSD) the substrate with potable water prior to TAMOSEAL application.

Mixing: TAMOSEAL must be mechanically mixed using a slow speed motor and mixing blade to thoroughly disperse the ingredients. Do not aerate the mix.

For Vertical Applications: One 50 lb (22.7 kg) bag of TAMOSEAL requires 2 gal (7.6 L) of mixing liquid. This consists of 2 qt (1.9 L) of AKKRO-7T blended with 6 qt (5.7 L) of potable water, or 2.3 qt (2.2 L)of FLEX-CON blended with 5.7 qt (5.4 L) of potable water. *For Horizontal Applications:* One 50 lb (22.7 kg) bag of TAMOSEAL requires 2 gal (7.6 L) of mixing liquid. This consists of 1 gallon (3.8 L) of AKKRO-7T blended with 1 gal (3.8 L) of potable water or 1.15 gallon (4.4 L) of FLEX-CON blended with 0.85 gallon (3.2 L) of potable water.

Pour approximately one half of the required mixing liquid into an empty, clean container and begin slow speed mixing. Slowly add TAMOSEAL and the remainder of the mixing liquid as needed to the mixture. Stop mixing and allow the mixture to "fatten" for ten minutes. Re-mix to achieve proper consistency. Use mixed TAMOSEAL within one hour.

Application: Saturate surface dry (SSD) the substrate with potable water before starting any TAMOSEAL application. **Hand Brush:** Apply TAMOSEAL using a 6 in. (15 cm) masonry brush. Load bristles with TAMOSEAL and apply a heavy coat using long, smooth horizontal strokes. Apply sufficient material to fill all voids. Final strokes should all be in one direction to produce an even texture and finish. Allow first coat to dry for 12 to 24 hours before applying a finish coat. **Push Broom:** Use a 5 gal (18.9 L) pail or wide mouth tub to hold TAMOSEAL. Dip a 10 in. (25 cm) tampico-bristle push broom into the TAMOSEAL and mix just enough to load the bristles. Apply a heavy coat using long, even horizontal strokes. Apply sufficient material to fill all voids. Lift the brush at the end of each stroke. Final strokes should all be in one direction to produce an even texture and finish. Do not overbrush. Allow first coat to dry for 12 to 24 hours before applying a finish coat.

Spray: Use heavy-duty spray equipment capable of spraying cement coatings or mastics.

Horizontal Applications: Use a water-based cure and seal from Euclid Chemical on all horizontal applications for added protection and ease of cleaning.

Note: *Prior to application, it is recommended that a mock up or field sample be made containing all materials that will be coated. Obtain approval of the architect or owner for the final color, texture and coverage rate before proceeding with work. Retain approved sample until the project is completed.*

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean any splatter or spills with water before material sets. TAMOSEAL is a cementitious product containing an acrylic additive, and if allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces or when temperature is expected to fall below 40°F (4°C) in the 24 hour period following application.
- Do not use on moderate to heavy traffic bearing surfaces.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application.
- Some colors may chalk or show water marks after weathering.
- When using TAMOSEAL containing AKKRO-7T or FLEX-CON in enclosed tanks or reservoirs, make sure that adequate ventilation is available during the application and the total curing period.
- Not recommended for negative side waterproofing where hydrostatic pressures exceed 8 ft (2.4 m) water head.
- TAMOSEAL should not be applied to surfaces actively leaking.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

TAMOSEAL FOUNDATION COATING

CEMENT-BASED WATERPROOFING TREATMENT

EUCLID CHEMICAL

DESCRIPTION

TAMOSEAL FOUNDATION COATING is a cement-based waterproofing material specifically designed to waterproof the exterior surface of below grade concrete and masonry. When properly applied, this formulation becomes an integral part of the wall, filling and sealing the pores and voids in the surface, while remaining breathable. TAMMOSEAL FOUNDATION COATING is normally applied to the positive side, but may be applied to the negative side when hydrostatic pressures are low and aesthetics are not important.

PRIMARY APPLICATIONS

- Concrete block
- Precast concrete
- Formed concrete
- Foundations
- Back coating between face brick and back-up units
- Below grade surfaces subject to water penetration
- Brick and stone

FEATURES/BENEFITS

- Tenacious bond
- Becomes an integral part of substrate
- Breathable
- Durable

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH
Compressive Strength, ASTM C109 psi (MPa)
7 days....4,500 (31)
28 days....6,400 (44)
Flexural Strength, ASTM C348 psi (MPa)
7 days....350 (2.5)
28 days....810 (5.6)
Tensile Strength, ASTM C190 psi (MPa)
7 days....330 (2.3)
28 days....390 (2.7)
Absorption, % ASTM C67
24 hour soak....4.4
5 hour boil....3.9

Freeze-Thaw Resistance, ASTM C672
% loss at 50 cycles....1.20
Durability Factor, % ASTM C666
After 300 cycles....101.0
Chloride Content ASTM D144....0.0098%
Water Permeance ASTM E514 (after coating leaking wall)
Extent of damp area: 72 hours....0.0%
Maximum leakage:1 hour....none
Leakage rate: mL/hr....none
Permeance rating....excellent
Water Vapor Transmission, ASTM E96
Perms....12
Standard Building Code
(SBCCI), Section 1814....Complies

Note: Test results obtained when AKKRO-7T is used in mixing liquid.

PACKAGING

TAMOSEAL FOUNDATION COATING is packaged in 50 lb (22.7 kg) poly-lined bags.

SHELF LIFE

18 months in original, unopened package

COVERAGE

Block Walls: Normal waterproofing conditions - 2 coats of TAMOSEAL FOUNDATION COATING at a rate of 2 lb/yd² (1.08 kg/m²) per coat. **Concrete Foundations:** Normal waterproofing conditions - one coat at a minimum of 2 lb/yd² (1.08 kg/m²) using AKKRO-7T/water mixing liquid blend. **Walls:** Severe water pressure - a base coat at 2 lb/yd² (1.08 kg/m²) and trowel on finish coat at a rate of 1 lb/yd² (.54 kg/m²). **Trowel Applications:** Add 25 lb (11.3 kg) clean silica sand to each 50 lb (22.7 kg) of TAMOSEAL FOUNDATION COATING and use the AKKRO-7T/water mixing liquid blend. **Parge Coating Masonry Units:** Mix 25 lb (11.3 kg) of clean silica sand to each bag of TAMOSEAL FOUNDATION COATING and apply uniformly. Upon completion of the parge coat, apply a coat of TAMOSEAL FOUNDATION COATING at a rate of 2 lb/yd² (1.08 kg/m²). ***Note:*** *Coverage rates are approximate and will depend on the texture and porosity of the substrate.*

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of dirt, form oil, efflorescence, laitance, curing agents and other contaminants. Remove form marks and other protrusions to prevent "show through". Form a cove at the footer-wall intersection, point and fill all broken corners of block and breaks in the surface and repair all surface defects including cracks and voids with TAMOSEAL FOUNDATION COATING mixed to a mortar consistency. Cut back wires a minimum of 3/4 in. (19mm) and patch with SPEED CRETE RED LINE or SPEED PLUG. Saturate-Surface Dry (SSD) the surface with potable water immediately before TAMOSEAL FOUNDATION COATING application.

Mixing: TAMOSEAL FOUNDATION COATING must be mechanically mixed using a slow speed motor and mixing blade to thoroughly disperse the ingredients. Do not aerate the mix. Pour approximately one half of the required 2 gal (7.57 L) of clean potable water per 50 lb (22.7 kg) bag into an empty, clean container and begin slow speed mixing. Slowly add TAMOSEAL FOUNDATION COATING and the remaining liquid as needed to bring the mixture to a heavy, completely blended pancake batter consistency. Stop mixing and allow the mixture to "fatten" for 10 minutes. Re-mix and if necessary add more liquid to reduce to batter consistency.

Note: *To improve bonding and mechanical properties, on smooth or dense concrete, masonry and for all trowel applications, prepare a mixing liquid consisting of a blend of 3 parts potable water with 1 part AKKRO-7T in a clean container. Substitute this mixing liquid blend in place of the water described above. Two gal (11.3 L) of mixing liquid consists of 2 qt (1.89 L) of AKKRO-7T blended with 6 qt (5.68 L) of potable water. When using as a pointing mortar, AKKRO-7T mixing liquid is recommended.*

Application: Dampen the wall with potable water before starting any TAMOSEAL FOUNDATION COATING application. Make sure all applications completely cover the footer forming a cove at the walls/footer intersection. **Hand Brush:** Apply TAMOSEAL FOUNDATION COATING using a 6 in. (15 cm) masonry brush. Load bristles with TAMOSEAL FOUNDATION COATING and apply a heavy coat using long, smooth horizontal strokes. Apply sufficient material to fill all voids. Final strokes should all be in one direction to produce an even texture and finish. Allow first coat to dry for 12 to 24 hours before applying a finish coat. **Push Broom:** Use a 5 gal (18.9 L) pail or wide mouth tub to hold TAMOSEAL FOUNDATION COATING. Dip a 10 in. (25 cm) tampico-bristle push broom into the TAMOSEAL FOUNDATION COATING mix just enough to load the bristles. Apply a heavy coat using long, even horizontal strokes. Apply sufficient material to fill all voids. Lift the brush at the end of each stroke. Final strokes should all be in one direction to produce an even texture and finish. Do not overbrush. Allow first coat to dry for 12 to 24 hours before applying a finish coat. **Spray:** Use heavy duty spray equipment capable of spraying cement coatings or mastics. **Trowel:** Trowel applications are required in some severe water pressure situations.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean any splatter or spills with water before material sets.

PRECAUTIONS/LIMITATIONS

- The general appearance of TAMOSEAL FOUNDATION COATING is gray, but there are no color consistency guarantees. If a more uniform appearance is desired, use TAMOSEAL.
- Do not apply to frozen or frost filled surfaces or when temperature is below 40°F (4°C), or expected to fall below 40°F (4°C) in 24 hours.
- Do not dampen walls excessively.
- If application is made during hot or windy weather, finished surfaces should be fog sprayed several times during the day to prevent rapid drying.
- TAMOSEAL FOUNDATION COATING is normally applied to the positive side but may be applied to the negative side when hydrostatic pressures are low and aesthetics are not important.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

HEY'DI K-11

CEMENT-BASED, CRYSTALLINE WATERPROOFING TREATMENT

EUCLID CHEMICAL

DESCRIPTION

HEY'DI K-11 is a breathable, two-part, polymer-modified, cement-based system for waterproofing concrete and masonry. HEY'DI K-11 has a texture and consistency similar to concrete and may be brush or spray applied. HEY'DI K-11 becomes an integral part of the wall and waterproofs the negative or positive side through a crystallization process. HEY'DI SB is the bonding agent used with HEY'DI K-11. It improves adhesion and flexibility, and reduces the permeability of the system. HEY'DI K-11 must be allowed to cure before applying a finishing floor system.

PRIMARY APPLICATIONS

- Below or above grade surfaces
- Horizontal structural slabs
- Foundations & basements
- Tunnels
- Dams & water reservoirs
- Manholes
- Sewage & water treatment plants
- Interior/exterior
- Spillways

FEATURES/BENEFITS

Waterproofs a wide variety of surfaces including concrete, medium/heavy weight block, brick and shotcrete.

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75° F (24°C) *Values are typical and not necessarily referenced to create specifications.*

Test Method	Criterion	Results
Adhesion, ASTM C952 psi(MPa)	75°F	175 (1.2)
Tensile Strength, ASTM C190 psi(MPa)	100% RH	332 (2.3)
	50% RH	118 (0.8)
Flexural Strength, ASTM C580 psi(MPa)	75°F	472 (3.3)

Permeability, CRD 48-73 Two coats tested with water pressure @ 200 psi (1.4 MPa) resulted in permeability of 5.2 x 10^{-10} (ft^3/sec.)/(ft^2/ft head/ft))

PACKAGING

HEY'DI K-11 is packaged in 50 lb(22.7 kg) polylined bags. HEY'DI SB BONDING AGENT is available in 5 gal (18.9 L) pails or cases of six 1 gal (3.8 L) pails. HEY'DI K-11 Contractor Kit consists of 25 lb(11.4 kg) of HEY'DI K-11 powder and 1 gal (3.8L) of a ready to use, prediluted mixture of water and HEY' DI SB BONDING AGENT.

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS/COMPLIANCES

HEY'DI K-11 is certified by NSF/ANSI Standard 61 for use in water/wastewater treatment facilities

HEY' DI SB BONDING AGENT is approved for use by the Canadian MTQ

COVERAGE

Under normal waterproofing conditions, one 50 lb (22.7 kg) bag of HEY'DI K-11 will cover approximately 100 ft^2 (2.45 m^2) in two coats. **Note:** Coverage rates are approximate and will depend on the texture and porosity of the substrate.

DIRECTIONS FOR USE

Surface Preparation: New concrete and masonry must be cured a minimum of 7 days. The surface must be structurally sound, clean and free of dirt, oil and other contaminants including curing compounds, form release agents, old coatings, paint and efflorescence. All concrete laitance must also be removed. Provide an absorptive surface on all substrates including precast and formed concrete. The surface must have an open capillary system for adhesion and for optimum crystalline growth. Remove form marks and other protrusions. Concrete honeycombs, cavities, joints, cracks, voids, tie holes and other defects must be opened and routed to sound material. Follow the recommended methods for repairing defects as suggested below. No active water leaks should be present at the time of application of HEY'DI K-11. Use the HEY'DI POWDER X SYSTEM to seal active leaks.

Mixing: Positive Side Waterproofing: Blend a 1:5 ratio of HEY'DI SB BONDING AGENT with potable water to make the "mixing liquid". Negative Side Waterproofing, blend a 1:3 ratio of HEY'DI SB BONDING AGENT with potable water to make the "mixing liquid". To mix a 50 lb (22.7 kg) bag of HEY'DI K-11, pour approximately one gal (3.8 L) of mixing liquid into a clean container and begin slow speed power mixing.

Slowly add HEY'DI K-11. Gradually add more mixing liquid to bring the mixture to the consistency of a completely blended slurry. Mixing 50 lb (22.7 kg) of HEY'DI K-11 will require a 1½ to 2 gal (5.68 to 7.57 L) of mixing liquid. When mixing is completed, do not add additional mixing liquid and do not retemper the mix.

Application: Dampen the surface with potable water prior to application. There should be no running or standing water present. A minimum of two coats of HEY'DI K-11 is applied to a surface for effective waterproofing. Each coat is applied at 2.25 lbs/yd² (1.22 kg/m²) which yields approximately 30 mils thickness per coat. **Brush:** Surface must be damp at the time of application. Load bristles of a masonry brush with HEY'DI K-11. Work the slurry into the surface to fill pores and voids. The final brush strokes should be in one direction to produce an even texture and finish. Apply at a rate of 2.25 lbs/yd² (1.22 kg/m²). Allow HEY'DI K-11 to cure for 24 hours before applying a second coat. After 24 hours, dampen the first coat and apply a second coat of HEY'DI K-11. HEY'DI K-11 in white may be used as a finish coat to enhance the aesthetic appearance. Apply the second coat in the same manner as the first coat except that the finish brush strokes should be at right angles to those of the first coat. Apply the second coat at a rate of 2.25 lb/yd² (1.22 kg/m²). **Spray:** Use air operated spray equipment capable of spraying cementitious materials. Use a 1/8" (0.32 cm) nozzle. On concrete surfaces, spray HEY'DI K-11 in two coats. The first coat should be light and followed immediately by a second heavier coat. Total coverage of the two coats should be 4.5 lb/yd² (2.45 kg/m²). On concrete masonry surfaces, apply a first coat at 2.25 lb/yd² (1.22 kg/m²). Before initial set, back brush the surface with a masonry brush or broom to fill voids and ensure uniform coverage. Allow the first coat to cure for 24 hours. Dampen the surface and spray on a second coat at 2.25 lbs/yd² (1.22 kg/m²) in the same manner as the first coat. Back brushing the second coat is not required. **Broadcast & Trowel for Horizontal Applications:** When the concrete starts to reach initial set (no bleed water visible), dry sprinkle HEY'DI K-11 at the rate of 4 to 5 lb/yd² (2.2 to 2.7 kg/m²) on the concrete surface. Power trowel the surface until HEY'DI K-11 coverage is uniform.

