

SECTION 09 97 26
EXTERIOR TEXTURED COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. General:
 - 1. Section includes surface preparation and application of both the polymer-modified, cement-based vertical surface leveling and the textured coatings over concrete masonry unit construction.

1.2 RELATED REQUIREMENTS

- A. Section 04 20 00 – MASONRY: Concrete masonry unit construction for infill of existing tilt-up panels.
- B. Section 09 91 00 - PAINTING: Applied finish coatings.

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
 - 2. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).
 - 3. ASTM C 580 - Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
 - 4. ASTM C 642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete.
 - 5. ASTM C 666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
 - 6. ASTM C 672 - Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
 - 7. ASTM C 882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.
 - 8. ASTM D 4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
 - 9. ASTM G 154 - Practice for Operating Light and Water Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Non-metallic materials.

1.4 SUBMITTALS

- A. Information and Review Submittals: Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:
 - 1. Product Data: Manufacturer's product data sheets, performance data, chemical

and physical properties and installation instructions for each item furnished hereunder.

2. Selection Samples: Sample card indicating Manufacturer's full range of colors available for selection by Architect.
 3. Verification Samples: 12 inch long samples of sealant for verification of color, installed where directed by Architect.
 4. Certificates: Manufacturer's certification that the Products supplied meet or exceed specified requirements.
 5. Test and Evaluation Reports:
 - a. Compatibility and adhesion test reports: Test reports from manufacturer indicating that coatings proposed for use have been tested for compatibility and adhesion with actual samples of substrates to be used on this project. Include manufacturer's interpretation of test results, and recommendations for primers and substrate preparation specific to this Project.
- B. Closeout Submittals: Submit the following under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS.
1. Bonds and Warranty Documentation: Manufacturer's standard Warranties and Guarantees.

1.5 QUALITY ASSURANCE

- A. General: Notify the Architect where conflicts apply between referenced standards and existing materials, and existing methods of construction.
- B. Qualifications:
1. Installer/Applicator: Minimum of 3 years documented experience demonstrating previously successful work of the type specified herein.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements:
1. Do not deliver items to the site, until all specified submittals have been submitted to, and approved by, the Architect.
 1. Deliver materials in original unopened packages, containers or bundles bearing brand name, and identification of manufacturer, with labels and package seals intact and legible.
- B. Storage and Handling Requirements:
1. Store and handle materials following manufacturer's recommended procedures, and in accordance with material safety data sheets.
 2. Protect materials from damage due to moisture, direct sunlight, excessive temperatures, surface contamination, corrosion and damage from construction operations and other causes.
- C. Damaged material: Remove any damaged or contaminated materials from job site immediately, including materials in broken packages, packages containing water marks, or show other evidence of damage, unless Architect specifically authorizes correction thereof and usage on project.

1.7 SITE CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 40 and 90 degrees F unless otherwise permitted by manufacturer's written instructions.
- B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
 - 1. Monitor weather reports, and do not apply finishes if rain is expected within 8 hours of completing application.
- C. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before starting or continuing coating operation.
- D. Primer shall not be exposed to ultra violet for more than four weeks prior to application of coating. If exposure exceeds four weeks, primer shall be recoated, as recommended by manufacturer.
- E. Material use is above grade only. Do not use below grade.

1.8 WARRANTY

- A. In addition to the specific guarantee requirements of the GENERAL CONDITIONS and SUPPLEMENTAL GENERAL CONDITIONS, the Contractor shall obtain in the Owner's name the standard written manufacturer's guarantee of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which the Contractor may have by law or other provisions of the Contract Documents.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Compatibility:
 - 1. Provide finish coatings and crack fillers and primers as applicable for use within finish coatings that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each material or coat, provide products and spreading rates recommended in writing by elastomeric coating manufacturer for use on substrate indicated.
- B. Primer: Exterior Textured Coating manufacturer's recommended, factory-formulated, alkali- resistant primer compatible with substrate and other materials indicated.

