SECTION 09699

EPOXY COATINGS
VAPORSOLVE® ULTRA SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Surface preparation.
   2. Joint and crack treatment.
   3. Furnishing and installation of epoxy-based moisture control system.

1.02 RELATED SECTIONS

A. Section 03300 – Cast-In-Place Concrete:
   1. Concrete shall meet the requirements for "Durable Concrete" according to ACI Committee 201.
B. Section 09620 – Specialty Flooring, installation requirements.
C. Section 09640 – Wood Flooring, installation requirements.
D. Section 09650 – Resilient Flooring, installation requirements.
E. Section 09660 – Static Control Flooring, installation requirements.
F. Section 09690 – Fluid Applied Flooring, installation requirements.
G. Section 09680 – Carpet, installation requirements.

1.03 SUBMITTALS

A. Submit manufacturer's product data including ASTM test reports on product performance.
B. Submit manufacturer's application instructions.
C. Submit manufacturer's warranty information.

1.04 QUALITY ASSURANCE

A. All materials used in concrete moisture control system shall be supplied by Arizona Polymer Flooring, Glendale, AZ. No multiple sourcing or substitutions will be allowed.
B. If 10 year gold warranty is selected by the owner, the application contractor must be certified by the manufacturer or be under the supervision of a factory technical service person for the surface preparation and application of VaporSolve® Primer.

1.05 DELIVERY, STORAGE AND HANDLING

A. All material shall be delivered to the job site in unopened containers clearly labeled and stored in a dry location at a minimum of 65 degrees F.

1.06 WARRANTY

A. The owner may choose the standard warranty. If the standard warranty is selected, the product manufacturer guarantees that the products are free from manufacturing defects and comply with its published specifications. In the event that the buyer proves that the goods received do not conform to these specifications or were defectively manufactured, the buyer's remedies shall be limited to the repayment of the product purchase price. All consequential damages, including but not limited to installation labor, damage to the structure or contents of the structure are excluded.

   The contractor guarantees that surface preparation and application meet industry standards. The length of the warranty shall be determined by the local or state governing contractor's board.

B. If the Gold warranty is selected, the warranty shall be made jointly to the owner by the product manufacturer and the application contractor.

Arizona Polymer Flooring guarantees that its products are free from manufacturing defects and comply with its published specifications. In addition, we further guarantee that the moisture remediation system will protect subsequently applied flooring from **damage due to moisture or alkalinity regardless of the level of moisture in the concrete.** This warranty shall be limited to repair of the affected areas only as determined by Arizona Polymer Flooring. Repair shall include removal of existing flooring, reapplication of remediation system and new flooring. New flooring shall be of the same type and value as the old flooring. Labor charges shall be reasonable and average for the industry. Removal and replacement of owner's equipment is not covered. Consequential damages to the building structure or its contents are excluded. Damages due to temporary loss of building use are excluded. The length of the Gold warranty is 10 years from the date of installation.

The application contractor guarantees that he shall comply with the product manufacturer's application specification governing surface preparation, product mixing and application thickness. All invoices must be paid in full for warranty to take effect.

Arizona Polymer Flooring and the installation contractor shall be released from warranty obligations under any of the following conditions:

1. Laboratory analysis reveals interior concrete contamination from previously applied reactive silicate materials or organic hydrocarbon materials that interfere with the bonding of VaporSolve® Basic System.
2. Weakening of the concrete over time caused by conditions beyond the control of the product manufacturer or the installation contractor. If the concrete deteriorates sufficiently, it will no longer support the bond of the remediation system. Such conditions are detailed in "Guide to Durable Concrete" ACI Committee 201 published by the American Concrete Institute and would include any of the following:
    A. Attack from sulfates of sodium, potassium, calcium, magnesium, or Ettringite, sometimes found in soil or dissolved in ground water.
    B. Deterioration caused by the physical action of salts from ground water containing sodium sulfate, sodium carbonate and sodium chloride.
    C. Cracks that develop in the concrete or joints after the application of the remediation system. This includes cracks and damage to the concrete caused by Alkali Silica Reaction (ASR).
    D. Failure of the concrete due to expansive contaminants in the concrete mix.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Resin system, crack and control joint filler shall be supplied by Arizona Polymer Flooring, Phoenix, Arizona.
B. If a self-leveling cementitious underlayment is required over the moisture control system, APF tie coat and APF E-Z Level shall be used.

2.02 MATERIALS

A. Joints and cracks shall be filled with a flexible epoxy compound, VaporSolve® Joint Filler.
B. Moisture control epoxy shall be APF VaporSolve® Ultra System.

