



• Characteristics and Applications

1. PRODUCT NAME

Solomon Colors, Inc.,
Integral Colors For
Ready Mix Concrete

2. MANUFACTURER

Corporate Headquarters

Mailing Address:

Solomon Colors, Inc.,
P.O. Box 8288
Springfield, IL 62791

UPS and Shipping Address:

4050 Color Plant Road
Springfield, IL 62702
Phone: 800-624-0261 or
217-522-3112
Fax: 217-522-3145

Western Facility

Mailing and Shipping Address:

Solomon Colors, Inc.
1251 West Durst Dr.
Rialto, CA 92376
Phone: 909-873-9444 or
866-747-2656
Fax: 909-874-9444

3. PRODUCT DESCRIPTION

Basic Use: Solomon Colors, Inc. Integral Colors For Ready Mix Concrete are pure mineral pigments designed for use in cementitious slump applications. These colors are commonly used in the manufacturing of ready mix concrete, architectural concrete stamping, driveways, sidewalks, patios, grout, vertical precast and poured-in-place concrete construction.

Composition and Materials:

Solomon Colors, Inc. Integral Colors For Ready Mix Concrete contain natural and synthetic iron oxides, and are available in a broad range of colors and blends and comply with ASTM C979.

Packaging:

Solomon Colors, Inc. Integral Colors For Ready Mix Concrete dry powder pigments are packaged in 25 lb. (11.3 kg) repulpable bags and can be added directly to the ready mix truck after pre-opening. The bag readily disintegrates to become part of the mix.

Each bag is clearly marked with name and number. Custom bagging is available from 1-49 lbs.

Color Range: Products are available in numerous standard colors as indicated on the Solomon "Colors for Ready Mix Concrete" chart and are available in a dry form. These colors are shown at 25 lbs. per one (1) yard, 25 lbs. per two (2) yards, and 25 lbs. per four (4) yards of concrete using gray cement. By altering the amount of color used per yard, many other shades can be obtained. Differences in portland cement, aggregates, slump, and finishing techniques create differences in the final concrete color. **We strongly recommend pouring a test slab for approval prior to starting the job.** Color matching is available for special applications.

Caution: NO COLOR ADDITION SHOULD EXCEED 10% OF THE CEMENTITIOUS PRODUCT WEIGHT. Never add color to a mixer as the first ingredient. This may cause a loss of color by coating or caking the sides of the mixer.

Limitations: A level of 7% color based on the weight of total cementitious material used is the color saturation point. Color added in excess of 10% will not provide additional benefits and can significantly reduce the overall strength of the finished product. Conversely, a level of color below 1% can cause irregular coloring and a general "washed out" appearance. The suggested "optimum" range is 2% to 7% pigment loading based on total cementitious material weight. (Cement, Lime, Fly Ash, GBFS).

NOTE: Use of Fly Ash and GBFS in colored concrete should be monitored for color consistency.

4. TECHNICAL DATA

American Society for Testing & Materials (ASTM)

- ASTM C33-97- Standard Specification for Concrete Aggregates
- ASTM C94-97- Standard Specification for Ready-Mix Concrete

- ASTM C150-97a- Standard Specification for Specification for Portland Cement
- ASTM C979-82 - (R1993) Standard Specification for Pigments for Integrally Colored Concrete

Physical Properties:

All Solomon Colors, Inc. products comply with ASTM C979 for integrally colored concrete. Solomon Colors, Inc. Integral Colors for Ready Mix Concrete are finely milled (95-99% minus 325 mesh particle size) and blended under strict quality control procedures producing uniform and consistently strong tinting strength for maximum coloring powder. Solomon Colors, Inc. Integral Colors for Ready Mix Concrete colors are permanent, inert, stable to atmospheric conditions, sun fast, weather resistant, alkali resistant, water insoluble, lime proof, non-bleeding and free of deleterious fillers or extenders.

General Formulas:

Yellow: $Fe_2O_3 - H_2O$
Black: $FeO - Fe_2O_3$
Red: Fe_2O_3

Particle Shape: (Color dependent)
Acicular, Cubical, or Spherical
Particle Size: Generally less than 44 microns
pH range: 6.5 to 9.0

5. APPLICATION

Mixing: Make sure the mixer is clean and has no washout water left in the mixer. Load mixer in customary manner with water, coarse and fine aggregates (ASTM C33) and portland cement (ASTM C150). Caution should be taken to keep the water to cement ratio at a level so that the concrete will not exceed a 4 inch slump. If the job requires a higher slump for proper placement, a water reducer or plasticizer can be used. Solomon Colors, Inc. Integral Colors for Ready Mix Concrete can be added at the plant or the job site.

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Mix at a high speed for minimum of 10 minutes before pouring. CAUTION: ADDING WATER AFTER THE POUR HAS STARTED SHOULD BE KEPT TO A MINIMUM.

If more than one load is required on the job, care should be taken to keep all proportions of aggregates, cement, water, color, and admixtures the same or variations of color tone may occur in the finished job.

