

ITEM 559.1696--25 - PROTECTIVE SEALING OF STRUCTURAL CONCRETE

1. DESCRIPTION:

- 1.01 Under this work the Contractor shall furnish and apply, in accordance with this specification, a protective sealer to concrete surfaces, at locations indicated on the plans or where directed by the Engineer.

2. MATERIALS:

- 2.01 The protective sealer used on concrete surfaces shall be one appearing on the Department's Approved List and shall meet the requirements of the following subsection:

717-03 - Penetrating Type Protective Sealers

3. CONSTRUCTION DETAILS:

- 3.01 **General.** The Contractor shall provide the Engineer with the sealer Manufacturer's written instructions for application and use, at least five (5) working days before the start of work. Only one (1) brand and specific type of sealer will be allowed for use on each individual element of a project (i.e. each pier, deck, abutment, etc.).

3.02 Surface Preparation.

1. **New Concrete.** All required surface texturing, and saw cut grooving, shall be completed before the surface is prepared. All concrete that is to be sealed shall air dry for fourteen (14) days after curing has been removed, or for the length of time specified in the manufacturer's written instructions, whichever is longer. Also, concrete shall air dry for twenty-four (24) hours after curing and/or completion of saw cut grooving. If the concrete is subjected to rain or moisture from other project operations, the surface shall be allowed to dry for a minimum of forty-eight (48) hours, or for a length of time specified in the manufacturer's specifications, whichever is longer, before the sealer is applied. After the drying period has ended, the concrete surface shall be lightly sand or shot blasted, followed by vacuum cleaning, to remove loose particles.
2. **Existing Concrete.** Concrete surfaces to be sealed shall be thoroughly cleaned by light sand or shot blasting, followed by vacuum cleaning, to remove loose particles. If the concrete is subjected to rain or moisture from other project operations, the surface will be allowed to air dry for a minimum of forty-eight (48) hours before the sealer is applied.

Care shall be taken while blast cleaning that all dirt is removed with minimal exposure of coarse aggregate. After cleaning, no blasting residue, laitance, curing compounds, standing water, oil, dirt or other foreign particles shall be present, which may prevent penetration or adhesion of the sealer. All surface preparation work shall be completed and approved by the Engineer, before sealer application can commence.

- 3.03 **Weather Limitations.** Sealer materials shall not be applied during wet weather conditions or, if in the opinion of the Engineer, adverse weather conditions are anticipated within twelve (12) hours of the completion of sealer application. Ambient and surface temperatures shall be a minimum of 40°F during application and until the sealed concrete is dry to the touch. Application by spray methods will not be permitted during windy conditions, if in the opinion of the Engineer unsatisfactory results will be obtained.

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3. CONSTRUCTION DETAILS: (cont'd)

- 3.04 **Sealer Application.** The sealer shall be used as supplied by the Manufacturer without thinning or alteration, unless specifically required in the Manufacturer's instructions. Thorough mixing of the sealer before and during its use shall be accomplished as recommended by the Manufacturer. Equipment for sealer application shall be clean of foreign materials and approved by the Engineer before use.

A minimum of two (2) coats of the sealer shall be applied to achieve uniform coverage. The total quantity of sealer applied by all coats shall be equal to the quantity required at the application rate specified in the Approved List. The second and each additional coat shall be applied perpendicular to the previous coat. Care shall be taken when applying each coat, such that running or puddling does not occur. Each coat shall be allowed to dry for a minimum of two (2) hours before the next coat is applied. The final coat shall be allowed to dry according to the manufacturer's instructions, before the removal of maintenance and protection of traffic.

On sloping and vertical concrete surfaces, sealer application shall progress from bottom to top. Care shall be taken to ensure that the entire surface of the concrete is covered and all pores filled.

4. METHOD OF MEASUREMENT:

- 4.01 The quantity to be paid for will be the actual number of square feet of surface area that is provided with protective sealing.

5. BASIS OF PAYMENT:

- 5.01 The unit price bid per square feet shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.