2.03 SYSTEM DESCRIPTION

A. One coat of VaporSolve® Primer and one coat of VaporSolve® 100 to achieve a minimum thickness of 11 mils.

B. The coating system shall have the following properties:
   1. Hardness Shore D (ASTM D 2240): 85
   2. Bond Strength to wet concrete (ASTM D 4541): 450 psi, concrete fails
   3. Permeability (ASTM E 96): 0.78 perms
   4. Permeability/MVT (ASTM E 96): Not more than 1 pound/24 hrs./1,000 sq. ft.
   5. Chemical Resistance: (ASTM D 1308) – 60 day immersion)
      a. 35% Potassium Hydroxide: No visible change, weight gain of 0.09%.
      b. 35% Sodium Hydroxide: No visible change, weight gain of 0.09%.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:
   1. Inspect surfaces to receive moisture control system. Report in writing to the architect any unusual or unsatisfactory condition.
   2. A tensile bond test to verify the cohesive strength of the concrete is recommended, but not mandatory. The test is done in accordance with ASTM D-4541 using an Elcometer pull tester or similar device. Follow these steps to conduct this test:
      a. Grind the concrete using a diamond cup wheel. Remove a minimum 20 mils from the surface.
      b. Vacuum thoroughly to remove all dust.
      c. Mix small kit of Epoxy 400 Fast Cure for one full minute.
      d. Pour onto prepared surface, brush in well. Wait 10 minutes and apply a second coat.
      e. Place dowel into wet epoxy. Allow to cure overnight.
      f. Pull off dowel. Record failure mode and PSI.
         Results must show a minimum concrete tensile strength of 250 psi.

3.02 SURFACE PREPARATION

A. All surface contaminants such as grease, oil, animal fats, etc. must be removed prior to shot blasting. A floor machine with a nylogrit brush must be used with either APF Orange Clean or Maintex 7-11 degreaser depending upon the contaminant being removed.

B. Surfaces to receive VaporSolve® coating system shall be shot blasted using a 50/50 blend of 280/330 shot. Floor shall be crosshatched (North-South, East-West) double blasted to achieve an CSP 3-4 profile (texture similar to 60-80 grit sandpaper). Diamond grinding is acceptable on the edges. After shot blasting, the surface must be thoroughly vacuumed. Cracks wider than 1/16 inch should be routed out to ¼ inch width. Cracks and joints must be filled flush with VaporSolve® Joint Filler. Joints must be filled to their complete depth. Joint filling may be done before or after the application of VaporSolve® Primer. If joint filling is done before the application of VaporSolve® Primer, tape both sides of the joint to keep the joint filler off the body of the floor. Allow joint filler to cure firm before proceeding. Honor all moving joints and do not bridge with floor covering materials. When remediation is to be done under polymer flooring, mark all moving joints and re-cut after polymer flooring has been installed. Saw cuts must be a minimum ¼ inch wide and 1 inch deep.

3.03 INSTALLATION

A. Allow sufficient time for the installation of the flooring system. At no time shall the speed of project completion be allowed to detrimentally affect the application.

B. Provide sufficient light, power, and heat to permit proper application of the material. Substrate temperature shall be at a minimum of 50 degrees F during the application and for 48 hours thereafter.

C. Mix and apply VaporSolve™ Primer at the rate of 200 sq. ft. per gallon. Pour material from the mixing pail and spread using a metal trowel or flat squeegee. Back roll with a ½ or ¾ inch nap roller. After the initial roll out, walk back onto the material with spiked shoes and roll a second time to insure the best substrate wetting. Allow to cure tack free before proceeding.

D. Apply VaporSolve® finish coat epoxy at the rate of 200 sq. ft. per gallon. Finish coating system thickness shall be not less than 11 mils. Allow to cure firm before proceeding with self-leveling cementitious underlayment or finished flooring.

3.03 FIELD QUALITY CONTROL

A. Installer shall apply the material at the thickness specified by the product data sheet. Measure out the area to be covered and use the entire kit on that area. For example, a three gallon kit of VaporSolve® Primer must cover 600 sq. ft. (excluding water added) to meet the specification.

3.04 SELF-LEVELING CEMENTITIOUS UNDERLAYMENT

A. Should a self-leveling cementitious underlayment be required by the flooring adhesive manufacturer or for the purposes of smoothing the substrate, APF tie coat and APF E-Z Level shall be used.

END OF SECTION