2.2 POLYMER-MODIFIED, CEMENT-BASED, VERTICAL, STRUCTURAL SURFACE LEVELER

- A. Basis-of-Design: To establish a standard of quality, design and function desired, Drawings and specifications have been based on Sto SkimCoat by Sto Corp, or approved equal.
- B. Performance/Design Criteria: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity:

1. Application: Trowel.
2. Working Time: 25-45 minutes
3. Compressive Strength: 1,200 psi (8.3 MPa) at 3 days, 2,200 psi (15.2 MPa) at 7 days, 3,000 psi (20.7 MPa) at 28 days, ASTM C 109.
4. Bond Strength: 250 psi (1.7 MPa) at 7 days, 500 psi (3.4 MPa) at 28 days, ASTM C 882 modified.
5. Flexural Strength: 850 psi (5.9 MPa) at 7 days, 1,030 psi (7.1 MPa) at 28 days, ASTM C 580.
6. Tensile Bond Strength: 145 psi (1.0 MPa) at 7 days, 220 psi (1.5 MPa) at 28 days, ASTM D 4541 to concrete
7. Tensile Strength: 385 psi (2.6 MPa) at 28 days, ASTM C 190
8. Trowel-application consistency
9. Color: Concrete Gray.
10. Combustibility: Non-combustible, both before and after use.

2.3 EXTERIOR TEXTURED COATINGS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Tammscoat Coarse by The Euclid Chemical Company, or approved equal.
- B. Finish: Coarse Texture
- C. Color: Refer to Drawings
- D. Performance Criteria:
 1. Weight per gallon - 10.5 lbs + 0.5
 2. Viscosity – 125-128 KU
 3. Solids, Weight % - 53-56
 4. Weather-o-meter (Hours) - 5,000- ASTM G154 with no crazing, cracking, chipping or flaking.
 5. Water absorption %- ASTM C642- 48 hours-0.18, 50 days-0.46
 6. Freeze/Thaw Durability – ASTM C666- 300 cycles with no visible defects
 7. ASTM D2794, Impact Resistance, 1/2" indenter, 6 inch lb.load with no chipping.
 8. Salt Spray Test ASTM: B-117-95 (Hours) - 3,000 with no deterioration
 9. ASTM C672- Scaling Resistance, 50 cycles with no scaling.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.
- B. Verify substrate is sufficiently dry to achieve a bond in accordance with the manufacturer's recommendations.
- C. Beginning of installation means acceptance of existing substrate and site conditions.

3.2 INSTALLATION OF STRUCTURAL SURFACE LEVELER

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing and handling of materials.
- C. Surface Preparation: Comply with manufacturer's printed instructions and the following.
 - 1. Remove loose and deteriorated materials from surfaces to be leveled using high pressure (>300 psi (20.7 MPa)) water-blasting, sand blasting, or mechanical wire brushing.
 - 2. Provide right-angle cuts at perimeter of repair by saw-cutting or chipping; do not feather edge.
 - 3. Clean surfaces of bond-inhibiting materials including oil, dust and dirt, laitance and standing water
- D. Mixing: Comply with manufacturer's printed instructions and the following.
 - 1. Precondition components to temperature of 70 plus or minus 5 degrees F (21 plus or minus 2.5 degrees C) prior to mixing.
 - 2. Using StoSilo or Sto S-25 Continuous Mixer:
 - a. Connect to a source of clean, potable water.
 - b. Set the water flow rate to provide the desired consistency (suggested initial setting 450 L/hr).
 - 3. Drill and Paddle:
 - a. Mix with 7 to 7.5 pints (3.3 to 3.6 L) of clean, potable water per 60-pound (27.2 kg) bag.
 - b. Mix with a slow-speed drill (<300 rpm), adding the dry material slowly, approximately 1/3 bag at a time.
 - c. Do not exceed the maximum water content.
 - d. Mix up to 3 minutes or to achieve a uniform, lump-free consistency. Avoid over- mixing.
 - 4. Mortar Mixer:
 - a. Predampen the inside of a clean mortar mixer, and then remove any excess water.
 - b. Pour 7.0 pints (3.3 L) of water, per bag of powder, into the mortar mixer, start the mixing blades, and slowly add all of the powder.
 - c. If more water is needed, add up to 0.5 pints (0.24L) per bag.
 - d. Do not exceed maximum water content.
 - e. Mix to a uniform, lump-free consistency. Avoid over-mixing.
- E. Application: Comply with manufacturer's printed instructions and the following.
 - 1. Apply when ambient and surface temperatures are 45 degrees F (7.5 degrees C) and rising.
 - 2. Do not apply in freezing conditions or during precipitation.

