ARDEX MC™ RAPID

One-Coat Moisture Control System for Concrete to Receive ARDEX Products

- One-coat epoxy resin system
- For RH readings up to 100%
- Excellent coverage
- Fast setting - Proceed in as little as 4 hours
- No sand broadcast required for underlayment applications of 1/4” (6 mm) or less
- Reduces moisture vapor emissions to acceptable levels for floor coverings
- Solvent free, alkali resistant
- ASTM E96 - 0.06 perms
- Tenacious bond to substrate
- Use under all standard commercial and residential floor coverings on interior substrates only
- Use under all ARDEX interior toppings (sand broadcast method only)

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ARDEX MC™ RAPID

One-Coat Moisture Control System for Concrete to Receive ARDEX Products

Description and Usage

The ARDEX MC™ RAPID Moisture Control System is a one-coat, 100% solids epoxy moisture management system formulated to suppress excessive moisture vapor emissions in new or existing concrete prior to installing an ARDEX underlayment with flooring or an ARDEX topping with sealer. It is especially suited to treat areas of new concrete in critical installations, such as health care and institutional applications where the construction schedule does not allow adequate drying of the concrete. ARDEX MC RAPID is also recommended over existing concrete where the level of moisture emissions from the slab exceeds the maximum allowed by the manufacturer of the finished floor covering or sealer. Designed specifically for fast-track installations, ARDEX MC RAPID can receive an ARDEX underlayment or topping in as little as 4 hours.

The ARDEX MC RAPID system is based on a reactive epoxy that produces a hard surface and tenaciously bonds to the substrate. Once cured, ARDEX MC RAPID is able to reduce any level of moisture emissions to an acceptable level, even over new concrete that is only 3 - 7 days old as a part of the ARDEX Concrete Management Systems™ (ACMS™). A 10 mil application of ARDEX MC RAPID with no sand broadcast is used for underlayment layers of 1/4" (6 mm) thick or less. For thicker applications of underlayments, for any topping applications and for its use as a part of ARDEX ACMS, apply a coat at 14 mils with sand broadcast to refusal.

Moisture and Dew Point

ARDEX MC RAPID is suitable for moisture levels in concrete up to 100% RH.

Please note that very high RH levels (above 98%) could be indicative of external water infiltration from inadequate drainage, leaks, broken pipes, etc. Verify that all external sources of water are controlled sufficiently prior to installation.

The surface of the concrete must be dry at the time the ARDEX MC RAPID is installed. For RH levels above 98%, verify concrete surface dryness by mat testing in conformance with ASTM D4263. The test must be conducted for at least 4 hours, which is the time required for ARDEX MC RAPID to be set sufficiently. To ensure that condensation does not form, it is extremely important to check the surface temperature of the concrete just prior to installation to verify that this temperature is at least 5°F (3°C) higher than the dew point for the given temperature and humidity in the space and rising. For example, if the dew point temperature in the space is 60°F (16°C), the slab temperature must be 65°F (19°C) or higher and rising.

Substrate Preparation

All concrete substrates must be structurally sound and solid, surface dry and thoroughly clean and free of oil, wax, grease, asphalt, paint, latex compounds, curing and sealing compounds and any contaminant that could act as a bond breaker. The concrete must have a minimum tensile strength of 150 psi (10.5 kg/cm^2) for areas to receive normal foot traffic and 200 psi (14 kg/cm^2) for areas of heavy commercial traffic when tested in accordance with ASTM C1583.

Mechanical preparation of the surface is required to obtain a minimum ICRI concrete surface profile of 3 (CSP #3). Substrate preparation must be by mechanical means, such as shot blasting.

Broom sweep and vacuum the prepared surface. Acid etching, solvents, sweeping compounds, adhesive removers and sanding are not acceptable means of cleaning the substrate.

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, ARDEX MRP™ Moisture Resistant Patch or ARDEX K 60™ ARDITEX in certain situations. For substrate preparation and installation instructions regarding these applications, please contact the ARDEX Technical Service Department.

Where full-depth slab or trench repair is needed prior to installing ARDEX MC RAPID, ARDEX TRM™ Transportation Repair Mortar Fast-Setting, Horizontal Concrete Repair Mortar can be used. The surface of the ARDEX TRM must be prepared to a minimum ICRI concrete surface profile of 3 (CSP #3). Proper profile can be achieved as the ARDEX TRM is roughed in or via mechanical preparation methods, such as shot blasting, once the product is cured. Thoroughly sweep and vacuum prior to proceeding with the installation.

While the minimum cure time for ARDEX TRM is 6 hours, it is important to note that any heat generated by the hydration reaction of the ARDEX TRM must dissipate prior to installing ARDEX MC RAPID.

Joints and Cracks

Please note that ARDEX cannot be responsible for issues arising from expansion and isolation joints, saw cuts or new or existing cracks that may develop, widen or become more narrow after the system has been installed.

