

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The requirements of the GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, and DIVISION 1, GENERAL REQUIREMENTS, apply to the work of this section.

1.02 SECTION INCLUDES

- A. Two-component, solvent free, water-reduced, white penetrating concrete moisture vapor, alkalinity, moisture and alkaline salt suppression barrier for preparing substrates for the application of moisture sensitive floor coverings for a period of 15 years. Surface shall be directly compatible with flooring adhesives and may directly accept (no primer) cement overlayers for floor surface smoothing. Final surfaces shall have an emission rate of 2.0 pounds (± 0.50), remain resistant to concrete's alkaline nature of 14pH and hydrostatic pressure of 45psi.

1.03 NOT INSTALLED UNDER THIS SECTION

- A. Section 03300 - Cast In Place Concrete: Placement of anchors in concrete work for attachment of wall panel support components.

1.04 REFERENCES

- A. Standards: Comply with the following:
 - 1. American Concrete Institute (ACI), ACI Committee Report 201 "Guide to Durable Concrete".
 - 2. American Society for Testing Materials www.ASTM.com
 - a. ASTM E 96 Water Vapor Transmission of Materials
 - b. ASTM D 4541 Pull-Off Adhesion Strength of Coatings Using Portable Tester
 - c. ASTM D 1308 Effect of Household Chemicals on Clear/ Pigmented Organic Finishes
 - d. ASTM F 1869 Anhydrous Calcium Chloride Testing of Concrete Sub Floors
 - e. ASTM F 710 Concrete Alkalinity (pH) Testing

1.05 SYSTEM DESCRIPTION

- A. Performance Requirements: Comply with the following:
 - 1. Two-component, water extendable polymer chemistry.
 - 2. Vapor reduction of up to 95% per ASTM E 96, maintain that level
 - 3. Resistance to long term 14pH (alkalinity) exposure per ASTM D1308
 - 4. Concrete adhesion strength up to 500psi per ASTM D 4541
 - 5. System shall be compatible with floor covering or coating materials.

1.06 SUBMITTALS

- A. Barrier Manufacture:
 - 1. System: Descriptive literature/ product data, installation details.
 - 2. Safety Information: Current material data safety sheets.
 - 3. Field Acceptance: Acceptance of on site conditions for specified system installation.
 - 4. Independent Testing Results, for specified barrier, conducted within 2 years of project start.
 - 1) ASTM E96 Documentation: up to 95% moisture reduction
 - 2) ASTM D1308 Documentation: indefinite alkali resistant
 - 3) ASTM D 4541 Documentation: 600psi (100% concrete cohesive failure)
- B. Installer: Manufacture certified applicator certificates

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacture certified or approved installer.
- B. Safety: Non-marine pollutant and water clean up.
- C. Regulatory Requirements: Materials and equipment used for this Project shall comply with the current applicable regulations of the California Air Resources Board [CARB] and the Environmental Protection Agency [EPA]. Regulatory changes may affect the formulation, availability, or use of

the specified coatings. Confirm availability of coatings to be used prior to use, and notify the Architect of any recent changes that may have occurred after the preparation of this specification section.

1.8 PROJECT CONDITIONS

- A. Environmental requirements:
1. Do not apply system until the structure is roofed.
 2. Do not apply system to unprotected surfaces or when water is accumulated on the surface of the concrete.
 3. Do not apply system when temperature is lower than 50 degrees Fahrenheit prior, during and after application for 48 hours.
 4. Allow continuous ventilation, indirect air movement during application and curing process.
- B. Existing Conditions: Examine site and compare it with the drawings and specifications. Thoroughly investigate and verify conditions under which the work is to be performed. No allowance will be made for extra work resulting from negligence or failure to be acquainted with all available information concerning conditions necessary to estimate the difficulty or cost of the work.