Special Applications: Repairs: After proper surface preparation of the areas to be repaired, apply HEY'DI K-11 in two coats of 2.25 lbs/yd² (1.22 kg/m²) each over areas which require repairs. After the second coat has cured for 24 hours, apply TAMMSPATCH II to the defective area per instructions in their respective technical data sheet. Allow patches to cure for 24 hours. Apply HEY'DI K-11 per the above application instructions over the entire area to be waterproofed including the repairs. For optimum waterproofing, repair areas will have a total of 4.5 lbs/yd² (2.45 kg/m²) of HEY'DI K-11 under the repair and a second coat of 4.5 lbs/yd² (2.45 kg/m²) of HEY'DI K-11 over the entire surface including the repaired areas. **Coved or Canted Applications**: Apply 2 coats of HEY'DI K-11 to the area to be coved. After the second coat has cured for 24 hours, use DURALTOP GEL or TAMMSPATCH II to form the required cove. Waterproof over coves or canting with two coats of HEY'DI K-11 (1.22 kg/m²/coat). **Cracks or Expansion Joints**: Cut out cracks to a minimum of 1" x 1" (2.54 cm x 2.54 cm) depth and width. Apply 2 coats of HEY'DI K-11 into sides and bottom of crack or joint. Cure the second coat for a minimum of 4 days and then install a flexible, waterproof joint sealant. The joint sealant may be filled approximately 1/4" to 1/2" (.64 cm to 1.27 cm) from the top of the surface. Apply a bond breaker tape over the sealant and fill the remaining joint area flush to the surface with TAMMSPATCH II. Apply 2 coats of HEY'DI K-11 over the entire area to be waterproofed including the patched cracks and joints. **New Construction Joints**: Brush apply 2 coats of HEY'DI K-11 onto the concrete surface to be joined. After second coat has cured 24 hours, pour the new concrete against the HEY'DI K-11 surface to form the bond and continuous membrane. **Through Wall Penetrations**: Cut around the pipe, electrical conduit or other embedded material a minimum of 1" deep and 1" wide (2.54 cm by 2.54 cm) at the surface. Clean the pipe or conduit thoroughly. Mix HEY'DI SB BONDING AGENT with potable water at a 1:1 ratio. Dry blend cement and sand at a 1:1 ratio. Combine mixtures and apply the slurry to the pipe or conduit. Allow 24 hours for curing. Dampen area and apply 2 coats of HEY'DI K-11 allowing a 24 hour cure time between coats. Fill the remaining cavity with TAMMSPATCH II. After allowing the TAMMSPATCH II to cure for 24 hours, apply 2 more coats of HEY'DI K-11 over the entire area to be waterproofed.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. If allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not re-temper HEY'DI K-11.
- Do not apply to frozen or frost filled surfaces or when temperature is below or expected to fall below 40°F (4°C) within 48 hours.
- Do not apply HEY'DI K-11 at temperatures above 90°F (32°C), unless the surface has been fully saturated with water at the time the application begins.
- HEY'DI K-11 is not designed as a wearing surface. Apply a protective topcoat before subjecting it to traffic.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application.
- Ensure that adequate ventilation is available during the application and the full curing period when using HEY'DI K-11 containing HEY'DI SB BONDING AGENT in enclosed tanks or reservoirs. Allow minimum 7 days drying time before backfilling unless protection board is used.
- Allow 7 days cure at 75°F (24°C) before covering or before the application of waterbased decorative coatings.
- Do not apply coatings containing lime over HEY'DI K-11.
- Allow minimum 7 days cure before exposing HEY'DI K-11 to water pressure or any contact with water.
- When HEY'DI K-11 is used in areas exposed to chemicals or high-sulfate containing soils, consult technical service for specific recommendations.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

HEY'DI POWDER X SYSTEM

WATERPROOFING COMPOUND FOR ACTIVE LEAKS

EUCLID CHEMICAL

DESCRIPTION

HEY'DI POWDER X SYSTEM is a combination of cementitious and silicate based materials used on negative side surfaces to seal and stop leakage caused by hydrostatic pressure. HEY'DI POWDER X SYSTEM is a 3 coat, two component system consisting of a powder and a liquid. HEY'DI POWDER X is a dry powder that hardens in seconds when exposed to water. HEY'DI SEALING LIQUID (ordered separately) penetrates through HEY'DI POWDER X into the capillaries of the substrate. It reacts with moisture and the constituents of the substrate to form crystals. While moisture is present, the crystallization process will continue for approximately six months. HEY'DI POWDER X SYSTEM is not designed to be used as a wearing surface. Horizontal surfaces subject to vehicle or heavy foot traffic must be covered with a protective topping.

PRIMARY APPLICATIONS

- Interior/exterior walls below grade
- Slabs on grade and basements
- Foundations
- Reservoirs
- Tunnels
- Dry docks

FEATURES/BENEFITS

- Leaking and weeping concrete or masonry from the negative side
- Protects against hydrostatic water pressure
- Will not debond from the surface by water pressure

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties: Values are typical and not necessarily referenced to create specifications.

Test Method	Criterion	Results
Adhesion ASTM E149, psi (MPa), 3 day cure	Open structure concrete	84.6 (0.58)
	Closed structure concrete	42.2 (0.29)
	Steel formed concrete	61.4 (0.42)
Tensile Strength ASTM C190, psi (MPa)	100% RH	380 (2.62)
	50% RH	325 (2.24)
Permeability CRD 48-55	Water head @ 4.3 ft	7.6 x 10 to 11^{-11}
	Water head @ 144 ft	8.1 x 10 to10^{-10}

PACKAGING

HEY'DI POWDER X is packaged in 30 lb (13.6 kg) pails and HEY'DI SEALING LIQUID is packaged in 5 gal (37.9 L) pails.

SHELF LIFE

1 year in original, unopened package

COVERAGE

HEY'DI POWDER X applied dry at 0.28 lb/ft² (1.16 kg/m²) and depends on the extent of the active leaking areas HEY'DI SEALING LIQUID used as received, 60 ft²/gal (1.47 m²/L)

DIRECTIONS FOR USE

General Surface Preparation: New concrete and masonry surfaces should be cured a minimum of 7 days. Surface must be structurally sound, clean, and free of contaminants including curing compounds, form release agents, dust, dirt, oil, efflorescence, old coatings, and paint. Concrete honeycomb, cavities, joints, cracks, voids, tie holes, and other defects must be opened and routed to sound material. Rout broken or uneven brick or block to sound material.Substrates must be roughened and absorptive. Smooth precast or formed concrete must be opened to an exposed aggregate surface. The surface must have an open capillary system for adhesion and optimum crystalline growth. Remove form marks and other protrusions.

Application: For application to actively leaking surfaces, wear rubber gloves and immediately rub HEY' DI POWDER X well into the wet surface until the surface is dry. This application should not be greater than 1/32" (0.8 mm) in thickness. As soon as the POWDER X has been applied, brush the area with HEY'DI SEALING LIQUID using a clean brush. As soon as the SEALING LIQUID is applied, rub another batch of POWDER X into the wet surface. The entire procedure may be repeated for difficult to control leaks. Upon completion of the three steps, protect the surface from rain, hot sun, or wind, and freezing or frost for 24 hours while monitoring the area to ensure leaks have been stopped and have not been re-directed to new locations. To produce an uninterrupted waterproof membrane, apply two coats of HEY'DI K-11 over the entire surface, including the repaired surface and the surrounding wall area. Apply HEY'DI K-11 as described in the HEY'DI K-11 Technical Data Sheet.

Moderate leakage or small holes: Clean and prepare the surface as described above. Press a generous handful of dry HEY'DI POWDER X into the hole and maintain constant pressure until leakage stops. **High pressure leakage or heavy flow:** Premix HEY'DI POWDER X with potable water into a thick putty and use it as a plug. Finish sealing off the remaining flow using dry HEY'DI POWDER X as directed above.

Dynamic and Static Cracks: Cut out the crack 3" (7.6cm) wide at the surface and 2" to 3" deep (5cm to 7.6cm). Use HEY'DI POWDER X System to stop active leaking. Dampen area, and apply HEY'DI K-11 to the sides and bottom of the cut and overlap onto the sides and bottom of the cut and overlap onto the adjacent surfaces.

Following cure of the HEY'DI K-11, apply a bond breaker tape in the bottom of the cut and install a waterproof flexible joint sealant. Maintain top surface of sealant 1½" (3.8cm) below the top of the substrate. Following cure of sealant, install a bond breaker tape to only the cured surface of the sealant. Fill the remaining cut with TAMMSPATCH II to the level of the substrate. To create a joint for movement control, cut into the center of the fill mortar 1/8" wide and a minimum one half of the depth of the fill mortar.

Floor/Wall Joint Leakage: Cut an area approximately 1/2" (12mm) deep a minimum 3" to 4" (7.6cm to 10cm) up the wall, and 3" to 4" (7.62 cm to 10.16 cm) onto the floor. Use HEY'DI POWDER X SYSTEM to stop active leaking. Dampen the area and apply HEY'DI K-11 to the sides and bottom of the area and overlap the adjacent surfaces. Following cure, use TAMMSPATCH II to level the area with the floor surface.

CLEAN-UP

Clean all mixing and application equipment with water immediately after use. Clean all splatter or spills with water before material sets. HEY'DI POWDER X is a cementitious product and if allowed to dry on the surface, removal becomes very difficult.

PRECAUTIONS/LIMITATIONS

- HEY'DI POWDER X is a dark gray waterproofing compound and is not intended to be a decorative finish.
- Do not apply to frozen or frost filled surfaces or when temperature is below 40°F (4°C) or expected to fall below 40°F (4°C) in 48 hours.
- Do not apply in temperatures above 90°F (32°C).
- Protect with a topping when used as a traffic wearing surface.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application. Ensure that adequate ventilation is available during the application and the full curing period when using HEY'DI POWDER X SYSTEM in enclosed tanks or reservoirs.
- Allow minimum 7 days drying time before backfilling.
- Allow 7 days cure before covering or before the application of a waterbased decorative coating.
- Do not apply lime based products over HEY'DI POWDER X SYSTEM.
- Do not substitute HEY'DI SEALING LIQUID.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

DEHYDRATINE 75

EMULSIFIED ASPHALT DAMPPROOFING COMPOUND

EUCLID CHEMICAL

DESCRIPTION

DEHYDRATINE 75 is a VOC compliant, water-based compound designed to dampproof concrete and masonry. The DEHYDRATINE formulation is derived from colloidal, asphalt-based clay emulsions, that utilize a water carrier. It can be used above and below grade. DEHYDRATINE 75 is highly effective and is easily applied by trowel or spray.

FEATURES/BENEFITS

DEHYDRATINE 75 is an effective dampproofing product on roofing materials such as fiber glass fabric and metal (see Roofing under Application Techniques). DEHYDRATINE 75 can be used over most metals to protect against rust and corrosion. It has good weathering and abrasion resistance. It resists flow or sag even when exposed to high ambient temperatures. Other advantages include:

- Solvent free
- Adheres tenaciously to damp or “green” surfaces
- Breathes to allow water vapor to escape and reduce blistering
- Flexible and will not crack as a result of normal contraction & expansion
- Asbestos-free

PACKAGING

DEHYDRATINE 75 is packaged in 5 gal (18.9 L) pails and in 55 gal (208 L) drums.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

ASTM D1227 Type III
ASTM D1187 Type I

Appearance: DEHYDRATINE 75 is black.

COVERAGE

The following coverage rates are approximate and for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements:

One Coat Application	**ft²/gal (m²/L)**
(not more than)	33 (0.81)
Two Coat Application	
1st coat	50 (1.23)
2nd coat	50 (1.23)

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, clean, free of dust, dirt, mortar, residue curing and parting compounds, and other contaminants. Use of wire brushes, sandblasting or other mechanical means is recommended. Prior to application, surface defects, voids, joints or cracks must be properly sealed or filled. Dry surfaces should be dampened with water and kept damp before application.

Mixing: DEHYDRATINE 75 does not require mixing.

Application: Apply by soft bristle brush or suitable spray equipment at a rate of not more than 33 ft^2/gal (0.81 m^2/L) in a single coat. When two coats are applied in hot weather when it may be difficult to keep the surface damp, the first coat may be diluted with up to 10% of clean, cool water. The first coat should be dry to the point where it is tacky to the touch before the second coat is applied.

Backfilling: Do not backfill until the film has dried (at least 24 to 48 hours after application). Backfilling should be accomplished as soon as possible (after 24 to 48 hours) to protect the film from damage by outside sources. Place backfill with care so that the film will not be ruptured.

Spraying: Use an air operated piston pump (such as Graco) with a 9:1 ratio and a pole gun with a 3/32 in. (0.2 cm) tip. A 3/4 in. (1.9 cm) ID material hose and a 1/2 in. (1.3 cm) ID air hose from the pump to the gun is preferred for most applications.

Roofing: DEHYDRATINE 75 can be used with fiberglass fabric for built-up waterproofing and roofing applications. DEHYDRATINE 75 has excellent rust inhibiting qualities and can be applied as a coating over metal roofs. It has good weathering properties and resistance to corrosive fumes and smoke.

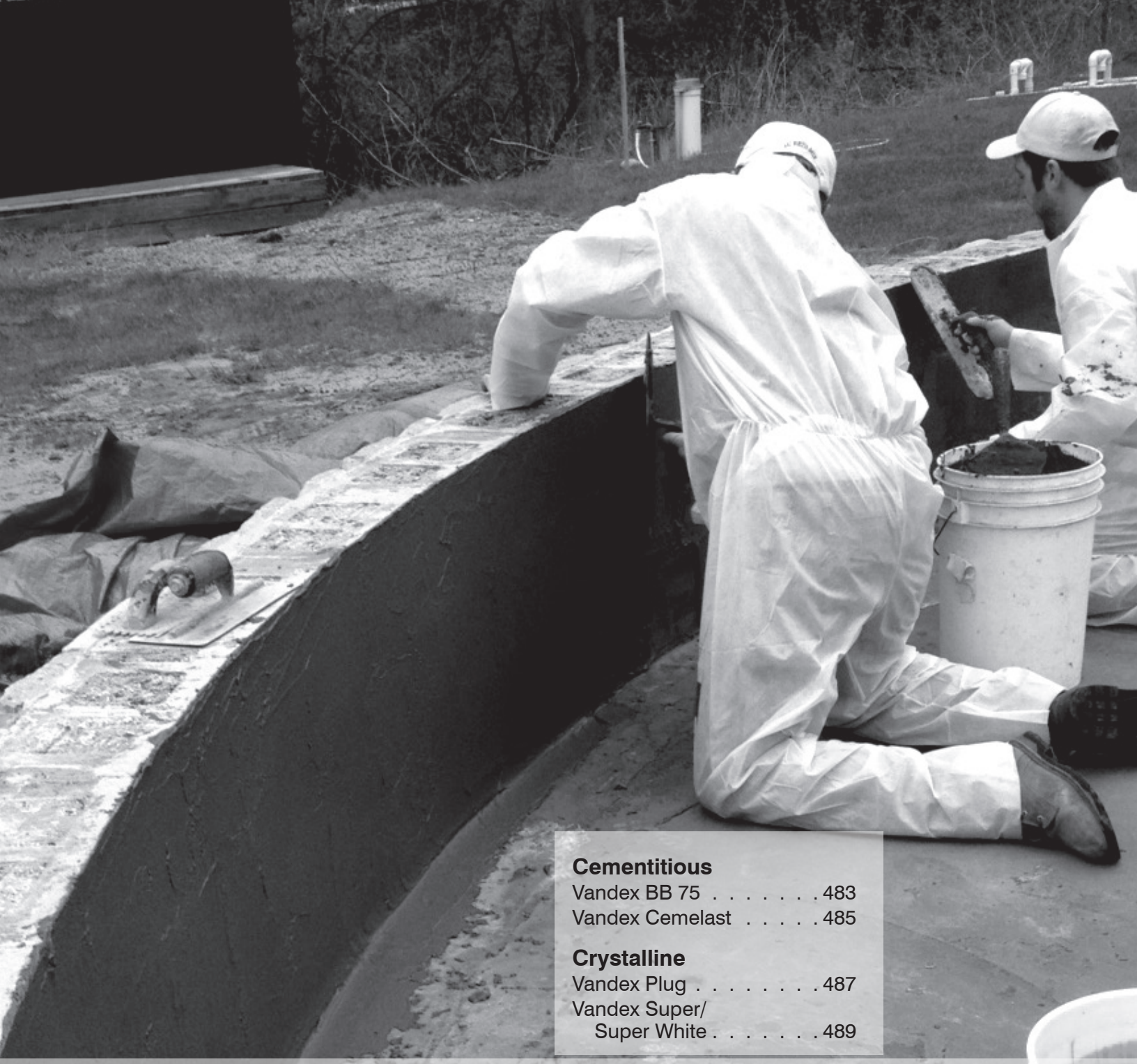
CLEAN-UP

Clean tools or equipment with mineral spirits immediately following use. Clean drips while still wet. DEHYDRATINE 75 will not harm glass or metal by etching, pitting, or staining; however, it will leave a residue which is easily removed with a clean cloth and petroleum based paint thinner. Stronger solvents may be required to remove the residue if allowed to remain on the surface. Once final set has occurred, DEHYDRATINE 75 may be impossible to remove from surfaces. Flush rubber surfaces with water immediately following contact with DEHYDRATINE 75.

PRECAUTIONS/LIMITATIONS

- Do not apply DEHYDRATINE 75 to surfaces that will receive a concrete overlay or topping, or will be sealed with another type of sealer.
- Mask or protect the sides of joints prior to the application of DEHYDRATINE 75.
- Applications of DEHYDRATINE 75 at coverage rates greater than those recommended above may result in improper drying.
- Do not allow to freeze.
- Do not apply DEHYDRATINE 75 if rain is expected during the application time. DEHYDRATINE 75 should be dry tack-free before exposure to rain.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19



VANDEX WATERPROOFING

VANDEX BB 75

NSF APPROVED, CEMENTITIOUS WATERPROOF COATING

EUCLID CHEMICAL

DESCRIPTION

VANDEX BB 75 is an engineered surface waterproof coating with hydrophobic properties that is NSF/ANSI Standard 61 approved for use with potable water. VANDEX BB 75 can be brush or spray applied to either the positive or negative side of a concrete or masonry substrate in need of waterproofing. Tested to over 230 feet of hydrostatic pressure, VANDEX BB 75 is suitable for horizontal and vertical/overhead uses. While resistant to water and moisture, VANDEX BB 75 allows the structure to breathe by allowing the passage of vapor.

PRIMARY APPLICATIONS

- Structural slabs
- Swimming pools
- Foundations & basements
- Tunnels
- Dams & water reservoirs
- Manholes
- Sewage & water treatment plants
- Culverts
- Spillways

FEATURES/BENEFITS

- Positive or negative side to minimize excavation
- Allows vapor to pass through substrate
- NSF approved for potable water
- Perfect for vertical/overhead and horizontal surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @70°F and 50% RH

Setting Time.....2 to 4 hours

Compressive Strength, ASTM C109

28 days .....5,800 psi (39.9 MPa)

Flexural Strength, ASTM C348

28 days .....870 psi (6.0 MPa)

Modulus of Elasticity, ASTM C469

28 days .....3.1 x 10^5 psi (2,137 MPa)

Appearance: VANDEX BB 75 is concrete gray in color

Water Permeability of Concrete, CRD C48-92

At the completion of the test, the treated specimens (6" x 6" [15.2 cm x 15.2 cm]) did not exhibit any water leakage. All specimens were tested for 14 days under 200 psi (462 feet of head pressure [13.8 bar]). An independent laboratory test report is available upon request.

