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SECTION 07260

TOPICAL VAPOR-ALKALINITY CONTROL BARRIER

PART 1 - GENERAL

1.01 SUMMARY

A. Seamless synthetic resin polymer surface to control excessive concrete moisture vapor and alkalinity with complete resistance to mold, mildew and biological growth. Provide material under all floor coverings or liquid applied coatings.

1.02 REFERENCE

- A. ASTM American Society for Testing Materials
- B. ASTM E96 Water Vapor Transmission Testing
- C. ASTM D1308 Acid & Alkali Testing
- D. ASTM D4541 Concrete Adhesion Testing
- E. ASTM F1869 Calcium Chloride Testing

1.03 SUBMITTALS

A. Product Data. Provide the following:

1. Product Data: Detailed installation requirements, spread rates, joint and crack treatment and final barrier surfaces for floor coverings.
2. Installer: Factory certified installer certificate.
3. ASTM Reports: Manufacturers certified ASTM testing reports for specified performance requirements.
4. Safety: MSDS information listing VOC content, safety and site storage.
5. Extended Warranty Sample: Manufacturers standard 15 year warranty for manufacturing defects and on site material performance. Warranty shall not list ACI-318 compliance exclusions.
6. Field Documents: Manufacturer shall provide written acceptance of on site conditions including environmental conditions, concrete mix design, admixtures, concrete salts, sub

slab vapor barrier, curing methods, concrete surface strength, and prior to barrier installation.

1.04 SCHEDULING

- A. Scope Meeting: Prior to installations Owner Representative, Architect, Contractor and installer shall review ASTM F 1869 testing results, building temperature, interior humidity and site conditions. Installer will provide specified vapor-alkalinity control barrier installation procedures and application details.
- B. Safety Meeting: Installer shall report ventilation requirements, site protection and material data safety information to disclose product limitations and precautions prior to application. Information is to prevent site contamination and safety issues with other trades.

1.05 WARRANTY

- A. Extended Warranty: Written warranty, signed by manufacturer agreeing to repair topical barrier system that does not comply with requirements or that does not remain watertight or fails to remain bonded to concrete during specified warranty period.
- B. Warranty shall not exclude or become void due to non-conformance to ACI-318 parameters, dew-point, concrete salts, admixtures, resin and silicate surface treatments or cohesive substrate failure in the concrete surface due to normal concrete movement. Installation on slab surfaces deems acceptance of on site conditions.
 - 1. Warranty may exclude unforeseen Alkali-silica reaction or Alkali-aggregate conditions as outlined by ACI-212, seismic action and flooding. Topical barrier manufacturer is responsible for complete review of concrete mix designs, admixtures, sub-slab vapor retarder installed and curing methods for written acceptance prior to installations.
- C. Extended Warranty Period: 15 years covering manufacturing defects. Warranty covers installation defects to topical barrier and moisture or alkalinity damage to the lifetime of the installed finished flooring system.
 - 1. Warranty shall cover 100% of the cost to repair or replace areas damaged and include:
 - a. Installed topical vapor-alkalinity barrier.
 - b. Floor covering systems or resinous materials.
 - c. Adhesives, patching materials and installation accessories.
 - d. Installation labor.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Concrete Surface Barrier: Subject to compliance with requirements, provide one of the following barriers:

Advanced Moisture Control www.vaporsafe.com (714) 903-7086 (Base Design Intent).
Substitutions: No Exceptions (No Known Equals)

2.02 PHYSICAL PROPERTIES

- A. Vapor-Alkalinity Control Barrier:

1. Formulation: Synthetic composition:
2. Shall not contain acrylic, latex, organic additives or chemistries that may re-emulsify or support microorganism growth.
3. Concrete moisture vapor and alkalinity reduction: Unlimited control, no upper limits on performance.

B. Environmental:

1. Growth Resistance: Will not support the growth of mold, mildew or microorganisms.
2. Safety: Non-corrosive, non-toxic and non-hazardous to installers.
3. Water Pollution: Material must not be a marine pollutant.
4. VOC Content: 77 g/l

C. Fire Resistance: Non-combustible, non-flammable

1. Smoke Development: None (0)
2. Flame Spread: Nil (5)
3. Fuel Contribution: None (0)

D. Barrier Performance:

1. ASTM E96 Water Vapor Transmission: 89 to 95% vapor reduction
2. ASTM D1308 Alkali & Acid Resistance: No effect on materials
3. ASTM D4541 Adhesion Strength: 400 psi
4. ASTM F 1869 Testing Results: 3.0 pounds or less.
5. Tensile Strength: 6,000 to 8,000 psi
6. Compressive Yield: 12,000 psi
7. Ultimate Flexural: 10,000 psi
8. Bond Strength of cement topcoat: 2,100 psi or greater

E. Penetrating materials containing sodium, potassium and lithium silicates do not meet performance levels specified in this specification. Penetrating silicate based solutions are chemically reactive, non-resin based, non inner- surface forming and do not meet specified ASTM E 96 water vapor reduction levels and ASTM D 4541 pull off adhesion testing requirements.

2.03 ACCESSORIES

A. ASTM F 1869 Testing Equipment: American Moisture Test www.DomeTest.com (No Know Equal)

B. Cement Topcoat: Self leveling, non-gypsum based, 1/8 inch thick, 4,200 psi @ 28 days and flooring ready at a maximum of 24 hours after installation.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Pre-Installation Testing: Perform ASTM F1869-04 calcium chloride testing at a rate of 3 tests for areas up to 1,000 square feet and 1 test per each 1,000 square feet thereafter. Perform alkalinity surface testing at a similar rate as specified by testing manufacturer.

1. Document each test result on a locations map.
2. Report unacceptable conditions. Do not begin work until unacceptable conditions have been corrected. Execution of work shall constitute acceptance of existing conditions.
3. Maximum moisture level: 3.0 pounds per 1,000 square feet per 24 hours, 9 pH level.

3.02 PREPARATION

A. General: Coordinate work with work specified under other sections to ensure proper and adequate interface of work. Protect all adjacent surfaces from drips, spray, air pollution of surrounding environment, and other damage from work.

B. Concrete Substrates: Shot blast and grind near walls. Clean joints and cracks as required. Follow vapor-alkalinity control barrier manufacturer specifications for shot blast profiles.

3.03 APPLICATION

A. General: Apply barrier components to produce a specified vapor reduction level and optimum adhesion to substrate.

B. Barrier Application: Coverage rate for system shall be based on the surface texture and porosity of the substrates.

C. Cement Topcoat: Install as required for a smooth, fully compatible floor covering surface. Allow to cure for a 16 to 24 hours prior to flooring applications.

3.04 FIELD QUALITY CONTROL

A. Post-Testing: Perform ASTM F1869-04 Testing at a rate of 1 test per 1,000 square feet to verify material performance to below 3 pounds in accordance with topical barrier manufacturers specification.

B. Correct areas above 3 pounds of moisture at no additional charge to Owner.

C. Installer to guarantee final surfaces are ready for floor coverings and require no special flooring adhesives. Flooring installation shall remain standard for specified flooring.

END OF SECTION