Curing: In locations where humidity is low and temperatures are high, a curing compound may need to be applied while the concrete is still damp but not wet and hard enough to resist scuffing if a finisher is walking on the concrete while applying a curing product. In locations that have high humidity and low temperatures, a curing compound may trap moisture between the concrete and the curing product, causing the surface to become cloudy. In these conditions, letting the concrete cure naturally may be best. Be careful to keep traffic off the decorative concrete to protect it from damage. After the concrete is 24 hours old, it is recommended that the concrete be cleaned with a pressure washer before applying any type of curing compound or sealer. When using a curing compound, application should be one thin coat. If a decorative sealer is being used, apply multiple thin coats and allow drying to the touch between coats. Avoid applying any curing compound or sealer in a single heavy coat. The use of burlap, plastic sheeting or fogging with water are not recommended for curing, and may cause discoloration.

6. PRECAUTIONS

- Color pigment weight should not exceed 10% of the weight of cement.
- DO NOT load the mixer beyond the recommended capacity. Overloading will reduce mixing efficiency.
- Mixer should be loaded to a minimum of 40% capacity to insure good color dispersion.
- Water to cement ratio should not exceed .50 (weight of water divided by weight of cement).
- Adding water to ready mix concrete during a pour, to allow for the placement of concrete in stages, should be kept to a minimum.
- Over-finishing should be avoided to protect against “burning” the surface.
- Allow excess surface water to evaporate. Above normal water to cement ratios may cause spalling.
- Initial floating should be discontinued as soon as the surface becomes wet. Floating may be resumed after the surface water disappears.

- Avoid the use of calcium chloride or additives containing chlorides. These products can cause discoloration in the form of light and dark areas in the finished product.
- When admixtures are a part of the job's mix design, their use must be employed equally throughout the job to ensure consistent colors.
- Never add color to a concrete mixer as the first ingredient.
- DO NOT fog with water or cover surface during the initial curing process for at least 24 hours.
- Make sure the depth of a “broom finish” remains the same throughout the entire job. DO NOT wet the broom between strokes.
- Be sure the slab is clean and dry before applying a sealer.
- DO NOT “hard” trowel a colored surface. Hard troweling can leave dark blotches and uneven coloring on the surface of the slab.

7. TECHNICAL SERVICES

The Solomon Color Laboratory with over 50 years of experience is available at no charge to match existing colored concrete, develop special color tones or to provide expert color assistance to solve your individual color needs.

Since the color shades of cement and sand (coarse and fine) are different in each locality, it is recommended to send a minimum of 10 lbs. (4.5 kg) of cement and 20 lbs. (9.1 kg) of coarse and fine aggregate to be used in the concrete mix design along with a sample or representation of the desired color that is to be produced. Please contact the Solomon Colors, Inc. Color Laboratory and indicate the bag mix of cement and proportion of aggregates that is to be used. Color matching services for mortar, stucco, concrete block, grout and other cementitious products are also available.

Send to:

Solomon Colors, Inc.
Color Laboratory
4050 Color Plant Road
Springfield, IL 62702

Samples: Samples of standard Solomon Colors, Inc. Integral Colors For Ready Mix Concrete are available for submittals and/or for constructing job site mock-up slabs. The colored ready mix samples are mixed in our lab with either the supplied local cement and aggregates or Solomon Colors, Inc. available cement and aggregates.

8. AVAILABILITY AND COST

Availability: Solomon Colors, Inc. Integral Colors For Ready Mix Concrete and related products are readily available from stocks carried by an extensive network of building material dealers throughout the United States and Canada. Solomon Colors, Inc. dealers are also backed by reliable 24-hour factory services in processing and shipping of orders. Solomon Colors, Inc. has local sales representatives covering each state within the continental United States. For names of local dealers, distributors and sales representatives, contact Solomon Colors, Inc. offices in Springfield, IL.

Cost: Retail pricing for Solomon Colors, Inc. Integral Colors For Ready Mix Concrete is established by stocking building material dealers. The cost for coloring concrete is determined by the color and color shade desired. Budget installed cost information may be obtained from a local Solomon distributor or through the manufacturer at the listed phone number.

9. MAINTENANCE

The primary cause of maintenance work for colored concrete is the formation of efflorescence. In the event cleaning is required to remove efflorescence, the cleaning operation should be undertaken after the colored concrete has sufficiently cured, generally 7 – 28 days after installation depending upon daily curing temperatures, atmospheric humidity, and other seasonal weather conditions. Avoid using hydrochloric (muriatic) acid. Use a commercially prepared “proprietary concrete cleaner” following the directions for the weakest solution recommended by the manufacturer.

10. LIMIT OF WARRANTY AND LIABILITY

Solomon Colors, Inc., warrants that their products conform to the description and standards as stated on the product packaging (specific product literature). If properly applied, Solomon Colors, Inc. warrants the Integral Color for Ready Mix Concrete to be an effective bond breaker between concrete and stamping tools. The exclusive remedy of the user or buyer and the limit of liability of the company shall be the purchase price paid by the user or buyer for the quantity of the Solomon Colors, Inc. product involved. Because Solomon Colors, Inc. has no control over the workmanship or other materials used along with our colors, Solomon Colors, Inc. is not responsible for the finished job, method used, and/or multiple color combinations.