PACKAGING

VANDEX BB 75 is packaged in 55 lb. bags

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS/COMPLIANCES

VANDEX BB 75 is NSF (ANSI STD 61) certified for use with potable water

COVERAGE

Coverages rates for VANDEX BB 75 vary depending on the application. Below are typcial applications and their usage rate.

Dampness - 5.5 lbs/yd² (90 ft²/bag per coat) **Surface water/seepage -** 7.4 lbs/yd² (66 ft²/bag per coat)

Water pressure - 11 lbs/yd² (45 ft²/bag per coat)

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of dirt, oil and other contaminants including curing compounds, form release agents, old coatings, paint and efflorescence. New concrete and masonry must be cured a minimum of 7 days. All concrete laitance must also be removed. Provide an absorptive surface (CSP 1-3 in accordance with ICRI Guideline 310.2) on all substrates including precast and formed concrete. The surface must have an open pore appearance for proper adhesion. Remove form marks and other protrusions. Concrete honeycombs, cavities, joints, cracks, voids, tie holes and other defects must be opened and routed to a 3/4" depth or to sound material. No active water leaks should be present at the time of application of VANDEX BB 75. Use SPEED PLUG or VANDEX PLUG to stop all active leaks. Any surface defects need to be addressed with the application of EucoRepair V100. Once prepared, the substrate needs to soaked with water to a saturated, surface-dry (SSD) condition just prior to the application of the material.

Mixing: Mix the entire of bag of VANDEX BB 75 with 1.3 - 1.5 gal of clean water for brush or trowel applications. For spray applications, mix the entire bag with 1.5 - 1.65 gal of clean water. In either case, mix the material for at least 3 minutes with a drill and mixing paddle.

Application: Brush or trowel: After the substrate has been prepared as described above, apply VANDEX BB 75 from the bottom-up and work well into the substrate. Ensure that all cavities on the surface are filled. If a second layer is required it must be applied while the first coat is still "green". The time between applications is 2 to 4 hours, depending on local conditions. Take care not to damage the first coat while applying the second coat. If a trowel is used to apply the material, use a mason's brush to texture the first coat prior to the application of the second coat for maximum adhesion.

Spray: VANDEX BB 75 may be applied using appropriate spray equipment with compressed air (i.e. hopper gun). For spray equipment, the recommended air pressure is approx. 73 psi with a delivery rate of 18 ft^3/minute, using a 1/4" nozzle diameter. The first layer of VANDEX BB 75 is applied using a circular motion with nozzle at a 90° angle to the substrate. A trowel or brush is then used to work the material into the substrate. If needed, spray apply a second coat while the first coat is still "green" and can support the second coat. Time between coats is typically 2 to 4 hours, depending on local conditions. The second layer can be trowelled flat or left textured.

Curing and protection: VANDEX BB 75 is cement based and will cure in the same fashion as ordinary concrete. For maximum effectiveness, it is essential that the material be wet cured for a minimum of 5 days. Once VANDEX BB 75 has hardened sufficiently, standard wet curing processes such as wet or fog spraying, or covering with polyethylene sheeting, wet burlap or burlene. VANDEX BB 75 must be protected from rain during the first 24 hours and be protected from frost for at least 5 days. Use insulation blankets if necessary. Backfilling can occur 3 days after placement. VANDEX BB 75 treated surfaces need to be protected from gouging and scratching during the backfill process using protective mats or boards.

Application of topical treatments: Prior to the application of aesthetic coatings over top of VANDEX BB 75 treated surfaces, the material needs to be cured for 28 days. If a plaster or stucco finish is to be used, apply a compatible bonding agent to the VANDEX BB 75 surface.

Filling of water retaining structures: Filling of VANDEX BB 75 treated structures can occur once the material has had sufficient time to cure. Typically, 14 days would be required prior to filling. If the project is "fast-tracked" and the structure needs filled sooner, the material needs to be checked for sufficient hardness no sooner than 7 days after placement.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. If allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces or when temperature is below or expected to fall below 40°F within 48 hours.
- Protect treated surfaces from frost for 5 days.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application. Inspect for hardness prior to filling.
- Allow minimum 3 days drying time before backfilling. Use protection boards to prevent gouging.
- Allow 28 days cure before the application of coatings and cementitious treatments.
- Protect treated surfaces for 24 hours from rain.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VANDEX CEMELAST

ELASTICIZED, CEMENTITIOUS WATERPROOF COATING

EUCLID CHEMICAL

DESCRIPTION

VANDEX CEMELAST is an elastic surface waterproof coating with hydrophobic properties. VANDEX CEMELAST is comprised of VANDEX CEMELAST LIQUID and VANDEX BB 75 powder. When the two are mixed together to create VANDEX CEMELAST, areas that are subject to cracking and minor movement can be easily waterproofed. Tested to over 50 feet of hydrostatic pressure, VANDEX CEMELAST is suitable for horizontal and vertical/overhead uses. While resistant to water and moisture, VANDEX CEMELAST allows the structure to breathe by allowing the passage of vapor.

PRIMARY APPLICATIONS

- Structural slabs
- Swimming pools
- Foundations & basements
- Tunnels
- Dams & water reservoirs
- Manholes
- Sewage & water treatment plants
- Culverts
- Spillways

FEATURES/BENEFITS

- Positive side waterproofing
- Allows vapor to pass through substrate
- Elastomeric properties for cracked substrates
- Perfect for vertical/overhead and horizontal surfaces

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @70°F and 50% RH

Setting Time.....2 to 4 hours

Adhesive Strength

28 days.....175 psi

VANDEX CEMELAST is concrete gray in color

Elongation at Rupture

final.....13%

Tear Resistance

final.....130 psi

PACKAGING

VANDEX CEMELAST LIQUID is packaged in 2.6 gal pails. VANDEX BB 75 is packaged in 55 lb. bags

SHELF LIFE

VANDEX CEMELAST LIQUID has a shelf life of 6 months in original, unopened containers. VANDEX BB 75 has a shelf life of 1 year in original, unopened packages.

COVERAGE

One mixed unit of VANDEX CEMELAST will cover approximately 109 ft^2 at 2mm in thickness. Two coats are recommended for proper performance.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of dirt, oil and other contaminants including curing compounds, form release agents, old coatings, paint and efflorescence. New concrete and masonry must be cured a minimum of 7 days. All concrete laitance must also be removed. Provide an absorptive surface (CSP 1-3 in accordance with ICRI Guideline 310.2) on all substrates including precast and formed concrete. The surface must have an open pore appearance for proper adhesion. Remove form marks and other protrusions. Concrete honeycombs, cavities, joints, cracks, voids, tie holes and other defects must be opened and routed to a 3/4" depth or to sound material. No active water leaks should be present at the time of application of VANDEX CEMELAST. Use SPEED PLUG or VANDEX PLUG to stop all active leaks. Any surface defects need to be addressed with the application of EucoRepair V100. Once prepared, the substrate should be dry, but slight dampness is acceptable prior to the application of the material.

Mixing: Place the entire contents of VANDEX CEMELAST LIQUID into a clean mixing pail. Slowly add the entire bag of VANDEX BB 75. Mix the material for at least 3 minutes with a drill and mixing paddle. In the event small amounts of VANDEX CEMELAST need to be mixed, mix at a ratio of 5.5 lbs. of powder to 2 lbs. of liquid.

Application: Brush or trowel: After the substrate has been prepared as described above, apply VANDEX CEMELAST from the bottom-up and work well into the substrate. Ensure that all cavities on the surface are filled. Apply the second layer while the first coat is still "green". The time between applications is 2 to 4 hours, depending on local conditions. Take care not to damage the first coat while applying the second coat. If a trowel is used to apply the material, use a mason's brush to texture the first coat prior to the application of the second coat for maximum adhesion. Apply 2 coats at 2mm in thickness each. The entire coating is not to exceed 4mm in thickness.

Spray: VANDEX CEMELAST may be applied using appropriate spray equipment with compressed air (i.e. hoppergun). For spray equipment, the recommended air pressure is approx. 73 psi with a delivery rate of 18 ft^3/minute, using a 1/4" nozzle diameter. The first layer of VANDEX CEMELAST is applied using a circular motion with nozzle at a 90° angle to the substrate. A trowel or brush is then used to work the material into the substrate. If needed, spray apply a second coat while the first coat is still "green" and can support the second coat. Time between coats is typically 2 to 4 hours, depending on local conditions. The second layer can be trowelled flat or left textured.

Curing and protection: VANDEX CEMELAST requires no curing procedures due to the enhancement from the VANDEX CEMELAST LIQUID. Take caution to shield the freshly placed material from extreme temperatures and wind. VANDEX CEMELAST must be protected from rain during the first 24 hours and be protected from frost for at least 5 days. Use insulation blankets if necessary. Backfilling can occur 3 days after placement. VANDEX CEMELAST treated surfaces need to be protected from gouging and scratching during the backfill process using protective mats or boards.

Application of topical treatments: Prior to the application of aesthetic coatings over top of VANDEX CEMELAST treated surfaces, the material needs to be cured for 28 days. If a plaster or stucco finish is to be used, apply a compatible bonding agent to the VANDEX CEMELAST surface.

Filling of water retaining structures: Filling of VANDEX CEMELAST treated structures can occur once the material has had sufficient time to cure. Typically, 14 days would be required prior to filling. If the project is "fast-tracked" and the structure needs filled sooner, the material needs to be checked for sufficient hardness no sooner than 7 days after placement.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. If allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces or when temperature is below or expected to fall below 40°F within 48 hours.
- Protect treated surfaces from frost for 5 days.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application. Inspect for hardness prior to filling.
- Allow minimum 3 days drying time before backfilling. Use protection boards to prevent gouging.
- Allow 28 days cure before the application of coatings and cementitious treatments.
- Protect treated surfaces for 24 hours from rain.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VANDEX PLUG

RAPID-SETTING, CRYSTALLINE HYDRAULIC CEMENT

EUCLID CHEMICAL

DESCRIPTION

VANDEX PLUG is a rapid-setting hydraulic cement compound with crystalline properties used to instantly stop running water or seepage in masonry or concrete. VANDEX PLUG is ready to use and requires only the addition of water before plugging and sealing active leaks within a minute. Once VANDEX PLUG has set and stopped the flowing water, additional Vandex waterproofing treatments can be immediately applied over the top of it.

PRIMARY APPLICATIONS

- Concrete pipe
- Swimming pools
- Foundations & basements
- Tunnels
- Dams & water reservoirs
- Manholes
- WTP & WWTP plants
- Culverts
- Spillways

FEATURES/BENEFITS

- Initial set in 45 seconds
- Instantly stops running water or seepage leaks
- Positive or negative side application
- Can be applied underwater

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties at 75°F (24°C)

Test Method

Compressive Strength ASTM C109 psi (MPa)

1 hour.....1,000 (6.9)
1 day.....1,500 (10.3)
28 days.....3,000 (20.7)

Flexural Strength ASTM C348

7 days.....300 (2.1)
28 days.....350 (2.4)

Expansion/Shrinkage ASTM C157

28 Day Length Change, 3" x 3" beams removed from molds @ 24 hours

Moist Room (100% RH).....0.10%
Dry Room (50% RH).....-0.25%

Appearance: VANDEX PLUG is a gray hydraulic cement compound.

PACKAGING

VANDEX PLUG is packaged in 50 lb (22.7 kg) pails.

SHELF LIFE

1 year in original, unopened container

COVERAGE/YIELD

1 lb (0.45 kg) of VANDEX PLUG yields approximately 17 in^3 (171 cm^3) of repair material.

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP >3 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Mixing: Pour potable water into a clean mixing container and gradually add VANDEX PLUG. Use approximately 1 quart of water to 8 to 9 lbs (3.8 to 4.3 kg/L) of material. Mix rapidly with a trowel to the consistency of stiff putty with no slump for no more than 20 seconds. VANDEX PLUG will flash set in 45 seconds. Properly mixed, VANDEX PLUG can be hand formed into a ball.

Application: Saturate, surface-dry (SSD) areas for repair with potable water immediately before application of VANDEX PLUG.

General Repairs: Force VANDEX PLUG into the crack or hole by hand or with a trowel. Rapidly fill to the full depth of the opening. **Patching Active Leaks:** Start at the top of the crack or hole, and force the VANDEX PLUG to the full depth of the prepared area. Apply direct pressure to the new patch until the VANDEX PLUG has taken a firm set. Mix fresh material, and continue patching toward the area of the greatest pressure. When extreme water pressure is encountered, physically hold the mixed VANDEX PLUG with a hand against the leak and apply continuous pressure until the VANDEX PLUG has set, and the water has stopped running. Do not use a twisting motion. **Floor-Wall Patching:** Follow above methods for the specific conditions encountered. Use a rounded tool to force the VANDEX PLUG into the joint, and construct a 45° transitional cove between the floor and wall at the same time. **Expansion/Contraction Cracks:** Do not use VANDEX PLUG to treat dynamic cracks. Consult the technical data sheets for the DURAL AQUA LINE of chemical/urethane grouts.

CLEAN-UP

Clean tools and mixing equipment with water immediately after use.

PRECAUTIONS/LIMITATIONS

- Do not apply VANDEX PLUG to frozen or frost filled surfaces.
- Do not twist VANDEX PLUG into the hole while plugging running water leaks.
- In warm weather, mix VANDEX PLUG with ice water. In cold weather, mix VANDEX PLUG with mildly warm water.
- Do not use in dynamic cracks or expansion joints. Use a chemical grout from the DURAL AQUA line.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VANDEX SUPER/SUPER WHITE

NSF/ANSI 61 APPROVED CRYSTALLINE WATERPROOFING

EUCLID CHEMICAL

DESCRIPTION

VANDEX SUPER and VANDEX SUPER WHITE are waterproof treatments that become an integral part of concrete through a crystallization process. Once the cementitious carrier is applied to either the positive or negative side of the substrate, crystal growth occurs, blocking the capillaries and minor shrinkage cracks within the concrete to prevent any further water ingress. In addition to waterproofing,VANDEX SUPER/SUPER WHITE protects concrete substrates against saltwater, wastewater, harsh ground water and certain chemical solutions.

PRIMARY APPLICATIONS

- Sewage & water treatment plants
- Swimming pools
- Foundations & basements
- Secondary containment tanks
- Dams & water reservoirs
- Manholes
- Tunnels & subways
- Construction joints
- Spillways
- Structural slabs
- Underground vaults
- Retaining walls

FEATURES/BENEFITS

- Positive or negative side to minimize excavation
- Allows vapor to pass through substrate
- Remains permanently active within concrete
- Resistant to hydrostatic pressure
- Provides resistance against chemical exposure
- No membrane to tear or puncture
- Monolithic, no seams to separate
- Can be applied to “green” concrete structures
- No special surface preparation or primers needed
- NSF/ANSI Standard 61 approved for potable water use

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties @ 75°F (24°C), 50% RH

Permeability Testing, CRD-C 48-92

At the completion of the test, the treated specimens (6”x6” [15.2cm x 15.2cm]) did not exhibit any water leakage. All specimens were tested for 14 days under 200 psi (462 feet of head pressure [13.8 bar]). An independent laboratory test report is available upon request.

Water Penetration, DIN 1048

Treated specimens (7.5”x 15.5” x 4” [19.1cm x 39.4cm x 10.2cm]) exhibited an average water penetration of 9mm when tested for 72 hours under 72 psi (166 feet of head pressure [5.0 bar]). An independent laboratory test report is available upon request.

Compressive Strength, psi (MPa) ASTM C109

7 days.....2,500 (17.2)
28 days.....3,500 (24.1)

Freeze/Thaw Resistance, ASTM C666

300 cycles.....98% Relative Dynamic Modulus

Chemical Resistance, ASTM C267

Treated specimens and ASTM C 494 (5,450 psi [37.6 MPa]) untreated reference specimens were immersed in brake fluid, pool chlorine (5ppm), ethylene glycol (100%), mineral oil (100%), toluene (100%), sodium hydroxide (50%) and hydrochloric acid (10%). The compressive strength and weight change of each specimen was determined after 1, 7, 14, 28, 56, and 84 days. The treated specimens either outperformed or were the same as the reference specimens. An independent laboratory test report is available upon request.

Flexural Strength, psi (MPa) ASTM C348

7 days.....600 (4.1)
28 days.....900 (6.2)

Scaling Resistance, ASTM C672

50 cycles.....0 Rating, No Scaling

SPECIFICATIONS/COMPLIANCES

- VANDEX SUPER is NSF (ANSI Standard 61) certified for use with potable water

PACKAGING

VANDEX SUPER and SUPER WHITE are packaged in 50 lb. (22.7 kg) bags and 50 lb. (22.7 kg) plastic pails.

SHELF LIFE

1 year in original, unopened package

COVERAGE

Coverages rates for VANDEX SUPER/SUPER WHITE vary depending on the application. Below are typical applications and their usage rate.

Positive and negative side wall waterproofing: 320 ft^2/bag (29.7 m^2/bag) per coat (approximately 5 to 7 wet mils). Two coats are required. (160 ft^2 of wall area can be completed with one bag of product).

Water retaining structures: 320 ft^2/bag (29.7 m^2/bag) per coat (approximately 5 to 7 wet mils). Two coats are required. (160 ft^2 of wall area can be completed with one bag of product).

Freshly placed concrete slabs (including split slabs): 205 ft^2/bag (19.0 m^2/bag) (approximately 8 to 11 wet mils). Only one coat is required.

