

## SECTION 03392

# PENETRATING CONCRETE SEALER

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Materials and procedures for applying protective penetrating concrete sealer.

#### 1.2 REFERENCES

- A. AASHTO T 260: Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials
- B. ASTM C 267: Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes
- C. ASTM C 666: Resistance of Concrete to Rapid Freezing and Thawing
- D. ASTM E 274: Skid Resistance of Paved Surfaces Using a Full-Scale Tire

#### 1.3 SUBMITTALS

- A. Certificate of Compliance to the Engineer or the Construction and Materials Division.
- B. One quart of the product to the Engineer.

### PART 2 PRODUCTS

#### 2.1 PENETRATING CONCRETE SEALERS

- A. Choose from the following list:
  - 1. Silane
  - 2. Siloxane
  - 3. Silicate
  - 4. Siliconate
  - 5. Organo Silane Ester
  - 6. Styrene Acrylic Copolymer

7. Organo Siloxane
8. Alkylalkoxy Siloxane
9. Alkylalkoxy Silane

B. Comply with requirements of Table 1:

**Table 1**

<b>Penetrating Concrete Sealer Requirements</b>				
<b>* Properties</b>	<b>Requirements</b>	<b>ASTM</b>	<b>AASHTO</b>	<b>** UDOT</b>
Accelerated Weathering	As Specified	C 666	T 260	
Freeze-thaw Test Medium	Less than or equal to 3 percent Road Salt			Sealer Studies
Minimum Depth Penetration	Greater than or equal to 3/16 inches			Sealer Studies
Freeze-thaw Weight Loss	Less than or equal to 6 percent 300 Cycles			Sealer Studies
Chemical Resistance	Subsections: 1.1.2 1/1/3	C 267		
Friction Number	Greater than or equal to 40	E 274		
Infrared Spectrogram	Materials Division Base Comparison			Materials Studies

\* Certified test results from a private accredited testing laboratory will suffice for acceptance.

\*\* Utah Department of Transportation, Materials and Research Division concrete sealer studies of 1986 and 1990.

### **PART 3 EXECUTION**

#### **3.1 PREPARATION**

- A. Keep surfaces dry and free of laitance, dirt, dust, paint, grease, oil, rust, and other contaminants.
- B. Remove any curing compound from the surface of the concrete before applying penetrating sealer.

- C. Use one of the following cleaning methods:
  - 1. Hydroblasting - 700 psi min.
  - 2. Shotblasting
  - 3. Sandblasting
  - 4. Etching
- D. Keep concrete surface matrix intact without exposing any large aggregate.
- E. Cure concrete for 28 days prior to sealer application.
- F. Place the material after obtaining the approval from the Engineer.

### **3.2 APPLICATION**

- A. Application Rate:
  - 1. Based upon the residue content at a coverage rate of 0.11 lbs/yd<sup>2</sup>.
  - 2. Apply according to manufacturers recommendation for each of the following surfaces:
    - a. Horizontal
    - b. Vertical
    - c. Overhead
- B. Application Drying Time: Select a sealer with maximum drying time of 1½ hours.
- C. Upon application, meet the minimum Friction Number of 40 for at least 90 percent of friction numbers.

END OF SECTION