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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual*, including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material". Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies color pigmentation for cementitious materials, as manufactured by Direct Colors, Inc. This MANU-SPEC section is specifically related to color pigmentation for concrete; however, the same pigmentation materials can also be used to color other cementitious materials, such as stucco, plaster, mortar and grout. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 03 05 00
COMMON WORK RESULTS FOR CONCRETE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: This Section specifies color pigmentation for cementitious materials.

Specifier Note: Include in this Article only those documents and sections that directly affect the work of this section. Do not include Division 00 documents or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 documents and Division 01 sections to some degree. Make reference to other documents with caution, as referencing them may cause them to be considered part of the Contract.

1.02 RELATED REQUIREMENTS

- A. Section [03 30 00 - Cast-in-Place Concrete: concrete sealing, concrete curing].
- B. Section [03 35 00 - Concrete Finishing].
- C. Section [03 39 00 - Concrete Curing].

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Contract Conditions or Section 01 42 19 - Reference Standards may establish the edition date of standards. This Article does not require compliance with standards, but is merely a listing of references used. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.03 REFERENCE STANDARDS

- A. ASTM International (ASTM).
 - 1. ASTM C979, Standard Specification for Pigments for Integrally Colored Concrete.
- B. Occupational Safety and Health Administration (OSHA).
 - 1. OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- C. US Green Building Council (USGBC).
 - 1. Leadership in Energy and Environmental Design (LEED).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate color pigmentation for cementitious materials work with work of other sections.
- B. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with [Section 01 31 19 - Project Meetings].
- C. Sequence with Other Work: Comply with color pigmentation for cementitious materials manufacturer's written recommendations for sequencing construction operations.

Specifier Note: Use the following Paragraph when the schedule of the work is unique or unusual. Coordinate Paragraph with Section 01 32 13 - Scheduling of Work.

- D. Schedule work in accordance with Section [01 32 13 - Scheduling of Work].

Specifier Note: Coordinate Article below with Contract Conditions and with [01 78 36 - Warranties].

1.05 ACTION SUBMITTALS

- A. General: Submit listed action submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].

Specifier Note: Samples are full-size actual products intended to illustrate the products to be incorporated into the project. Sample submittals are commonly necessary for such characteristics as colors, textures, and other appearance issues.

- B. Samples: Submit as follows:
 - 1. Two [1 lb (450 g)] samples each of type of color pigment mixture.
- C. Product Data: Submit as follows prior to mixing or preparation of concrete.
 - 1. Product data, including Manufacturer's SPEC-DATA product sheet for specified products.
 - 2. Material Safety Data Sheets (MSDS).

1.06 INFORMATION SUBMITTALS

- A. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
- B. Certificates: Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- C. Manufacturer's Instructions: Submit manufacturer's installation and mixing instructions.
- D. Manufacturer's Qualifications: Submit letter verifying Manufacturer's qualifications.
- E. Installer's Qualifications: Submit letter verifying Installer's qualifications.

1.07 CLOSEOUT SUBMITTALS

- A. Warranty: Submit warranty documents specified.
- B. Operation and Maintenance Data: Submit operation and maintenance data for installed products in accordance with Section [01 78 00 - Closeout Submittals].
 - 1. Include Manufacturer's instructions covering maintenance requirements and identifying material batch numbers.

1.08 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 - 2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction and approving application method.

1.09 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with [01 61 00 - Common Product Requirements].
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery:

1. Deliver materials in manufacturer's original packaging with identification labels intact and in sizes to suit project.
2. Deliver color pigmentation for cementitious materials to project site in labeled plastic-lined bags each bearing name and address of manufacturer, production codes or batch numbers and formula identification.

D. Storage and Protection:

1. Store color pigmentation for cementitious materials in a clean, dry area protected from dampness, freezing and exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
2. Keep color pigmentation for cementitious materials protected from traffic and contamination by foreign materials.

E. Waste Management and Disposal:

Specifier Note: The disposal of packaging waste into landfill sites demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for USGBC's LEED® construction project certification.

1. Separate waste packaging materials for [reuse] [and] [recycling] in accordance with [Section 01 74 19 - Construction Waste Management and Disposal].

Specifier Note: USGBC's LEED certification includes credits for the diversion of construction waste from landfill. Diversion can be tracked by either weight or volume, but must be consistent for all materials.

2. Collect and separate for disposal [paper] [plastic] [corrugated cardboard] packaging material [in appropriate onsite bins] for recycling.
3. Remove from site and dispose of packaging materials at appropriate recycling facilities.

1.010 PROJECT AMBIENT CONDITIONS

- A. Maintain materials, substrates and surrounding air temperature between [41degrees F (5 degrees C) [50 degrees F (10 degrees C)] and [90 degrees F (32 degrees C)] prior to, during and 48 hours after completion of color pigmentation for cementitious materials work.

1.011 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.

Specifier Note: Manufacturer's warranty does not cover the finished product since the manufacturer has no control over how the finish is mixed or applied.

- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate Paragraph below with manufacturer's warranty requirements.

- C. Warranty: Commencing on date of acceptance by [Owner] [Architect] [Consultant].

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Ensure manufacturer has minimum [5] years experience in manufacturing color pigmentation for cementitious materials similar to or exceeding requirements of project.

Specifier Note: Retain Article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.02 PROPRIETARY PRODUCTS/SYSTEMS

- A. Manufacturer: Direct Colors, Inc., 430 East 10th Street, Shawnee, OK 74801, Telephone: (877) 255-2656, (405) 275-6657;

Fax: (405) 275-2815, E-mail: info@directcolors.com, website: www.directcolors.com.

2.03 MATERIALS

A. Color pigmentation:

1. Synthetic, inorganic, lightfast, odorless, alkali and weather resistant, UV stable, non-hazardous, chemically inert, water insoluble, providing consistent color and tested to ASTM C979.
2. Specific Gravity: Heavier than water.
3. Evaporation Rate: Zero.

Specifier Note: The final color of the cementitious material is dependent on a combination of the color mixture and the pigment type. Refer to the manufacturer's SPEC-DATA sheet for the color mixture and pigment type combination that best meets the project requirements. Insert the most appropriate color mixture name and pigment type number in the Paragraphs below.

4. Color Mixture: [_____].
5. Pigment Type: [_____].

Specifier Note: Choose the pigment rating weight that matches the color mixture and pigment type specified in the previous Paragraphs. Refer to the manufacturer's SPEC-DATA sheet for the corresponding pigment rating weight.

6. Pigment Rating Weight: [1lb (0.45 kg)] [3 lb (1.36 kg)] [5 lb (2.27 kg)].
- B. Use color pigmentation for cementitious materials that comply with OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- C. Acceptable Material: Direct Colors Integral Color and Concrete Pigment.

2.04 MIXES

Specifier Note: The ratio of color pigment by weight is for cementitious and supplementary cementitious materials such as fly ash, slag and lime only. The ratio does not include the weight of sand or other aggregates that will be included in the final mix.

- A. Color Pigment to Cement Materials Ratio: [10]% maximum, [1]% minimum by weight.
- B. Mix color pigmentation for cementitious materials with other cementitious materials in accordance with color pigment manufacturer's written recommendations.

2.05 FINISHES

- A. Concrete Finishing Materials: In accordance with Section [03 35 00 - Concrete Finishing].

2.06 ACCESSORIES

- A. Concrete Sealer: In accordance with Section [03 30 00 - Cast-in-Place Concrete].
- B. Concrete Curing Materials: In accordance with Section [03 30 00 - Cast-in-Place Concrete] [03 39 00 - Concrete Curing].

2.07 SOURCE QUALITY CONTROL

- A. Ensure color pigmentation for cementitious materials are from single manufacturer.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Section 01 25 13 - Product Substitution Procedures.

2.08 PRODUCT SUBSTITUTIONS

- A. Substitutions: [In accordance with Section [01 25 13 - Product Substitution Procedures]] [No substitutions permitted].

PART 3 EXECUTION

3.01 INSTALLERS

- A. Provide experienced and qualified workers to carry out mixing and placement of color pigmentation for cementitious materials.

3.02 MANUFACTURERS INSTRUCTIONS

Specifier Note: Paragraph below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise Paragraph below

to suit project requirements and specifier's practice.

- A. Compliance: Comply with color pigment manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and Direct Colors, Inc., SPEC-DATA sheets.

3.03 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Prior to installation of color pigment for cementitious materials, verify that conditions of substrates installed under other sections or contracts are acceptable for product installation in accordance with manufacturer's instructions.
 - 2. Inform [Owner] [Architect] [Consultant] of unacceptable conditions immediately upon discovery.
 - 3. Proceed with installation only after unacceptable conditions have been remedied.

3.04 INSTALLATION

Specifier Note: Cement, supplementary cementitious materials, sand, aggregates and other components of the concrete mix must be consistent throughout the project. Small changes in consistency between one concrete batch and the next may affect the final color of different pours.

- A. Ensure that consistent cementitious materials and aggregates are used for each concrete pour of concrete containing color pigmentation.

Specifier Note: Coordinate installation with the manufacturer's written installation details and instructions.

- B. Perform concrete work in accordance with Section [03 30 00 - Cast-in-Place Concrete].
- C. Finish concrete in accordance with Section [03 35 00 - Concrete Finishing].
- D. Cure concrete in accordance with Section [03 30 00 - Cast-in-Place Concrete] [03 39 00 - Concrete Curing].
- E. Seal concrete in accordance with Section [03 30 00 - Cast-in-Place Concrete].

3.05 FIELD QUALITY CONTROL

Specifier Note: Use the following Paragraphs and subparagraphs when manufacturer's field services are desired to verify the quality of installed components. Establish the number and duration of periodic site visits required by the manufacturer and specify below. Consult with the manufacturer for services required. Delete if field services are not required.

- A. Manufacturer's Field Services: Have manufacturer's technical representative schedule site visits to review work as follows:
 - 1. After delivery and storage of products.
 - 2. When preparatory work for which work of this Section depends is complete, but before installation begins.
 - 3. [Weekly] [2 times] during progress of work [at [25%] and [60%]] of completion.
 - 4. Upon completion of work, after cleaning is carried out.

3.06 CLEANING

- A. Perform final cleanup in accordance with Section [01 74 23 – Final Cleaning].
- B. Upon completion, remove surplus materials, rubbish, tools and equipment.

Specifier Note: USGBC's LEED certification includes credits for the diversion of construction waste from landfill. Diversion can be tracked by either weight or volume, but must be consistent for all materials.

- C. Divert damaged, unused or leftover color pigmentation for cementitious materials from landfill to recycling facilities.

3.07 PROTECTION

Specifier Note: Coordinate the following Paragraph with Section 01 76 00 - Protecting Installed Construction.

- A. Protect installed concrete in accordance with Section [03 30 00 - Cast-in-Place Concrete] [01 76 00 - Protecting Installed Construction].

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- B. Repair damage to adjacent materials caused by work related to color pigmentation for cementitious materials.

END OF SECTION