Construction joints: 160 ft^2/bag (14.8 m^2/bag) (approximately 10 to 14 wet mils). Only one coat is required.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of dirt, oil and other contaminants including curing compounds, form release agents, old coatings, paint and efflorescence. New concrete and masonry must be cured well enough to support the application of VANDEX SUPER/SUPER WHITE without marring the surface. All concrete laitance must also be removed. Provide an absorptive surface (CSP 1-3 in accordance with ICRI Guideline 310.2) on all substrates including precast and formed concrete. The surface must have an open capillary system for adhesion and for optimum crystalline growth. Remove form marks and other protrusions. Concrete honeycombs, cavities, joints, cracks, voids, tie holes and other defects must be opened and routed to sound material. No active water leaks should be present at the time of application of VANDEX SUPER/SUPER WHITE. Use SPEED PLUG or VANDEX PLUG to stop all active leaks. Any surface defects need to be addressed with the application of EucoRepair V100. Once prepared, the substrate needs to be soaked with water to a saturated, surface-dry (SSD) condition just prior to the application of the material.

Mixing: Approximate mixing ratio is 2 parts clean, potable water to 5 parts of VANDEX SUPER/SUPER WHITE powder by volume. Alternately, mix the entire 50 lb. (22.7 kg) bag or pail with 1.75 to 2.0 gal (6.6 to 7.6 L) of water. DO NOT MIX any more material than can be used within 20 minutes. Agitate the mixture frequently to restore workability.

Application: Brush: Apply VANDEX SUPER/SUPER WHITE to properly prepared concrete and masonry substrates with a masonry brush. Spread the material across the SSD surface and work into the surface at the specified coverage rate. If a second coat is required, apply the second coat while the coat is still “green” and can support the second coat being scrubbed over top of it. The setting time of VANDEX SUPER (gray) is approximately 60 minutes, while the setting time of VANDEX SUPER WHITE is approximately 150 minutes. Set times were determined under laboratory conditions at 72°F (22°C).

Spray: VANDEX SUPER/SUPER WHITE may be applied using appropriate spray equipment with compressed air (i.e. hopper gun). For spray equipment, the recommended air pressure is approx. 73 psi (0.5 MPa) with an air delivery rate of 18 ft^3 (500 L)/minute. If needed, spray apply a second coat while the first coat is still “green” and can support the second coat.

New concrete slabs: Place and screed concrete as usual. Once the concrete has reached initial set and the bleed water has disappeared, use a power trowel with float shoes to open the surface of the concrete. Broadcast VANDEX SUPER/SUPER WHITE over the surface at the specified amount with a mesh sieve or other mechanical means. The material must then be worked into the surface with float shoes prior to the start of final finishing procedures. Properly cure upon completion. This is the only application where the 7 day cure time on new concrete isn’t required prior to material placement.

Split slab construction: Once the base slab has been placed (min. 4” [10 cm]), apply VANDEX SUPER/SUPER WHITE at the specified rate with a mesh sieve. Proceed to placing the topping slab as to not displace any of the material on the base slab.

Construction joints: Just prior to the placement of the adjoining slab, apply the specified amount of VANDEX SUPER/SUPER WHITE slurry to the prepared, exposed side of the slab in place. Take care to not displace the material as the adjacent slab is placed.

Curing and protection: VANDEX SUPER/SUPER WHITE is cement based and will cure in the same fashion as ordinary concrete. For maximum effectiveness, it is essential that the material be wet cured for a minimum of 5 days. Once VANDEX SUPER/SUPER WHITE has hardened sufficiently, use standard wet curing processes such as wet or fog spraying, or covering with polyethylene sheeting, wet burlap or burlene. VANDEX SUPER/SUPER WHITE must be protected from rain during the first 24 hours and be protected from frost for at least 5 days. Use insulation blankets if necessary. Backfilling can occur 3 days after placement. VANDEX SUPER/SUPER WHITE treated surfaces need to be protected from gouging and scratching during the backfill process. **Application of topical treatments:** Prior to the application of aesthetic coatings over top of VANDEX SUPER/SUPER WHITE treated surfaces, the material needs to be cured and neutralized. Allow 28 days for the VANDEX SUPER/SUPER WHITE to fully cure. After that time, soak the treated surface with water and apply a diluted solution of hydrochloric (muriatic) acid (1:8, approximately 3.5%). Thoroughly rinse with clean water immediately after the application. DO NOT ALLOW the diluted acid solution to dry on the material. Use all necessary protective means (gloves, goggles, respirators and clothing) when working with the diluted acid solution.

Filling of water retaining structures: Filling of VANDEX SUPER/SUPER WHITE treated structures can occur once the material has had sufficient time to cure. Typically, 14 days would be required prior to filling. If the project is "fast-tracked" and the structure needs filled sooner, the material needs to be thoroughly inspected for hardness no sooner than 7 days after placement.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter and spills with water before material sets. If allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Chemical resistance data is given as a reference. These products are NOT intended to be used on chemical containment structures.
- Do not retemper VANDEX SUPER/SUPER WHITE.
- Do not mix more material than can be placed in 20 minutes.
- Do not apply to frozen or frost filled surfaces or when temperature is below or expected to fall below 40°F (4°C) within 48 hours.
- When using in extreme conditions, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- Protect treated surfaces from frost for 5 days.
- Do not apply VANDEX SUPER/SUPER WHITE at temperatures above 90°F (32°C), unless the surface has been fully saturated with water at the time the application begins. Take protective measures to shade substrates in elevated temperatures.
- VANDEX SUPER/SUPER WHITE slurry is not designed as a wearing surface. Apply a protective topcoat before subjecting it to traffic.
- When applied to the inside of open cisterns, tanks, pools, etc., do not fill with water for at least 7 days after application. Inspect for hardness prior to filling.
- Allow minimum 3 days drying time before backfilling. Protection boards may be used to prevent gouging.
- Allow 28 days cure and neutralize the product before the application of coatings.
- Protect treated surfaces for 24 hours from rain.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

VANDEX CONSTRUCTION JOINT TAPE

WATERPROOFING STRIP FOR STATIC JOINTS AND CRACKS

EUCLID CHEMICAL

DESCRIPTION

VANDEX CONSTRUCTION JOINT TAPE is a 7" wide synthetic rubber "tape" that is covered with an alkali resistant and flexible polyester fabric, which forms a web around the edges. VANDEX CONSTRUCTION JOINT TAPE is used in conjunction with VANDEX BB 75 or VANDEX CEMELAST to provide a permanent waterproof seal over static joints and cracks on either the positive or negative side of a substrate where water is a problem.

PRIMARY APPLICATIONS

- Structural slabs
- Swimming pools
- Foundations & basements
- Tunnels
- Dams & water reservoirs
- Manholes
- Sewage & water treatment plants
- Culverts
- Spillways

FEATURES/BENEFITS

- Waterproofs on the positive or negative side
- Resistant to hydrostatic pressure
- Remains flexible
- Can be applied to green concrete for fast turnaround

PACKAGING

VANDEX CONSTRUCTION JOINT TAPE is supplied in 98.4 ft (30m) rolls.

SHELF LIFE

VANDEX CONSTRUCTION JOINT TAPE has an infinite shelf life provided it is stored in its original, unopened package in a dry environment.

COVERAGE

One roll of VANDEX CONSTRUCTION JOINT TAPE will seal 98.4 linear feet of joint or crack. The tape is 7" wide with an additional 1 1/4" of fabric webbing off the edges.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of dirt, oil and other contaminants including curing compounds, form release agents, old coatings, paint and efflorescence. New concrete and masonry must be cured a minimum of 7 days. All concrete laitance must also be removed. Provide an absorptive surface on all substrates including precast and formed concrete. The surface must have an open pore appearance for proper adhesion. Remove form marks and other protrusions. Concrete honeycombs, cavities, joints, cracks, voids, tie holes and other defects must be opened and routed to a 3/4" depth or to sound material. No active water leaks should be present at the time of application of VANDEX CONSTRUCTION JOINT TAPE. Use SPEED PLUG or VANDEX PLUG to stop all active leaks. Any surface defects need to be addressed with the application of VANDEX UNI MORTAR 1 ZSR. If the VANDEX CONSTRUCTION JOINT TAPE is going to be used to treat cracks and joints on the negative side, rout out the cracks and joints to 3/4" in depth and fill with VANDEX UNI MORTAR 1 ZSR. Once prepared, the substrate should be dry, but slight dampness is acceptable prior to the application of the material.

Mixing: VANDEX CONSTRUCTION JOINT TAPE requires no mixing or preparation, however the VANDEX slurry materials used to adhere the tape to the substrate require mixing. Please refer to the technical data sheets of either VANDEX BB 75 or VANDEX CEMELAST for proper mixing and application instructions.

Application: After preparing the joint or crack as described above, follow the directions on the VANDEX slurry material technical data sheet for mixing and placement. Apply the first coat of slurry material and be sure to extend the application of the VANDEX slurry material at least 3/8" beyond the width of the tape in each direction. Position the tape over the applied coating and embed properly, making sure the fabric webbing on the edges gets fully embedded. Overcoat the tape with a second lift of VANDEX slurry mortar and smooth with a trowel or damp brush. In the event the VANDEX CONSTRUCTION JOINT TAPE and slurry are applied for negative side protection, mechanical bracing will be required if hydrostatic pressure is present through the crack or joint in the substrate.

For lap splices, overlap the tape at least 8”, using the VANDEX slurry material as an adhesive for the splice. For internal and external corners, use a 1 1/4” x 1 1/4” piece of VANDEX CONSTRUCTION JOINT TAPE adhered to the material in the corner for added reinforcement.

Curing and protection: While the VANDEX CONSTRUCTION JOINT TAPE requires no special curing, the slurry mortar used in the process may. Please refer to the technical data sheet of the VANDEX slurry mortar used for all curing, protection and return to service requirements.

CLEAN-UP

Clean mixing and application equipment with water immediately after use. Clean splatter or spills with water before material sets. If allowed to dry on the surface, removal becomes extremely difficult.

PRECAUTIONS/LIMITATIONS

- Do not apply to frozen or frost filled surfaces or when temperature is below or expected to fall below 40°F within 48 hours.
- Protect treated surfaces from frost for 5 days.
- Do not fill open cisterns, tanks, pools, etc. with water for at least 7 days. Inspect for hardness prior to filling.
- Allow minimum 3 days drying time before backfilling. Use protection boards to prevent gouging.
- Allow 28 days cure before the application of coatings and cementitious treatments.
- Protect treated surfaces for 24 hours from rain.
- Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

MISCELLANEOUS PRODUCTS

FORMSHIELD G

GENERAL USE, OIL-BASED, CHEMICALLY REACTIVE CONCRETE FORM RELEASE

EUCLID CHEMICAL

DESCRIPTION

FORMSHIELD G is an economical, chemically reactive concrete form release agent for general use in concrete forming applications. FORMSHIELD G contains a proprietary ingredient that provides release capability superior to traditional, barrier-type form oils. FORMSHIELD G is compliant with all VOC regulations in the U.S. and Canada. Because it is not water-based, FORMSHIELD G does not require protection from freezing. Forms treated with FORMSHIELD G can be put to use faster than those treated with water-based release products. Metal, plastic, wood and composition forms strip cleanly with FORMSHIELD G.

PRIMARY APPLICATION

Preventing the adhesion of concrete to forms of all types in general concrete forming applications

FEATURES/BENEFITS

- Forms release easily and cleanly from concrete
- Less staining than barrier-type form oils
- Compliant with all VOC regulations in the U.S. and Canada
- Reduces the occurrence of voids and bugholes
- Tolerant to freezing conditions during storage and transportation
- Treated forms are ready for use quickly
- Not regulated for transportation - easy storage and shipping
- Very low odor

TECHNICAL INFORMATION

VOC content ..... < 5 g/L
Weight/gal..... 7.26 lb/gal (0.87 kg/L)

Appearance: FORMSHIELD G is a pale yellow liquid

PACKAGING

FORMSHIELD G is packaged in 275 gal (1041 L) totes, 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container.

SPECIFICATIONS/COMPLIANCES

ACI 347

Compliant with all VOC regulations in the U.S. and Canada

COVERAGE

	ft²/gal (m²/L)
Plywood Forms	350 to 500 (8.59 to 12.27)
Wood Composition Forms	350 to 500 (8.59 to 12.27)
Plastic Forms	800 to 1000 (19.63 to 24.54)
Metal Forms	800 to 1000 (19.63 to 24.54)

Note: Coverage rates are approximate and for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements.

DIRECTIONS FOR USE

Surface Preparation: The form surface must be free from dirt, cement paste, hardened concrete and other residue that could transfer to the finished concrete surface. Before coating plywood forms, apply a heavy brush coat to the plywood edges to protect laminations.

Application: In cold weather or if FORMSHIELD G has been stored in a cold location, gently stir the product before using. FORMSHIELD G can be applied by brush, spray or roller. Apply in a continuous film, avoiding excessive buildup, runs and puddles. Forms treated with FORMSHIELD G will be ready to use within one hour on plywood and 2 to 3 hours on metal and plastic forms. Used forms can be re-coated with FORMSHIELD G if proper surface preparation techniques are followed.

CLEAN-UP

Clean tools and application equipment immediately after use with mineral spirits. Clean drips and overspray while still wet.

PRECAUTIONS/LIMITATIONS

- Do not thin or dilute FORMSHIELD G.
- The viscosity of FORMSHIELD G increases at low temperatures, resulting in reduced sprayability.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

FORMSHIELD PURE

PREMIUM, OIL-BASED, CHEMICALLY REACTIVE CONCRETE FORM RELEASE

EUCLID CHEMICAL

DESCRIPTION

FORMSHIELD PURE is a premium, chemically reactive concrete form release agent with exceptional performance and ease of use that is unmatched by water-based form release products. FORMSHIELD PURE has a unique crystal clear formulation containing a proprietary ingredient that provides release capability superior to traditional form oils, making it ideal for use in precast and architectural concrete applications. FORMSHIELD PURE is compliant with all VOC regulations in the U.S. and Canada. Because it is not water-based, FORMSHIELD PURE does not require protection from freezing. Forms treated with FORMSHIELD PURE can be put to use faster than those treated with water-based release products. Metal, plastic, wood and composition forms strip cleanly with FORMSHIELD PURE.

PRIMARY APPLICATION

Preventing the adhesion of concrete to forms of all types in precast and architectural concrete applications

FEATURES/BENEFITS

- Forms release easily and cleanly from concrete
- No staining
- Compliant with all VOC regulations, including Federal EPA, OTC, LADCO, Maricopa County, CARB, and SCAQMD
- Dramatically reduces the occurrence of voids and bugholes
- Tolerant to freezing conditions during storage and transportation
- Treated forms are ready for use quickly
- U.S. DOT non-regulated: easy storage and shipping
- Very low odor

TECHNICAL INFORMATION

VOC content ..... <5 g/L
Weight/gal..... 7.26 lb/gal (0.87 kg/L)
Appearance: FORMSHIELD PURE is a crystal clear liquid

PACKAGING

FORMSHIELD PURE is packaged in 275 gal (1041 L) totes, 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened container.

SPECIFICATIONS/COMPLIANCES

Corp of Engineers CE 1401.01 (17.4) & CW 03101 (5.3)

GSA CE 204 (3-03-K)

ACI 347

Compliant with Federal, OTC, California, and Maricopa County regulations

COVERAGE

	ft²/gal (m²/L)
Plywood Forms	350 to 500 (8.59 to 12.27)
Wood Composition Forms	350 to 500 (8.59 to 12.27)
Plastic Forms	800 to 1000 (19.63 to 24.54)
Metal Forms	800 to 1000 (19.63 to 24.54)

Note: Coverage rates are approximate and for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements.

DIRECTIONS FOR USE

Surface Preparation: The form surface must be free from dirt, cement paste, hardened concrete and other residue that could transfer to the finished concrete surface. Before coating plywood forms, apply a heavy brush coat to the plywood edges to protect laminations.

Application: In cold weather or if FORMSHIELD PURE has been stored in a cold location, gently stir the product before using. FORMSHIELD PURE can be applied by brush, spray or roller. Apply in a continuous film, avoiding excessive buildup, runs and puddles. Forms treated with FORMSHIELD PURE will be ready to use within one hour on plywood and 2 to 3 hours on metal and plastic forms. Used forms can be re-coated with FORMSHIELD PURE if proper surface preparation techniques are followed.

CLEAN-UP

Clean tools and application equipment immediately after use with mineral spirits. Clean drips and overspray while still wet.

PRECAUTIONS/LIMITATIONS

- Do not thin or dilute FORMSHIELD PURE.
- The viscosity of FORMSHIELD PURE increases at low temperatures, resulting in reduced sprayability.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

FORMSHIELD WB

ECONOMICAL, WATER-BASED CONCRETE FORM RELEASE

EUCLID CHEMICAL

DESCRIPTION

FORMSHIELD WB is a low cost, highly effective release agent for metal, plastic, wood and composition forms. It is a blend of natural organic chemicals which impart a waterproof film to prevent adhesion of concrete to the forms and provide for quick and easy release. FORMSHIELD WB is supplied ready to use as a thin, milky white colored liquid.

PRIMARY APPLICATIONS

Water-based formulation can be applied to forms of all types for easy removal from freshly placed concrete.

FEATURES/BENEFITS

- Reduces labor and construction time
- Lowers costs
- Allows the forms to be re-used
- Minimizes clean-up and maintenance
- Can be used on metal or plastic forms and on previously oiled or untreated wood forms
- Excellent release properties
- Reduces transfer of wood grain markings

TECHNICAL INFORMATION

Weight/gal ..... 8.3 lb/gal (0.994 kg/L)
VOC ..... < 89 g/L
Appearance: FORMSHIELD WB is a milky white liquid

PACKAGING

FORMSHIELD WB is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

1 year in original, unopened container

SPECIFICATIONS/COMPLIANCES

Corps of Engineers Specifications CE-1401.01
Corps of Engineers Specifications CW-03101

COVERAGE

Coverage rates are approximate and for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements.

	ft²/gal (m²/L)
Plywood forms	350 to 500 (8.59 to 12.27)
Wood composition forms	350 to 500 (8.59 to 12.27)
Plastic forms	800 to 1000 (19.63 to 24.54)
Metal forms	800 to 1000 (19.63 to 24.54)

DIRECTIONS FOR USE

Surface Preparation: Forms must be free from dirt, hardened concrete, and other extraneous matter. Before coating plywood panel surfaces, apply one, preferably two, heavy brush coats to the edges to protect laminations.