When Installing an Underlayment

All moving joints and moving cracks must be honored up through the ARDEX MC RAPID, the ARDEX underlayment and floor covering by installing a fully flexible sealing compound designed specifically for this use, such as ARDEX ARDISEAL™ RAPID PLUS.

Dormant cracks less than a hairline (1/32" / 0.8 mm) can be covered with ARDEX MC RAPID. Dormant joints and dormant cracks greater than a hairline (1/32" / 0.8 mm) that will not be honored must be pre-filled with ARDEX ARDIFIX™ in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks and dormant joints have have been properly filled, broadcast sand to refusal, and allow these areas to cure thoroughly. Remove all excess sand prior to proceeding with the ARDEX MC RAPID installation.

When Installing a Topping

All joints, including control joints, expansion joints and isolation joints, and moving cracks must be honored up through the ARDEX MC RAPID, the ARDEX topping and the sealer by installing a fully flexible sealing compound designed specifically for this use, such as ARDEX ARDISEAL RAPID PLUS.

All dormant cracks must be pre-filled with ARDEX ARDIFIX in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks have been properly filled, broadcast sand to refusal, and allow these areas to cure thoroughly. Remove all excess sand prior to proceeding with the ARDEX MC RAPID installation.

Recommended Tools

Epoxy mixing paddle, low speed drill, short-nap paint roller or notched squeegee (smoother surfaces), long-nap paint roller (more uneven surfaces) and a paintbrush

Mixing

Each individual unit of ARDEX MC RAPID comes in a 1.65 gal. (6.25 L) unit containing separate, pre-measured quantities of hardener (Part B) and resin (Part A). After opening each container, mix the resin (Part A) thoroughly before blending. For blending, the hardening agent (Part B) is added to the resin (Part A). 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 30 seconds, and then pour all of the contents back into the resin container. This step ensures that no hardener residue remains unreacted. Mix for an additional 30 seconds before applying.

CAUTION! *Once the ARDEX MC RAPID is mixed thoroughly, immediately pour the entire contents of the container onto the prepared concrete surface. Due to its high reactivity, this epoxy has a tendency toward intense heat buildup when in mass, such as when left in the original container. If this occurs, do not touch the container. Close the lid loosely, and transport the container by the handle to a cool room or outdoors until it sets and cools.*

Application

The required thickness for the ARDEX MC RAPID is dependent on application; see below. Note that application rates are approximate and dependent on concrete surface profile, texture and porosity.

	Sand broadcast required:	Minimum installation thickness:	Approximate application rate per mixed unit:
Underlayments up to 1/4" (6 mm) thick	No	10 mils / 250 microns	250 - 270 sq. ft. (23 - 25 sq. m)
Underlayments greater than 1/4" (6 mm) thick	Yes	14 mils / 350 microns	170 - 190 sq. ft. (16 - 18 sq. m)
Toppings	Yes	14 mils / 350 microns	170 - 190 sq. ft.
Fast-track primer (no moisture mitigation)	Yes	10 mils / 250 microns	250 - 270 sq. ft.
Direct installation of floor coverings (no underlayment)	No	10 mils / 250 microns	250 - 270 sq. ft.
ARDEX ACMS	Yes	14 mils / 350 microns	170 - 190 sq. ft.

Apply the freshly mixed ARDEX MC RAPID at the minimum thickness specified above. Use a short-nap paint roller or notched squeegee with back-rolling 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, edges and corners. Coat the area completely prior to proceeding.

A sand broadcast is required for certain applications; see chart. Where required, sand broadcast must proceed while the ARDEX MC RAPID is still in a fresh state (maximum 20 minutes).

Sand Broadcast Applications

While the ARDEX MC RAPID is still in a fresh state (maximum 20 minutes), broadcast an excess of fine sand (less than 1/50" in grain size or 98.5% passing sieve size #30 or #35) consistently over the entire area. When broadcasting the sand, use a NIOSH-approved dust mask in conformance with OSHA requirements regarding the handling of sand (crystalline silica). Sand must be clean and dry. Do not stand or walk on the freshly applied epoxy when broadcasting the sand. Once an area has been covered completely with sand, the surface of the sand can be walked on, so long as care is taken not to expose or disturb the epoxy. Use approximately 1 lb. of sand per sq. ft. of area (5 kg/m^2). Once the sand broadcast is complete, avoid all general traffic over the surface for a minimum of 4 hours.

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 or topping. No additional priming is required. There is no limit to how long the sanded surface can remain open before installing the ARDEX underlayment or topping provided that the surface does not become contaminated. If the underlayment or topping will not be installed immediately, protect its surface from construction traffic, dirt and debris using Masonite or similar. Install the ARDEX underlayment or topping in accordance with the instructions found in the corresponding ARDEX technical data sheet.

Applications Requiring No Sand Broadcast

For applications for which no sand broadcast is required, allow the ARDEX MC RAPID to dry a minimum of 4 hours (maximum of 20 hours - 70˚F / 21˚C) prior to proceeding.

