



# INCRETE COLOR-CRETE™

## BEST PRACTICES FOR GRANULAR INTEGRAL COLOR



### WHAT IS INCRETE COLOR-CRETE?

Increte Systems 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

Increte Color-Crete granular pigments are provided in bulk bags and blended at ready-mix, precast and manufactured concrete products plants using the Color-Matic "G" or other suitable dispensing equipment. Consult your Euclid Chemical Company sales representative to determine the system that best fits the needs of your concrete production facility.

### LIMITATIONS

Some colors cannot be accurately produced because the gray color of cement is difficult to overcome. These colors can be achieved more efficiently by using white cement. Variations in cement color, type and brand can all affect the final color. The type of aggregates, finishes, forming materials, methods and curing can also affect color, so it is 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 GRANULAR PIGMENT

Granular color can be added in two methods depending on the type of Color-Matic "G" being utilized. The highest tint strength possible is achieved using the patented Dry to Wet slurry process. When using this process, it is recommended to add the slurry at the beginning of the batch with the aggregate and the head-water. This will help distribute the color evenly and complete the shearing process before the cementitious materials are added. When adding granular pigment to the mixer, whether through a Color-Matic "G" dispenser or by hand, it is critical to add the granules with the aggregate and water and allow as much mixing time as possible before adding the cementitious materials. The cementitious materials can act as a lubricant and prevent the color from developing 100% tint strength. 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 3 yd<sup>3</sup> 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 installed 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 affect the evaporation rate and cure time of the concrete, which can cause efflorescence and color variation.

## PLACING AND FINISHING

Do not exceed maximum slump as specified in the mix design. Place as close to the 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 the concrete surface. 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 appearance. 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 plastic shrinkage cracking.

## CURING

Until completely cured, integrally colored concrete can look non-uniform and slightly darker than its 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, contact a Euclid Chemical representative for a product recommendation.

## VERTICAL CONCRETE

Prior to pouring, cast a job site 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 Euclid Chemical representative for information on matching slurries. All holes, plugs, gaps and joints should be patched or filled to prevent water leakage. If not filled, 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 the Increte Color-Crete Technical Data Sheet. Euclid Chemical 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:

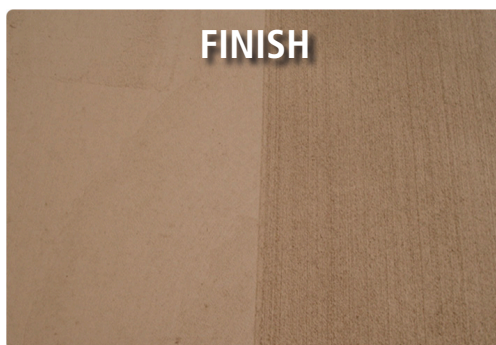
- Cement color/brand
- Cement content
- Slump
- Admixtures
- Pozzolans
- Aggregates
- Quality of pigment



### 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



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