

SPECIAL PROVISION

PROJECT #
PIN #

SECTION 09981S

CONCRETE COATING

Delete Section 09981 in its entirety and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Water repellent and concrete stain applied to concrete surface.
- B. Concrete stain reapplied over graffiti on concrete surface.

1.2 RELATED SECTIONS Not Used

1.3 REFERENCES

- A. ASTM D 968: Abrasion Resistance of Organic Coatings by Falling Abrasive
- B. ASTM D 3960: Volatile Organic Compound (VOC) Content of Paints and Related Coatings
- C. ASTM D 4285: Indicating Oil or Water in Compressed Air
- D. ASTM D 4541: Pull-Off Strength of Coatings Using Portable Adhesion Testers
- E. ASTM D 7234: Pull-Off Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers

1.4 DEFINITIONS Not Used

1.5 SUBMITTALS

- A. Concrete Coating System
 - 1. Manufacturer's product data sheets for review.
 - a. Include recommended installation instructions for each product used for information.

2. Letter of compatibility under the concrete stain manufacturer's letterhead, for review, indicating that the concrete stain to be used are compatible with the water repellents to be used.
3. Three 8½ inch by 11 inch samples of each concrete stain color required on the project for review before ordering concrete coating materials.

PART 2 PRODUCTS

2.1 CONCRETE COATING SYSTEM

- A. Water Repellent
 1. Use Alkoxy Silane (98 percent or greater silane) as a base coat.
 - a. Meet VOC content of 350 g/L or less for a reactive penetrating sealer. Refer to ASTM D 3960.
- B. Concrete Stain
 1. Use a 100 percent acrylic emulsion stain that meets the requirements of Table 1.
 2. Provide the colors as described.
 - a. Match the color of the existing surface when applying over graffiti.

Table 1

PROPERTIES OF CURED CONCRETE STAIN		
Property	Value	Method
Abrasion Resistance, min. liters per mil	30	ASTM D 968
Adhesion to Concrete	Substrate failure	ASTM D 4541 or ASTM D 7234
VOC content, max. g/L	250	ASTM D 3960

2.2 EQUIPMENT

- A. Sandblaster/Air Compressor
 1. Air free of water and oil according to ASTM D 4285.
- B. Pressure Washer
 1. At least 3000 psi but no more than 5000 psi.

PART 3 EXECUTION

3.1 GENERAL

- A. Use only one concrete coating system on an individual element.
- B. Furnish, prepare, apply, cure, and store materials according to the product manufacturer's directions and as specified in this Section.
 - 1. Do not allow material to freeze
 - 2. Deliver concrete coating materials to the project site in sealed containers bearing the manufacturer's original labels with the brand, color, and type clearly marked on each container.
- C. Omit water repellent when applying concrete stain over graffiti.
- D. Weather Limitations
 - 1. Apply when the outside air temperature is between 45 and 90 degrees F and will remain between 45 and 90 degrees F per the manufacturer's recommended cure time.
 - 2. Do not apply within 24 hours of a rain event or pressure washing, nor if a rain event is forecasted within 8 hours.

3.2 PREPARATION BEFORE WATER REPELLENT APPLICATION

- A. Cure concrete for 28 days before water repellent application.
 - 1. Rapid setting patch materials do not need to cure for 28 days but must meet moisture content levels specified in this Section.
- B. Completely remove curing compounds, oil, grease, dirt, and any other surface contaminants from concrete surfaces.
 - 1. Use one of the following methods:
 - a. Pressure washing
 - b. Shotblasting
 - c. Sandblasting
- C. Remove dust or debris using compressed air immediately before each application of the product.
- D. Measure moisture content in the presence of the Engineer with an electronic concrete moisture meter at three or more locations along the area to be sealed.
 - 1. Measure recently patched concrete areas separately.
 - 2. Do not apply water repellent if any measurements exceed 4.0 percent.

3.3 WATER REPELLENT APPLICATION

- A. Apply according to the manufacturer's recommendations, except for the following.
 - 1. Apply each coat at an application rate of 1 gal penetrating concrete sealer to 250 sq ft.
- B. Apply two separate coats of penetrating concrete sealer.
 - 1. Apply second coat while the first coat is still wet to the touch.

3.4 PREPARATION BEFORE CONCRETE STAIN APPLICATION

- A. Allow water repellent to cure for at least 5 hours.
- B. Pressure wash surface and allow area to dry for 24 hours and complete any additional surface preparation requirements per manufacturer's recommendations.
- C. Stir the coating materials thoroughly before application.

3.5 CONCRETE STAIN APPLICATION

- A. Apply according to the manufacturer's recommendations.
- B. Apply two coats of the concrete stain according to the manufacturer's recommendations, but not less than the following rates.
 - 1. Apply the first coat evenly at a minimum application rate of 1 gal concrete stain to 350 sq ft working in one direction.
 - 2. Cure the first coat of the concrete stain at least 4 hours before the second coat of the concrete stain is applied.
 - 3. Apply the second coat evenly at a minimum application rate of 1 gal concrete stain to 350 sq ft working in the opposite direction of the first coat.

3.6 PROTECTION

- A. Prevent sandblasting material, coating products and debris from falling into waterways, pedestrian areas, traffic areas, or onto railroad tracks.
- B. Protect surrounding surfaces from overspray.

END OF SECTION