



1. Product Name

Direct Colors Concrete Pigments

2. Manufacturer

Direct Colors, Inc. (DCI)
 430 East 10th Street
 Shawnee, OK 74801
 (877) 255-2656
 (405) 275-6657
 Fax: (405) 275-2815
 E-mail: info@directcolors.com
www.directcolors.com

3. Product Description

BASIC USE

Direct Colors Concrete Pigment, also known as Integral Color, is designed to color concrete, stucco, plaster, mortar, grout, overlay and other cementitious materials. Integral Colors have been used in thousands of different commercial and residential applications to create beautiful and unique surfaces.

DCI Concrete, Inc. (DCI) concrete pigments can be used to add color to concrete floors, countertops, cultured and architectural stone, statuary and an assortment of other garden decor items.

DCI Concrete pigments are also used to tint concrete sealers and liquid release agents to over 30 translucent colors for use in both indoor and outdoor flooring applications. Additionally, DCI acetone-based concrete dyes, made with concrete pigments, can be applied to existing concrete surfaces for even, consistent coloration and are especially valuable for floors that cannot be acid stained or colored by any other means.

COMPOSITION & MATERIALS

Direct Colors Pigments are made from metal oxides of iron, chromium, cobalt or titanium. They are man-made, synthetic, inorganic pigments that are tested to and meet ASTM C979 standards. They do not contain carbon black, or other materials that may be unstable or non-lightfast in many cementitious applications.

SIZES

Direct Colors Concrete Pigments are available in 1 lb (0.5 kg), 5 lb (2 kg), 10 lb (4.5 kg), 20 lb (9 kg),



1835 Pigment in Stamped Concrete (Photo Courtesy of Decocrete)

50 lb (23 kg), 500 lb (227 kg) and 2000 lb (907 kg) quantities. Custom batch quantities are also available.

COLOR

Direct Colors Concrete Pigments deliver superior uniformity in color, strength and lightfastness and are available in over 100 colors. See Tables 1 and 2. Accurate traceability is provided by use of batch identification codes. View visual color representations online at www.directcolors.com.

BENEFITS

- High quality pigments at an affordable price
- Wide range and variety of colors available
- Superior customer service and technical support
- Free freight in the lower 48 states

ACCESSORIES

- Concrete sealers
- Multipurpose wax
- Concrete dyes
- DCI overlays
- Liquid Colored Antique
- Decorative aggregates
- Stamps and stencils

LIMITATIONS

- Direct Colors, Inc., color charts for integral color/concrete pigments are intended to match what can generally be expected from a final color as closely as possible. However, the color and condition of preexisting concrete will affect the final result of the new concrete color, so color samples are approximations only

- Efflorescence, a naturally occurring deposit found on the surface of concrete, is more noticeable on dark colors because of its whitish appearance. Although it will eventually cease, there is no known method to achieve 100% prevention. Efflorescence can quickly be removed by acid washing, but over time, natural weathering will achieve the same effect. See "Reducing Efflorescence" under "Installation" for techniques to help reduce the occurrence of efflorescence

4. Technical Data

APPLICABLE STANDARDS

ASTM International (ASTM) - ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete

APPROVALS

Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200

PHYSICAL/CHEMICAL PROPERTIES

- Lightfast
- Alkali and weather resistant
- UV stable
- Non-hazardous
- Color consistent
- Chemically inert
- Insoluble in water
- Inorganic
- Synthetic
- Specific gravity - Heavier than water
- Evaporation rate - None
- Reddish-brown appearance
- Odorless



