Bone Dry Products, Inc. September 2022

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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* 2020 Edition.

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

SECTION 03 05 30

CONCRETE POROSITY REDUCING ADMIXTURE

PART 1 GENERAL

1.01 SECTION INCLUDES

1. Concrete porosity reducing admixture for hydrostatic pressure (PRAH).
2. Product also known as Moisture Vapor Reduction Admixture (MVRA) or Porosity Inhibiting Admixture (PIA).

1.02 RELATED REQUIREMENTS

1. Section 03 30 00 – Cast-In-Place Concrete: Concrete mix design and underslab vapor retarder.
2. Section 03 53 00 – Concrete Topping
3. Division 09 – Finishes; Flooring Sections

1.03 REFERENCE STANDARDS

1. ACI 302.2R – Guide to Concrete Floor and Slab Construction
2. ASTM C39/C39M – Standard Test Method for Compressive Strength of Cylinder Concrete Specimens
3. ASTM C78/C78M – Standard Test Method for Flexural Strength of Concrete 9Using Simple Beam with third-Point Loading)
4. ASTM C157/C157M – Standard Test Method for Length Change of Hardened Cement Mortar and Concrete
5. ASTM C403/C403M – Standard Test Method for time Setting of Concrete Mixtures by Penetration Resistance
6. ASTM C494/C494M – Standard Specification for Chemical Admixtures for Concrete
7. ASTM C666/666M – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
8. ASTM E1745 – Standard Specification for Plastic Water Vapor Retarders Used in Contract with Soil or Granular Fill Under Concrete Slabs
9. CRD C48 - Standard Test Method for Water Permeability of Concrete

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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1. Coordinate with flooring sections for make, type and application method of adhesive and verify compatibility with porosity admixture manufacturer.
	1. Adhesive MUST be able to be applied over non-porous substrate.

1.05 SUBMITTALS

1. See Section [[01 30 00 - Administrative Requirements][01 33 000 – Submittal Procedures]], for submittal requirements.
2. Product Data: Provide manufacturer’s product literature [and testing data], listing applications and limitations of PRAH.
3. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
4. Specimen Warranty.

1.06 QUALITY ASSURANCE

1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least [[three][\_\_\_]] years of [documented] experience.
2. Installer Qualifications: Company specializing in performing work of 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.

1.08 WARRANTY

1. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
2. Provide manufacturer’s lifetime warranty of PRAH for coverage against failure of flooring system, adhesive and preparation material due to concrete moisture migration.
3. Warranty covers material and labor to replace flooring system ,including preparation material, adhesive and flooring, due to concrete moisture related issues.
4. Contact manufacturer for approval of proposed flooring adhesives where Bone Dry Pro Admix is applied.

PART 2 PRODUCTS

2.01 MANUFACTURERS

1. Bone Dry Products, Inc.; Bone Dry Pro Admix: www.bonedryproducts.com.
2. [\_\_\_\_\_\_\_\_\_\_\_]
3. Substitutions: [[Not Allowed][See Section [01 60 00 - Product Requirements][01 25 00 – Substitution Procedures]].

2.02 PERFORMANCE REQUIREMENTS

1. Concrete Test Results (Reference Sample equivalent concrete mix without admix):
2. Water Permeability, CRD C48: Up to 91 percent reduction
3. Final Set Time, ASTM C403/C403M: No change
4. Compressive Strength at 28 Days, ASTM C39/C39M: No change
5. Flexural Strength, ASTM C78/C78M: No change
6. Length Change, ASTM C157/C157M: Up to 15 percent reduction in shrinkage
7. Freeze-Thaw, ASTM C666/C666M: Up to 81 percent increase in Durability Factor
8. Physical Characteristics:
9. Appearance: Translucent Brown
10. Silicate-free
11. Odor: Odorless
12. VOC: 0
13. Boiling Point: 212° F (100° C)
14. pH: 6 to 7
15. Flash Point: Non-flammable
16. Weight: 10.71 pounds per gallon
17. Shelf Life: 1 year
18. Stability: Stable under normal conditions, DO NOT FREEZE

2.03 MATERIAL

1. Application: Concrete slabs on grade to reduce moisture vapor transmission.
2. Concrete Admix: ASTM C494/C494M, Type S - Specific Performance Admixture

PART 3 EXECUTION

3.01 EXAMINATION

A. Proper application of PRAH eliminates testing of concrete moisture content as performed under ASTM F1279 and ASTM F1869

3.02 PREPARATION

A. Ensure that slabs-on-grade have vapor retarder conforming to ASTM E1745.

1. Do not install a granular blotter layer between concrete slab and vapor retarder.

B. Resinous Flooring Coatings: At locations where resinous flooring coatings and PRAH are used, surface must be profiled to CSP 3 level.

3.03 ADMIXTURE DISPENSING RESTRICTIONS

1. Concrete Mix must contain water-to-cement ratio between 0.31 to 0.53
2. Dosage: 8-10 fl. ounces per 100 pounds of cement.
3. Apply admixture separate from other admixtures specified for slab-on-grade concrete.
4. Plant-Mix: Apply admixture with tail water
5. Site-Mix: Apply admixture to batch and allow to blend for 7 minutes.
6. Do NOT include retarding, shrinkage reducing or crystalline growth admixtures containing Beta-naphthalene sulfonate with PRAH.

3.03 CURING

1. Cure concrete with PRAH in accordance with ACI 302.2R or use dissipating curing compounds.
2. Permanent cure and seal products are not recommended with Bone Dry Pro Admix when installing moisture-sensitive flooring.

END OF SECTION