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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), 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 a primer and two single-component self-leveling cementitious underlayment materials for interior use as manufactured by Specialty Construction Brands, Inc. 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 54 00
CAST UNDERLAYMENT

PART 1 GENERAL

1.01 REFERENCES

Specifier Note: Paragraph below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Contract Conditions and Section 01 42 00 - References may establish the edition date of standards. This Paragraph does not require compliance with standard(s). It is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

A. Reference Standards:

1. ASTM International (ASTM):

- a. ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- b. ASTM C531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
- c. ASTM C580 Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
- d. ASTM D3931 Standard Test Method for Determining Strength of Gap-Filling Adhesive Bonds in Shear by Compression Loading.
- e. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- f. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this Section with work of other trades for proper time and sequence to avoid construction delays. Comply with Section [01 31 00 - Project Management and Coordination].

Specifier Note: Add additional text to specify unusual or detailed coordination requirements affecting the work results of this Section.

1. [_____].

- B. Preinstallation Meetings: Conduct preinstallation meeting [one week] prior to commencing [work of this Section] [and] [on-site installations] to verify project requirements, substrate conditions and coordination with other building subtrades, and to review manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section [01 31 19 - Project Meetings].

Specifier Note: Add additional text to describe requirements for meetings to coordinate products and techniques and to sequence related work for sensitive and complex items.

1. [_____].

- C. Sequencing: Sequence work of this section in accordance with Section [01 12 16 - Work Sequence] [and manufacturer's written recommendations for sequencing construction operations].

Specifier Note: Specify additional text as required to describe the particular sequence of events required to coordinate work that must be done in sequence with, or at the same time as, work in another section.

1. [_____].

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

Specifier Note: Specify additional text to include requirements for coordinating work that requires unusual scheduling with work of other sections.

1. [_____].

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.03 ACTION SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Product Data: Submit specified products as follows:
1. Manufacturer's product data, including manufacturer's SPEC-DATA product sheet.
 2. Manufacturer's installation instructions.
 3. Catalog pages illustrating products to be incorporated into project.
 4. Material Safety Data Sheets (MSDS).

1.04 INFORMATION SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Qualification Statements:
1. Submit letter of verification for manufacturer's qualifications.
 2. Submit letter of verification for installer's qualifications.

1.05 CLOSEOUT SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Warranty Documentation: Submit warranty documents specified.

1.06 QUALITY ASSURANCE

- A. Qualifications:
1. Manufacturer:
 - a. Having [5] years experience manufacturing components similar to or exceeding requirements of project.
 - b. Having sufficient capacity to produce and deliver required materials without causing delay in work.
 2. Installer:

- a. Acceptable to the manufacturer, experienced in performing work of this section and specialized in installation of work similar to that required for this project.

Specifier Note: Retain the following Paragraph when certification related to sustainability submittals is a project requirement.

- B. Sustainability Standards Certification: Provide certification for [_____] materials certified by [certification organization's name] in accordance with [certification organization's standard].

1.07 DELIVERY, STORAGE & HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver material in accordance with Section 01 65 00 Product Delivery Requirements, Section [01 61 00 - Common Product Requirements] and in accordance with manufacturer's written instructions.
 - 2. Deliver materials in manufacturer's original packaging with identification labels intact and in sizes to suit project.
- B. Storage and Handling Requirements:
 - 1. Store materials protected from exposure to harmful weather conditions and at temperatures recommended by manufacturer.
- C. Packaging Waste Management:

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.

Specifier Note: Include the following Subparagraphs to specify information that will provide direction to Contractor for the disposal of construction waste materials using environmentally responsible methodology other than landfill resources.

- 1. Separate waste 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. Manufacturer may reclaim packaging and delivery materials for recycling.

- 2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
- 3. Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] packaging material [in appropriate onsite bins] for recycling.
- 4. Fold metal and plastic banding; flatten and place in designated area for recycling.

Specifier Note: Add additional Subparagraphs to include pallets, crates, padding and other packing materials that are typically associated with the specified products.

- 5. Remove:
 - a. Pallets from site [and return to supplier or manufacturer].
 - b. [_____].

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

1.08 WARRANTY

- A. Warranty: Refer to Contract Conditions and Section [01 78 36 - Warranties] for project warranty provisions.
- 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 other Contract Documents.

Specifier Note: DSP 510 carries a 3 year warranty; DSP 520 carries a 5 year warranty.

