

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 864
SEALING OF CONCRETE SURFACES

July 11, 2000

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864.01 Description. This work consists of applying an approved sealer on existing and new concrete surface areas after the concrete is cured and repairs completed and cured. Apply the sealer to locations described in the plans. Use sealers on the Office of Materials Management's approved list. Apply the sealer listed in the pay item description. Choose a type of sealer if no sealer is listed in the pay item description.

864.02 Materials. Approved sealer systems meet the following performance requirements:

1. Absorption - ASTM C642 (non-air entrained concrete). Concrete should be proportioned and mixed in accordance with ASTM C672. Sealed concrete, under total immersion, will not exceed 1.0% after 48 hours or 2.0% after 50 days
2. Scaling Resistance - ASTM C672 A rating of "No Scaling" after 100 cycles on the sealed concrete (non-air entrained concrete) as compared to "Severe Scaling" on untreated concrete.
3. NCHRP 244, Series 11 - Cube Test
 - 3.1 Weight gain - not to exceed 25% of untreated cube
 - 3.2 Absorbed chloride - not to exceed 25% of untreated cube
4. NCHRP 244, Series IV - Southern Exposure
 - 4.1 Absorbed chloride - not to exceed 10% of untreated concrete

5. Record and report the application rate (square footage/gallon) of sealer during the tests.

Provide test data from an approved independent testing facility. The sealer manufacturer funds the testing costs. Furnish the test data, a one quart (one liter) sample, and the MSDS to the Office of Materials Management. Pre-qualified sealers will be on the Department's approved list

864.03 Equipment. Use application equipment recommended by the sealer manufacturer. Use spray equipment, tanks, hoses, brooms, rollers, coaters, squeegees, etc., that is clean, free of foreign matter, oil residue and water.

864.04 Mixing. Mix the sealer according to the manufacturer's recommended procedures. Furnish the Engineer with the manufacturer's application instructions. Don't mix or apply the sealer until the manufacturer's written recommendations are supplied to the Engineer. Mixed materials to a uniform consistency and maintain during application.

864.05 Storage. Store all sealer components in tightly sealed containers, in a dry location, and as recommended by the manufacturer. Deliver unopened drums or containers of the sealer or sealer components to the job site with the manufacturer's numbered seal intact.

864.06 Surface Condition. Apply sealers to surfaces which are dry, free from dust, dirt, oil, wax, curing compounds, efflorescence, laitance, coatings and other foreign materials. Repair any structurally unsound surfaces, weak sections or spalled areas before applying any sealer.

Air dry concrete surfaces for at least five (5) days after completion of required curing. Air dry any cavities which require grout filling and curing for five days. Do not apply sealer until the air drying is complete.

Seal accelerated cured precast concrete after it has attained the required 28 day strength and after any cavities which require grout filling have been filled, cured and air-dried for five days.

864.07 Surface Preparation. Remove dust, dirt, oil, wax, curing compounds, efflorescence, laitance, coatings and other foreign materials from surfaces to be sealed. Use chemicals or other cleaning compounds if removal requires their use but only use products approved by the sealer manufacturer. Furnish the Engineer documentation of the sealer manufacturer's approval. Apply the sealer within 48 hours of surface preparation.

Install suitable traps, filters, drip pans and other separation devices in the cleaning equipment so oil and other foreign material isn't deposited on the surface.

Use the following cleaning methods depending on the surface type:

A. New water cured exposed concrete surfaces.

1. Water blast at 7,000 psi (48 MPa) minimum

B. New, liquid membrane cured, exposed concrete surfaces.