

INCRETE COLOR-CRETE™

Integral Colors for Concrete



EUCLID CHEMICAL



SANDSTONE CC730 (B)



PECOS BEIGE CC550 (A)



FIESTA CC320 (B)



SAN JOSE BUFF CC715 (B)



AUSTIN BUFF CC047 (A)



PHOENIX TAN CC575 (A)



SAND BUFF CC725 (B)



DESERT TAN CC275 (C)



AUTUMN BROWN CC050 (D)



COCOA CC177 (D)



YUMA GOLD CC990 (B)



SOMBRA CC805 (C)



MAPLEWOOD CC460 (C)



SALTILLO CC705 (B)



TERRA COTTA CC875 (C)



TILE RED CC895 (C)



BRICK RED CC100 (C)



TAHOE RED CC850 (D)



CHEROKEE RED CC153 (D)



REDWOOD CC630 (D)



NAVAJO CC510 (A)



CORDOVA CC200 (B)



SEDONA CC750 (B)



TIERRA CC885 (A)



PUEBLO CC595 (A)



SOFT GRAY CC802 (A)



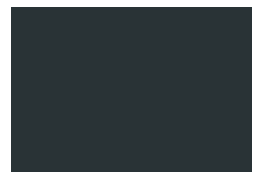
SILVER GRAY CC770 (B)



EURO GRAY CC285 (A)



DARK GRAY CC230 (C)



CHARCOAL CC150 (D)

Specialty designer colors are available upon request. The distinctive colors of Increte Color-Crete when utilized to create hardscape materials of High-SRI Concrete contributes to LEED points when these surfaces provide a Solar Reflective Index (SRI) with a minimum of 29 or higher as determined by ASTM E903 or ASTM C1549. See reverse side for individual color with LEED contributing values.

Colors shown approximate laboratory samples made with type-1 portland, tan sand, Increte Color-Crete pigment and 4" slump. Due to variations of job site conditions, actual colors on the chart can and will vary slightly. Conditions that will cause variation are inconsistent slump (water content), finishing and curing methods, weather conditions, and concrete raw materials. A job-site or test slab sample should be made using specified materials, and the finishing and curing techniques to be used. For color consistency, batch to batch uniformity must be maintained.

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Best Practices and Procedures

Basic Use

Increte Color-Crete™ is designed to be used in all cementitious materials, producing unlimited color effects. The primary applications are cast-in-place, slab-on-grade, precast, tilt-up, concrete pavers and roof tiles. Increte Color-Crete also can be used in concrete curbing, stucco, cast stone and plaster.

Composition

Euclid Chemical colors are pure synthetic iron oxide pigments, manufactured to the highest standards. They are high strength and uniform in color and exceed ASTM C-979 specifications for integrally colored concrete. Increte Color-Crete colors are light-fast, lime-proof and totally weather-proof, providing a permanent color fast solution.

Additives

Calcium chloride is NOT to be added as it can create discoloration as uneven light and dark areas in the finished product. Non-chloride accelerators, including hot water, may be used as acceptable accelerators.

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 job site 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

Ideally, when mixing at the plant, load the color with the head water then add the balance of the load. Make sure mixer is not dry and verify that it is empty with no concrete left from previous batch, backspin if necessary. After all ingredients are added to the mixer, mix the drum or mixer for a minimum of 75 revolutions at mixing speed and a minimum of 5 minutes. If color is added at the job site, increase mix time to 8 to 12 minutes. Always check concrete for thorough and complete color dispersion before placing. Be sure to use the same mix design and slump from truck to truck (If higher slump is required it may be obtained by the use of water reducing admixtures). It is important to use the same cement; as different cements can have different shades of gray that can affect the final color. Watch the slump closely as varying slumps is an indication of varying water to cement ratios and this can affect the final color.

Job Site Samples

A representative job site sample should be produced for each color and/or mix design. These job site samples should be of adequate size to be representative of the actual job and produced with a minimum of 3 yd³ (2.3m³) or 1/3 the capacity of the mixer. These sample(s) should be cast using the same aggregates, cement, water to cement ratio and finishing techniques to be used on the job. These samples should also be produced and approved prior to commencing the first pour on site.

Job Site Prep

Concrete should be placed over a properly compacted sub-grade. This sub-grade should be free of mud, standing water and frost. If placing over inconsistent sub-grades such as wood, plastic, asphalt or existing concrete know that this will affect the evaporation rate and cure time of the concrete which can increase the presence of efflorescence and cause color variation.

