

SECTION 07 26 00

Recommended Specification for the ARDEX MC™ MOISTURE CONTROL SYSTEM

PART I – GENERAL

1.01 SUMMARY

- A. This is the recommended specification for ARDEX MC™ MOISTURE CONTROL SYSTEM for Concrete to receive ARDEX Engineered Cements.
- B. The ARDEX MC™ MOISTURE CONTROL SYSTEM is an epoxy-based moisture management system formulated to suppress excessive moisture vapor in new or existing concrete prior to the installation of ARDEX Underlayments and Toppings. It is especially suited to treat areas of new concrete where the construction schedule is such that adequate drying of the concrete is not possible. ARDEX MC™ is also recommended over existing concrete where the level of moisture emissions from the slab exceeds the maximum permitted by the manufacturer of the finished floor covering or coating to be installed.
- C. Complete installation details are provided in the ARDEX MC™ Technical Brochure available at www.ardex.com.

1.02 SECTION INCLUDES

- A. ARDEX MOISTURE CONTROL PRIMER (P-MC).
- B. ARDEX MOISTURE CONTROL SEALER (S-MC).
- C. A two-part epoxy crack and joint filler such as ARDEX ARDISEAL 2C™ Two-Part, Semi-Rigid Epoxy Joint Sealant.
- D. ARDEX S 21 Smoothing Compound.
- E. Fine sand that is less than 1/50 of an inch in grain size or 98.5% passing sieve size #35.
- F. ARDEX Underlayment or Topping.

1.03 QUALITY ASSURANCE

- A. Installation of ARDEX MC™ MOISTURE CONTROL SYSTEM must be by a factory-trained contractor, such as an ARDEX LevelMaster Elite® Installer, who has specific experience with the installation of ARDEX MC™. Please contact the ARDEX Technical Department at (888) 512-7339 for a complete list of Installers.
- B. Applicator must file a pre-installation checklist with the manufacturer and receive written confirmation of the approval to proceed in order to obtain the 10-year ARDEX MC™ MOISTURE CONTROL SYSTEM Warranty.
- C. ARDEX MC™ shall be installed only over concrete surfaces that have been properly mechanically prepared to a minimum surface profile of ICRI CSP #3 and which have a moisture emission level of 20 lbs. or less at the time of testing when measured in accordance with ASTM F1869, or an RH value of 95% or less when measured in accordance with ASTM F2170.

- D. An ARDEX Underlayment or Topping must be installed in accordance with the manufacturer's recommended specifications for use and installation.
- E. The ARDEX MC™ shall reduce the vapor emissions of the concrete to less than 3 lb. and the underlayment or topping surface shall be suitable to receive all types of floor coverings or sealers when allowed to properly dry in accordance with ARDEX recommendations.
- F. Manufacturer's certification that the system has been tested in accordance with ASTM D1653 and has a perm rating of less than 0.05.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in their unopened packages and protect from extreme temperatures and moisture. Protect liquids from freezing.

1.05 SITE CONDITIONS

- A. ARDEX MC™ involves the use of epoxies and cementitious materials. Observe the basic rules for working with epoxy and concrete. Do not install below 50°F surface temperature. Install quickly if substrate and job site conditions are above 70°F.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. The epoxy-based moisture control system shall be ARDEX MC™.
- B. The Portland cement-based underlayment or topping shall be an ARDEX product, such as ARDEX K 15® Self-Leveling Concrete Underlayment, suitable for the intended use.
- C. For pre-smoothing very uneven substrates, the compound shall be ARDEX S 21 Smoothing Compound.
- D. To fill dormant cracks, the epoxy material shall be ARDEX ARDISEAL 2C™ Two-Part, Semi-Rigid Epoxy Joint Sealant.
- E. The sand broadcast into the fresh ARDEX S-MC coat shall be fine sand that is less than 1/50 of an inch in grain size or 98.5% passing sieve size #35.
- F. Where required to extend the ARDEX cementitious products, the aggregate shall be well graded, washed gravel, 1/8" to 1/4" or larger.
- G. Water for mixing the cementitious materials shall be clean, potable, and sufficiently cool (not warmer than 70°F).

2.02 MIX DESIGNS

- A. Each individual unit of ARDEX P-MC Primer and ARDEX S-MC Sealer contains separate, pre-measured quantities of the hardener (Part A) and the resin (Part B). The hardening agent (Part A) is added to the resin (Part B).

- B. ARDEX S 21 is mixed in 2-bag batches at one time. Mix each bag of ARDEX S 21 (50 lb.) with 5 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2-3 minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX S 21 bag label.
- C. For mix designs related to the use of ARDEX underlayments and toppings, refer to the standard mixing instructions for installation over concrete as shown in the manufacturer's installation instructions.
- D. For instructions on the filling of dormant cracks and joints, follow the written instructions of the selected epoxy manufacturer.

