

Section 03366

Concrete Densifier/Sealer/Hardener

**** SPECIFIER NOTES: The following section is designed for treatment of uncovered concrete floor surfaces that will be exposed to medium to high volume of rubber wheeled and pedestrian traffic. This section applies to concrete floor slabs that need to be dustproofed, hardened, and/or sealed against petroleum, dirt, water and other mild contaminants. Typical applications include concrete floors in warehouses, distribution centers, manufacturing plants, sports arena concourses, retail sales floors, mechanical rooms, janitor closets, stairwells, concourses, and exterior loading docks and concrete containment facilities. ****

Part 1 - GENERAL

1.01 DESCRIPTION

A. Summary of Work:

1. Furnish all labor, materials, tools, equipment and service for all concrete sealer/densifier/hardener application as indicated, in accordance with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to, or necessary for sound, secure and complete installation.
4. See Division 1 for General Requirements.

*****Specifier: Edit to job.*****

B. Related work:

1. Section 03300: Cast in Place Concrete
2. Section 03412: Weather Protection

1.02 SYSTEM

A. Description: A sealer/densifier/hardener that will react with concrete surfaces to produce a dense, hydrophobic, insoluble, moisture barrier to seal out contaminants, while hardening and densifying surface.

B. Location of work: As indicated.

1.03 REFERENCES AND QUALITY ASSURANCE

A. References:

1. Corps of Engineers Spec: CEGS 03300 4-79
2. USDA approved
3. Dept. Of Navy, GSA, VA approved

B. Design criteria:

1. ACI 302 Class 1 through 4 concrete floors.
2. May be used on Class 5 and 6 floors when used with mineral or metallic aggregate hardeners and toppings, and Class 9, Super-flat floors.
3. Complies with all Federal and State VOC requirements.
4. Independent Test Data, ASTM C 779, Procedure A, reduction of surface abrasion by 50% or more at the 30 minute time interval.

C. Applicator qualifications:

1. Approved in writing by manufacturer.

1.04 SUBMITTALS (See Division 1)

A. Product data:

1. Furnish if required by A/E.

B. Samples:

1. Furnish if required by A/E.

C. Project information:

1. Test reports
2. Certificate of rate of application
- D. Project closeout data:
 1. Signed 10 year warranty

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver to jobsite in sealed, labeled containers.
- B. Store and handle to prevent damage to product and environment.

1.06 JOB CONDITIONS

- A. Existing conditions, prior to installation:
 1. Assure concrete has been cured a minimum of 3 days.
 2. Assure concrete is clean and free of membrane forming curing compounds and/or other sealers.
 3. Concrete is free of laitance, grease, oil and contaminants.
- B. Environmental requirements:
 1. Comply with all VOC and EPA requirements.
- C. Protection:
 1. Protect adjacent surfaces/areas from damage due to over spray; especially glass and painted surfaces.
 2. Comply with 1.06 A above.

1.07 PRE-INSTALLATION MEETING

- A. At the engineer's request, technical personnel shall be available for a pre-job conference to review installation procedures.

1.08 WARRANTY

- A. Written warranty signed jointly by applicator, manufacturer and contractor.
- B. Warrant installation for a period of 10 years from date of substantial completion against dusting from abrasion.

PART 2 - PRODUCTS

2.01 CONCRETE SEALER/DENSIFIER/HARDENER

- A. Acceptable manufacturers: L & M Construction Chemicals, Inc., 14851 Calhoun Road, Omaha, NE 68152 (800-362-3331).

1. Product:

- a. Base: SEAL HARD; a solution of 100% active ingredient chemicals which penetrate concrete to seal, densify, dustproof and harden to resist water and oil penetration, and contamination.

Active ingredients: 100%

Type: Alkali Silicate

Flash Point: None

Specific Gravity: 1.155

VOC: gm/L: 0

Solids minimum: 30%

- B. Substitution for the above-specified manufacturers will not be allowed.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION INSPECTION

- A. Assure surfaces are clean and free of all contaminants, and any film forming curing compounds or sealers.
- B. Assure concrete has been cured a minimum of 3 days before application.
- C. Protect concrete from construction activity staining.

3.02 APPLICATION

- A. Apply in accord with manufacturer's instructions.
 - 1. Apply directly from sealer container onto prepared surfaces, undiluted.
 - 2. Application equipment: Mechanical "walk-behind" or riding scrubber.
 - 3. Apply at minimum rate of 1 gallon per 150-200 sq. ft.
 - 4. Allow surfaces to remain wet with sealer for 30-60 minutes.
 - 5. Remove excess sealer at end of application procedure by water flushing and then squeegee dry.
 - 6. Apply in 1 coat.

*****Specifier: Delete if none*****

- 7. Apply 2 coats to porous or rough concrete surfaces.
 - 8. Apply 2 coats to floor areas that will be exposed to frequent oil spills.

3.03 FIELD QUALITY CONTROL

- A. Have applicator certify rate of application.

3.04 CLEANING

- A. Leave area broom clean.

END OF SECTION