

**ITEM 04559.16 M - PROTECTIVE SEALING AND STAINING OF STRUCTURAL CONCRETE**

**DESCRIPTION:**

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

**MATERIALS:**

The same manufacturer shall supply the protective sealer and stain. The protective sealer used on concrete surfaces shall be one appearing on the Department's Approved List and shall meet the requirements of:

717-03 - Penetrating Type Protective Sealers

Color Stain: The color stain shall be 100% acrylic, water based stain that provides a uniform color/tint to the concrete surface and is resistant to ultraviolet degradation, airborne dirt, smog, industrial fumes, acid rain, and other atmospheric chemicals. The color stain shall be one which is applied after the penetrating sealer application, because future applications of the stain to the concrete surfaces may be required. The stain manufacturer shall provide technical data sheets that outline how future applications of stain shall be applied and surface preparation requirements. The future applications of the stain shall not require the removal of the original application of the penetrating sealer and stain.

The manufacturer of the stain shall provide application instructions and surface preparation requirements. The manufacturer also shall provide in writing that the use of their stain product over the penetrating sealer will not void the warranty of the stain or penetrating sealer. The stain, when used with the penetrating sealer, shall provide a uniform color over the concrete.

All materials shall be packaged in strong substantial containers. Each container shall be plainly marked with the following information: name of product, name and address of Manufacturer, application instructions, lot/batch number, date of manufacture, quantity of material, and date of expiration or shelf life. The printed shelf life shall not exceed one year from the date of manufacture.

**CONSTRUCTION DETAILS:**

General: The Contractor shall provide the Engineer with copies of the technical data sheets, application instructions, and material samples of both the protective sealer and stain two weeks prior to application for his review and approval. Once the Engineer approves the Contractor's materials, two test panels will be constructed along the concrete surface. Tests panels shall be 1200 mm by 1200 mm.

The location and size of the test panels will be as ordered by the Engineer. The test panels shall be allowed to cure as per the manufacturer's recommendation. The test panels shall be

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approved by the Engineer prior to the application of the protective sealer and stain over the concrete surfaces. If during the application of the protective sealer and stain, the appearance of the concrete varies from that of the test panels, the Contractor shall make the necessary adjustments to the application process and rate in order for the application to match the test panels. The process of applying the sealer and stain to the concrete shall be identical to that used to construct the test panels.

The concrete surface to be sealed and stained shall be clean and dry and free from any material that might inhibit the acceptance of the sealer or color stain. All repairs to the concrete surface shall be performed prior to the application of the sealer and stain.

Surface Preparation: The concrete shall be cleaned of dust and soil by water blasting or other method approved by the Engineer. Prior to cleaning the concrete surface, the Contractor shall remove loose scale or laitance from the concrete surface by wire brushing or other method approved by the Engineer. The cleaning procedure used shall meet the sealer and stain manufacturer's recommendations.

Application: The concrete surface shall be completely dry before application begins. The sealer and stain shall be applied as to the limitations and provisions of the manufacturer's technical data sheets and product application instructions.

The Contractor shall exercise due care to protect structures and installations adjacent to the work area from overspray.

The Engineer is empowered to terminate the application of the stain if he determines that satisfactory results are not being obtained or when areas not specifically designated to be stained are likely, or are being, affected by the application method.

Clean-up: All areas adjacent to the work which are affected by the overspray or are damaged by the Contractor's operations shall be cleaned or repaired by the Contractor in a manner satisfactory to the Engineer.

### **METHOD OF MEASUREMENT:**

Payment will be made based on the number of square meters of concrete actually covered by both the protective sealer and stain, in accordance with the contract documents and as directed by the Engineer. Measurement will be taken as the horizontal or vertical plane projection of the surface, whichever is applicable. No measurement will be made of actual concrete surfaces.

### **BASIS OF PAYMENT:**

The unit price bid shall include the cost of all labor, materials and equipment necessary to complete the work.