



INCRETE COLOR-CRETE™ INTEGRAL COLOR

BEST PRACTICES AND PROCEDURES



WHAT IS INCRETE COLOR-CRETE?

Euclid Chemical's colors are pure synthetic iron oxide pigments, manufactured to the highest standards. They are high strength, uniform in color, and exceed ASTM C 979 specifications for integrally colored concrete. Increte Color-Crete colors are light-fast, lime-proof and weatherproof, providing a permanent colorfast solution. Increte Color-Crete can be used in all cementitious materials, providing an unlimited palette for decorative effects. The primary applications are cast-in-place, slab-on-grade, precast, tilt-up, concrete pavers and roof tiles. It can also be used in concrete curbing, stucco, cast stone and plaster.

PACKAGING

Euclid Chemical offers Increte Color-Crete in many forms, from **Batch-Ready™ Powder Integral** to **Liquid Increte Color-Crete**, available pre-packaged by the yard. Batch-Ready disintegrating bags and Liquid Increte Color-Crete contain precise measurements of pigment and are added to ready-mix drums, eliminating waste and human error. All Increte Color-Crete loadings have specific weights of pigment, based on each sack (94 lbs of cement). Please refer to the Increte Color-Crete color chart for individual color loadings. *Example: Euclid Chemical's Pecos Beige requires 3 lbs/sack. Pouring an 8-yard load at a 5-sack mix (470 lbs of cement) requires 15 lbs of Pecos Beige pigment per cubic yard, a total of 120 lbs.*

LIMITATIONS

Some colors are difficult to produce because the gray color of cement affects the hue, and using white cement may not be cost effective. These colors can be achieved more efficiently by using **Increte Color Hardener**, a dry shake product that colors the surface of freshly placed concrete. Variations in cement color, type and brand can all affect the final color. Variations in aggregates, finishes, forming materials, methods and curing can affect color, so it's important to keep materials, operations and application techniques as consistent as possible. Calcium Chloride should not be added to any concrete containing Increte Color-Crete, as it can cause discoloration.

MIX DESIGN

Design concrete mixes to use the lowest water/cementitious ratio applicable for local conditions and materials. Type I, II, or V Portland Cement is recommended. When appropriate, use in combination with Supplementary Cementitious Materials (SCM's) such as Class F Fly Ash, Natural Pozzolan, or Ground Granulated Blast Furnace Slag. When SCM is used, use throughout the project for consistent color. Place concrete with a 4" slump (not to exceed 5"). If a higher slump is required use a mid-range or high-range water reducing admixture. Do not use admixtures containing calcium chloride. Placement slump should be appropriate for the application, non-segregating and consistent from batch to batch. A jobsite test batch placement is recommended using a minimum batch size that is 1/3 of the capacity of the mixing equipment using the same mix design, raw materials, slump, placement and finishing techniques that will be used on the actual job. Contact your local Euclid Chemical representative for technical assistance.

ADDING LIQUID & POWDER PIGMENT

Ideally, the best procedure is to batch 40-50% of the load. With the mixer running, add color and mix for 1-2 minutes before adding the balance of materials. Once all materials have been added, mix the drum at mixing speed for 5 minutes. Be sure to use the same mix design and slump from truck to truck. If higher slump is required, it can be obtained using a water reducing admixture. It's important to consistently use the same cement, as different cements can vary in color, thus affecting the final color. Watch the slump closely, as varying slumps can be an indication of water-to-cement ratio inconsistency that can affect final color. Never add Color-Crete to an empty drum or mixer.

JOB SITE SAMPLES

A representative job site sample should be created for each color/mix design. Job site samples should be of adequate size to be representative of the job, and produced with a minimum of three cubic yards or 1/3 capacity of the mixer used for the project. Samples should be cast using the aggregates, cement, water-to-cement ratio and finishing techniques to be used on the job. Samples should be produced and approved prior to application of the first on-site pour.