TABLE 1 INTEGRAL COLOR CHART, GRAY CEMENT BASE, TO ASTM C979

Color mixture	Brick Red	Sun Dried Tomato	Merlot	Evening Shadow	Terra Cotta
Pigment type	1835	1835	126	126	560
Pound rating	4 lb	1 lb	3 lb	1 lb	5 lb
Color mixture	Majestic Sunrise	Dawn	Earthen Red	Desert Rouge	Desert Vista
Pigment type	1830	1830	1115	1115	560
Pound rating	4 lb	1 lb	3 lb	1 lb	3 lb
Color mixture	Navajo	Uplands	Caramel	San Juan	Frontier Buff
Pigment type	543	543	543	543	533
Pound rating	5 lb	3 lb	2 lb	1 lb	1 lb
Color mixture	Burnished Copper	Sandstone	Canyon Brown	Santa Fe Tan	Smokestack
Pigment type	553	553	553	533	230
Pound rating	4 lb	1 lb	5 lb	3 lb	5 lb
Color mixture	Weathered Tin	Deep Bronze	Milk Chocolate	Rattan	Golden Buff
Pigment type	230	680	680	609	609
Pound rating	1 lb	3 lb	1 lb	4 lb	2 lb
Color mixture	Cocoa Brown	Walnut	Petrified Wood	Mint Green	Briar Buff
Pigment type	653	649	649	5376	500
Pound rating	3 lb	4 lb	2 lb	3 lb	3 lb
Color mixture	Taupe	Pecan	Maple	Rocky Crag	Wildwood Buff
Pigment type	653	627	627	623	500
Pound rating	1 lb	3 lb	1 lb	3 lb	2 lb
Color mixture	Wheat Buff	Winterfield Buff	Mocha	Tarnished Brass	Sunray
Pigment type	500	1198	623	1311	1311
Pound rating	1 lb	1 lb	1 lb	3 lb	1 lb
Color mixture	Venetian Red	Umber	Slate Blue	Prussian Blue	Sapphire
Pigment type	1880	1880	5151	5151	15.3
Pound rating	5 lb	3 lb	1 lb	3 lb	5 lb
Color mixture	Midnight Blue	Mint Green	Forest Green		
Pigment type	15.3	5376	5376		
Pound rating	5 lb	3 lb	5 lb		

TABLE 2 INTEGRAL COLOR CHART, WHITE CEMENT BASE, TO ASTM C979

Color mixture	Cayenne	Blush	Sequoia	Plum	Fire Rose
Pigment type	1830	1830	126	126	1115
Pound rating	3 lb	1 lb	3 lb	1 lb	3 lb
Color mixture	Morning Mist	Dusty Rose	Wildflower	Terran	Peach
Pigment type	1115	1835	1835	553	553
Pound rating	1 lb	3 lb	1 lb	3 lb	1 lb
Color mixture	Autumn	Leaf Fall	Pumpkin	Sun Dust	October Bronze
Pigment type	560	560	543	543	533
Pound rating	3 lb	1 lb	3 lb	1 lb	3 lb
Color mixture	Sunwashed Clay	New Bark	Everland Buff	Cake Buff	Beachfront Buff
Pigment type	533	623	623	609	609
Pound rating	1 lb	3 lb	1 lb	3 lb	1 lb
Color mixture	Canyon Wall	Cinnamon	Espresso	Pebble	Camel
Pigment type	627	627	653	653	500
Pound rating	3 lb	1 lb	3 lb	1 lb	3 lb
Color mixture	Sunset Tan	Tawny	Cream Beige	Café	Cottage Brown
Pigment type	500	1198	1198	649	649
Pound rating	1 lb	3 lb	1 lb	3 lb	1 lb
Color mixture	Malayan Buff	Lotus Pond	Crème Mint	Hunter Green	Vineyard
Pigment type	1311	5376	5376	5376	1880
Pound rating	1 lb	3 lb	1 lb	5 lb	5 lb
Color mixture	Vineyard	Mauve	Tea Rose	Prairie Blue	Skye Blue
Pigment type	1880	1880	1880	5151	5151
Pound rating	5 lb	3 lb	1 lb	1 lb	3 lb
Color mixture	Electric Blue	Ultramarine	Hunter Green		
Pigment type	15.3	15.3	5376		
Pound rating	3 lb	5 lb	5 lb		



Colors cast in Gray Cement

FIRE PERFORMANCE

Direct Colors Concrete Pigments are non-flammable, noncombustible and nonexplosive.

5. Installation

PREPARATORY WORK

Store materials in an area protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.



Colors cast in White Cement



METHODS

Mixing

Color charts and codes are based on pounds of pigment per 94 lb (43 kg) of cement material, including Portland cement, silica fume, fly ash and lime. Sand and aggregates are not used in this ratio. The maximum level of pigment to cement is 10% by weight. Using less than 1% pigment can result in a washed-out appearance. Blue pigments should be mixed dry with any cement-based material to ensure even color distribution.

When an exact color match is required, complete a test pour, mixing the exact ingredients and ratios that will be used onsite. When custom blends are made for countertops, ready mixes, overlays, curbing, mortar, grouts and other concrete based products, the colors hold true within an acceptable range to most users, especially when the mixture has been adjusted to meet the specific needs of the mix and the project application.