Mixing: Mix FORMSHIELD WB prior to use to ensure that settling has not occurred.

Application: FORMSHIELD WB is applied by brush, spray, or roller to metal, plastic, or plywood forms. One or two heavy brushcoats should be applied to the edges of plywood forms to protect the laminations.

19215 Redwood Road • Cleveland, OH 44110
800-321-7628 t • 216-531-9596 f

The surface of forms should receive one light, uniform coat. Avoid excessive build-up and runs or puddles since an excess of coating may retard the concrete. For proper performance, always make sure brush is fully saturated with FORMSHIELD WB. Attempts to “stretch or skinny” FORMSHIELD WB will result in sub-standard performance of product. FORMSHIELD WB should be applied evenly over the panel. One full coat provides proper protection. FORMSHIELD WB will set and be ready to use within one hour on plywood; 2 hours on metal and plastic forms.

CLEAN UP

Clean tools or equipment with water and soap/detergent immediately following use. Clean drips and overspray while still wet. Dried FORMSHIELD WB becomes very difficult to remove.

PRECAUTIONS/LIMITATIONS

- Store in a dry, ventilated, 40°F to 90°F (4°C to 32°C) area. Protect from freezing.
- Do not thin or dilute FORMSHIELD WB.
- Do not apply in rain, and protect from rain for at least 1 hour after application.
- Do not apply FORMSHIELD WB when temperature is below freezing.
- FORMSHIELD WB is not recommended when concrete is to be steamcured, or for tilt up work.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

CONCRETE BLASTER

HIGH PERFORMANCE EQUIPMENT CLEANER

EUCLID CHEMICAL

DESCRIPTION

CONCRETE BLASTER is a patented liquid with the ability to remove hardened, built-up concrete from tools and equipment. It is designed to eliminate the need for sand blasting, bushhammering and jack-hammering hardened concrete from equipment.

PRIMARY APPLICATIONS

- Ready mix trucks
- Transport buggies
- Trowels
- Troweling machines
- Screeds
- Floats
- Concrete forms
- Precast forms
- Concrete and mortar mixers
- Other concrete placing equipment

FEATURES/BENEFITS

- Ready to use - no mixing required
- Reduces the related costs of sand blasting and chip-hammering
- Reduces labor costs and equipment damage normally associated with removing built-up, hardened concrete

TECHNICAL INFORMATION

Appearance: CONCRETE BLASTER is a clear liquid with a slight amber cast. When applied to concrete the product will foam slightly. CONCRETE BLASTER will not affect the appearance of typical equipment used in the concrete industry.

PACKAGING

CONCRETE BLASTER is packaged in 275 gal (1041 L) totes, 55 gal (208 L) drums, and 5 gal (18.9 L) pails.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Approximately 3 gal (11.4 L) of CONCRETE BLASTER will be required to clean the typical rear exterior of a ready mix truck. This assumes an average depth of built-up concrete of 1/2" (13 mm).

DIRECTIONS FOR USE

Surface Preparation: CONCRETE BLASTER works best when applied to dry concrete.

Mixing: CONCRETE BLASTER is packaged ready to use. No pre-mixing is required. Do not dilute.

Application: To remove hardened concrete, apply CONCRETE BLASTER directly to the area to be cleaned with a brush or pump-up type sprayer. **THE CONCRETE SURFACE MUST BE THOROUGHLY SATURATED.** Allow CONCRETE BLASTER to remain on the concrete until the cement matrix becomes soft to the touch. The minimum recommended time is 20 minutes but treated concrete may be left to react overnight. The product will continue to attack the cement matrix even after the foaming action has subsided.

After the concrete has softened, re-apply CONCRETE BLASTER and allow to remain on the surface for approximately 10 minutes. Remove concrete with a scraper. If additional concrete remains, subsequent applications may be necessary. The final application may be removed by power washing. Concrete buildup of 1/4" (6 mm) or more will require multiple applications. If treated concrete will set overnight, apply additional CONCRETE BLASTER the next morning to re-soften the concrete. Leave the fresh application on 10 to 15 minutes. Then, remove softened concrete as stated above.

Regular maintenance: CONCRETE BLASTER may be used on a regular basis to remove concrete build-up.

CLEAN-UP

Clean tools and equipment with soap and water.

PRECAUTIONS/LIMITATIONS

- Though CONCRETE BLASTER is a relatively safe product to use, always wear protective clothing (rubber gloves, eye protection, etc.).
- Do not dilute or effectiveness will be greatly diminished.
- CONCRETE BLASTER contains a mild organic acid which may oxidize certain metals if left in contact for long periods of time. After the concrete residue has softened, complete the removal and thoroughly flush the area with clean water.
- Concrete surface must be dry.
- Do not allow this product to freeze.
- The effectiveness of CONCRETE BLASTER is reduced in cold weather.
- Protect concrete floors or driveways from spillage.
- A small area should be tested to ensure against staining of paint finishes.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO CLEAN & STRIP

CONCRETE FLOOR STRIPPER

EUCLID CHEMICAL

DESCRIPTION

EUCO CLEAN & STRIP is a heavy duty concrete floor cleaner and stripper that is effective at removing curing compounds, oils, grease, most concrete sealers, and other contaminants from conrete floors. EUCO CLEAN & STRIP is formulated with a citrus-based solvent that will not etch concrete like acid based removers. EUCO CLEAN & STRIP is a safer alternative to petroleum and chlorinated solvent based removal products.

PRIMARY APPLICATIONS

- Facilitates removal of concrete curing compounds and cure & seals
- Breaks down grease, oil, dirt stains and rubber tire marks
- Degreases tools and equipment

FEATURES/BENEFITS

- High strength, concentrated formula
- Easy to apply - rinses clean with water

TECHNICAL INFORMATION

WEIGHT PER GALLON	7.0 lbs/gal (0.84 kg/L)
FLASH POINT	117°F (47°C)
ODOR	Citrus
APPEARANCE	Clear, light yellow liquid

PACKAGING

EUCO CLEAN & STRIP is packaged in 55 gal (208 L) drums, 5 gallon (19 L) pails, and in cases of 1 gallon (3.8 L) jugs (4 jugs per case).

SHELF LIFE

2 years in original, unopened containers

DILUTION AND COVERAGE

Euco Clean & Strip can be diluted with water or used full strength, depending on the extent of the cleaning or stripping to be done. Experimenting with different dilution ratios will be necessary to determine which strength is most suitable. Always test a small area before use.

Stripping curing compounds or cure and seals, degreasing, heavy duty cleaning:

Suggested dilution ratio range: 5:1 (water to Clean & Strip) to full strength

Coverage: 100-200 sq. ft./gal. (2.5-4.9 sq m/L)

Light cleaning:

Suggested dilution ratio range: 5:1 to 10:1 (water to Clean & Strip)

Coverage: 400-500 sq. ft./gal. (9.8-12.3 sq m/L)

DIRECTIONS FOR USE

Apply the Euco Clean & Strip solution to the floor while scrubbing with a stiff broom or mechanical floor scrubber. Then, allow the Euco Clean & Strip solution to dwell on the surface for sufficient time to soften the soil, curing compounds, or cure & seal. This typically takes 20-40 minutes. Longer dwell times may be necessary for removal of curing compounds or cure and seals. Do not allow Euco Clean & Strip solution to dry during the dwell period - add more Euco Clean & Strip if necessary to keep the concrete wet. After the dwell period, rinse the entire floor thoroughly with water before the product dries. Additional scrubbing and pressure washing may be necessary to remove curing compounds, cure and seals, and stubborn stains. Re-application may be necessary for extremely dirty, stained floors, or hard-to-remove curing compounds or cure and seals.

CLEAN-UP

Clean tools and equipment with water.

PRECAUTIONS/LIMITATIONS

- Use in well ventilated areas.
- Wear protective clothing (gloves, eye protection, etc.)
- Keep away from heat and flame.
- Do not use near food.
- Do not use on resilient tile, asphalt, or painted surfaces.
- Euco Clean & Strip may soften rubber tires and cause them to become tacky. Use caution when operating wheeled equipment in these conditions.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO CONCRETE FLOOR CLEANER

CONCRETE SURFACE SALT AND LAITANCE REMOVER

EUCLID CHEMICAL

DESCRIPTION

EUCO CONCRETE FLOOR CLEANER is a heavy duty diammonium citrate cleaner that is highly effective at removing laitance and surface salts from concrete floors. This residue is often encountered after curing blankets have been removed from the concrete surface. Without removal of the laitance and salts and proper cleaning of the concrete floor, future applications of surface treatments such as liquid densifiers will not perform properly. EUCO CONCRETE FLOOR CLEANER is formulated as a water based solution with low VOC's.

PRIMARY APPLICATIONS

- Removes laitance and residual salts from concrete surfaces
- Ensures a clean floor for proper penetration and performance of liquid densifier applications

FEATURES/BENEFITS

- High strength, effective formula
- Contractor-friendly water-based formulation
- Safer to use than other types of acidic cleaners

TECHNICAL INFORMATION

Odor.....ammonia
Specific gravity.....1.08 ±0.10
Weight/gal.....9.01 lbs/gal (1.08 kg/L)
pH..... 6 (as packaged)
VOC content.....≤5 g/L

Appearance: Clear liquid

PACKAGING

EUCO CONCRETE FLOOR CLEANER is packaged in 55 gal (208 L) drums and 5 gallon (18.9 L) pails.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Approximately 400 ft^2/gallon (9.8 m^2/L), depending on dilution rate.

DIRECTIONS FOR USE

Verify Required Dilution Rate: Dilute a sample of EUCO CONCRETE FLOOR CLEANER to a 1:1 ratio (by volume) with water. Apply diluted sample to concrete area to be tested. Test effectiveness of EUCO CONCRETE FLOOR CLEANER. Additional dilution rates may be required as necessary.

Surface Salt and Laitance Removal: Apply EUCO CONCRETE FLOOR CLEANER to floor using sprayers, automatic floor scrubbers, or other conventional methods. For cleaning and removal of surface salts and laitance, allow EUCO CONCRETE FLOOR CLEANER to dwell on the floor for 15 minutes*. Redistribute puddles during this soak time. Add more product if necessary. After dwell time, remove salts and laitance by scrubbing the floor with water and brushes. Neutralize the EUCO CONCRETE FLOOR CLEANER with the following solution: Dissolve 1.0 lb of baking soda in 5 gal (18.9 L) of water. For use in an autoscrubber, add this solution to an additional 50 gal (189 L) of water in the scrubber tank. Wash the area with this neutralizing solution, followed by a final rinse with clean water to flush residue and any debris from the floor. **** Times are approximate. More or less dwell time may be needed for the desired result. Excessive dwell time can result in etching of the concrete surface.***

CLEAN-UP

Clean tools and equipment with water.

PRECAUTIONS/LIMITATIONS

- Always wear protective clothing (rubber gloves, eye protection, respirator, etc.). Consult the MSDS before using.
- Protect adjacent concrete slabs and polished and painted surfaces, metal and glass from exposure to EUCO CONCRETE FLOOR CLEANER.
- Do not track EUCO CONCRETE FLOOR CLEANER onto an area that is not presently being treated. Any tracked material should be removed immediately.
- Storage: EUCO CONCRETE FLOOR CLEANER is unusable if allowed to freeze. Store between 50°F to 90°F (10°C to 32°C).
- In all cases, consult the Safety Data Sheet before use.

Caution: While the EUCO CONCRETE FLOOR CLEANER is reacting on the concrete, there may be a mild to heavy ammonia odor; a respirator equipped with an appropriate cartridge for ammonia should be used.

Rev. 01.19

EUCO SOLVENT

CLEAN-UP AND FLOOR STRIPPER PRODUCT

EUCLID CHEMICAL

DESCRIPTION

EUCO SOLVENT is a high-strength solvent for numerous uses from tool clean-up to cure & seal membrane removal. It is a pure liquid and contains no added fillers or solids.

PRIMARY APPLICATIONS

- Cleaning of tools and equipment
- Removal of resin based curing membranes and sealers from floor surfaces
- Removal of blotchiness and whitening issues with acrylic sealers, caused by over-application and/or moisture build up under the sealer
- Breakdown of oil, grease and tar build-up
- Clean-up of epoxy equipment and tools
- Troweling aid for epoxy mortars

FEATURES/BENEFITS

- High strength for fast clean-up
- Multiple components for maximum effectiveness
- Helps re-wet acrylic sealers to fix aesthetic problems caused by over-application and/or moisture build up

TECHNICAL INFORMATION

Appearance: EUCO SOLVENT is a clear, low viscosity liquid.

PACKAGING

EUCO SOLVENT is packaged in 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (4 jugs per case).

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Floor Stripping: For solvent based curing compound removal, an application rate of 100 ft^2/gal (2.45 m^2/L) will remove most of the sealer. (This product may not be effective in removing some water based curing and sealing products.) Cured epoxy sealers and coatings may require 2 to 3 applications for complete removal.

DIRECTIONS FOR USE

Surface Preparation: Cleaning or curing compound/sealer removal is easiest if the material has not hardened.

Mixing: EUCO SOLVENT requires no premixing. The product is ready for use directly from the container.

Placement: Apply EUCO SOLVENT directly on the area to be cleaned or stripped. Keep the area wet and allow to soften for 5 to 10 minutes. Reapply additional solvent and begin resin removal by scraping or scrubbing with a solvent-resistant brush. When performing a solvent wash on surfaces coated with acrylic sealers, keep the area wet and allow to soften for 5 to 10 minutes. Re-apply additional solvent and begin sealer re-distribution and/or removal using a combination of scrubbing with a solvent-resistant brush and back rolling with a solvent-resistant roller.

CLEAN-UP

Clean tools with brushes before resin residue has hardened. If the resin has hardened, submerge the tools in EUCO SOLVENT until the residue has softened and can be scraped away.

PRECAUTIONS/LIMITATIONS

- Do not use near sparks or open flames.
- Use only in well ventilated areas.
- If HVAC intake ducts will distribute solvent odor into adjoining occupied areas of the building, care should be taken to block these ventilation vents.
- Always wear protective clothing (rubber gloves, eye protections, etc).
- Use EUCO CLEAN & STRIP whenever solvent odor is unacceptable.
- In all cases, consult the Safety Data Sheet before use.

Rev. 02.19

EUCLID UNIVERSAL COLOR PACKS

COLORANT FOR JOINT FILLERS, CURE & SEALS, REPAIR MATERIALS, AND COATINGS

EUCLID CHEMICAL

DESCRIPTION

EUCLID UNIVERSAL COLOR PACKS are used to pigment Euclid Chemical solvent based cure & seals, joint fillers, polymeric repair materials, and epoxy coatings. Formulated from high-quality, concentrated pigments, Universal Color Packs are available in 33 standard colors, eliminating the need to keep a large inventory of construction products in multiple colors. Simply mix Color Packs into the products listed below to create a custom look with color.

PRIMARY APPLICATIONS

EUCLID UNIVERSAL COLOR PACKS can be used to pigment:

- Euclid Chemical solvent based cure & seals
- Euco QWIKjoint UVR
- Euco QWIKstitch
- Euco 700
- Dural 340 NS and Dural 340 SL
- Duralkote 240
- Duralflex Fastpatch

FEATURES/BENEFITS

- Easy to dose and mix in
- Convenient, low-waste packaging

PACKAGING

EUCLID UNIVERSAL COLOR PACKS are packaged in cases containing 6 Color Packs.

SHELF LIFE

4 years, when stored properly in original, unopened packages

DOSAGE

Diamond Clear
EverClear and EverClear 350
Luster Seal 300 and Luster Seal 350
Super Diamond Clear and Super Diamond Clear 350

Recommended dosage for all of the above cure & seals is 1 to 4 Color Packs per 5 gallon pail, depending on the deepness of color desired. A test section is required to determine the number of Color Packs needed to achieve the desired appearance. Darker colors typically require fewer Color Packs than lighter colors.

Diamond Clear 350: 1 to 3 Color Packs per 5 gallon pail, depending on deepness of color desired

QWIKjoint UVR: 1 Color Pack per 10 gal unit of Neutral Base

Duralflex Fastpatch: 1 Color Pack per kit

Euco QWIKstitch: 1 Color Pack per 2 gal unit

Duralkote 240: 1 Color Pack per 2 gal unit of Neutral Base

Euco 700: 1 Color Pack per 2 gal unit of Neutral Base
2 Color Packs per 10 gal unit of Neutral Base

Dural 340 NS, SL: 1 Color Pack per 4 gal unit of Neutral Base
2 Color Packs per 10 gal unit of Neutral Base

DIRECTIONS FOR USE

Refer to the Dosage section on the front of this sheet for information on the number of Color Packs to add to each product.

Solvent based cure & seals: Add the Color Pack(s) to the pail of material and stir or agitate gently. During application, stop to stir or agitate the pail or sprayer occasionally to keep pigment uniformly dispersed. Apply pigmented cure & seal thinly and evenly; uneven or thick application will result in unsightly roller or spray lap marks. Follow the coverage rate and application instructions described on the cure & seal technical data sheet.

Euco QWIKjoint UVR: Before pouring into dispensing pump reservoir, add one Color Pack to Part B and mix with a drill and paddle at slow speed until the color is unifrom with no streaks.

Duralflex Fastpatch: Mix Color Pack in Part A until the color is uniform.