JOB SITE PREPARATION

Concrete should be placed over a properly placed and compacted sub-grade. Sub-grade should be free of mud, standing water and frost. Pouring over inconsistent sub-grade(s) such as wood, plastic, asphalt or existing concrete can effect the evaporation rate and cure time of the concrete, which can in turn effect efflorescence and cause color variation.

PLACING AND FINISHING

Place as close to final position as possible to avoid segregation. Once a pour has begun, no water should be added to the truck. Do not start the concrete finishing process until all bleed water has evaporated, as this can cause discoloration and weaken non-durable surfaces. Use consistent finishing techniques throughout any project to ensure a uniform finish. Do not add water to a concrete surface during the finishing process, as this may create a blotchy surface look. Move any edging tool and/or other hand-finishing tool in only one direction to produce a consistent finish. Hard steel troweling should be minimized to avoid trowel "burns". When placing concrete in hot/windy conditions, prevent the surface from drying too quickly, which can cause excessive shrinkage and plastic cracking.

CURING

Until completely cured, the color of tinted concrete can look non-uniform and slightly darker than it's final color. Allow 28 days for final cure. Do not place foreign materials such as burlap, water, plastic, wood or paper on a surface during the curing process. Contact with such foreign materials can cause discoloration. Do not water cure integrally colored concrete. While curing, water evaporation can cause a white hazy film (efflorescence) to appear on the concrete surface. This efflorescence is more noticeable on colored concrete, giving a chalky or faded look. This can be reduced or eliminated by proper curing, and protecting the surface from water penetration. Efflorescence can also be removed with mild acid cleaners formulated for the task. When using such a product, follow manufacturer's instructions and test a small area to ensure product will not discolor or etch the concrete surface. When considering use of a curing compound, use only those recommended by an Increte representative prior to use.

VERTICAL CONCRETE

Prior to pouring, cast a jobsite sample as described in the Job Site Samples section of this sheet. New forms should be "seasoned" with a slurry of matching color. Contact an Increte representative for information on matching slurries. All holes, plugs, gaps and joints should be patched or filled to prevent water leakage, or water-to-cement ratios in the area(s) near these leaks can change and discolor the concrete. If using internal vibrators, be careful not to allow the vibrator head to come in contact with reinforcing steel or the face of a form, as this can create dark "vibrator burn" spots on the concrete surface. If using form liners, clean and remove any cement remnants from previous pours from the liner. When pouring integrally colored concrete, always use a non-staining form release agent. To help achieve color consistency, forms should be stripped when concrete is of the same age.

MAINTENANCE

Integrally colored concrete can be maintained by sweeping. Spills should be cleaned as they occur. Rinse dirt with clean water. Heavily soiled areas can be scrubbed using water and a stiff bristled brush. For large area maintenance, an auto scrubber can be used. When applying any Euclid Chemical acrylic sealer, refer to the product's Technical Data Sheet before use.

WARRANTY

For complete warranty information, refer to Increte Color-Crete Technical Data Sheet. Increte warrants only that its products are of consistent quality. No other oral or written statement is authorized. Any liability is limited to refund or replacement of defective product. The end user shall determine a product's suitability and assume all risks and liability.

CONSISTENT METHODS MEAN CONSISTENT COLOR

Many factors can have a dramatic effect on final color appearance. Using consistent materials, practices and techniques throughout any project is key to providing a uniform finish. The information below illustrates some of the factors that can affect integral color results.

HOW CONCRETE MIX EFFECTS FINAL COLOR

These mix components directly affect final color appearance, so careful consistency of use is critical:

- Cement color/brand
- Cement content
- Slump
- Admixtures
- Pozzolans
- Aggregates
- Quality of pigment



HOW CONTRACTOR PRACTICES EFFECT FINAL COLOR

The importance of consistency in any individual contractor's practices cannot be overstated. Practices that directly affect final color appearance include:

- Subgrade preparation
- Temperature/weather conditions
- Placing techniques
- Finishing techniques
- Adding water at any point to the mix, the broom/sponge, "blessing" the concrete surface during finishing
- Curing and sealing choices and techniques

