

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, contained in the *CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 03055

CONCRETE PIGMENTS

Specifier Notes: This section covers Solomon Colors SGS Integral Colors for Ready Mix Concrete, SGS Color-Flo Liquid Colors, Brickform Dry Shake Colored Hardener, and Brickform Colored Release Agent.

Coordinate this section with the section specifying the concrete. Consult Solomon Colors for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

Specifier Notes: List the materials specified in this section.

- A. Dry powder iron oxide pigments to be added to concrete.
- B. Liquid iron oxide pigments to be added to concrete.
- C. Dry shake colored hardeners.
- D. Colored release agent.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

- A. Section 03300 - Cast-in-Place Concrete.
- B. Section 03330 - Architectural Concrete.

- C. Section 03400 - Precast Concrete.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ASTM C 33 - Standard Specification for Concrete Aggregates.
- B. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.
- C. ASTM C 150 - Standard Specification for Portland Cement.
- D. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete.

1.4 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data including mixing instructions.

Specifier Notes: Coordinate the following sentence with the section specifying the cement.

- C. Samples: Submit manufacturer's samples of standard concrete colors mixed with cement specified in Section 03_____ .
- D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- E. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Sufficient plant facilities to provide quality and quantity of materials as required without delaying progress of the Work.
 - 2. Minimum of 10 years experience in producing iron oxide pigments to be added to concrete.

Specifier Notes: Any differences in the concrete materials, batching, mixing, slump, or finishing techniques can create differences in the final concrete color. Construction of mock-ups for approval by the Architect prior to starting the work is strongly recommended.

Scope of the mock-up construction must be clearly specified. Coordinate the mock-ups paragraph with the section specifying the concrete.

Delete the following paragraph if mock-ups are not required.

- B. Mock-Ups:
 - 1. Construct mock-ups of concrete with pigments for approval of color by Architect.

2. Construct mock-ups as specified in Section 03_____ .
3. Approved mock-ups shall become the standard for color, appearance and workmanship.

Specifier Notes: Delete **one** of the following **two** sentences.

4. Mock-ups shall remain as part of the completed Work.
4. Mock-ups shall not remain as part of the completed Work. At Architect's direction, demolish mock-ups and remove debris.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original unopened containers, with labels clearly identifying product name, manufacturer, color name and number, weight, and mixing instructions.
- B. Storage:
 1. Store materials in clean, dry area in accordance with manufacturer's instructions.
 2. Keep containers sealed until ready for use.

Specifier Notes: Use the following paragraph when specifying SGS Color-Flo Liquid Colors.

3. Liquid Pigments:
 - a. Keep from freezing.
 - b. Keep container lids on.
 - c. Reseal partial containers.
- C. Handling:
 1. Handle materials in accordance with manufacturer's instructions.
 2. Protect materials during handling and mixing to prevent damage or contamination.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Solomon Colors, PO Box 8288, Springfield, Illinois 62791. Phone (800) 624-0261 / (217) 522-3112. Fax (800) 624-3147 / (217) 522-3145. Web Site www.solomoncolors.com. E-Mail sgs@solomoncolors.com.
- B. Brickform - Rafco Products, 11061 Jersey Blvd., Rancho Cucamonga, CA 91730. Phone (800) 483-9628 / (909) 484-3658. Web Site www.brickform.com

2.2 CONCRETE PIGMENTS

Specifier Notes: Specify the required materials and delete the others.

- A. Dry Powder Iron Oxide Pigments: Brickform Shake on Hardners and Release

Specifier Notes: Specify the color name and number. Consult Brickform for availability of custom colors.

1. Color:
 - a. Name: _____ .
 - b. Number: _____ .
2. Compliance: ASTM C 979.
3. Material: Natural and synthetic, milled, blended iron oxide in dry powder form.
4. Produce uniform and consistent color.
5. Permanent, inert, stable to atmospheric conditions, sunfast, weather resistant, alkali resistant, water insoluble, lime proof, and nonbleeding.
6. Free of deleterious fillers and extenders.
7. Free of admixtures.
8. Particle Size: 95 to 99 percent minus 325 mesh.

B. Liquid Iron Oxide Pigments: SGS Color-Flo Liquid Colors.

Specifier Notes: Specify the color name and number. Consult Solomon Colors for availability of custom colors.

1. Color:
 - a. Name: _____ .
 - b. Number: _____ .
2. Compliance: ASTM C 979.
3. Material: Predispersed iron oxide pigments containing high pigment solids in aqueous base liquid.
4. Produce uniform and consistent color.
5. Permanent, inert, stable to atmospheric conditions, sunfast, weather resistant, alkali resistant, water insoluble, lime proof, and nonbleeding.
6. Free of deleterious fillers and extenders.
7. Particle Size: 95 to 99 percent minus 325 mesh.
8. Specific Gravity: 1.9 to 2.0.

