ITEM 428
CONCRETE SURFACE TREATMENT

428.1. Description. Prepare surface and apply a linseed oil treatment or a penetrating-type sealant treatment to concrete surfaces.

428.2. Materials. Furnish materials required by the class of surface treatment shown on the plans.

A. Surface Treatment Class I. Provide mixture containing a minimum of 50% and a maximum of 70% boiled linseed oil by volume. Use mineral spirits as the complement component for any ambient temperature range above 40°F, or kerosene for ambient temperature range above 70°F. Provide material in accordance with the following specifications:
- Boiled linseed oil: ASTM D 260
- Mineral spirits: ASTM D 235
- Kerosene: ASTM D 3699

Provide combined mixture in clean, leakproof, labeled containers. Clearly state the contents on all the containers.

B. Surface Treatment Class II. Provide penetrating surface treatment in accordance with DMS-8140, “Concrete Surface Treatment (Penetrating).”

428.3. Construction Methods. Treat the upper surfaces of the roadway slab (including direct traffic culverts), bridge sidewalks and medians, the inside faces of curbs and concrete rails, and all other areas shown in the plans. Do not treat surfaces given a higher finish as defined in Item 427, “Surface Finishes for Concrete,” unless otherwise shown on the plans.

A. Surface Treatment Class I. Clean concrete surfaces to remove contaminants that retard or prevent absorption of the mixture before treatment application. Do not apply the treatment before required concrete curing is complete, while the surface is damp, or when the ambient temperature is below 40°F. Do not heat the mixture. Use a spray applicator equipped with a spray bar to apply the treatment material unless directed otherwise.

Apply the material in 2 stages. Apply at an approximate rate of 40 sq. yd. per gallon for the first stage and 67 sq. yd. per gallon for the second stage for a total coverage of 25 sq. yd. per gallon. Wait a minimum of 4 hr. after the first application before applying the second application. Apply so that a uniform coverage is obtained.

Remove any excess mixture remaining on the surface 4 hr. after the second application or cover with an application of fine sand. Do not allow traffic on the treated surface for 24 hr. after the final application.

B. Surface Treatment Class II. Refer to the manufacturer’s specifications for instruction on the use of the treatment material in addition to the requirements of this Item.

Clean the concrete surfaces to remove all visible curing compound and any other contaminants that retard or prevent penetration of the mixture before treatment application. Demonstrate the method of cleaning to the Engineer by preparing a 100-sq. ft. area before proceeding with complete cleaning. Do not damage the concrete surface to the point that the coarse aggregate is exposed. Acceptance of the entire cleaned surface by the Engineer is required before the application of the treatment material.

Apply the treatment material no sooner than 14 days after casting the concrete and a minimum of 1 day after curing blankets have been removed.

Apply treatment material to a dry surface no sooner than 24 hours after any water has reached the concrete surface. Apply treatment material when surface temperature is between 40°F and 100°F.

Do not dilute or alter the treatment material.

Apply the treatment material at a rate of 125 sq. ft. of surface area per gallon. Treat the upper side of horizontal and near-horizontal surfaces in 1 pass or coat. Treat the vertical and overhead surfaces in 2 passes or coats. Apply the first coat at a rate of 165 sq. ft. of surface area per gallon, and apply the
second coat at a rate of 500 sq. ft. of surface area per gallon. Apply the second coat within 1 hr. of application of the first coat.

Use a spray applicator equipped with a spray bar to apply the treatment material to deck surfaces. Apply the treatment material at a uniform rate, covering the entire surface being treated. Follow the treatment material manufacturer’s specifications regarding the post-wetting of the treated surface and required lapse time before traffic is permitted on the treated surface.

428.4. Measurement. This Item will be measured by the square yard of concrete surface treated. This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2, “Plans Quantity Measurement.” Additional measurements or calculations will be made if adjustments of quantities are required.

428.5. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price for “Concrete Surface Treatment (Class I)” or “Concrete Surface Treatment (Class II).” This price is full compensation for furnishing materials and for equipment, labor, tools, and incidentals.