Euco QWIKstitch: Mix Color Pack in Part A until the color is uniform.

Duralkote 240: Mix Color Pack in Part B until the color is uniform.

Euco 700: Mix Color Pack(s) in Part A until the color is uniform.

Dural 340 NS & SL: Mix Color Pack(s) in Part A until the color is uniform.

After adding Color Pack(s), proceed with mixing and placement instructions found on each individual product's technical data sheet.

PRECAUTIONS/LIMITATIONS

- Do not use Color Packs in products other than those listed on this technical data sheet.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOBAR

EVAPORATION RETARDANT

EUCLID CHEMICAL

DESCRIPTION

EUCOBAR is designed to be used as an evaporation retardant on concrete surfaces of all types. When sprayed over fresh concrete, EUCOBAR forms a monomolecular film that prevents rapid moisture loss from the concrete surface. It is easy to use requiring only the addition of water before spray application. EUCOBAR is especially effective when concreting operations must be performed in direct sun, wind, high temperatures, or low relative humidity.

PRIMARY APPLICATIONS

- Floors
- Pavements
- Concrete toppings
- Vertical/overhead repairs
- Dry shake floors including all SURFLEX and EUCO-PLATE formulations
- Specialty iron toppings
- Parking decks and ramps

FEATURES/BENEFITS

- Holds in surface moisture on concrete floors, slabs, and repairs
- Helps prevent plastic shrinkage cracking
- Easy and economical to use
- Helps eliminate crusting caused by loss of surface moisture
- Water based for total compatibility with fresh concrete
- Excellent for both interior and exterior concrete projects
- Will not affect adhesion of curing compound or other treatments

TECHNICAL INFORMATION

EUCOBAR is a water based polymer concentrate that is readily dilutable in water.

Evaporation rate is a function of relative humidity, concrete temperature, air temperature and wind velocity. Plastic shrinkage cracking is a strong possibility when the rate of evaporation exceeds 0.2 lb/ft^2/hr (1.0 kg/m^2/hr). The chart on the back of this page (Fig. 2.1.5 of ACI 305, Hot Weather Concreting) is useful in determining the evaporation rate under a given set of jobsite conditions. Use EUCOBAR when the above limit is exceeded.

Appearance: EUCOBAR is a free flowing pink liquid designed to be mixed with water. The use of EUCOBAR will not affect the color of concrete.

PACKAGING

EUCOBAR is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Dilution Rate: 9:1 (Water:EUCOBAR)

EUCOBAR (after dilution) will cover approximately 200 to 400 ft^2/gal (5 to 10 m^2/L). Coverage will vary depending on concrete texture and wind conditions. For estimating purposes, 1 gal (3.8 L) of EUCOBAR concentrate will treat 2000 to 4000 ft^2 (186 to 372 m^2) of concrete surface area, but is highly dependent upon ambient conditions.

DIRECTIONS FOR USE

Surface Preparation: EUCOBAR is applied directly to the surface of fresh concrete. No surface preparation is necessary.

Mixing: EUCOBAR is supplied as a concentrate and must be diluted with water at a 9:1 (water:EUCOBAR) ratio. Determine capacity of sprayer and divide by 10. Add this amount of EUCOBAR to the sprayer canister followed by 9 times that amount of water. For example, if 1 quart (0.95 L) of EUCOBAR is added, dilute with 9 quarts (8.5 L) of water. Mix or shake until thoroughly blended.

Placement: Apply using a tank type, hand pump sprayer capable of spraying in a fine mist. Use a slotted tip for the best spray. Spray EUCOBAR over the fresh concrete surface as soon as possible after floating. A pink, translucent sheen will appear as the surface is treated. On extreme drying conditions, additional applications may be given as needed. When used on floors with dry shake hardener applications, EUCOBAR may be used on the fresh concrete as well as between each shake application.

Curing & Sealing: Proper curing procedures are important to ensure the durability and quality of concrete. To prevent surface cracking, cure flatwork with a high solids cure and seal, such as SUPER AQUA-CURE VOX or REZ-SEAL.

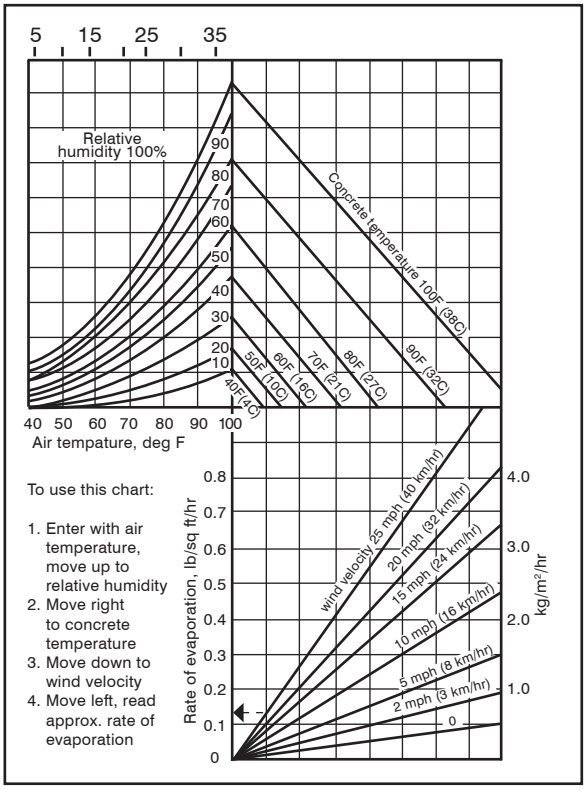


Fig. 2.1.5, ACI 305, Hot Weather Concreting

CLEAN UP

Clean spray equipment with soap and water.

PRECAUTIONS/LIMITATIONS

- Use with proper dilution rate.
- This product is not a surface retarder for doing exposed aggregate concrete
- Do not use as a curing compound.
- Apply only as a fine spray.
- Do not allow to freeze.
- Do not work EUCOBAR into the surface of cast-in-place concrete or cementitious repair applications.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCOBAR RTU

READY-TO-USE EVAPORATION RETARDANT

EUCLID CHEMICAL

DESCRIPTION

EUCOBAR RTU is a ready-to-use evaporation retardant for use on concrete surfaces of all types. When sprayed over fresh concrete, EUCOBAR RTU forms a monomolecular film that prevents rapid moisture loss from the concrete surface. EUCOBAR RTU is especially effective when concreting operations must be performed in direct sun, wind, high temperatures, or low relative humidity. EUCOBAR RTU is supplied pre-diluted, and does not require the addition of water before using.

PRIMARY APPLICATIONS

- Floors
- Pavements
- Concrete toppings
- Vertical/overhead repairs
- Dry shake floors including all SURFLEX and EUCO-PLATE formulations
- Specialty iron toppings
- Parking decks and ramps

FEATURES/BENEFITS

- Holds in surface moisture on concrete floors, slabs, and repairs
- Helps prevent plastic shrinkage cracking
- Easy and economical to use
- Helps eliminate crusting caused by loss of surface moisture
- Water based and VOC compliant
- Excellent for both interior and exterior concrete projects
- Will not affect adhesion of curing compounds or other surface treatments
- May help contribute to LEED points

TECHNICAL INFORMATION

EUCOBAR RTU is a pre-diluted water based polymer.

Evaporation rate is a function of relative humidity, concrete temperature, air temperature and wind velocity. Plastic shrinkage cracking is a strong possibility when the rate of evaporation exceeds 0.2 lb/ft^2/hr (1.0 kg/m^2/hr). The chart on the back of this page (Fig. 2.1.5 of ACI 305, Hot Weather Concreting) is useful in determining the evaporation rate under a given set of jobsite conditions. Use EUCOBAR RTU when the above limit is exceeded.

Appearance: EUCOBAR RTU is a light pink liquid. The use of EUCOBAR RTU will not affect the color of concrete.

PACKAGING

EUCOBAR RTU is packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

SHELF LIFE

One year when stored properly in original, unopened package.

COVERAGE

EUCOBAR RTU will cover approximately 200 to 400 ft^2/gal (5 to 10 m^2/L).

Coverage will vary depending on concrete texture and environmental (temperature, humidity, wind) conditions.

DIRECTIONS FOR USE

Surface Preparation: EUCOBAR RTU is applied directly to the surface of fresh concrete. No surface preparation is necessary.

Mixing: Gently stir EUCOBAR RTU before using. No dilution with water is necessary.

Placement: Apply using a tank type, hand pump sprayer capable of spraying in a fine mist. Use a slotted tip for the best spray. Spray EUCOBAR RTU over the fresh concrete surface as soon as possible after floating. A pink, translucent sheen will appear as the surface is treated. On extreme drying conditions, additional applications may be given as needed. When used on floors with dry shake hardener applications, EUCOBAR RTU may be used on the fresh concrete as well as between each shake application.

Curing & Sealing: EUCOBAR RTU is not a curing compound. Proper curing procedures are important to ensure the durability and quality of concrete. To prevent surface cracking, cure flatwork with a high solids cure and seal or other industry-approved curing method.

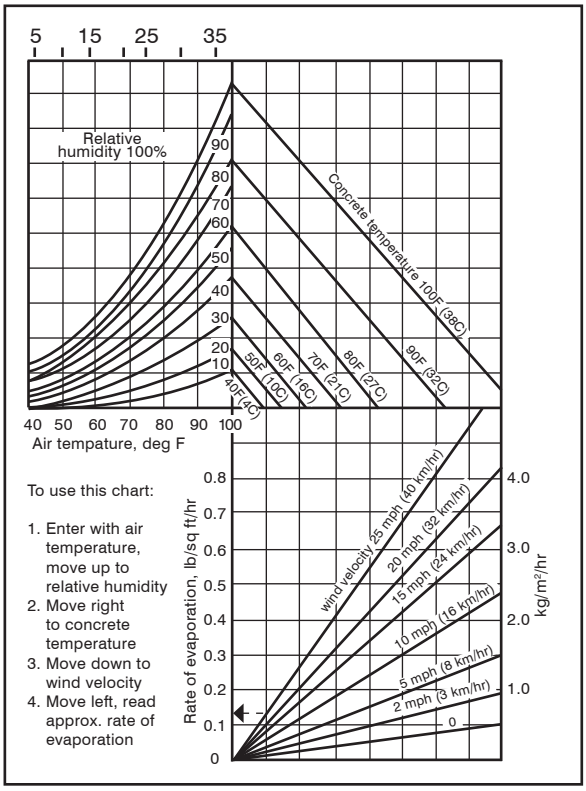


Fig. 2.1.5, ACI 305, Hot Weather Concreting

CLEAN UP

Clean spray equipment with soap and water.

PRECAUTIONS/LIMITATIONS

- Do not use as a curing compound.
- Apply only as a fine spray.
- Do not allow to freeze.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

CONCRETE SURFACE RETARDER

EUCLID CHEMICAL

FORMULA F & FORMULA S FOR EXPOSED AGGREGATE SURFACES

DESCRIPTION

CONCRETE SURFACE RETARDER F & S are chemical formulations which retard, but do not "kill" the set of the mortar at the surface of concrete. When the underlying concrete has hardened, the retarded mortar surface can be flushed off with a stream of water and/or removed by scrubbing with a stiff brush. Since these compounds do not "kill" the set, if they are left on the concrete or unintentionally splashed on other fresh concrete, they will permit the concrete to eventually attain a set and achieve full strength. CONCRETE SURFACE RETARDER is available in two formulations to meet varying job requirements:

Formula F is a paint-like emulsion designed for application directly to forms.

Formula S is a neutral, sprayable liquid for application to freshly placed horizontal concrete surfaces.

PRIMARY APPLICATIONS

- Creation of exposed aggregate surfaces
- Precast panels
- Decorative sidewalks and walkways
- Bond improvement for water-proofing materials
- Slip-resistant surfaces
- Formulations for both horizontal and vertical

FEATURES/BENEFITS

- Safe to use - easy to apply
- Works quickly and effectively
- Provides up to 1/4" (6 mm) depth retardation
- Reduces cost of mechanically preparing surfaces for waterproofing, stucco or plaster application
- Etch depth can be adjusted as desired

TECHNICAL INFORMATION

	Formula S	Formula F
Weight/gal	8.91 lb/gal (1.07 kg/L)	8.80 lb/gal (1.05 kg/L)
Solids Content	17%	30%
VOC	≤ 5 g/L	653 g/L

Appearance: CONCRETE SURFACE RETARDER **Formula F** is a tan paint-like emulsion for application on vertical surfaces such as forms. CONCRETE SURFACE RETARDER **Formula S** is a low viscosity green liquid for application directly on freshly placed horizontal concrete surfaces.

PACKAGING

CONCRETE SURFACE RETARDER F & S are packaged in 55 gal (208 L) drums and 5 gal (18.9 L) pails.

CONCRETE SURFACE RETARDER S is also available in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Formula F: 150 ft^2/gal (3.7 m^2/L). This coverage rate will provide up to 1/4" (6 mm) of surface retardation.

Formula S: 100 to 200 ft^2/gal (2.5 to 4.9 m^2/L). This coverage rate will provide 1/8" to 3/16" (3.2 to 4.8 mm) of surface retardation.

DIRECTIONS FOR USE

Surface Preparation: Forms to be coated should be clean and free of oil, dirt and form release agents.

Mixing: CONCRETE SURFACE RETARDER does not require pre-blending. These products should be used directly from the container.

Application: CONCRETE SURFACE RETARDER Formula F should be painted on forms without thinning in a continuous unbroken film. Forms may be coated several days in advance or in as short a time as will allow complete drying of the film. Drying time varies between one and four hours depending on weather conditions. In warm weather, forms may be stripped in one day, in cooler weather allow two to three days. Immediately after stripping remove the retarded surface mortar by flushing off with a stream of water and/or remove by scrubbing with a stiff brush. Pre-cast structural members should be stripped from their forms in their usual time and the surface mortar then removed.

CONCRETE SURFACE RETARDER Formula S is applied to freshly placed horizontal concrete surfaces immediately after final finishing operations. It should be applied by low pressure spray and the treated surfaces then covered to prevent rapid evaporation. The retarded mortar should be flushed off with water in 12 to 24 hours after application depending upon weather conditions.

Use BROWNTONE CS to cure and seal exposed aggregate concrete to give these surfaces a subtle, earthtoned look with an attractive gloss.

CLEAN UP

Clean tools and equipment with soap and water before the material dries.

PRECAUTIONS/LIMITATIONS

- Do not use CONCRETE SURFACE RETARDER Formula F on styrofoam forms
- These products are affected by environmental conditions. Warmer temperatures will allow earlier stripping of forms and earlier surface flushing, while cooler temperatures delay these procedures.
- Store in a dry place and protect from freezing.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO GRIP

SLIP-RESISTANT ADDITIVE FOR CONCRETE SEALERS & COATINGS

EUCLID CHEMICAL

DESCRIPTION

EUCO GRIP is a finely ground polymer added to concrete sealers and coatings for slip resistance, reduction in gloss, and fine texturizing of the surface. EUCO GRIP mixes easily into solvent-based or 100% solids sealers and coatings with little effect on the product's sprayability and overall viscosity. EUCO GRIP will stay well suspended in the sealer or coating without the need for constant stirring. The micro-spherical shape of EUCO GRIP's polymer beads provide a smoother feel underfoot when compared to traditional silica sand or other aggregate broadcast systems.

PRIMARY APPLICATIONS

EUCO GRIP is commonly added to sealers or coatings applied to:

- Concrete floors
- Patios and walkways
- Pool decks
- Driveways
- Garage floors
- Any concrete where a slip-resistant finish is desired

FEATURES/BENEFITS

- Provides a slip-resistant finish
- Easily stirred into sealers or coatings
- No change in product viscosity or sprayability
- Smoother feel underfoot than sand or other aggregate broadcasts

PACKAGING

EUCO GRIP is packaged in cases of 1 lb (0.45 kg) bags (12 bags per case).

SHELF LIFE

The shelf life of EUCO GRIP is indefinite when stored in original, unopened packaging.

DOSAGE

EUCO GRIP is typically added at a rate of 3.2 oz EUCO GRIP per 1 gallon of sealer or coating (91 g/3.8 L) and 16 oz of EUCO GRIP per 5 gallons of sealer or coating (454 g/18.9 L). Less or more EUCO GRIP can be added to achieve the desired texture, but do not exceed 8 oz per gallon of product (227 g/3.8 L).

DIRECTIONS FOR USE

Add the desired amount of EUCO GRIP to the sealer or coating while mixing. When adding EUCO GRIP to a two-component product, stir the EUCO GRIP into one component before mixing both components together. After incorporating the EUCO GRIP completely into the sealer or coating, allow it to dwell in the product for at least 30 minutes, and up to 24 hours, before application. If the sealer or coating is not used immediately, it may be necessary to gently re-mix the EUCO GRIP into the product before application.

A small test batch and application is recommended when using EUCO GRIP in a product for the first time to determine the proper dosage rate for the texture desired.

PRECAUTIONS/LIMITATIONS

- EUCO GRIP will increase the coefficient of friction and slip resistance of sealers and coatings to which it has been added. However, the sealer or coatings should not be considered completely non-slip or non-skid.
- When adding EUCO GRIP to concrete cure & seals or sealers containing acetone or tertiary butyl acetate (TBAC), the product must be applied immediately after incorporation of the EUCO GRIP.
- Do not use in penetrating sealers such as silane or siloxane water repellents.
- Do not apply by broadcasting into a wet sealer surface.
- Not recommended for use in water based products.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

ACCELGUARD 80

NON-CHLORIDE ACCELERATOR FOR MORTAR

EUCLID CHEMICAL

DESCRIPTION

ACCELGUARD 80 is an accelerating, water-reducing admixture for mortar that does not contain calcium chloride or added chloride ions. It improves certain properties of plastic and hardened mortar, provides benefits such as significant improvement in early stiffening and setting characteristics. ACCELGUARD 80 can be used in mortar which will be in contact with steel since it is completely free of materials that cause corrosion.