ARDEX K 60 Up to 1/4" (6 mm) Thick

ARDEX K 60 can be installed up to 1/4" thick over ARDEX MC RAPID without the use of sand broadcast or a primer. Once the ARDEX MC RAPID has cured a minimum of 4 hours (maximum of 20 hours - 70˚F / 21˚C), the direct application of ARDEX K 60 can proceed. Refer to the ARDEX K 60 technical data sheet for installation instructions.

NOTE: Temperatures warmer than 70˚F will cause the ARDEX MC RAPID to cure more quickly, thus reducing the maximum time to install ARDEX K 60 over ARDEX MC RAPID without the use of a primer.

Other ARDEX Underlayments Up to 1/4" (6 mm) Thick

Prime the surface of the ARDEX MC RAPID with ARDEX P 82™ Ultra Prime. Allow the ARDEX P 82 to dry thoroughly (min. 3 hours, max. 24 hours). Install the ARDEX underlayment in accordance with the instructions found in the corresponding ARDEX technical data sheet.

Direct Installation of Flooring

ARDEX MC RAPID may receive floating/non-adhered flooring systems and direct-bond flooring systems without requiring the use of an ARDEX underlayment.

The ARDEX MC RAPID must cure a minimum of 4 hours (70˚F / 21˚C) prior to installing the floor covering and care must be taken not to puncture or otherwise compromise the ARDEX MC RAPID when the floor covering is installed. Please note that the adhesives used for the installation of the floor covering must be suitable for use over non-porous substrates, such as epoxy coating systems. Please also note that care should be taken to ensure that there is no absorption of liquids, including water or other solvents, from the adhesive into the ARDEX MC RAPID coated concrete.

Follow the adhesive manufacturer's recommendations for installation over an epoxy coating system, which may include smaller notched trowels and/or longer open times. When installing pressure sensitive adhesives directly over ARDEX MC RAPID, it may be necessary to allow a longer cure time than listed in the manufacturer's technical data sheets. An extended curing time will allow the adhesive to fully dry and prevent the adhesive's moisture from becoming trapped under the flooring. Additionally, for adhesives that are specified for use over a porous substrate, a cementitious underlayment with a minimum thickness of 1/8" must be installed over the ARDEX MC RAPID.

Please note that if the surface of the concrete coated with ARDEX MC RAPID is not flat and/or smooth enough for the installation of the floor covering, the appropriate ARDEX underlayment must be installed.

As always, prior to proceeding with the actual installation, we recommend installing an adequate number of properly located test areas, which include the adhesive and finish flooring, to determine the suitability of the application for its intended use.

Notes

FOR PROFESSIONAL USE ONLY.

ARDEX MC RAPID has a working time of approximately 20 minutes at 70°F (21°C). Lower temperatures will lengthen the working time, while higher temperatures will shorten it dramatically. Do not apply ARDEX MC RAPID if the surface temperature is below 50°F (10°C).

Dispose of packaging and residue in accordance with federal, state and local waste disposal regulations. Do not flush material down drains.

Precautions

Carefully read and follow all precautions and warnings on the product label. For complete safety information, please refer to the Safety Data Sheet (SDS) available at www.ardexamericas.com.

Technical Data According To ARDEX Quality Standards

All data based on 70˚F (21˚C) installation temperatures. Physical properties are typical values and not specifications.

Mixing Ratio:	Add entire pre-measured contents of Part B (Hardener) into Part A (Resin).
Coverage:	10 mils (250 microns): Approx. 250 - 270 sq. ft. (23 - 25 sq. m) per mixed unit of ARDEX MC RAPID. Approx. 150 - 165 sq. ft. per gallon (3.8 - 4 sq. m per liter) 14 mils (350 microns): 170 - 190 sq. ft. (16 - 18 sq. m) per mixed unit of ARDEX MC RAPID. Approx. 100 - 115 sq. ft. per gallon (2.5 - 2.8 sq. m per liter) (Will vary with concrete surface profile, porosity and texture)
Permeability (ASTM E96):	0.06 perms
Effect of 14 pH Solution (ASTM D1308):	No effect
Working Time:	20 minutes
Pot Life:	ARDEX MC RAPID is a fast-setting material; after mixing, immediately pour onto the substrate and apply
Walkable:	4 hours
Install underlayment or topping:	Min. 4 hours
VOC:	19.9 g/L, A+B, ASTM D2369
Packaging:	One 1.65 gal. (6.25 L) unit
Storage:	Store in a cool, dry area. Do not leave containers exposed to sun. Keep from freezing. Keep away from heat.
Shelf Life:	1 year, if unopened
Warranty:	ARDEX Engineered Cements Standard Limited Warranty applies.

Extended system warranty is available. Please note that training by the ARDEX Technical Service Department as well as the submittal and approval of an ARDEX MC™ Pre-Installation Checklist is required for extended warranty eligibility. Please contact the ARDEX Technical Service Department for details.

Made in the USA.

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Visit www.youtube.com/ARDEX101 to watch ARDEX MC RAPID product demonstration video.

For easy-to-use ARDEX Product Calculators and Product Information On the Go, download the ARDEX App at the iTunes Store or Google Play.

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