

SECTION 090561 - MOISTURE VAPOR EMISSION CONTROL

PART 1 - GENERAL

0.1 SUMMARY

- A. Section Includes: Fluid-applied, resin-based, membrane-forming systems that control the moisture-vapor-emission rate of high-moisture, interior concrete to prepare it for floor covering installation.
- B. Apply moisture-vapor-emission-control systems to floor slabs where floor coverings are indicated, if necessary to prepare concrete substrates so moisture-vapor emissions are within acceptable levels according to floor covering manufacturers' requirements.

0.2 DEFINITIONS

- A. MVE: Moisture vapor emission.
- B. MVER: Moisture vapor emission rate.

0.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

0.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include manufacturer's technical data, application instructions, and recommendations for each vapor control floor coating component required.

0.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each MVE-control system, for tests performed by a qualified testing agency, or by manufacturer and witnessed by a qualified testing agency.
- B. Preinstallation testing reports.

0.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Employs factory-trained personnel who are available for consultation and Project-site inspection.
- B. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

0.7 FIELD CONDITIONS

- A. Environmental Limitations: Comply with MVE-control system manufacturer's written instructions for substrate and ambient temperatures, humidity, ventilation, and other conditions affecting system installation.
 - 1. Install MVE-control systems where concrete surface temperatures will remain a minimum of 5 deg F (3 deg C) higher than the dew point for ambient temperature and relative humidity conditions in installation areas for 48 hours before installation, during installation, and for 48 hours after installation unless longer period is recommended in writing by manufacturer.

- B. Close spaces to traffic during MVE-control system application and for period after application as recommended by manufacturer.

PART 2 - PRODUCTS

0.1 PERFORMANCE REQUIREMENTS

- A. MVE-Control Systems, General: Provide products acceptable to each floor covering manufacturer to prevent adhesion problems of installed flooring caused by excess alkalinity and moisture occurring in concrete slabs.
- B. Water-Vapor Transmission: Through MVE-control system, maximum 0.20 grains/hr./sq. ft. when tested according to ASTM E 96/E 96M.
- C. Tensile Bond Strength: For MVE-control system, greater than 200 psi (1.38 MPa) with failure in the concrete according to ASTM D 7234.

0.2 MVE-CONTROL SYSTEM

- A. Basis-of-Design Product: Subject to compliance with requirements, provide KOSTER American Corporation, Virginia Beach VA (757-425-1206, www.kosterusa.com); VAP 1 2000, or comparable product by one of the following:
 - 1. ARDEX Americas.
 - 2. BASF Corporation.
 - 3. KOSTER American Corporation.
 - 4. MAPEI Corporation.
 - 5. Vexcon; MOISTUREBLOC.
- B. MVE-Control System: ASTM F 3010-qualified, fluid-applied, two-component, epoxy-resin, membrane-forming system; formulated for application on concrete substrates to reduce MVER to level required for installation of floor coverings indicated and acceptable to manufacturers of floor covering products indicated, including adhesives.
 - 1. Substrate Primer: Provide MVE-control system manufacturer's concrete-substrate primer if required for system indicated by substrate conditions.
 - 2. Cementitious Underlayment Primer: If required for subsequent installation of cementitious underlayment products, provide MVE-control system manufacturer's primer to ensure adhesion of products to MVE-control system.

0.3 ACCESSORIES

- A. Patching and Leveling Material: Moisture-, mildew-, and alkali-resistant product recommended in writing by MVE-control system manufacturer and with minimum of 3000-psi (20.68-MPa) compressive strength after 28 days when tested according to ASTM C 109/C 109M.
- B. Crack-Filling Material: Resin-based material recommended in writing by MVE-control system manufacturer for sealing concrete substrate crack repair.
- C. Cementitious Underlayment: If required to maintain manufacturer's warranty, provide MVE-control system manufacturer's hydraulic cement-based underlayment.

PART 3 - EXECUTION

0.1 PREPARATION

A. Preinstallation Testing:

1. Testing Agency: Engage a qualified testing agency to perform tests using one or more of the following methods as recommended by floor covering manufacturers.
2. Alkalinity Testing: Perform pH testing according to ASTM F 710. Install MVE-control system in areas where pH readings are less than 7.0 and in areas where pH readings are greater than 8.5.
3. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. Anhydrous Calcium Chloride Test: ASTM F 1869. Install MVE-control system in locations where concrete substrate MVER exceeds 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
 - b. Internal Relative Humidity Test: Using in situ probes, ASTM F 2170. Install MVE-control system in locations where concrete substrates exhibit relative humidity level greater than 75 percent.
4. Tensile-Bond-Strength Testing: For typical locations indicated to receive installation of MVE-control system, install minimum 100-sq. ft. (9.29-sq. m) area of MVE-control system to prepared concrete substrate and test according to ASTM D 7234.
 - a. Proceed with installation only where tensile bond strength is greater than 200 psi (1.38 MPa) with failure in the concrete.

- B. Concrete Substrates: Prepare and clean substrates according to MVE-control system manufacturer's written instructions to ensure adhesion of system to concrete.
- C. Protect walls, floor openings, electrical openings, door frames, and other obstructions during installation.

0.2 INSTALLATION

- A. General: Install MVE-control system according to ASTM F 3010 and manufacturer's written instructions to produce a uniform, monolithic surface free of surface deficiencies such as pin holes, fish eyes, and voids.
1. Install primers as required to comply with manufacturer's written instructions.
- B. Do not apply MVE-control system across substrate expansion, isolation, and other moving joints.
- C. Apply system, including component coats if any, in thickness recommended in writing by MVE-control system manufacturer for MVER indicated by preinstallation testing.
- D. After curing, examine MVE-control system for surface deficiencies. Repair surface deficiencies according to manufacturer's written instructions.
- E. Install cementitious underlayment over cured membrane if required to maintain manufacturer's warranty and in thickness required to maintain the warranty.

- F. Protect MVE-control system from damage, wear, dirt, dust, and other contaminants before floor covering installation. Use protective methods and materials, including temporary coverings, recommended in writing by MVE-control system manufacturer.
- G. Do not allow subsequent preinstallation examination and testing for floor covering installation to damage, puncture, or otherwise compromise the MVE-control system membrane.

END OF SECTION