FGP Moisture Mitigation System

Advanced Epoxy Vapor Control System for Flooring Performance

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Epoxy moisture mitigation system applied to concrete substrates.
2. ASTM F3010 compliant vapor control system.
3. High-performance epoxy moisture vapor reduction primer.
4. Resinous moisture mitigation system designed to reduce moisture vapor transmission and promote adhesion of subsequent flooring systems.

B. Related Requirements:

1. Division 01 Sections for administrative, procedural, and temporary requirements.
2. Section 03 30 00 – Cast-in-Place Concrete.
3. Section 07 92 00 – Joint Sealants.
4. Section 09 05 61 – Common Work Results for Flooring Preparation.
5. Section 09 67 23 – Resinous Flooring.
6. Division 09 finish flooring sections requiring moisture mitigation.

1.2 SUBMITTALS

A. Product Data

1. Manufacturer's Technical Data Sheets (TDS).
2. Safety Data Sheets (SDS).
3. Installation instructions.

B. Shop Drawings

1. Moisture mitigation system layout.
2. Interface with adjacent flooring systems.
3. Terminations and transitions.

C. Samples for Verification

1. Minimum 6-inch square sample illustrating finish and appearance.

D. Qualification Data

1. Installer qualifications.
2. Manufacturer qualifications.

E. Field Quality Control Reports

1. Moisture testing reports.
2. Surface preparation verification.
3. In-slab relative humidity testing documentation.

F. Closeout Submittals

1. Maintenance data.
2. Warranty documentation.

1.3 QUALITY ASSURANCE

A. Installer Qualifications

1. Installer shall be approved by manufacturer.
2. Minimum five (5) years documented experience installing epoxy moisture mitigation systems.
3. Employ trained personnel familiar with specified products and application methods.

B. Manufacturer Qualifications

1. Manufacturer shall specialize in resinous flooring systems and moisture mitigation technology.
2. Provide documentation of successful comparable installations.

C. Mockups

1. Install minimum 100 Ft^2 mockup demonstrating preparation and workmanship.
2. Approved mockup may remain as part of completed work.

D. Preinstallation Conference

1. Review substrate conditions.
2. Review moisture testing procedures.
3. Review environmental conditions.
4. Review sequencing and flooring system compatibility.

1.4 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials in original unopened containers with labels intact.
2. Store materials in clean, dry, temperature-controlled environment.
3. Protect materials from freezing, moisture, excessive heat, and direct sunlight.
4. Condition materials to 65°F–75°F prior to installation.

1.5 PROJECT CONDITIONS

A. Environmental Limitations

1. Maintain ambient temperature between 60°F and 85°F.
2. Maintain substrate temperature between 50°F and 85°F.
3. Relative humidity shall not exceed 80%.
4. Substrate temperature shall remain minimum 5°F above dew point.
5. Provide adequate ventilation during installation and curing.

B. Lighting

1. Provide permanent lighting or equivalent illumination for installation and inspection.

C. Substrate Conditions

1. Concrete compressive strength shall be minimum 3,000 psi.
2. Substrate shall be structurally sound and free of contaminants.
3. Surface profile shall comply with ICRI CSP 3-5.
4. Concrete pH shall be between 7.0 and 10.0.
5. Moisture conditions shall not exceed:
   a) 25 lbs/1,000 Ft^2/24 hrs MVER per ASTM F1869.
   b) 95% in-situ RH per ASTM F2170.

1.6 WARRANTY

A. Manufacturer Warranty

1. Provide manufacturer's standard written warranty against material defects.

B. Installer Warranty

1. Provide written workmanship warranty for one (1) year.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product

1. Floorguard Products.

B. Source Limitations

1. Obtain primary flooring system materials from single manufacturer.

C. Substitutions

1. Comply with Division 01 requirements.

2.2 MOISTURE MITIGATION SYSTEM

A. System Description

1. FGP Moisture Mitigation System.
2. High-performance epoxy vapor control system designed to reduce moisture vapor transmission from concrete substrates and promote long-term adhesion of resinous and finished flooring systems. System functions as a Class I vapor retarder in accordance with ASTM F3010 and is engineered to accommodate elevated concrete moisture conditions up to 25 lbs MVER and 95% in-situ RH when properly installed.

