



ARDEX MC™ ULTRA

Two-Coat Moisture Control System For Concrete to Receive ARDEX Toppings and Underlayments

Two-coat epoxy resin system consisting of Primer and Sealer with double sand broadcast

Solvent-free, alkali resistant

Tenacious bond to substrate

For new or existing concrete that has moisture levels in excess of the maximum allowed by the manufacturer of the finished floor covering or coating

Use interior for extremely demanding applications and in critical areas such as hospital ER's and surgical suites, institutional, heavy commercial and decorative toppings

Suitable for use under all ARDEX Toppings and Underlayments, even where highly moisture sensitive flooring such as solid vinyl, rubber and linoleum sheeting will be installed

Provides secondary top-down waterproofing

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ARDEX MC™ ULTRA

Two-Coat Moisture Control System For Concrete to Receive ARDEX Toppings and Underlayments

Description and Usage

The ARDEX MC ULTRA™ MOISTURE CONTROL SYSTEM is a two-coat, 100% solids epoxy moisture management system formulated to suppress excessive moisture vapor in new or existing concrete prior to the installation of an ARDEX Topping with sealer, or Underlayment with flooring. 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 up to 98% RH. ARDEX MC ULTRA 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 coating, and there are no limits for the thickness of the topping or underlayment installed over it.

The ARDEX MC ULTRA system is based on a reactive epoxy that produces a hard surface and bonds tenaciously to the substrate. There are two components: the ARDEX MC ULTRA PRIMER, which is yellow in color and is installed as the base coat, and the ARDEX MC ULTRA SEALER, which is green in color and serves as the sealer coat. Both coats receive a sand broadcast layer. Once cured, this two-coat system reduces any level of moisture emissions to an acceptable level, even over new concrete that is only 7 days old. Because of the double sand broadcast, this system also provides secondary top-down waterproofing. The ARDEX MC ULTRA system serves as the base to receive ARDEX Toppings or Underlayments. No primer is required.

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 at least 200 psi 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.

Prior to beginning the installation, measure the relative humidity within the concrete in accordance with ASTM F2170. The RH shall not exceed 98%. The concrete surface cannot be damp and must be free of standing

water. In addition, the surface temperature must be measured and deemed to be at least 5°F (2.8°C) away from the dew point and rising to avoid condensation as the ARDEX MC ULTRA cures. These conditions must be maintained during the full application and cure of the system.

If the concrete substrate is too uneven to provide a uniform film thickness of the ARDEX MC ULTRA PRIMER and ARDEX MC ULTRA SEALER (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. Please refer to the appropriate ARDEX technical brochure for installation instructions and necessary cure times.

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.

Dormant Cracks and Saw-Cut Joints

To achieve a continuous moisture barrier, ARDEX recommends the use of a two-part, low viscosity rigid crack and joint filler such as ARDEX ArdiFix™ to fill small, non-moving cracks and saw-cut joints in existing concrete substrates. Cracks greater than a hairline in width [1/32" (0.79 mm)] and saw-cuts must be filled in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks and saw-cuts have been properly filled, broadcast sand to refusal and allow these areas to cure thoroughly in accordance with the epoxy manufacturer's recommendations prior to proceeding with the ARDEX MC™ ULTRA installation.

Moving Joints and Cracks

All moving joints and cracks must be honored up through the moisture control system, ARDEX Underlayment and floor covering by installing a flexible sealing compound designed specifically for use over moving joints such as ARDEX ARDISEAL™ RAPID PLUS. ARDEX cannot be responsible for issues arising from expansion and isolation joints, saw-cuts and new or existing cracks that may develop or widen after the system has been installed.

For questions regarding the appropriateness of specific joint treatment compounds, please contact the ARDEX Technical Service Department at 888-512-7339.

Mixing And Application

Each individual 10 lb (4.5 kg) unit contains separate, pre-measured quantities of hardener (Part A) and resin (Part B). The hardening agent (Part A) is added to the resin (Part B). First, separate the two units to relieve any 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 (screwdriver, etc.) all the way through to the bottom of the top unit several times. Let the top unit drain completely into the bottom unit. Once empty, remove the top unit and thoroughly mix the two components together using a low-speed drill and mixing paddle.

The ARDEX MC ULTRA Primer (yellow) is applied first. Apply the freshly mixed primer to the prepared concrete surface in a uniform direction at a maximum application rate of 170 sq. ft. (15.8 m²) per unit (approx. 9 to 10 mils/225 to 250 microns). 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 ULTRA PRIMER into the surface with the roller to ensure maximum penetration. ARDEX MC ULTRA PRIMER can also be worked into the surface with a paintbrush for hard to reach areas and corners. While this initial coat is still in a fresh state (maximum 30 minutes), broadcast an excess of fine sand (less than 1/50" in grain size or 98.5% passing sieve size #30 or #35) uniformly over the entire area. When broadcasting the 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. 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 sq. ft. of area. Once the sand broadcast is complete, avoid all traffic over the surface for a minimum of 6 hours.

