COLOR-CRETE™
INTEGRAL COLOR
BEST PRACTICES AND PROCEDURES

WHAT IS 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. Color-Crete colors are light-fast, lime-proof and weatherproof, providing a permanent color fast solution. Color-Crete can be used in all cementitious materials, providing an unlimited palate for decorative effects. The primary applications are cast-in-place, slab on grade, pre-cast, tilt-up, concrete pavers and roof tiles. It can also be used in concrete curbing, stucco, cast stone and plaster.

PACKAGING

Increte Systems offers Color-Crete in many forms, from Batch-Ready™ Powder Integral to Liquid Color-Crete, available pre-packaged by the yard. Batch-Ready disintegrating bags and Liquid Color-Crete contain precise measurements of pigment and are added to ready-mix drums, eliminating waste and human error. All Color-Crete loadings have specific weights of pigment, based on each sack (94 lbs of cement). Please refer to the Color-Crete color chart for individual color loadings. Example: Increte’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 effects the hue, and using white cement may not be cost effective. These colors can be achieved more efficiently by using Increte’s Color Hardener, a dry shake product that colors the surface of freshly placed concrete. Variations in cement color, type and brand can all effect the final color. Variations in aggregates, finishes, forming materials, methods and curing can effect 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 Color-Crete, as it can cause discoloration.

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.

BATCHING AND MIXING

Use a minimum cement content of 470 lbs/cubic yard. Cement substitutes such as fly ash or slag should not be used unless an Increte representative is consulted. If a cement substitute is used, it must be added to all mixes on a given project for consistency of color. Do not exceed a 5” slump. 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 (4") 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 effecting the final color. Watch the slump closely, as varying slumps can be an indication of water-to-cement ratio inconsistency that can effect final color. Never add Color-Crete to an empty drum or mixer.

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 concrete with a 4" slump (not to exceed 5"). 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 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 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. Apply Increte’s Grease-A-Way for stubborn stains. When applying that or any Increte acrylic sealer, refer to the product’s Technical Data Sheet before use.

WARRANTY

For complete warranty information, refer to Increte’s 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 text and photos below illustrate some of the elements that commonly lead to trouble.

HOW CONCRETE MIX EFFECTS FINAL COLOR

These mix components directly effect 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 effect final color appearance include:
- Subgrade preparation
- Temperature/weather conditions
- Placing techniques
- Finishing techniques
- Adding water at any point to the mix, the broom/sponge, or “blessing” the concrete surface during curing
- Curing and sealing choices and techniques