C. Dry Shake Colored Hardeners: Brickform Colored Hardener.

Specifier Notes: Specify the color name and number. Consult Brickform Colors for availability of custom colors.

1. Color:
 - a. Name: _____ .
 - b. Number: _____ .
2. Compliance, Pigments: ASTM C 979.
3. Material: Type I portland cement, iron oxide pigments, and fine aggregate.
4. Surface colorant and increase surface wear resistance of ready-mix concrete.
5. Produce uniform and consistent color.
6. Permanent, inert, stable to atmospheric conditions, sunfast, weather resistant, and nonyellowing.
7. Free of deleterious fillers and extenders.
8. Particle Size: 95 to 99 percent minus 325 mesh.

D. Colored Release Agent: Brickform Colored Release.

Specifier Notes: Specify the color name and number. Consult Brickform Colors for availability of custom colors.

1. Color:
 - a. Name: _____ .
 - b. Number: _____ .
2. Compliance, Pigments: ASTM C 979.
3. Material: Dry hydrophobic powder and iron oxide pigments.
4. Release agent and accent colorant when stamping fresh concrete surfaces.
5. Produce uniform and consistent color.
6. Colorfast, alkali resistant, acid resistant, and nonbleeding.
7. Free of deleterious fillers and extenders.

2.3 CONCRETE MATERIALS

A. Materials:

1. Ready-Mixed Concrete: ASTM C 94.
2. Portland Cement: ASTM C 150. Use same source, brand, type, and color throughout project.
3. Coarse and Fine Aggregates: ASTM C 33. Use same source and color throughout project.
4. Admixtures: Designed for use with concrete pigments. Do not use calcium chloride or admixtures containing chlorides. Use same admixtures throughout project.

Specifier Notes: Coordinate the following paragraph with the section specifying the concrete.

- ### B. Concrete Mix Design: As specified in Section 03 _____ , except as specified in this section.
1. Color Pigment Weight: Maximum 10 percent of cement weight.
 2. Water to Cement Ratio: Maximum 0.50.
 3. Use same concrete mix design throughout project.

PART 3 EXECUTION

3.1 APPLICATION - DRY POWDER AND LIQUID IRON OXIDE PIGMENTS

Specifier Notes: Coordinate the following two paragraphs with the section specifying the concrete.

- ### A. Measuring, Batching, Mixing, and Delivering Concrete: As specified in Section 03 _____ , except as specified in this section.
1. Measure, batch, mix, and deliver concrete with pigments in accordance with manufacturer's instructions.
 2. Ensure mixer is clean and free of washout water before loading.
 3. Load mixer to a minimum of 40 percent capacity.
 4. Do not load mixer beyond recommended capacity.
 5. Add concrete materials to mixer in same order for each batch.
 6. Do not add pigment to mixer as first concrete material.
 7. Maintain consistent amounts of batch water in each batch.
- ### B. Placing, Finishing, and Curing Concrete: As specified in Section 03 _____ , except as

specified in this section.

1. Place, finish, and cure concrete with pigments in accordance with manufacturer's instructions.
2. Allow excess surface water to evaporate before finishing.
3. Do not over-finish surface. Avoid burning surface.
4. Do not fog with water or cover surface of colored concrete during initial curing process for a minimum of 48 hours.

Specifier Notes: Use the following three sentences when specifying liquid iron oxide pigments.
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- C. Add liquid pigments to concrete batch automatically by use of metering, volumetric, or weight measuring system or manually by weight or volume in accordance with manufacturer's instructions.
- D. Recycle liquid pigments while in their container before use to ensure uniformity and proper viscosity.
- E. Add liquid pigments to concrete batch after prewetted aggregate and before cement addition.

3.2 APPLICATION - DRY SHAKE COLORED HARDENERS

- A. Apply dry shake colored hardeners in accordance with manufacturer's instructions.
- B. Apply dry shake colored hardeners uniformly over concrete surface in 2 coats perpendicular to each other after initial floating and excess water has left concrete.
- C. Perform steel troweling or other types of finishing after color has been floated into surface.
- D. Do not sprinkle or fog additional water onto surface during floating or finishing.
- E. Cure concrete in accordance with manufacturer's instructions.

3.3 APPLICATION - COLORED RELEASE AGENT

- A. Apply colored release agent in accordance with manufacturer's instructions.
- B. Spread colored release agent uniformly across surface of finished slab after bleed water has disappeared and final finish is completed.
- C. Start stamping or imprint process immediately after application of colored release agent.
- D. Finish concrete in accordance with manufacturer's instructions.

3.4 CLEANING

- A. Clean concrete of efflorescence in accordance with manufacturer's instructions.
- B. Ensure concrete has sufficiently cured before cleaning.
- C. Use concrete cleaner approved by pigment manufacturer and Architect. Do not use cleaners containing acid.

D. Apply cleaner in accordance with cleaner manufacturer's instructions.

END OF SECTION