PRIMARY APPLICATIONS

- Cold weather masonry work
- Stucco
- Brick laying
- Block and structural clay tile

FEATURES/BENEFITS

- Accelerates mortar set time in cold weather
- Aids in protecting masonry mortar in cold weather
- Reduces job delays during cold weather
- Increases strengths at all ages
- Improves workability
- Completely non-corrosive with steel embedments

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mortars proportioned & tested per ASTM C270

Typical Test Results @ 40°F (4°C)

Dosage: 16 oz (473 ml)/bag of masonry cement.

Mix	Setting Time	3 Day Strength psi (MPa)	7 Day Strength psi (MPa)
Type M			
Plain		470 (3.2)	975 (6.7)
with A80	28% faster than plain	575 (4.0)	1123 (7.7)
Type S			
Plain		428 (3.0)	825 (5.7)
with A80	40% faster than plain	434 (3.0)	876 (6.0)
Type N			
Plain		237 (1.6)	459 (3.2)
with A80	38% Faster than plain	312 (2.2)	543 (3.7)

Appearance: ACCELGUARD 80 is a slightly amber colored liquid which, when added to concrete has no effect on the appearance of treated concrete.

PACKAGING

ACCELGUARD 80 is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

- ACCELGUARD 80 is formulated to comply with ASTM C494, Type E, and consequently it may be used in cement mortars to improve their properties.
- In compliance with ASTM C494, Type E requirements, this product offers a minimum of 5% water reduction which will increase one day strength a minimum of 125% over plain and will quicken the setting time a minimum of 1 hour but no more than 3 hours and 30 minutes.

DOSAGE RATES

Dosage Rates [per 94 lb (42.6 kg)]

	Daily Working Temperature	
	32°F (0°C) and rising	25°F (-4°C) and rising
Portland cement mortars	1 quart (0.9 L)	1 1/2 quart (1.4 L)
Masonry cement	1 pint (0.47 L)	1 1/2 pint (0.7 L)
Colored mortars	1 pint (0.47 L)	1 1/2 pint (0.7 L)

NOTE: This product does not protect plastic mortar from freezing. This product will allow the mortar to gain strength at a faster rate in cold weather. The mortar must achieve a minimum strength of 500 psi (3.5 MPa) before exposure to freezing temperatures.

DIRECTIONS FOR USE

ACCELGUARD 80 recommended dosage should be added directly to each batch of mortar at a rate of 6 oz (0.18 L) to 48 oz (1.4 L) per bag. Add directly to mortar after the initial charge of water and the mortar has "wetted out".

Mixing: ACCELGUARD 80 is ready to use and requires no pre-mixing.

The Euclid Chemical Company recommends the contractor follow typical cold weather masonry practices.

PRECAUTIONS/LIMITATIONS

- Bring material to 32°F (0°C) before use.
- ACCELGUARD 80 will freeze at temperatures of approximately -15°F (-26°C); however, freezing and thawing will not harm the material if thoroughly agitated at 40°F (4°C) or higher.
- ACCELGUARD 80 is not an anti-freeze for mixed mortar.
- Test batches/mix designs/sample slabs may be required due to variations in local cement and aggregates.
- Keep mortar from freezing until a minimum strength of 500 psi (3.5 MPa) is reached.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO WINTER ADMIXTURE

LIQUID MASONRY MORTAR ACCELERATOR

EUCLID CHEMICAL

DESCRIPTION

EUCO WINTER ADMIXTURE (EWA) is a multi-purpose liquid calcium chloride admixture designed to accelerate the normal setting rate of mortar, increase strength development at all ages, and to improve workability. It can be used safely with gray or white portland cement or colored masonry cements without causing discoloration.

PRIMARY APPLICATIONS

EUCO WINTER ADMIXTURE is used in mortar to lay brick, block, structural clay tile and glass block to eliminate the dangers connected with freezing mortar joints.

FEATURES/BENEFITS

- Accelerates set times of mortar
- Aids in protecting mortar in cold weather
- Cuts construction cost - no cold weather job delay
- Increases strengths at all ages
- Improves workability

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Results- Prepared Mortars

Brickset Mortar

Setting Rate @70°F (21°C)	Plain	with EWA
Initial Set	3 hrs15 min	2 hrs 15 min
Final Set	5 hrs 0 min	4 hrs 45 min

Compressive Strength ASTM C109, 2" (50 mm) cubes

	Plain	with EWA
24 hours	4.3 psi (.03 MPa)	64 psi (0.4 MPa)
3 days	495 psi (3.4 MPa)	606 psi (4 MPa)
7 days	787 psi (5.4 MPa)	1015 psi (7 MPa)
28 days	857 psi (6 MPa)	1191 psi (8 MPa)

Water Retention ASTM C91,	76.1%	82.3%
Absorption ASTM C642	7.0%	5.6%

Stoneset Mortar

Setting Rate @70°F (21°C)	Plain	with EWA
Initial Set	3 hrs 0 min	2 hrs 10 min
Final Set	5 hrs 0 min	4 hrs 30 min

Compressive Strength ASTM C109, 2" (50 mm) cubes

24 hours	8.5 psi (0.6 MPa)	44 psi (0.3 MPa)
3 days	317 psi (2.2 MPa)	329 psi (2.3 MPa)
7 days	630 psi (4.3 MPa)	643 psi (4.4 MPa)
28 days	773 psi (5.3 MPa)	800 psi (5.5 MPa)

Water Retention ASTM C91	74.0%	80.1%
Absorption ASTM C642	8.3%	7.5%

Appearance: EUCO WINTER ADMIXTURE is a clear liquid with a deep blue color.

PACKAGING

EUCO WINTER ADMIXTURE is packaged in 55 gal (208 L) drums, 5 gal (18.9 L) pails, and in cases of 1 gal (3.8 L) jugs (6 jugs per case).

SHELF LIFE

2 years in original, unopened container

SPECIFICATIONS/COMPLIANCES

- When tested according to ASTM C494, Type C, EUCO WINTER ADMIXTURE complies and gives a freeze-thaw relative durability factor of 102%.
- In compliance with ASTM C494, Type C requirements, this product will increase one day strength a minimum of 125% over plain and will quicken the setting time a minimum of 1 hour but no more than 3 hours and 30 minutes.

NOTE: *This product does not protect plastic mortar from freezing. This product will allow the mortar to gain strength at a faster rate in cold weather. The mortar should achieve a minimum strength of 500 psi (3.4 MPa) before exposure to freezing temperatures.*

DOSAGE RATES

EUCO WINTER ADMIXTURE may be added directly to the gauging water [85 to 100ºF (29 to 38ºC) if possible] in the following proportions based on the temperatures expected during the 24 hours following the work:

Temperature	EWA	Water
25°F (-4°C)	1 gal (3.8 L)	15 gal (57 L)
20°F (-7°C)	1 gal (3.8 L)	10 gal (38 L)
15°F (-9°C)	1 gal (3.8 L)	7 gal (27 L)

Add an additional quart of EUCO WINTER ADMIXTURE for each bag of lime in the mix.

OR

EUCO WINTER ADMIXTURE may be added directly to each mortar batch. Add the quantity indicated per bag of cement and/or lime.

	Daily Working Temperature*		
	32° (0°C)	**25° (-4°C)**	**20° (-7°C)**
Portland Cement Mortars	1 quart (0.9 L)	1 1/2 quart (1.4 L)	2 quart (1.9 L)
Masonry Cement	1 pint (0.5 L)	1 1/2 pint (0.7 L)	1 quart (0.9 L)
Colored Mortar	1 pint (0.5 L)	1 1/2 pint (0.7 L)	1 quart (0.9 L)

*The given temperatures are an assumed minimum with warming conditions.

DIRECTIONS FOR USE

At the recommended dosage rate, EUCO WINTER ADMIXTURE is added directly to the gauging water.

The Euclid Chemical Company recommends the contractor follow typical cold weather concreting practices such as the guidelines in ACI 306, Standard Specification for Cold Weather Concreting.

CLEAN-UP

Clean tools and equipment with water before mortar hardens.

PRECAUTIONS/LIMITATIONS

- Use no more than the prescribed amount of EUCO WINTER ADMIXTURE.
- Test batches/mix design/sample slabs may be required due to variations in local cement and aggregate.
- Keep mortar from freezing until a minimum strength of 500 psi (3.4 MPa) is reached.
- Do not add EUCO WINTER ADMIXTURE directly to dry cement.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

EUCO WINTER MIX POWDER

POWDERED MASONRY MORTAR ACCELERATOR

EUCLID CHEMICAL

DESCRIPTION

EUCO WINTER MIX POWDER (EWMP) is a multi-purpose, calcium chloride based admixture designed to accelerate the normal setting rate of mortar, increase strength development at all ages and improve workability. EUCO WINTER MIX POWDER is the dry version of the EUCO WINTER ADMIXTURE. It produces virtually the same results in mortar as does the EUCO WINTER ADMIXTURE liquid formula. Tests of EUCO WINTER ADMIXTURE liquid show that both plastic and hardened mortar properties are improved.

PRIMARY APPLICATIONS

EUCO WINTER MIX POWDER is used in mortar to lay brick, block, structural clay tile and glass block to eliminate the dangers connected with freezing mortar joints.

FEATURES/BENEFITS

- Accelerates setting times of mortar
- Aids in protecting mortar in cold weather
- Cuts construction costs-no cold weather job delays
- Increases strengths at all ages
- Improves workability
- Does not affect bond strength of mortar

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Results: Prepared Mortars

	Plain	With EWMP
Setting Rate:		
Initial Set:	3 hrs 15 min	2 hrs 15 min
Final Set:	5 hrs 0 min	4 hrs 45 min

Compressive Strength ASTM C109, 2" (50 mm) cubes

24 hours	4 psi (0.03 MPa)	65 psi (0.4 MPa)
3 days	500 psi (3.4 MPa)	600 psi (4.1 MPa)
7 days	780 psi (5.4 MPa)	1000 psi (6.9 MPa)
28 days	850 psi (5.9 MPa)	1200 psi (8.3 MPa)

Water Retention	ASTM C91	
	76.1%	82.3%
Absorption	ASTM C642	
	7.0%	5.6%

Test Results: Prepared Mortars (white cement)

	Plain	With EWMP
Setting Rate:		
Initial Set:	3 hrs 0 min	2 hrs 10 min
Final Set:	5 hrs 0 min	4 hrs 30 min

Compressive Strength ASTM C109, 2" (50mm) cubes

24 hours	8 psi (0.06 MPa)	45 psi (0.3 MPa)
3 days	300 psi (2.1 MPa)	330 psi (2.3 MPa)
7 days	630 psi (4.3 MPa)	640 psi (4.4 MPa)
28 days	775 psi (5.3 MPa)	800 psi (5.5 MPa)

Water Retention	ASTM C91	
	74.0%	80.1%
Absorption	ASTM C642	
	8.3%	7.5%

Appearance: EUCO WINTER MIX POWDER is a white, free flowing, fine grained powder.

PACKAGING

EUCO WINTER MIX POWDER is packaged in cases of 1.25 lb (0.6 kg) bags (20 bags per case).

SHELF LIFE

2 years in original, unopened package

SPECIFICATIONS/COMPLIANCES

- When tested in accordance with ASTM C494, Type C, EUCO WINTER MIX POWDER complies and gives a freeze/thaw relative durability of 102%.
- In compliance with ASTM C494, Type C , this product will increase one day strength a minimum of 125% over plain and will quicken the setting time a minimum of 1 hour but no more than 3 hours and 30 minutes.

NOTE: *This product does not protect plastic mortar from freezing. This product will allow the mortar to gain strength at a faster rate in cold weather. The mortar should achieve a minimum strength of 500 psi (3.4 MPa) before exposure to freezing temperatures.*

DOSAGE RATES

Temperatures ranging from 15 to 32°F (-10 to 0°C)
Masonry Cements: one bag of EUCO WINTER MIX POWDER to each bag of masonry cement.
Portland Cement Lime: Two bags EUCO WINTER MIX POWDER to each bag of Portland Cement.

Above 32°F (0°C)
Masonry Cements: one-half bag EUCO WINTER MIX POWDER to each bag of masonry cement.
Portland Cement-Lime: one bag EUCO WINTER MIX POWDER to each bag of Portland Cement.

DIRECTIONS FOR USE

Empty contents of bag into mortar mixer with part or all of mixing water. Rotate mixer blades approximately 15 seconds until EUCO WINTER MIX POWDER has dissolved. Add cement, lime and sand or masonry cement and sand in normal manner. The Euclid Chemical Company recommends the contractor follow typical cold weather masonry practices. Please refer to "Recommended Practices for Cold Weather Masonry Construction" as published by the International Masonry Industry All-Weather Council or "Cold Weather Concrete Masonry Construction" as published by the National Concrete Masonry Association (publication TEK 16B).

Mixing: EUCO WINTER MIX POWDER is ready to use and requires no pre-blending.

CLEAN-UP

Clean tools and equipment with water before mortar hardens.

PRECAUTIONS/LIMITATIONS

- EUCO WINTER MIX POWDER must be completely dissolved in water prior to the addition of masonry cement, lime and sand.
- Test batches/mix design/sample slabs may be required due to variations in local cement and aggregates.
- Keep concrete from freezing until a minimum strength of 500 psi (3.4 MPa) is reached.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

HYDRAPEL MORTAR ADMIXTURE

INTEGRAL WATER REPELLENT ADMIXTURE FOR MORTAR

EUCLID CHEMICAL

DESCRIPTION

HYDRAPEL MORTAR ADMIXTURE is a complex dry powder additive formulated to prevent moisture intrusion in masonry structures, and is an essential component of the HYDRAPEL Water Repellent Admixture System. HYDRAPEL MORTAR ADMIXTURE significantly reduces water absorption and efflorescence potential, and will help preserve color and overall mortar integrity as a result. HYDRAPEL MORTAR ADMIXTURE provides added bond strength without affecting plastic properties or normal construction rates.

PRIMARY APPLICATIONS

- Masonry Mortar
- Stucco
- Masonry Grout Fill

FEATURES/BENEFITS

- Superior water repellency
- Excellent bond strength
- Reduced efflorescence potential
- Complies with ASTM C1384 for Water Repellent and Bond Enhancing Mortar Admixtures

TECHNICAL INFORMATION

Physical Properties

Specific Gravity 2.01

Freeze Point .....N/A

Appearance: Gray powder that does not alter color

Test methods used to evaluate HYDRAPEL MORTAR ADMIXTURE:

ASTM C1403, C1437, C1072, C780, C1314 and E514

PACKAGING

HYDRAPEL MORTAR ADMIXTURE is available in cartons of 12 zip-tear pouches weighing 2 lb (0.9 kg), and in 25 lb (11.4 kg) bags for dry blending applications.

SHELF LIFE

2 years in original, unopened packaging; product beyond this age may be suitable for use if no clumping or other damage is apparent. Please consult your local Euclid Chemical representative if shelf-life or material suitability for use is in question.

DOSAGE RATES

Use **HYDRAPEL MORTAR ADMIXTURE** at a rate of one 2 lb (0.9 kg) pouch per bag or 1 ft^3 (0.03 m^3) of cementitious materials used in the mix. For pre-blended (bagged or bulk) masonry mortars, add one 2 lb (0.9 kg) pouch for every 4 ft^3 (0.12 m^3) of material volume.

NOTE: For reduced absorption and efflorescence control (Non-Specified Water Repellent Construction) use 1/2 of the above dosage rate.

DIRECTIONS FOR USE

HYDRAPEL MORTAR ADMIXTURE should be added to approximately 75% of the mix water before sand or cement are added. Simply open zip-tear pouch and pour contents into the mixer while idle. Batch as normal and add sufficient water to achieve desired consistency and mix for 5 minutes total.

SPECIFICATIONS/COMPLIANCES

HYDRAPEL MORTAR ADMIXTURE has been tested with EUCON HYDRAPEL and EUCON BLOCKTITE treated CMUs in accordance with ASTM E 514 (Standard Test Method for Water Penetration and Leakage Through Masonry), and achieved E-Rated (Excellent) performance after 72 hours.

HYDRAPEL MORTAR ADMIXTURE complies with ASTM C 1384 (Standard Specification of Admixtures for Masonry Mortar) as both water repellent and bond enhancing.

The HYDRAPEL SYSTEM has been tested per California Code of Regulations state chapter 2405(c) 3.C. for grout bond shear strength and showed increased CMU/grout bond strength when compared to untreated reference test specimens.

Design and construction details must observe applicable design codes and include the recommendations of NCMA TEK 10-1A: Crack Control in Concrete Masonry Walls; TEK 19-1: Water Repellents for Concrete Masonry Walls; TEK 19-2A: Design for Dry Single-Wythe Concrete Masonry Walls; TEK 19-4A: Flashing Strategies for Concrete Masonry Walls; TEK 19-5A: Flashing Details for Concrete Masonry Walls.

Specified water-repellent projects must include HYDRAPEL MORTAR ADMIXTURE in the associated masonry mortar per data sheet and label instructions. Failure to do so will compromise the performance of HYDRAPEL SYSTEM and is in violation of it's guide specification. The use of this product will not compensate for flaws in building design, inadequate production procedures, or improper construction practices.

Only concave or "V" tooled joints should be allowed for water repellent masonry construction incorporating the HYDRAPEL SYSTEM. These recommendations are supported by both the National Concrete Masonry Association and the Brick Institute of America. Remove excess mortar promptly and clean residue using procedures outlined in NCMA TEK 8-2: Removal of Stains from Concrete Masonry

PRECAUTIONS/LIMITATIONS

HYDRAPEL MORTAR ADMIXTURE can effectively impart water repellency when adhering to proper industry (ASTM C 270) practices, and when concave or "V" joint tooling is employed (as recommended by NCMA and BIA).