3. Comply with manufacturer's guides for hot and cold weather application.
 4. Dampen substrate to fill concrete pores with water. Remove ponding, glistening, or surface water (saturated surface dry).
 5. Apply scrub coat of repair mortar into substrate to ensure intimate contact and establish bond.
 6. Apply mortar while scrub coat is wet. Consolidate and trowel to the desired finish, with a minimum thickness of 1/8 inch.
 7. Maximum thickness per lift is 1/2-inch.
 8. If applications thicker than 1/2-inch are required, scarify the first lift and allow to harden sufficiently to support the next lift (about 30 minutes at 75 degrees F (23 degrees C). Apply a scrub coat and complete the next lift while the scrub coat is wet. Trowel the final lift to the desired finish.
- F. Curing
- a. 1. Keep surface damp for 48 hours with continuous light water-fogging, or cover with damp burlap or burlene curing blankets.
 - b. 2. If no coating or sealer is to be applied, a water-based curing compound meeting ASTM C309 may be used.
 - c. 3. Do not use solvent-based curing compounds.
- G. Cleaning: Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

3.3 MOISTURE TESTING

- A. Following the application and drying of the surface leveler, perform the standard test described in ASTM D 4263-83 "Standard Test Method for Indicating Moisture in Concrete by Plastic Sheet Method." Tape tightly to the concrete surface an 18" x 18" sheet of clear polyethylene film, approximately 4 mils thick, and allow it to remain in place for at least 16 hours. Do not continue if any moisture is visibly present.
- B. Perform Moisture Testing on each Exterior Tilt-up concrete panel infill area.

3.4 INSTALLATION OF TEXTURED COATING

- A. Examine substrates and conditions, with Applicator present, for compliance with manufacturer's requirements for maximum moisture content, alkalinity, and other conditions affecting performance of work.
- B. Verify that substrate is within the range of alkalinity recommended by manufacturer.
- C. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
- D. Surface Preparation:
1. General: Perform preparation and cleaning procedures in accordance with coating system manufacturer's instructions and as herein specified, for each particular substrate and coating condition.
 - a. Remove hardware accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-coated or provide surface applied protection prior to surface preparation and coating operations. Remove, of necessary, for complete coatings of items and adjacent surfaces. Following completion of coating of each area, reinstall removed

- items.
- b. All surfaces shall be sound and clean prior to application of primer and coatings.
Such surface contaminants as dust, dirt, mildew, form oils, loose substrate, etc., shall be removed by water-blasting. Excessive form oils, release agents and curing compounds may require light sandblasting.
- c. Mask all glass, shrubbery and asphalt surfaces.
- d. Over a clean and sound surface apply manufacturer recommended Primer per manufacturer's printed instructions.
 - 1) Curing Time: Twenty-four (24) hours minimum
- E. Materials Preparation:
 - 1. Mix and prepare coating materials in accordance with manufacturer's directions.
 - 2. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of coatings in a clean condition, free of foreign materials and residue.
 - 3. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film, and if necessary, strain material before using.
- F. Application:
 - 1. Apply coating in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 2. Concrete System:
 - a. Over primed, clean and sound surface, apply product at standard coverage rate in desired texture and color with recommended spray equipment.
 - b. Apply a uniform film thickness over the entire surface being covered. Minimum dry film thickness is approximately 15 mils.
 - c. A wet edge shall be maintained to prevent lap-marks.
- G. Avoid starting and stopping midway on wall. Continue to a natural break such as a panel edge or corner.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. Clean-up: During progress of work, remove from site discarded coating materials, rubbish, cans and rags at end of each work day.
- C. Upon completion of coating work, clean window glass and other coating-splattered surfaces. Protect work of other trades, whether to be coated or not, against damage by coating and finishing work. Correct any damage by cleaning, repairing or replacing, and recoating, as acceptable to Architect.
- D. Provide "wet paint" signs as required protecting newly-coated finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of coating operations.

END OF SECTION