

SECTION 099726 – CEMENTITIOUS COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and application of cementitious coating systems on concrete and masonry.
- B. Related Sections:
 - 1. Section 040120.63 – Brick and Terra Cotta Masonry Repair.
 - 2. Section 040140.61 – Stone Repair.
- C. Industry Standards
 - ASTM (American Society for Testing and Materials).

1.2 ACTION SUBMITTALS

- A. Environmental Product Declaration (EPD) for each type of product.
- B. Samples: For each exposed product and for each color and texture specified, 4 by 8 inches in size. Step coats on Samples. Label each coat required for system.

1.3 INFORMATIONAL SUBMITTALS

- A. Material certificates.

PART 2 - PRODUCTS

2.1 CEMENTITIOUS COATINGS

- A. Polymer-Modified Cementitious Coating: Containing Portland cement, polymer, and hydrated lime or aggregates.
 - 1. Compressive Strength: Not less than [**3500 psi**] **<Insert value>** at 28 days according to ASTM C109/C109M.
 - 2. Tensile Strength: Not less than [**350 psi**] **<Insert value>** at 28 days according to ASTM C109.
 - 3. Flexural Strength: **<Insert value and test method>**.
 - 4. Adhesion: **<Insert value and test method>**.
 - 5. Permeance: **<Insert value and test method>**.
 - 6. Accelerated Weathering: **<Insert value and test method>**.
 - 7. UV Resistance: **<Insert value and test method>**.
 - 8. Salt-Spray Resistance: **<Insert value and test method>**.
 - 9. **<Insert performance requirements>**.

- B. Colors: [**As selected by Design-Professional-of-Record from manufacturer's full range**] :
[**As selected by Owner from manufacturer's full range**].

2.2 MINERAL COATINGS

- A. Silicate/Mineral Coating: Containing Liquid Potassium Silicate (CAS: 1312-75-1) and Non-Hazardous Acrylate. Hybrid mineral coatings formulated for use on all masonry (mineral surfaces), stucco, concrete, and plaster surfaces and over latex and acrylic coatings.
- B. Performance Requirements: Comply with the following:
1. Vapor Permeability <Insert value > ASTM E 96 (Wet Cup Method)
 2. Weather Resistance <Insert value > ASTM G 53-84
 3. Wind-driven rain. <Insert test results > ASTM E514
 4. Accelerated weathering, <Insert test results > ASTM G 154
- C. Other Materials: Provide crack fillers, block fillers, and related materials that are compatible with mineral finish-coat materials and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- D. Colors: As selected by [**Design-Professional-of-Record**] [**Owner**] from manufacturer's full range.

2.3 ACRYLIC COATINGS

- A. Acrylic Coating: Containing water-based high-build 100 percent acrylic. Waterproof coating for above-grade concrete, masonry, and stucco.
1. Texture: Smooth.
- B. Performance Requirements Comply with the following:
1. Resistance to wind-driven rain, <Insert test results > ASTM D6904
 2. Water-vapor permeance, perms <Insert value > ASTM D1653.
 3. Moisture resistance, <Insert test results >
 4. Accelerated weathering, 5000 hrs. <Insert test results > ASTM G23, Type D.
 5. Visual color change, 5000 hrs. <Insert test results > ASTM D 1729
 6. Chalking, 5000 hrs. <Insert test results > ASTM D 4214
 7. Salt-spray (Fog) Resistance, <Insert test results > ASTM B117.
 8. Flexibility, <Insert test results > ASTM D1737.
 9. Dirt pick-up, % after 6 months exposure, <Insert test results > ASTM D3719.
 10. Sand abrasion resistance, at 3,000 L, <Insert test results > ASTM D986, Method A.
 11. Impact resistance, at 30 in-lbs., <Insert test results > ASTM D2794.
 12. Fungus resistance, <Insert test results > ASTM D3273.
- C. Other Materials: Provide crack fillers, block fillers, and related materials that are compatible with acrylic finish-coat materials and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- D. Colors: As selected by [**Design-Professional-of-Record**] [**Owner**] from manufacturer's full range.

2.4 GRAFFITI RESISTANT COATING

- A. RTV Silicone Rubber penetrating coating that has a neutral (non-acidic) moisture cure system which contains petroleum distillates that transport silicone solids into the substrate's capillary system.
- B. Performance Requirements Comply with the following:
 - 1. Accelerated weathering, <Insert value > ASTM C793
 - 2. Water-vapor Transmission <Insert value > ASTM E96
- C. Graffiti coating must comply with NYC Architectural Coatings Rule for volatile organic compounds. The emission limit is 600 g/l.
- D. Proposed alternate products must be equal in terms of chemical composition and performance standards. Products must be penetrating, permanent treatments using a silicone rubber base and not contain any paraffin waxes, urethanes or polysiloxanes. Silane and siloxane based products will not be considered because of their lack of elongation. Products must be non-sacrificial, allowing for repeated cycles of tagging and cleaning without the requirement to reapply the sealant.
- E. Film forming coatings shall not be considered because of the freeze-thaw environment.

2.5 WATER REPELLENT SEALER

- A. Siloxanes and Silanes penetrating neutral (non-acidic) moisture cure sealer that has a minimum water vapor permeability of 0.98.
- B. Performance Requirements Comply with the following:
 - 1. Resistance to UV radiation, <Insert value > ASTM G 53
 - 2. Vapor transmission, <Insert value > ASTM E 96
 - 3. Wind driven rain (brick) <Insert value > ASTM E 514
 - 4. Absorption (for clay brick) <Insert value > ASTM C 67

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for mixing and preparing materials and as applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
 - 1. After completing coating operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, incompatible coatings, and loose substrate materials.
- D. Cementitious and Masonry Surfaces: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Crack Repair: Fill cracks according to manufacturer's written instructions before coating surfaces.

3.3 CEMENTITIOUS COATING SCHEDULE

- A. Polymer-modified Cementitious Coatings
 - 1. General: Apply additional coats when undercoats or other conditions show through final coat until cured film is of uniform coating finish, color, and appearance.
 - 2. Above-Grade Concrete and Masonry: Two finish coats with total cured thickness not less than 40 mils.
 - a. First Coat: Apply polymer-modified cementitious coating material at the rate of 2 lb/sq. yd. to achieve a total cured thickness of 25 mils.
 - b. Second Coat: Apply polymer-modified cementitious coating material at the rate of 1 lb/sq. yd. to achieve a total cured thickness of 15 mils.
 - 3. Surfaces Previously Coated with Polymer-Modified Cementitious Coating: One finish coat applied at the rate of 1 lb/sq. yd. to achieve a total cured thickness of not less than 15 mils.
- B. Mineral coatings
 - 1. Remove any previous or existing coatings before application of new mineral coating.
 - 2. Apply coating with a short bristle brush or roller as recommended by manufacturer to ensure full absorption of the coating into masonry.
 - 3. Provide a two coat application, do not apply succeeding coat until Architect has approved previous coat.
 - 4. Normally absorptive surfaces: Apply coats according to manufacturer's instructions.
 - 5. Highly absorptive, sandy surfaces: Apply priming coat as recommended by manufacturer.
- C. Acrylic coatings

1. Apply primer in accordance with manufacturer's instructions.
2. Acrylic coating to be applied as a two-coat system, achieving a total dry-film thickness (DFT) of 12-16 mils (304-406 microns).

END OF SECTION 099726