PART 3 – EXECUTION

3.01 PREPARATION

- A. All concrete substrates must be structurally sound, solid, and mechanically prepared to a minimum surface profile of ICRI CSP #3 (light shotblast).
 - 1. All concrete subfloors must be of adequate tensile strength (minimum 200 psi when tested in accordance with ASTM D4541 Method 5).
 - 2. The concrete must be clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker. Mechanically clean using shot blasting or other method to achieve the specified profile. Acid etching and the use of sweeping compounds and solvents are not acceptable means of preparing the concrete.
 - 3. Substrates shall be tested for moisture vapor emissions in accordance with ASTM F1869 and shall be deemed to be at a measured emission rate of 12 lb. or less at the time of installation of the ARDEX MC™.
 - 4. Where the mechanical preparation has resulted in a surface profile that is CSP #6 or higher, the use of ARDEX S 21 is recommended to pre-smooth the concrete prior to installing the ARDEX MC™. Allow the ARDEX S 21 to dry for 24 hours and proceed with the installation of the ARDEX MC™. No additional surface preparation is necessary for the dry ARDEX S 21 surface.
 - 5. All cracks in the subfloor shall be repaired to minimize telegraphing through the underlayment.

3.02 JOINT AND CRACK PREPARATION

- 1. Moving Joints – honor all expansion and isolation joints up through the ARDEX Moisture Control System, and underlayment or topping.
- 2. Saw Cuts, Control Joints and Dormant Cracks – fill all non-moving joints and cracks greater than 1/32" with ARDEX ARDISEAL 2C Two-Part, Semi-Rigid Epoxy Joint Sealant. Once the cracks and joints have been properly filled, allow these areas to cure for a minimum of 16 hours prior to proceeding with the installation of the ARDEX MC™.

3.03 APPLICATION OF THE ARDEX MC™ MOISTURE CONTROL SYSTEM

- A. Mixing of ARDEX P-MC and S-MC.
1. Each individual unit of ARDEX P-MC Primer and ARDEX S-MC Sealer contains separate, pre-measured quantities of the hardener (Part A) and the resin (Part B). The hardening agent (Part A) is added to the resin (Part B).
 2. First separate the two units to relieve the small amount of pressure that may have built up during storage. Reseat the top unit and pierce the plastic cap at the top center of the unit with a sharp object all the way through the bottom of the top unit several times. Let the top unit drain completely into the bottom unit.
 3. Once empty, remove the top unit and thoroughly mix the two components together using a low-speed drill and mixing paddle.

- B. ARDEX MC™ MOISTURE CONTROL SYSTEM is a two-coat system consisting of a primer and a sealer with sand broadcast into the second layer.

1. Apply the first coat of freshly mixed ARDEX P-MC Primer (yellow) to the prepared concrete surface in a uniform direction at an application rate of 125 sq. ft. per unit to achieve a coating thickness of 10 mils. Use a short-nap paint roller or notched squeegee for smoother surfaces and a longer nap roller for more uneven substrates. ARDEX P-MC can also be applied with a paintbrush for hard reach areas and in corners. Allow this coat to dry for a minimum of 6 hours at 70°F before applying the sealer coat.
2. Working in a direction that is at a 90° angle to direction that the first coat was applied, apply the sealer coat of ARDEX S-MC Sealer (green) as above, again at a coverage rate of 125 sq. ft. per unit (10 mils).
3. While this second coat is still in a fresh state (maximum 30 minutes), broadcast an excess of fine sand that is less than 1/50 of an inch in grain size (98.5% passing sieve size #35) consistently over the entire area. Avoid standing or walking on the freshly applied sealer when broadcasting the sand.
4. Once an area has been completely covered with sand, the surface of the sand can be walked on being careful not to expose the sealer at any time. Use about 2/3 lb. of sand per square foot of area. Once the sanding process is complete, avoid all traffic over the surface for a minimum of 6 hours.

Note: When broadcasting the sand use a NIOSH approved dust mask in conformance with OSHA requirements regarding the handling of sand.

5. After 16 hours, broom sweep and vacuum the surface to remove all loose sand. Protect this surface from construction traffic and dirt and debris using Masonite or similar until the Ardex underlayment or topping is installed.
6. The clean prepared surface of sand is the priming system for the ARDEX underlayment, such as ARDEX K 15® Self-Leveling Concrete Underlayment, or topping. No additional priming is required. Install the ARDEX underlayment or topping in accordance with printed instructions found in the corresponding technical brochure. It is not necessary to retest the substrate for moisture emissions prior to installing the floor covering or sealer.

3.04 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the Ardex products is to be done by taking an entire unopened unit or bag of the product being installed to an independent testing facility to perform the specified testing. There are no in situ test procedures for the evaluation of the materials specified.

3.05 PROTECTION

- A. Prior to the installation of the underlayment or topping, or finish flooring or sealer, the surface of the system should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION