

ARDEX GUIDE SPECIFICATION

ARDEX MC™ RAPID

One-Coat Moisture Control System For Concrete to Receive ARDEX ARDIFLO™ Pump System Underlayments

SECTION 07 26 19 TOPICAL MOISTURE VAPOR EMISSION SYSTEM WITH ARDEX ARDIFLO™ SYSTEM

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™ Two-Part, Low Viscosity Rigid Polyurethane
3. ARDEX AridSeal™ Rapid Plus Fast Setting Semi-Rigid Joint Sealant
4. ARDEX K 301™ Self-Leveling Exterior Concrete Topping
5. ARDEX MRP™ Moisture Resistant Patch
6. ARDEX HC 100R™ High-Capacity Rapid Self-Leveling Underlayment
7. ARDEX HC 100™ High-Capacity Self-Leveling Underlayment
8. ARDEX K15® Premium Self-Leveling Underlayment
9. ARDEX V1200™ Self-Leveling Flooring 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 07 26 00, Vapor Retarder

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 F2170 - Relative Humidity in Concrete Floor Slabs Using in situ Probes
- E. ASTM F1869 - Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
- F. ASTM 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- G. ASTM C1708 – 12 Standard Test Methods for Self-Leveling Mortars Containing Hydraulic Cements
- H. 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
- I. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials
- J. ASTM D1308 - Chemical Resistance of Finishes

1.4 SUBMITTALS

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

1.5 QUALITY ASSURANCE

- A. Installation of the ARDEX product must be completed by a certified 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 recommended 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.

1.6 WARRANTY

- A. Certified 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 10-year ARDEX MC™ RAPID Warranty.
- B. ARDEX ARDIFLO™ Pump System Underlayments 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 provide the ARDEX SystemOne 10-year 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.

PART 2 - PRODUCTS

2.1 TOPICAL MOISTURE VAPOR EMISSION SYSTEM

- A. One-Coat Moisture Control System for Concrete to Receive ARDEX Underlayments and Toppings

Acceptable Products:

- a. ARDEX MC™ RAPID; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, Pa 15001 USA 724-203-5000
- 1. 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: Max 270 sq. ft. per mixed unit for 10 mils
- c. Permeability (ASTM E96): <0.1 perms
- d. 14 pH solution (ASTM D1308): No effect
- e. Working Time: 20 minutes
- f. Pot Life: 20 minutes
- g. VOC: 0g/L, calculated SCAQMD 1168
- h. Walkable: Minimum of 4 hours
- i. Prime and Install Underlayment: Minimum 4 hours, maximum 24 hours

2.2 HYDRAULIC CEMENT UNDERLAYMENT

A. Hydraulic Cement-based Self-Leveling Underlayment.

1. Acceptable Products:

- a. ARDEX HC 100R™ High Capacity Rapid Self-Leveling Underlayment; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, Pa 15001 USA, (724) 203-5000, www.ardexamericas.com
 - i. Primer: ARDEX P 82™ Ultra Prime
- b. ARDEX HC 100™ High Capacity Self-Leveling Underlayment
 - i. Primer: ARDEX P 82™ Ultra Prime
- c. ARDEX K15® Premium Self-Leveling Underlayment
 - i. Primer: ARDEX P 82™ Ultra Price
- d. ARDEX V1200™ Self-Leveling Flooring Underlayment
 - i. Primer: ARDEX P 82™ Ultra Prime

- 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 4000 psi at 28 days, ASTM C109M.
- f. Flexural Strength: 1000 psi at 28 days, ASTM C78.
- g. VOC: 0 g/l, calculated SCAQMD 1168

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

PART 3 – EXECUTION

3.1 PREPARATION

B. Concrete Subfloors: 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 Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before application.
- 2. Mechanical preparation of the surface is required to obtain a minimum ICRI concrete surface profile of 3 (CSP 3).
- 3. Prior to beginning the installation, measure the relative humidity within the concrete (ASTM F2170). Alternatively, you can also measure the surface relative humidity in accordance with ASTM F2420. For these relative humidity methods, the RH shall not exceed 100%.
- 4. If the concrete substrate is too uneven to provide a uniform film thickness of the ARDEX MC™ RAPID (typically CSP 6 or higher), the substrate can be pre-smoothed using ARDEX K 301™ Self-Leveling Exterior Concrete Topping or ARDEX MRP™ Moisture Resistant Patch.

B. Joint Preparation

- 1. Moving Joints – honor all expansion and isolation joints up through the moisture mitigation system and underlayment. A flexible sealing compound such as ARDEX ArdiSeal™ Rapid Plus may be installed.
- 2. Saw Cuts and Control Joints – fill all non-moving joints with ARDEX ArdiFix™ Joint Filler or ARDEX SD-F™ Feather Finish® as recommended by the manufacturer.

3.2 APPLICATION OF ARDEX MC™ RAPID:

- A. Examine substrates 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 stir 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, stir 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 270 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. 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. Once the area is completely coated, allow to dry for a minimum of 4 hours (max. 24 hours). It is not necessary to re-test the substrate for moisture emissions prior to installing the floor covering.
 - 2. For ARDEX Underlayment applications greater than 1/4" (6 mm), or if the ARDEX MC™ RAPID was not worked into the surface sufficiently enough to prevent pinholes, a second coat with sand broadcast is needed. No ARDEX P 82™ ULTRA PRIME is required for a second coat.
 - a. Working at a 90° angle to the direction the first coat was applied; apply the ARDEX MC™ RAPID at a coverage rate of 10 mils. While this coat is still in a fresh state (maximum 20 minutes), broadcast an excess of fine 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 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 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 MC RAPID and primer or second coat of MC Rapid and sand broadcast, install ARDEX ARDIFLO™ Pump System Underlayment in accordance with printed instructions found in the corresponding technical brochure.
- e. It is not necessary to re-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