After a minimum of 6 hours, broom sweep and vacuum the surface to remove all loose sand. Apply the ARDEX MC ULTRA SEALER top coat at a 90° angle to the ARDEX MC ULTRA PRIMER. Mix and apply the ARDEX MC ULTRA SEALER as outlined above at a maximum rate of 100 sq. ft. (9.3 m²) per unit (14 to 16 mils/350 to 450 microns). While this coat is still fresh (maximum 30 minutes), broadcast an excess of fine sand uniformly over the entire area as detailed above. Once the sand broadcast is complete, avoid all traffic over the surface for a minimum of 6 hours.

After 16 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 Topping or Underlayment. No additional priming is required. There is no limit to how long the sanded surface can remain open before installing the ARDEX Topping or Underlayment provided that the surface does not become contaminated. If the topping or underlayment will not be installed immediately, protect its surface from construction traffic, dirt and debris using Masonite or similar. Install the ARDEX Topping or Underlayment in accordance with the printed instructions found in the corresponding ARDEX Technical Brochure. It is not necessary to re-test the substrate for moisture emissions prior to installing the coating or floor covering.

Notes

The installation of ARDEX MC ULTRA does not require calcium chloride testing of the concrete per ASTM F1869 nor does ASTM permit this test over the top of concrete that has been treated with a moisture remediation system. ARDEX MC ULTRA is warranted to reduce emissions to an acceptable level for the entire flooring system regardless of the values obtained by this test.

ARDEX MC ULTRA PRIMER and ARDEX MC ULTRA SEALER have a working time of approximately 30 minutes at 70°F (21°C). Lower temperatures will lengthen the working time, while higher temperatures will dramatically shorten it. Do not apply ARDEX MC ULTRA if the surface temperature is below 50°F (10°C).

Once the ARDEX MC ULTRA is thoroughly mixed, use it immediately and without interruption. Due to their high reactivity, these epoxies have a tendency towards intense heat build-up, especially 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.

Precautions

RESIN

⚠WARNING! Causes skin and eye irritation. Vapors may cause respiratory irritation. May cause allergic reactions. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or dust. Avoid prolonged contact with skin. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. KEEP OUT OF THE REACH OF CHILDREN.

HARDENER

⚠DANGER! Combustible liquid and vapor. Toxic. Corrosive. Causes skin and eye burns. Harmful if inhaled, swallowed or absorbed through the skin. Severe respiratory irritant. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Contains components which may be easily absorbed through the skin. May cause severe irritation to the respiratory tract if vapors are inhaled. May cause severe allergic reactions or sensitization. Keep away from heat and flame. Do NOT get into eyes, on skin or on clothing. Do NOT breathe vapor. Do NOT swallow. Wash thoroughly after handling. Clean contaminated clothing before reuse. Keep container tightly closed. Use only with adequate ventilation. KEEP OUT OF THE REACH OF CHILDREN.

Technical Data According to ARDEX Quality Standards

All data based on 70°F (21°C) installation temperatures

Mixing Ratio: Add entire pre-measured contents of Part A (hardener) to Part B (resin).

Material Requirements on CSP 3 Prepared Concrete (approx.):

Max. 170 sq. ft. (15.8 m²) per mixed unit of ARDEX MC ULTRA PRIMER

Max. 100 sq. ft. (9.3 m²) per mixed unit of ARDEX MC ULTRA SEALER

(Will vary with surface profile)

Permeability (ASTM E96):

0.02 perms

Affect of 14 pH solution (ASTM D1308):

No effect

Working Time:

30 minutes

Pot Life:

30 minutes

Install ARDEX MC ULTRA Sealer:

Min. 6 hours after sand broadcast

Max. unlimited provided surface is protected.

Install Topping or Underlayment over ARDEX MC ULTRA SEALER:

Min. 16 hours,

max. unlimited provided surface is protected.

VOC Content:

0 g/L calculated & reported, SCAQMD 1168

Packaging:

10 lb/4.5 kg net weight

Storage:

Store in a cool dry area. Do not expose containers to sun. Keep from freezing. Keep away from heat.

Shelf Life:

One year if unopened

Warranty:

ARDEX Engineered Cements Standard Limited Warranty applies. Extended system warranty is available. Please see the ARDEX MOISTURE CONTROL SYSTEMS brochure for terms and conditions. Please note that training by the ARDEX Technical Service Department is required for extended warranty eligibility.

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