Truck Pours

For a standard mix, the simplest method to convert the values on the color chart to a specific pour is to multiply the poundage on the chart by 5 to determine how much pigment per yard is needed. Consistency with the pigment per yard ratio is critical in achieving matching pours. The water level and mix ratios in each load are critical as well. It is essential to know how much concrete is in the truck, not just how much will be poured.



Stamped walkway colored with 230 and 1830 Concrete Pigments (Photo Courtesy of Mark Douglass)



Swim-up pool bar countertop colored with 1311 Concrete Pigment, English Red Acid Stain and Coffee Brown Deco Gel (Photo Courtesy of Susan Turfle)

Dispense the pigment in the back of the truck, using the hose to clean the fins and ensuring that no loose pigment remains to cause streaking. Spinning the mix for 10 - 15 minutes is generally sufficient to properly disperse the pigment. Place and work the concrete as normal.

As the concrete sets, the color will appear to fade. This is caused by the concrete dispensing powder on the surface and will be resolved by sealing this in the same way as a decorative concrete would be sealed. Once sealed, the color should be stable and considerably darker than at first appearance pre-seal.

Color Calculator

Color calculators and measurement examples are available at www.directcolors.com to measure required pigment per yard and per custom batch of concrete.

PRECAUTIONS

Safety

- To avoid inhaling dust and contact with face and eyes, wear full face mask, eye protection and rubber gloves
- Avoid contact with inorganic acids
- Wash with soap and water after exposure. Chronic overexposure can cause slight skin irritation

Performance

- For optimal results, use the same brand of cement, aggregates and sand, as well as the same cement to pigment ratio, until project completion

- In order to avoid undesired discoloration, do not use calcium chloride as a set accelerator
- Difference in slump may produce a noticeable difference in color between batches
- Use local exhaust or baghouse for ventilation
- If material is released or spilled, scoop or vacuum the floor and wash with water
- To avoid color variation, be consistent in all stages of the batching, mixing, forming/ placing and hardening of concrete

Reducing Efflorescence

- Ensure that the aggregate-cement ratio is sufficient to enable the cement paste to completely fill the voids between the aggregate particles after compaction
- To minimize air voids that remain after complete cement hydration, add to the concrete mix only the minimum amount of water needed to achieve required workability
- Select sands and aggregates for the mix design carefully, as appropriate particle size and shape can help to improve mechanical compaction, effectively squeezing air voids and allowing them to be replaced with the cement paste
- There is some evidence that certain cement additives and chemical admixtures can help to inhibit efflorescence. Consult Direct Colors, Inc., for more information





Stamped concrete colored with Direct Colors Concrete Pigment dispersed in Antique Release and Tinted Sealer (Photo Courtesy of Decocrete)

- Ensure concrete cures sufficiently to achieve not only strength, durability and reduced cracking, but surfaces that are as dense as possible to limit the concrete's ability to absorb water
- A variety of concrete coatings, including water and solvent based concrete sealers offered by Direct Colors, are available for application to the surface, blocking pores and forming an impermeable barrier at the concrete's exposed surface. This prevents

the movement of water to the surface, restricting the migration of efflorescence forming compounds. Consult Direct Colors, Inc., for more information.

BUILDING CODES

Installation and waste disposal must comply with the requirements of all applicable local, state and federal code jurisdictions.

6. Availability & Cost

AVAILABILITY

Products can be purchased at www.directcolors.com, or by calling (877) 255-2656. Products are also available from certified distributors. Contact the manufacturer or check online at www.directcolors.com for local availability information.

COST

Current pricing is available online at www.directcolors.com.

7. Warranty

The conditions of use and application of concrete pigment products are beyond the control of Direct Colors, Inc. Direct Colors makes no warranty regarding workmanship and other variables that do not involve the performance of pigments. Buyer's sole remedy shall be the purchase price paid by the user or buyer for the quantity of the Direct Colors product involved. For details, consult Direct Colors, Inc.

8. Maintenance

None required.

9. Technical Services

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Direct Colors, Inc. For questions or custom solutions, call (877)-255-2656 or email info@directcolors.com.

10. Filing Systems

- SmartBuilding Index
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.



Close-up of stamped concrete walkway as shown above (Photo Courtesy of Decocrete)