B. System Components

1. **Moisture Mitigation Primer**
   - **a.** MV 2112 Moisture Primer.
   - **b.** Applied at 80–90 Ft^2/Gal.
   - **c.** Thickness: 18–20 mils.
   - **d.** Smooth gloss finish.

2.3 PERFORMANCE REQUIREMENTS

A. System Thickness

1. 18–20 mils nominal.

B. Finish

1. Smooth Gloss.

C. Physical Properties

1. Hardness: Shore D 80 per ASTM D2240.
2. Flexural Strength: 12,200 psi per ASTM D790.
3. Adhesion: 350 psi concrete failure per ASTM D7234.
4. Vapor Retarder Classification: Class I per ASTM E96.
5. Permeance: <0.10 perms per ASTM E96.
6. Moisture Vapor Emission Resistance: 25 lbs/1,000 Ft^2/24 hrs per ASTM F1869.
7. In-Situ Relative Humidity Resistance: 95% RH per ASTM F2170.
8. Abrasion Resistance: 36 mg loss per ASTM D4060.

D. Cure Schedule

1. Recoat Window: 12–24 hours.
2. Full Cure: 5–7 days.

2.4 ACCESSORIES

A. Provide manufacturer's standard accessory materials compatible with moisture mitigation system.

B. Accessories may include:

1. Crack Repair Materials.
2. Joint Fill Materials.
3. Edge Detailing Materials.
4. Transition Materials.
5. Compatible Resinous Flooring Systems.

PART 3 – EXECUTION

3.1 EXAMINATION

1. Verify substrates are acceptable for installation.
2. Verify moisture testing has been completed in accordance with ASTM standards.
3. Proceed only after unsatisfactory conditions are corrected.

3.2 PREPARATION

1. Remove contaminants including oil, grease, curing compounds, sealers, and laitance.
2. Mechanically prepare substrate to achieve required CSP profile.
3. Surface preparation shall comply with ICRI CSP 3-5.

4. Perform moisture testing:
   a) ASTM F2170 – In-Situ Relative Humidity Testing.
   b) ASTM F1869 – Calcium Chloride Moisture Vapor Emission Testing.
5. Repair cracks, spalls, and voids prior to installation.
6. Vacuum and remove all dust and debris.

3.3 INSTALLATION

1. Install moisture mitigation system in accordance with manufacturer written instructions.
2. Apply moisture mitigation primer at specified coverage rates and film thicknesses.
3. Maintain uniform application without puddles, pinholes, roller marks, or dry areas.
4. Apply material continuously to form seamless low-permeance membrane.
5. Do not exceed manufacturer recoat windows.
6. System shall not be used as final traffic-bearing wear surface.

3.4 FIELD QUALITY CONTROL

1. Inspect completed system for uniformity, thickness, and continuity.
2. Verify proper cure prior to application of subsequent flooring systems.
3. Repair or replace defective work.

3.5 CLEANING AND PROTECTION

1. Remove debris and clean finished surfaces.
2. Protect installed system from damage and contamination during construction.
3. Prevent traffic until system reaches appropriate cure stage.
4. Protect system from moisture exposure, condensation, and contamination prior to application of subsequent flooring systems.

A. Limitations

1. System is not intended for actively leaking slabs or hydrostatic pressure conditions.
2. System does not bridge structural cracks, moving joints, or slab discontinuities.
3. System is not a substitute for proper drainage, vapor relief systems, or concrete design.
4. System performance depends on proper ASTM F2170 testing, preparation, and installation.
5. System is not designed to be pigmented, diluted, or used as a finish coat.

END OF SECTION