HYDRAPEL MORTAR ADMIXTURE will not compensate for flaws in building design, improper production procedures, or improper construction methods. The Euclid Chemical Company is not responsible for inappropriate use of HYDRAPEL MORTAR ADMIXTURE.

Rev. 03.18

INTEGRAL WATERPELLER

WATER REPELLENT ADMIXTURE FOR CONCRETE AND MORTAR

EUCLID CHEMICAL

DESCRIPTION

INTEGRAL WATERPELLER is a powdered blend of stearate water repellents and other chemicals which, when used as an admixture, forms an internal barrier against water penetration. INTEGRAL WATERPELLER also increases the plasticity of mortar, reduces water absorption and thereby guards against freeze-thaw damage. INTEGRAL WATERPELLER will not appreciably change the air content of mortar or concrete.

PRIMARY APPLICATIONS

- Masonry mortar
- Foundation walls
- Floor slabs
- Cement stucco

FEATURES/BENEFITS

- Reduces absorption
- Reduces capillary wicking
- Reduces vapor transmission through walls and slabs
- Provides greater workability
- Retains bond strength of mortar

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Appearance

INTEGRAL WATERPELLER is a light gray powdery material.

Test Results	Absorption Ratio Fed. Spec. SS-C-181b	Relative Absorption	Concrete Absorption Total Immersion	
			10 minutes	24 Hours
Plain Mortar	.34	100%	1.28%	4.10%
Mortar with "Dry" Waterpeller	.18	53%	0.60%	2.70%

PACKAGING

INTEGRAL WATERPELLER is available in 25 lb (11.3 kg) bags.

SHELF LIFE

1 year in original, unopened package.

DOSAGE RATES

Use 4 to 6 lb (1.8 to 2.7 kg) of INTEGRAL WATERPELLER per 1 yd^3 (.76m^3) of concrete or mortar.

DIRECTIONS FOR USE

Add INTEGRAL WATERPELLER to concrete or mortar as follows:

Use 1 lb (0.45 kg) per 94 lb (42.7 kg) bag of cement, or 1/4 lb per bag of prepared mortar.

In cement-lime mortar the above quantities should be added for each 1 ft^3 (0.03m^3) of lime, in addition to the quantity added for each bag of cement. INTEGRAL WATERPELLER may be added to the mix after all other components have been added.

CLEAN-UP

Clean tools and equipment with water before mortar hardens.

PRECAUTIONS/LIMITATIONS

- INTEGRAL WATERPELLER must be protected from moisture during storage.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

TAMMSBAR

REBAR TOUCH-UP EPOXY COATING

EUCLID CHEMICAL

DESCRIPTION

TAMMSBAR is a two-part ambient temperature cure thermosetting liquid epoxy coating designed to repair scrapes, scars, damage or imperfections of fusion bonded epoxy powder coatings. TAMMSBAR utilizes the latest in corrosion mitigation technology for long term service life. It can be conveniently applied to rebar with brush, roller or spray in the shop or field. TAMMSBAR meets the stringent standards of ASTM D3963 as a patch compound.

PRIMARY APPLICATIONS

- Repair of scrapes, scars, cuts, and splices to coated rebar
- Repair of imperfections in fusion bonded epoxy powder coated materials

TECHNICAL INFORMATION

Typical Engineering Data

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Material Properties at 75˚F (24˚C)

Mix ratio (by volume).....1:1
Mixed viscosity (cps).....1500
Gel time (minutes).....45 to 60
Tack free time (hrs.) .....4 to 5
Flexibility, 1/8" (3.22 mm) Mandrel Bend.. passes
Induction time .....none
VOC Content .....≤ 5 g/L

TEST	RESULT
Chloride Permeability Coating Thickness: 8 mils, 45 days test duration FHWA-RD-74-18, Section 4.1.3 ASTM D3963 (A1.4.1)	Accumulative Concentration of Chloride Ions Permeating Through Film: Pass
Salt Scaling Coating Thickness: 8 mils, 400 days test duration ASTM B117 ASTM D3963 (A1.4.2)	No blisters or rust holes
Chemical Resistance Coating Thickness: 8 mils, 28 days test duration ASTM G20 ASTM D3963 (A1.4.3)	No blisters or rust holes

Appearance: TAMMSBAR is a light green color that is matched to standard epoxy coated reinforcing steel.

PACKAGING

TAMMSBAR is packaged in 1 pint (0.5 L), and ½ gal (1.9 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

The coverage rate of Tammsbar is 120 to 175 ft^2/gal (2.9 to 4.3 m^2/L), with a final film thickness of 8 to 12 mils.

Note: Coverage rates are for estimating purposes only. Surface texture and temperature will determine actual material requirements.

DIRECTIONS FOR USE

Surface Preparation: Steel surfaces must be clean, dry, free of all oil, grease, dust, scale, rust, damaged coating from the repair area and any other contaminants that may interfere with adhesion.

Mixing: Premix Tammsbar Part A and Part B separately then combine one part by volume of Part A with one part by volume of Part B in a clean, dry container. Scrape the sides of the mixing container at least once during the mixing. Mix until uniform. Do not aerate during mixing. Mix only the quantity of material that can be used with its pot life.

Application: For best results the ambient and surface temperature should be above 50°F (10˚C). Minimum application temperature is 40°F (4˚C). Tammsbar can be applied by brush, roller or standard spray or airless spray equipment. Apply to the rebar, completely covering the defect area and overlapping onto existing powder coating. Allow the Tammsbar to dry prior to handling and storage.

CLEAN-UP

Clean tools and application equipment immediately after use with acetone. Clean up spills or drips while still wet with the same solvents. Dried Tammsbar will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store at 50°F to 90°F (10˚C to 32˚C).
- Do not thin.
- In all cases, consult the Safety Data Sheet before use.

Rev. 01.19

MEASUREMENT CONVERSIONS

If You Have	Multiply By	To Find
inches	25.4	millimeters
inches	2.54	centimeters
inches	0.0254	meters
in^2	6,642	cm^2
in^2	0.00694	ft^2
in^3	.554	fl. oz.
in^3	0.01639	liters
in^3	0.004329	gallons US
in^3	16.39	cm^3
in^3	0.00058	ft^3
ft^2	144	in^2
ft^2	9,729.03	cm^2
ft^2/gal	0.02454	m^2/liter
ft^3	1,728	in^3
ft^3	0.02832	m^3
ft^3	0.037	yd^3
yard	0.9144	meter
yd^2	0.8361	m^2
yd^3	27	ft^3
yd^3	0.7646	m^3
acres	43,560	ft^2
fl. oz.	1,805	in^3
fl. oz.	0.03215	quart
fl. oz.	0.00781	gallons US
fl. oz.	0.02957	liter
fl. oz./cwt	0.652	ml/kg
fl. oz./cwt	65.2	ml/100 kg
fl. oz./cwt	0.03868	l/m^3
quart	32	fl. oz.
quart	0.25	gallons US
gallon US	231	in^3
gallon US	4	quarts
gallon US	128	fl. oz.
gallon US	3.785	liter
gal/yd^3	4.951	liter/m^3
lb.	0.0005	ton US
lb.	453.5924	g
lb.	0.4536	kg
lb./ft^2	4.88	kg/m
lb./ft^3	16.02	kg/m^3
lb/yd^3	0.5933	kg/m^3
psi	0.006895	Mpa
w/c ratio	11.3	gal water/ bag of cement
gal water/ bag of cement	0.0885	w/c ratio

If You Have	Multiply By	To Find
g	0.0022	lbs
g	0.001	kg
liters	61.024	in^3
mils	0.001	inches
millimeters	0.0394	inches
centimeters	0.3937	inches
cm^2	0.155	in^2
meters	39.37	inches
cm^2	0.155	in^2
cm^3	0.06102	in^3
cm^2	0.00108	ft^2
m^2/liter	40.75	ft^2/gal
m^3	35.314	ft^3
meter	1.0936	yard
m^2	1.196	yd^2
m^3	1.308	yd^3
liter	33.8141	fl. oz.
ml/kg	1.533	fl. oz./cwt
ml/100kg	0.0153	fl. oz./cwt
l/m^3	25.85	fl. oz./yd^3
liter	0.264	gallon US
liter/m^3	0.202	gal/yd^3
g	0.0022	lb.
kg	2.205	lb.
kg/m^3	0.0624	lb/ft^3
kg/m^3	1.685	lb/yd^3
kg/m^3	0.2048	lb/ft^2
kg	1,000	g
Mpa	145	psi

TEMPERATURE CONVERSIONS

°C = (°F-32) x 1.8
°F = (1.8 x °C) + 32

32°F = 0°C
212°F = 100°C

WATER

Water weighs 8.345 lbs/gallon.
One cubic foot weighs 62.45 lbs.
One lb = 27.7 in3 = 0.1198 gallons.

SAND

One yd^3 of bulk sand weighs about 2,700 lbs.
One ft^3 of bulk sand weighs about 100 lbs.
One gallon of bulk sand weighs about 13-14 lbs.
The specific gravity of sand is approximately 2.6.

FLOOR SYSTEM THICKNESS

Inches	Mils	Millimeters
2	2000	50.8
1-1/2	1500	38.1
1	1000	25.4
3/4	750	19.05
1/2	500	12.7
3/8	375	9.52
5/16	312.5	7.94
1/4	250	6.35
3/16	187.5	4.76
1/8	125	3.175
3/32	93.8	2.38
1/16	62.5	1.59

DECIMAL EQUIVALENTS OF COMMON MEASUREMENTS

1/16	=	.0625	1/2	=	.5
1/8	=	.125	9/16	=	.5625
3/16	=	.1875	5/8	=	.625
1/4	=	.25	11/16	=	.6875
5/16	=	.3125	3/4	=	.75
3/8	=	.375	13/16	=	.8125
7/16	=	.4375	7/8	=	.875
			15/16	=	.9375

VOLUME AND AREA FORMULAS

Area of a square or rectangle = Length x Width
Circumference of a circle = Radius x 3.14 x 3.14
Area of a circle = Radius x Radius x 3.14
Absolute volume = Specific Gravity x 62.4
Surface area of cylinder = Diameter x Length x 3.14

COVERAGE YIELD OF ONE YARD OF CONCRETE

Thickness (inches)	Square Feet	Thickness (inches)	Square Feet
1	324	6	54
2	162	7	46
3	108	8	40
4	81	9	36
5	65	10	32

$ft^2/yd = 324/depth\ (inches)$

COVERAGE RATE/USAGE OF REPAIR MATERIAL

The coverage rate of repair material can be calculated by multiplying the cubic feet of product by 12 and dividing by the depth (in inches) of the repair:

Square feet of coverage = Cubic Feet x 12 ÷ Depth (in inches) of Repair

Example: 35 cubic feet of repair material placed at 2-1/2" in depth would cover 168 square ft

ANCHOR BOLT GROUTING

The cubic inches of grout required is equal to the total volume of a hole less the volume of its bolt.

Formula to establish the Total Volume of a hole:

Volume of a hole (cylinder) = 3.14 x Radius x Radius x Length

Formula to establish the Cubic Inches of Grout Required

Cubic inches of grout required = Volume of the Hole minus **Volume of its Bolt**

Example: A bolt 1/2" in diameter (radius of .25") and 5" long that is surface flush anchored in a hole 3/4" in diameter (radius of .375") and 6" long, requires 1.67 cubic inches of grout

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CONSTRUCTION PRODUCTS

BONDING AGENTS AND ADHESIVES
- Acrylic additives
- Anti-corrosion coating
- Dowel bar adhesives
- Injection resins
- Polyvinyl acetate primers
- Segmental bridge adhesives
- Structural concrete epoxy binders
- Styrene butadiene copolymers

CURING AND CURING & SEALING COMPOUNDS
- Dissipating and removable curing compounds
- Exempt solvent cure and seals
- Sealers for decorative concrete
- Solvent & water based cure and seals

GROUTING PRODUCTS
- Dry pack cementitious
- Epoxy grouts
- High flow cementitious
- Metallic aggregate grouts

JOINT FILLERS AND SEALANTS
- Epoxy control joint fillers
- Non-sag and self-leveling polyurethanes
- Pick-proof sealants
- Polysulfide sealants
- Polyurea joint fillers and repair products

MISCELLANEOUS PRODUCTS
- Color packs for solvent-based materials
- Concrete cleaners
- Evaporation retarders
- Form release agents
- Rebar coatings

WATERPROOFING AND DAMPPROOFING
- Cementitious coatings
- Emulsified asphalt dampproofing
- Hydrophilic urethane grout
- Hydrophobic urethane grouts
- Migratory crystalline systems
- NSF approved coatings
- VANDEX waterproofing systems

CONCRETE REPAIR SYSTEMS
- Cathodic protection systems
- Epoxy based mortars
- Fast setting mortars
- Horizontal, vertical and underwater products
- NSF approved repair mortars
- Self-leveling toppings and underlayments
- Urethane crack menders

DRY SHAKE FLOOR HARDENERS
- Light reflective flooring
- Metallic aggregate
- Natural aggregate
- Non-oxidizing metallic aggregate

HIGH PERFORMANCE COATINGS
- Chemical resistant amine and novolac epoxies
- Elastomeric coatings
- Epoxy and polyurethane traffic deck systems
- High build epoxy floor systems
- Industrial tank liners
- Penetrating epoxy deck healers
- UV resistant urethane topcoats
- Water-based acrylics

MASONRY ADMIXTURES
- Cold weather accelerators
- Integral water repellents

PENETRATING SEALERS AND LIQUID DENSIFIERS
- Magnesium silicofluoride dustproofers
- Penetrating epoxy sealers
- Silane and siloxane water repellents
- Silicate, sodium and lithium densifiers

CONCRETE & MASONRY ADMIXTURE PRODUCTS

ACCELERATORS
- Chloride
- Non-Chloride

RETARDERS

AIR ENTRAINERS

WATER REDUCERS

MID-RANGE WATER REDUCERS

HIGH RANGE WATER REDUCERS
- Powdered Admixtures

MASONRY / MCP PRODUCTS
- Plasticizing
- Integral Water Repellency
- Efflorescence Control

MORTAR ADMIXTURE PRODUCTS

INTEGRAL COLORS

FIBER PRODUCTS
- Micro Synthetic
- Macro Synthetic
- Steel

SPECIALTY PRODUCTS
- Air Detrainers
- ASR Control
- Corrosion Inhibitors
- Flowable Fill
- Hydration Stabilizers
- Micro Silica
- Rheology Modifiers
- Shrinkage Compensation
- Shrinkage Reduction
- Waterproofing
- Workability Extending

MISCELLANEOUS PRODUCTS
- Form Release Agents
- Surface and Evaporation Retardants
- Equipment Cleaners
- Dust Control

INCRETE DECORATIVE CONCRETE PRODUCTS

PLATFORM STAMPING TOOLS AND FORMLINERS
- Rigids and Liners
- Texture Skins
- Edge Forms
- Architectural Wall Formliners
- Custom Logos and Tools

ACCESSORIES
- Textured Rollers
- Joint Strips
- Vine and Rose Borders

CONCRETE COLOR
- Hardener
- Releases
- Integral Powder
- Integral Liquid
- Integral Granular

STAINS AND DYES
- Stain-Crete (Acid Base)
- Stone-Essence (Water Base)
- Vibra-Stain (Concentrated Dye)
- Concrete Stain (Stain Sealer)

FINISHING AIDS
- Increte Delay/Trowel Glide
- Retarder

SEALERS AND PROTECTIVE COATINGS
- Water & Solvent Based
- Cure and Seals
- VOC Compliant
- Specialty Coatings
- Epoxy
- Urethane
- Wax

STAMPED OVERLAY PRODUCTS
- Thin-Crete
- Bond-Crete
- Antiquing Agent
- Liquid Release

SPRAYED OVERLAY PRODUCTS
- Spray-Deck/Texture-Crete Grout
- Texture-Crete
- Liquid Dispersion
- Single Component Grout
- Spray-Deck Resin

OVERLAY & CUSTOM ADHESIVE STENCILS
- Pattern Stencils
- Vinyl (Staining) Stencils
- Sandblast Stencils

SELF-LEVELING / MICRO-TOPPING / VERTICAL OVERLAY
- Level Top SP
- Micro-Crete
- Thin-Crete Vertical
- Single Component Grout

SPECIALTY CLEANERS
- Grease-A-Way
- Uni-Stripp
- Solv-Kleen

MISCELLANEOUS PRODUCTS
- Densifier
- Slip-Resistant Additives
- Epoxy Vinyl Chip System
- Metallic Effect Epoxy System
- Quartz Epoxy System
- Sure-Etch Exposed Aggregate
- Matte Add

MINING & UNDERGROUND CONSTRUCTION PRODUCTS

DRY SHOTCRETE
- Euco Diamond Shot
- Eucoshot series
  - silica fume modified
  - latex modified
  - fiber reinforced
- Accelerators
- Binder mixes

GROUT
- Cable grout
- Cementitious grout
- Epoxy grout
- Tremie grout

ANNULUS GROUTING PRODUCTS
- Anti-bleed and segregation admixtures
- Accelerators
- Water reducers
- Micro-silica
- Retarders
- Hydration control

BACKFILL AND ANNULUS GROUTS
- Water reducers
- Set retarders
- Accelerators
- Superplasticizers

FORM RELEASE AND FINISHING
- Evaporation retardants
- Bio-degradable form release

WET SHOTCRETE
- Accelerators
  - alkali free
  - high performance
- Retarders and set stabilizers
- Superplasticizers
- Lubricating admixtures
- Pumping aids

ROCK SUPPORT
- Cartridges

PATCHING PRODUCTS
- Overhead
- Rapid Setting
- Latex modified

MISCELLANEOUS PRODUCTS
- Micro-silica
- Fibers
- Dust control
- Surface hardeners
- Equipment cleaners
- Anti-corrosion coatings
- Urethane sealants

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