

**ARDEX GUIDE SPECIFICATION**  
**ARDEX MC™ RAPID**

One-Coat Moisture Control System For Concrete to Receive ARDEX ACMS™

---

---

**SECTION 09 05 61.13**  
**MOISTURE VAPOR EMISSION CONTROL**  
**WITH ARDEX ACMS™**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01, Division 03, and Division 09 specifications that apply to this Section

1.2 SUMMARY

- A. This Section includes a single-coat, fast-curing, 100% solids epoxy moisture management system formulated to suppress excessive moisture vapor emissions in new or existing concrete prior to installing an ARDEX Underlayment.

- 1. ARDEX MC™ RAPID One-Coat Moisture Control System
- 2. ARDEX ARDIFIX™ Low Viscosity Ridid Polyurethane Crack and Joint Repair
- 3. ARDEX ARDISEAL™ RAPID PLUS Semi-Rigid Joint Sealant
- 4. ARDEX HC 100™ High-Capacity Self-Leveling Underlayment
- 5. ARDEX HC 100R™ High-Capacity Rapid Self-Leveling Underlayment

- B. Related Sections include the following:

- 1. Section 03 30 00, Cast-In-Place Concrete
- 2. Section 03 54 00, Hydraulic Cement Underlayment for Existing Concrete Floors
- 3. Section 09 05 61.13, Moisture Vapor Emission Control
- 4. Division 09 Flooring Sections

1.3 REFERENCES

- A. ASTM 109M, Compressive Strength Air-Cure Only
- B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars

- C. ASTM E84, Surface Burning Characteristics of Building Materials
- D. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- E. ASTM C1708, Standard Test Methods for Self-Leveling Mortars Containing Hydraulic Cements
- F. ASTM C1583, Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension
- G. ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
- H. ASTM D1308, Chemical Resistance of Finishes
- I. ASTM F3010, Standard Practice for Two-Component, Resin Based Resin-Forming Moisture Mitigation Systems For Use Under Resilient Floor Coverings

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.
- B. Qualification Data: For Installer

#### 1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX Topical Moisture Mitigation System must be completed by an ARDEX approved applicator, such as an ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the manufacturer. Please contact ARDEX Engineered Cements (724) 203-5000 for a list of approved installers.
- B. Manufacturer Experience: Products used for work in this section shall be manufactured by companies which have successfully specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation.
- C. Silicate-based concrete admixtures or curing agents must not be used in conjunction with ACMS System.

#### 1.6 WARRANTY

- A. Approved applicator must file a pre-installation checklist with the manufacturer and receive written confirmation of the approval to proceed in order to obtain the extended 20-Year Limited Warranty for the ARDEX Concrete Management Systems (ACMS™)™, which includes the ARDEX MC RAPID as well as ARDEX HC 100™ or ARDEX HC 100R™.

- B. ARDEX HC 100™ or HC 100R™ underlayment installed as part of a floor system, shall be installed in conjunction with the recommended ARDEX Tile & Stone Installation Materials or WW HENRY Flooring Adhesive, as appropriate, to obtain the ARDEX SystemOne Comprehensive Warranty.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

#### 1.8 PROJECT CONDITIONS

- A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department. The ARDEX MC RAPID must be allowed to cure for 4 hours before receiving traffic or getting wet. In the event that the ARDEX MCRAPID gets wet after 4 hours, any ponding water should be immediately removed from the surface and allowed to dry.

### **PART 2 - PRODUCTS**

#### 2.1 MOISTURE VAPOR EMISSION CONTROL

- A. One-Coat Moisture Control System for Concrete to Receive ARDEX Underlayments and Toppings
  - 1. Acceptable Products:
    - a. ARDEX MC™ RAPID; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA 15001 USA 724-203-5000, [www.ardexamericas.com](http://www.ardexamericas.com)
  - 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F +/- 3°F (21° C +/- 3°C) and 50% +/- 5% relative humidity:

- a. Application: Manual
- b. Material Requirements on CSP 3 Prepared Concrete: Approx. 170 – 190 sq. ft. (16 – 18 m<sup>2</sup>) per unit for 14 mils
- c. Permeability (ASTM E96): 0.06 perms
- d. 14 pH solution (ASTM D1308): No effect
- e. Working Time: 20 minutes
- f. Pot Life: 20 minutes
- g. VOC: 19.9g/L, A+B (ASTM D2369)
- h. Walkable: Minimum of 4 hours
- i. Install Underlayment: Minimum 4 hours

