Bone Dry Products, Inc. August 2020

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Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat,* as described in *The Project Resource Manual—CSI Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all Specifier Notes when editing this section.

Brackets [\_\_] indicate options in text to be filled in or deleted by the author; they should NOT be visible in final document.

Section numbers and titles are from *MasterFormat* 2018 Edition.

Please remove references to the manufacturer and preparer of this guide specification found in the header/footer.

**NOTE:** Because Bone Dry can be applied during the concrete pour or prior to installation of flooring we have provided two specification sections under which to include this valuable data. It is the specifier’s option to select the most appropriate location for his/her project.

SECTION 03 54 00

CAST UNDERLAYMENT

OR

SECTION 07 1616

CRYSTALLINE WATERPROOFING

OR

SECTION 09 05 61.13

MOISTURE VAPOR EMISSION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete sealers

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 – Cast-In-Place Concrete:

B. Section 03 53 00 – Concrete Topping

C. Division 09 – Finishes; Flooring Sections

1.03 REFERENCE STANDARDS -- VERIFY

A. ASTM C309 Type 1 Class A - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

B. ASTM C156 – 17 - Standard Test Method for Water Loss.

C. ASTM C39 / C39M - 18 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

D. ASTM C1202 - 19 - Standard Test Method for Electrical Indication of Concrete’s Ability to Resist Chloride Ion Penetration.

E. ASTM D1653 - 13 - Standard Test Methods for Water Vapor Transmission of Organic Coating Films.

F. ASTM E96 / E96M - 16 - Standard Test Methods for Water Vapor Transmission of Materials.

G. ASTM F2170 - 19 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

H. ASTM F1869 - 16a - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

I. ASTM E1643-11 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

J. ACI 302.2R-06 - Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

K. ASTM F710-17 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

1.04 ADMINISTRATIVE REQUIREMENTS

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For warranted jobs, Contractor MUST receive approval of flooring adhesive by Bone Dry Products.

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A. Coordinate with flooring sections for make, type and application method of adhesive and verify compatibility with sealer manufacturer.

B. Receive approval of sealer manufacturer if installation of finish flooring will be less than 30 days after concrete pour.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer’s product literature [and testing data], listing applications and limitations.

C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

D. Specimen Warranty.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of [documented] experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original, unopened containers.

B. Store materials in protected area not subject to freezing between 40° F (4° C) and 90° F (32° C)

C. Store closed containers in well ventilated space.

D. Wear protective clothing, gloves and eyewear when applying.

E. Wear NIOSH approved respirator when handling.

1.08 FIELD CONDITIONS

A. Ambient Conditions: Do not install sealer when concrete is less than 40° F (4° C), or more than 90° F (32° C) for a minimum of 24 hours before or after application.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide 25 year manufacturer’s warranty for coverage against damage to flooring or flooring adhesive materials due to concrete moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Bone Dry Products, Inc.; Bone Dry Pro: www.bonedryproducts.com.

B. Substitutions: [[Not Allowed][See Section [01 60 00 - Product Requirements][01 25 00 – Substitution Procedures]].

2.02 PERFORMANCE REQUIREMENTS

A. Penetrating Concrete Sealer Performance (based on 4,500 psi concrete test slab results):

1. Relative Humidity (RH), ASTM F2170: Up to 100%.
2. Moisture Vapor Emission Rate (MVER), ASTM F1869: Up to 25 lbs. / 1,000 sq. ft. per 24 hours.
3. Neutralizes elevated pH levels in concrete.
4. Complies with ASTM C309 Type 1 Class A for curing.

2.03 MATERIAL

A. Concrete Sealer:

1. Composition: Water-based silicate penetrating compound.

2. VOC Content: EPA Method 24; Zero VOC’s.

3. Finish: Transparent, no sheen.

2.04 ACCESSORIES

A. Surface Preparation: Etch-A-Crete by Bone Dry Products, Inc.

B. Leveling Surface: Concrete-based material, gypsum-based products are not allowed.

PART 3 EXECUTION

3.01 PREPARATION

A. Existing Concrete with Surface Coatings: Provide clean porous surface by:

1. Mechanically profiling surface by diamond grinding or shot blasting surface to CSP 2 minimum.
2. Apply minimum 1/8-inch cementitious topping compound over profiled surfaces.

B. New Concrete with no Surface Coatings:

1. Verify absorptivity with water droplet test: Water droplets must penetrate within 2-3 minutes; if not, etch or profile surface.
	1. Apply surface preparation (Etch-A-Crete) per manufacturer’s instructions, or
	2. Mechanically profile surface by diamond grinding or shot blasting surface.

C. Verify that cracks (excluding expansion or control joints) are routed out and filled with Portland cement 4 inches beyond edges of crack.

Cover trench saw cuts with cement-based coating prior to application of sealer.

F. Protect surrounding finish surfaces within at least 2 feet from overspray of sealer.

G. Ensure that areas to receive sealer are well ventilated.

H. For newly placed concrete slabs, install vapor retarder in direct contact with underside of slab per ASTM E1643-11, ACI 302.2R-06, and ASTM F710-17.

3.02 INSTALLATION

 A. Install in accordance with manufacturer's instructions.

1. Contact manufacturer for approval if flooring will be installed less than 14 days after application of sealer.

2. Curing compound is not required after application of sealer.

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Edit the following paragraphs to project requirements.

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B. New Concrete Applications:

1. Apply first coat of sealer uniformly to achieve saturated, lightly opaque appearance.
2. Allow to penetrate for 3-5 minutes, not exceeding 10 minutes.
3. Apply second coat while first is still wet, and only to areas where sealer has penetrated and texture of concrete is apparent.
4. Allow sealer to dry for 6 hours minimum; recommend 12 hours or overnight for full curing.

C. Application At Time of Concrete Pour Applications For Burnished Finish:

1. Allow slab to achieve sufficient hardness to support foot traffic.
2. Apply single heavy coat of sealer at manufacturer’s recommended rate, trowel as needed to achieve desired finish.

D. Application At Time of Concrete Pour Applications For Non-Burnished Finish:

1. Do not burnish concrete when troweling.
2. Allow slab to achieve sufficient hardness to support foot traffic after final troweling.
3. Apply single heavy coat of sealer at manufacturer’s recommended rate.
4. Allow sealer to dry for 6 hours minimum.

 E. Existing Concrete with Prior Coating Applications:

1. Sealer must be applied after leveling coat of concrete is applied to shot blasted surfaces.
2. Apply sealer at manufacturer’s recommended rate, allow sealer to absorb for no more than 10 minutes.
3. Apply second coat to areas while first coat is still wet but has penetrated concrete.
4. Allow sealer to dry for 6 hours minimum.
5. Remove loose dry product by lightly scraping concrete.

 F. When Applying to Receive Resin Based Systems:

1. Apply over surfaces with CSP 3 profile.
2. Use 100% solids epoxy, urethane, polyaspartic, or other resin systems.
3. No cement-based top coating required.

 G. Coverage Rates:

1. Broom-finished, troweled, or mechanically profiled: 300-340 sq ft/gal.
2. Heavily burnished, polished, or Etch-a-Crete-treated: 350-400 sq ft/gal.
3. Intensive burnishing or polishing: Up to 500 sq ft/gal.

3.03 CLEANING

A. Vacuum loose particles prior to applying approved flooring adhesives.

B. See Section 01 74 19 - Construction Waste Management and Disposal, for disposal of containers.

3.04 PROTECTION

A. Do not permit traffic on floor surface until fully dried.

END OF SECTION