1. Warranty Term: [3] [5] years commencing on date of substantial completion.

PART 2 PRODUCTS

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 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.

2.01 CAST UNDERLAYMENT

- A. Manufacturer: Specialty Construction Brands, Inc.

1. Contact: 1105 South Frontenac Street, Aurora, IL 60504-6451; Telephone: (800) 323-7407; Fax: (800) 952-2368; website: www.DramaticSurfaceProducts.com.

Specifier Note: Substitution procedures must either be in Contract Conditions or in Section 01 25 00 - Substitution Procedures. Do not include substitution procedures here.

2. Single Source Responsibility: Provide components and materials specified in this section from a single manufacturer.
3. Substitution Limitations:
 - a. Substitutions: [In accordance with [Contract Conditions] [Section 01 25 00 - Substitution Procedures] [No substitutions permitted].

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Contract Conditions and Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

4. Regulatory Requirements:
 - a. In accordance with Section [01 41 00 - Regulatory Requirements].
 - b. [_____].
5. Sustainability Characteristics:
 - a. Recycled Content: 10%, minimum.
 - b. [_____].
6. Compatibility: Ensure components and materials are compatible with specified accessories and adjacent materials.

Specifier Note: Retain one of the products below to conform to project requirements.

- B. DSP 510 Standard Self-Leveling Underlayment:

1. Compressive Strength at 28 Days, ASTM C109: 4000 psi (27.6 MPa).
2. Flexural Strength at 28 Days, ASTM C580: 900 psi (6.2 MPa).
3. Bond Strength to Concrete, ASTM D3931: 325 - 375 psi (2.24 - 2.58 MPa).
4. Day Shrinkage, ASTM C531: 0.025 - 0.045%.

- C. DSP 520 Premium Self-Leveling Underlayment:

1. Compressive Strength at 28 Days, ASTM C109: 5000 psi (34.5 MPa).
2. Flexural Strength at 28 Days, ASTM C580: 1100 psi (7.58 MPa).
3. Bond Strength to Concrete, ASTM D3931: 350 psi - 400 psi (2.41 - 2.75 MPa).
4. Day Shrinkage, ASTM C531: 0.025 - 0.045%.

- D. Mixes: Comply with the proportions and procedures recommended by the manufacturer for the substrates indicated.

2.02 ACCESSORIES

- A. Primer: DSP 500 Primer, a multi-purpose acrylic primer.

1. Volatile Organic Compound (VOC) Content: None.

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- B. Water: Potable.

Specifier Note: Retain aggregate only for underlayment installed in thicknesses over 1 1/2 inches (38 mm).

- C. Aggregate: Well-graded, washed pea gravel, 1/8 inch (3.2 mm) or larger.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrates previously installed under other sections or contracts are acceptable for product installation in accordance with manufacturer's instructions prior to cast underlayment installation.
1. Test Moisture Content of Substrates:
 - a. Moisture Vapor: To ASTM F1869.
 - b. Relative Humidity, ASTM F2170: Not greater than 95%.
 2. Inform [Owner] [Architect] [Consultant] of unacceptable conditions immediately upon discovery.
 3. Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval from [Owner] [Architect] [Consultant]].

Specifier Note: Specify actions required to prepare the surface, area or site for incorporation of the section's primary products. Describe requirements for exposure or removal of existing assemblies, components, products or materials.

3.02 PREPARATION

Specifier Note: Specify preparatory work required prior to installation/application/erection of primary products.

- A. Ensure structure or substrate is adequate to support the cast underlayment.
- B. Surface Preparation: Prepare surface in accordance with manufacturer's written recommendations and coordinate with Section [01 71 00 - Examination and Preparation].

Specifier Note: Specify preparatory work, such as selective removal of existing work, required prior to execution of new work. Specify requirements for exposure or removal of existing assemblies, components, products or materials.

- C. Demolition/Removal:
1. [_____].

3.03 INSTALLATION

- A. Coordinate installation of products in accordance with Section [01 73 19 - Installation].
- B. Install primer and cast underlayment in accordance with manufacturer's instructions.
- C. Coordinate cast underlayment work with work of other trades for proper time and sequence to avoid construction delays.

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

3.04 PROTECTION

- A. Protect installed product from damage during construction in accordance with Section [01 76 00 - Protecting Installed Construction].
- B. Repair damage to adjacent materials caused by cast underlayment installation.

END OF SECTION