## 2.2 HYDRAULIC CEMENT UNDERLAYMENT

### A. Hydraulic Cement-Based, Self-Leveling Underlayment

- 1. Acceptable Products:
  - a. ARDEX HC 100™ High-Capacity Self-Leveling Underlayment
  - b. ARDEX HC 100R™ High-Capacity Rapid Self-Leveling Underlayment
- 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F +/-3°F (21° C +/-3°C) and 50% +/-5% relative humidity:
  - a. Application: ARDEX ARDIFLO™ Pump System
  - b. Flow Time: 10 minutes
  - c. Initial Set: Approx. 30 minutes
  - d. Final Set: Approx. 90 minutes
  - e. Compressive Strength: Minimum 4500 psi at 28 days, ASTM C109M
  - f. Flexural Strength: 1000 psi at 28 days, ASTM C348
  - g. VOC: 0

2.3 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

## PART 3 – EXECUTION

### 3.1 PREPARATION

- A. The Concrete Substrate: Prepare substrate in accordance with manufacturer’s instructions.
  - 1. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Flooring. All concrete after initial 3-7 day cure must receive a brush blast shot blast.
- B. Crack and Joint Treatment

1. Dormant control joints and dormant cracks greater than a hairline (1/32" / 0.79 mm) must be pre-filled with ARDEX ARDIFIX™. Dormant cracks and dormant control joints must be filled in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks and dormant control joints have been filled properly, broadcast sand to refusal, and allow these areas to cure thoroughly. Remove all excess sand prior to proceeding with the ARDEX MC RAPID installation.
2. All moving joints and moving cracks must be honored up through the ARDEX MC RAPID, the ARDEX underlayment and the floor covering by installing a fully flexible sealing compound designed specifically for use in moving joints, such as ARDEX ARDISEAL™ RAPID PLUS.

### 3.2 APPLICATION OF ARDEX MC™ RAPID:

- A. Examine substrate and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Mixing: Comply with manufacturer's printed instructions and the following.
  1. Each individual 22 lb. unit contains separate, pre-measured quantities of hardener (Part B) and the resin (Part A). After opening each container, stir the individual components thoroughly as described in (2) below before blending. The hardening agent (Part B) is added to the resin (Part A).
  2. Pour all of the hardener into the resin portion and mix thoroughly for a minimum of 3 minutes using a low speed drill and an epoxy mixing paddle. Once mixed, pour some of the epoxy back into the hardener container, mix for 10 seconds, and then pour all of the contents back into the resin container. Mix for an additional 30 seconds before applying.
- D. Application: Comply with manufacturer's printed instructions and the following.
  1. Apply a coat of freshly mixed ARDEX MC™ RAPID to the prepared concrete surface in a uniform direction at an application rate of up to 190 sq. ft. per unit to achieve a minimum coating thickness of 14 mils. Use a short-nap paint roller or notched squeegee for smoother surfaces, and a longer nap roller for more uneven substrates. To minimize the potential for pinhole formation, work the ARDEX MC™ RAPID into the surface with the roller to ensure maximum penetration. ARDEX MC™ RAPID can also be worked into the surface with a paintbrush for hard to reach areas and corners.
    - a. While this coat is still in a fresh state (maximum 20 minutes), broadcast to excess of kiln-dried silica sand (less than 1/50 of an inch in grain size or 98.5% passing sieve size #35 or #30) consistently over the entire area.

Note: When broadcasting sand, use a NIOSH approved particulate respirator “dust mask” in conformance with OSHA requirements regarding the handling of sand. Do not stand or walk on the freshly applied epoxy when broadcasting the sand.

- b. Once an area has been completely covered with sand, the surface of the sand can be walked on, being careful not to disturb or expose the epoxy at any time. Use approximately 1 lb. of sand per square foot of area. Once the sand broadcast is complete, avoid all traffic over the surface for a minimum of 4 hours.
- c. After 4 hours, broom sweep and vacuum the surface to remove all loose sand. The clean, prepared surface of the sand is the priming system for the ARDEX Underlayment. No additional priming is required.
- d. Following the application of ARDEX MC™ Rapid and sand broadcast, survey substrate using ARDEX Ardipegs™, install ARDEX HC 100™ or ARDEX HC 100R™ in accordance with printed instructions found in the corresponding technical data sheet.
- e. It is not necessary to test the substrate for moisture emissions prior to installing the coating or floor covering.

### 3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX products is to be done by taking an entire unopened bag/unit of the product being installed to an independent testing facility to perform testing. There is no in-situ test method applicable for this system.

### 3.4 PROTECTION

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

**END OF SECTION**