Placing Finishing and Curing

Place all color-conditioned concrete on a thoroughly uniform compacted surface. Surface should be lightly dampened (no puddles). Concrete must be placed with consistent slump as specified in the mix design.

Troweling may begin after bleed water evaporates. Concrete should be stiff or plastic before troweling or brooming. Hard or late troweling will cause burns or dark spots. Do not add water or other foreign materials to surface upon finishing or discoloration will occur.

For exterior installations, apply rotary, broom or other uniformly textured finish for both appearance and slip resistance. Broom, rotary and rough finishes will usually cure more even-colored than smooth troweled surfaces.

Evaporation of water can cause a white hazy film (Efflorescence) on the surface of concrete. Efflorescence is more noticeable on colored concrete surfaces giving the appearance of a chalky or faded look. This effect can be reduced or eliminated by proper curing and protection against water penetration.

Efflorescence can be removed with mild acid cleaners formulated to remove efflorescence. Follow manufacturer instructions and always test a small area to insure product will not discolor or etch the surface. When applying curing compounds use only those recommended and approved by Euclid Chemical. Euclid Chemical should be contacted prior to the use of other curing methods.

Until it is completely cured, the color of concrete is normally less uniform and sometimes darker than the final color. Allow 28 days for full cure.

Do not place any foreign materials such as burlap, water, plastic, wood or paper on surface during the curing process. Contact with foreign materials during curing will cause discoloration. Do not water cure integrally colored concrete.

Curing

Once the surface will support foot traffic, Euclid Chemical's Super Diamond Clear or Super Diamond Clear 350 are recommended and may be applied to most new colored architectural concrete surfaces. These products meet the ASTM Standards C309 and C1315. Do not apply cure and seal products in high heat, direct sunlight or windy conditions. See technical information for the appropriate cure product, limitations, precautions and application specifications.

Limitations

Variations in cement color, type and brand can all produce variations in the final color. Variations in aggregates, finishes, forming materials and methods as well as curing can all affect the final color. It is very important to keep all materials, operations and techniques as consistent as possible. Calcium Chloride should not be added to any concrete containing Color-Crete as it can cause discoloration in the finished product.

Vertical Concrete

Prior to pouring you should cast a job site sample. Whenever using new forms they should be seasoned with a slurry of matching color. Please contact Euclid Chemical for more information on matching slurries. All holes, plugs, gaps and joints should be patched or filled to prevent water leaking out in these areas. If this is not performed the water to cement ratio in the area near the leaks will change and discolor the surface. If using internal vibrators be careful not to allow the vibrator head to come in contact with reinforcing steel or the face of the form as this can create a dark spot on the surface known as a vibrator burn. If using form liners, be sure to remove any cement paste from previous pours and to clean prior to each pour. When pouring integrally colored concrete always use a non-staining form release agent. To help achieve more color consistency, all forms should be stripped when concrete is of the same age.

Maintenance

Integrally-colored concrete can be maintained by sweeping. Spills should be cleaned up as they occur. Dirt may be rinsed with clean water. Heavily soiled areas may be scrubbed with water and a stiff bristle brush. Heavily soiled areas may be scrubbed with water and a stiff bristle brush. A concrete degreaser can be used to remove most stubborn stains. For maintenance of large areas, auto scrubbers may be used. To maintain surfaces that have been sealed with one of Euclid Chemical's acrylic sealers please refer to the Technical Data sheets for the particular sealers used.

Technical Services

Custom Colors and Matching Services

The Euclid Chemical color service laboratory is available to provide expert assistance for your color needs. Please contact your representative and indicate mix design along with sample of desired color that is to be produced.

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|--------------------|----------------|------------------|------------|-------------------|-----------------|-----------------|
| SRI Values* | Brick Red: 36 | Cherokee Red: 35 | Navajo: 34 | Cordova: 32 | Tierra: 33 | Tile Red: 37 |
| | Sandstone: 42 | Pecos Beige: 36 | Fiesta: 35 | San Jose Buff: 35 | Austin Buff: 41 | Phoenix Tan: 37 |
| | Desert Tan: 31 | Yuma Gold: 36 | Sombra: 41 | Maplewood: 38 | Saltillo: 39 | Terra Cotta: 32 |
| | | | | | | Euro Gray: 30 |

*SRI Values listed were derived using test samples made with medium gray type I/II Portland cement and test methods ASTM C1549 and ASTM E1980 as performed by an independent testing laboratory only.

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CHART CC-37



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