1.9 WARRANTY

- A. Warranty: Written guarantee, signed by manufacturer agreeing to replace system that does not maintain water vapor emission levels of 2.0 lbs. (± 0.50) per ASTM F 1869 and remain resistant to 14pH damage per ASTM F 710 for a period of 15 years.
1. In the event barrier failure occurs above specified rates, manufacture shall repair or replace barrier, flooring, adhesives, coatings, patching materials and supply labor to re-install at no additional cost to Owner.
- C. Installer Warranty: Guarantee installations are per manufacture specified methods and are free of installation defects and improper installations for 15 years.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Products: Subject to compliance with requirements, provide one of the following two-component, water extendable barrier products:
- 1) Diamond Stone Products, Inc. "Vapor Reduction System"
www.DiamondStoneProducts.com
 - 2) Synthetics International, Inc. "Synthetic30" www.SyntheticsIntl.com
 - 3) Or approved alternate (no know equals)
2. Formulation:
- 1) Formulation:
 - 1) White two-component, water extendable polymer chemistry.
 - 2) All components shall be non-corrosive, non-toxic, low odor.
 - 3) Shall not contain silicates, acrylics, solvents or latex components.
 - 2) Properties:
 - 1) Water Vapor Transmission, wet method: 95% vapor reduction.
 - 2) Pull off Concrete Adhesion Strength: 600 -1000psi+
 - 3) Alkalinity Resistance: 100% resistant @ 30 day exposure per ASTM D 1308.
 - 4) Compressive Strength: 13,500psi per ASTM C579
 - 5) Hardness (Shore D) 80 per ASTM C579
 - 6) Reduction: Water only, up to 40%
 - 7) Color: White
 - 8) Pot Life: 3 hours
 - 9) Clean Up: Water
 - 10) Dry To Touch: 4 hours
 - 11) Re-coat: 7 - 60 hours
 - 12) Full Cure: 5 days
 - 13) Primer for Cement: 2 - 4hours

- 14) VOC Content: 65 g/liter (mixed)
- 15) CFC's: Zero (0)

2.02 ACCESSORIES

- A. Underlayment Compound - Self Leveling, 4,100 psi, 100 % cement based, as recommend by barrier manufacturer to provide a smooth flooring surface.

PART 3 - EXECUTION

3.01 PREPARATION

- A. General: Coordinate work with work specified under other sections to ensure proper and adequate interface of work. Protect all adjacent surfaces from contamination over spray and other adjacent surfaces.
 - 1. Shot Blasting: Perform self contained apparatus that abrades the concrete surface, contains the dispensed shot and recycles shot by vacuum pickup over entire slab surface.
 - 2. Grinding: Required near walls and edges by industrial grinder with vacuum connection.

3.02 APPLICATION

- A. General: Apply system components in according to manufacture methods to produce a uniform, monolithic barrier.
 - 1. Barrier:
 - a. Spread Rate: 200 square feet per gallon.
 - b. Slabs: Roller and squeegee applications methods to saturate slab surfaces.
 - c. Crack & Joints: Flood cracks, control joints, holes, slab imperfections with barrier.
 - d. Penetrations: Seal all penetrations to form a moisture and water tight surface.
- B. Underlayment Application: Allow barrier to cure for 2 hours and directly pour self leveling compound to barrier surface as recommend by barrier manufacturer.

3.03 FIELD QUALITY CONTROL

- A. Inspection:
 - 1. Schedule inspections and notify the Architect, Project Inspector and any other regulatory agencies 48 hours prior to the inspection.
 - 2. Installer to guarantee installed system is compatible with specified flooring and specified floor coverings require no additional cementitious materials, special adhesives or re-applications of system components at additional charge to Owner.
 - 3. Independent Testing Agency:
 - a. Verify moisture reduction by ASTM F 1869 at a minimum of 10 locations. Results shall not exceed 2.0 lbs (± 0.5).
 - b. Perform ASTM D 4541 pull-off adhesion at 2 locations to verify concrete adhesion strength. Minimum result: 600psi or concrete cohesive failure
- B. If the validation test vapor emission and pH readings exceed the requirements of the finish flooring manufacturer, provide remedial materials and labor, at no additional cost, to bring vapor emissions within acceptable limits.

3.04 CLEANING

- A. Clean spillage and soiling from adjacent construction using water, before final cure.
 - 1. Remove all debris resulting from system installation from project area.
 - 2. Finish shall be clean and ready for the application of any additional finishes.

3.05 PROTECTION

- A. Protection: Protect barrier during specified cure periods from any kind of traffic, topical water, and contaminants.

END OF SECTION