

SECTION 03 39 00
CONCRETE SEALING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Application of curing compounds, curing and sealing compounds, and penetrating liquid floor treatments to concrete floor slabs.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Concrete Subcontractor.
 - c. Concrete finishing Subcontractor.
 - 2. Review the following:
 - a. Construction joints and control joints.
 - b. Semirigid joint fillers.
 - c. Concrete finishes and finishing.
 - d. Curing procedures.
 - e. Concrete protection.

1.3 ACTION SUBMITTALS

- A. Product Data: For each of the following.
 - 1. Curing materials.
 - 2. Curing and sealing materials.
 - 3. Liquid floor treatments.
 - 4. Joint fillers.

1.4 INFORMATIONAL SUBMITTALS

- A. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Entity having minimum 5 years documented experience who is acceptable to manufacturer and employs applicators trained in the specified system.

- A. Mockups: Cast concrete slab-on-ground panels to demonstrate typical joints, surface finish, texture, floor treatments, and standard of workmanship applicable to all slab Work of the Project.
 - 1. Slab-On-Ground: Build stand alone panel not part of the completed Work, minimum 20 feet by 20 feet in the location indicated or, if not indicated, as directed by Architect.
 - a. Divide panel into four equal panels to demonstrate saw joint cutting and control joint filler application.
 - b. Maintain mockup during construction in an undisturbed condition as a standard for judging the completed Work.
 - c. Demolish and remove mockup when directed.

1.6 COORDINATION

- A. Coordinate work of this Section with concrete curing methods specified in Section 03 30 00 "Cast-in-Place Concrete."
 - 1. Do not use curing and sealing compounds for concrete curing.
 - 2. Use curing and sealing compounds for finished flooring applications where indicated.

1.7 FIELD CONDITIONS

- A. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit liquid floor and slab treatments to be applied according to manufacturers' written instructions and warranty requirements:
 - 1. Concrete surfaces have cured for not less than 28 days.
 - 2. Ambient temperature is above 40 deg F and below 100 deg F and will remain so for 24 hours.
 - 3. Substrate is not frozen and substrate-surface temperature is above 40 deg F and below 100 deg F.
 - 4. Rain or snow is not predicted within 24 hours.
 - 5. Not less than 24 hours have passed since surfaces were last wet.
 - 6. Windy conditions do not exist that might cause liquid floor and slab treatments to be applied in an inconsistent manner.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer and Applicator agree(s) to repair or replace densification and hardening materials that fail to remain water-repellent, dustproof, hardened, and abrasion resistant within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CURING COMPOUNDS - TYPE 1

- A. Clear, Waterborne, Membrane-Forming, Dissipating Curing Compound: ASTM C309, Type 1, Class B.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Euclid Chemical Company (The); a subsidiary of RPM International, Inc.; Kurez DR VOX.
 - b. Nox-Crete Products Group; Res-Cure DH 100.
 - c. SpecChem, LLC; SpecRez.
 - d. W. R. Meadows, Inc; 1100-CLEAR.

2.2 PENETRATING LIQUID FLOOR TREATMENTS - TYPE 3

- A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic sodium silicate or silicate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Ameripolish; Eco-Hard MS
 - b. Curecrete Distribution Inc.; Ashford Formula.
 - c. Euclid Chemical Company (The); a subsidiary of RPM International, Inc.; Euco Diamond Hard.
 - d. Nox-Crete Products Group; Duro-Nox.
 - e. SpecChem, LLC; SpecHard.
 - f. W. R. Meadows, Inc; Liqui-Hard.
- B. If Type 1L Cement is permitted for use in the project, utilize the penetrating liquid floor treatment indicated below:
 - 1. Penetrating Liquid Floor Treatment: Clear, ion-exchange-chemistry-based, silicate-free, proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces containing Type 1L (PLC) cements.
 - a. Products: Subject to compliance with requirements, provide the following:
 - 1) Ameripolish; 3D SF Densifier.

2.3 RELATED MATERIALS

- A. Water: Potable.
- B. Semirigid Control Joint Filler: Two-component, semirigid, 100 percent solids, aromatic polyurea with a Type A shore durometer hardness range of 90 to 95 in accordance with ASTM D2240.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify concrete floors are clean and have obtained adequate strength.

3.2 PREPARATION

- A. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
- B. Remove all dirt, grease, laitance, or other foreign matter. Completely rinse and allow to dry. Surfaces must be completely dry before application of sealing or densifying products.

3.3 APPLICATION

A. Curing Compound:

1. Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2. Recoat areas subjected to heavy rainfall within three hours after initial application.
3. Maintain continuity of coating, and repair damage during curing period.
4. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

B. Curing and Sealing Compound:

1. Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2. Recoat areas subjected to heavy rainfall within three hours after initial application.
3. Repeat process 24 hours later, and apply a second coat. Maintain continuity of coating, and repair damage during curing period.

C. Penetrating Liquid Floor Treatment:

1. Prepare, apply, and finish penetrating liquid floor treatment in accordance with manufacturer's written instructions.
2. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
 1. Do not apply to concrete that is less than 28 days' old.
 2. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing.
 3. Rinse with water; remove excess material until surface is dry.
 4. Apply a second coat in a similar manner if surface is rough or porous.

3.4 JOINT FILLING

- A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least six month(s).
 - 2. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.
 - 1. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.5 PROTECTION

- A. Protect concrete surfaces as follows:
 - 1. Protect from petroleum stains.
 - 2. Diaper hydraulic equipment used over concrete surfaces.
 - 3. Prohibit vehicles from interior concrete slabs.
 - 4. Prohibit use of pipe-cutting machinery over concrete surfaces.
 - 5. Prohibit placement of steel items on concrete surfaces.
 - 6. Prohibit use of acids or acidic detergents over concrete surfaces.
 - 7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

3.6 SCHEDULE

- A. Type 1: Provide at all new concrete floor slabs, except where moisture- or wet-curing is required by Section 03 30 00 "Cast-in-Place Concrete."
- B. Type 3: Provide where indicated on drawings. If not indicated on drawings, provide under access floors, in data halls, at loading docks, on warehouse floors, on industrial floors, etc.

END OF SECTION

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