

ARDEX GUIDE SPECIFICATION
ARDEX MRF®
Moisture-Resistant, Rapid-Drying, Skimcoat Patching Underlayment

SECTION 03 01 30
Maintenance of Cast-In-Place Concrete

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes a trowel-grade underlayment formulated from a blend of Portland cement and other hydraulic cements that provides a smooth surface prior to the installation of ARDEX MC™ Moisture Control Systems or moisture-resistant adhesives and flooring.

- 1. ARDEX MRF® Moisture-Resistant, Rapid-Drying, Skimcoat Patching Underlayment
- 2. ARDEX P 82™ Ultra Prime
- 3. ARDEX P 51™ Primer

- B. Related Sections include the following:

- 1. Section 03 30 00, Cast-In-Place Concrete
- 2. Section 09 05 61.13 Moisture Vapor Emission Control
- 3. Division 09 Flooring Sections

1.3 REFERENCES

- A. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- B. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

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 product must be completed by a factory-trained applicator, such as an ARDEX LevelMaster® Elite, Choice Contractor or INSTALL Substrate Prep Certified Installer, 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: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 5 years. Contact Manufacturer Representative prior to installation.

1.6 WARRANTY: ARDEX MRF 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 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 cool, dry area and protect from direct sunlight. Protect unused material by removing air from bag and sealing tightly.
- C. Handle products in accordance with manufacturer's printed recommendations.

1.8 PROJECT CONDITIONS

- A. Do not install material below 40°F (5°C) surface and air temperatures. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical Service Department.

PART 2 - PRODUCTS

2.1 MAINTENANCE OF CAST-IN-PLACE CONCRETE

- A. Moisture-Resistant, Rapid-Drying, Skimcoat Patching Underlayment
 - 1. Acceptable Products:

- a. ARDEX MRF; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA; 724-203-5000; www.ardexamericas.com
 - i. Primer
 - 1. Epoxy coating systems: ARDEX P 82
 - 2. Gypsum: Double primed with ARDEX P 51

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

PART 3 – EXECUTION

3.1 PREPARATION

A. General: Prepare substrate in accordance with manufacturer's instructions.

1. Concrete:

- a. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete substrates must be solid, structurally sound, thoroughly clean and free of oil, wax, grease, asphalt and latex compounds, curing compounds, sealers and any contaminant that might act as a bond breaker. If necessary, mechanically clean the floor down to sound, solid concrete by shot blasting or similar. Over-watered, frozen or otherwise weak concrete surfaces must also be removed down to sound, solid concrete by mechanical methods. Sanding equipment is not an effective method to remove curing and sealing compounds.
- b. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the adhesive or the finished floor covering. For areas where moisture vapor emissions exceed the required limits refer to Section 09 05 61.13, Moisture Vapor Emission Control and install the appropriate ARDEX Moisture Control System.

2. Crack and Joint Preparation

- a. Moving Joints and Moving Cracks – Honor all moving joints and moving cracks up through the installation. All existing expansion joints, isolation joints and construction joints, as well as all moving cracks, must be honored up through the underlayment and flooring. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.
- b. Dormant Control Joints and Dormant Cracks – Fill all dormant control joints and dormant cracks with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX MRF as recommended by the manufacturer. Please be advised that while dormant control joints and dormant cracks may be filled with a trowel-grade material such as ARDEX MRF prior to installing finish flooring, this filling is not intended to act as a repair method that will eliminate the possibility of joints and cracks telegraphing.

3. Gypsum: For interior areas that do not have excessive moisture, ARDEX MRF can be installed over gypsum underlayments that are sound, solid, well-bonded and properly primed. All gypsum subfloors must be thoroughly clean and free of dirt, debris, sealers and contaminants that might act as a bond breaker. Mechanically clean if necessary using shot blasting or other. Please be advised, however, that the fact remains that the substrate is gypsum, and therefore has inherent weakness. ARDEX MRF will provide a solid surface to which new flooring can bond, but cannot change the fact that a weak substrate lies below.
4. Wood:
 - a. The interior wood subfloor must be constructed according to prevailing building codes and must be solid and securely fixed to provide a rigid base free of undue flex. Any boards exhibiting movement must be re-nailed. The surface of the wood must be clean and free of oil, grease, wax, dirt, varnish, shellac and any contaminant that might act as a bond breaker. If necessary, sand down to bare wood. A commercial drum sander can be used to sand large areas. Do not use solvents, strippers or cleaners. Vacuum all dust and debris. It is the responsibility of the installation contractor to verify that the wood subfloor is thoroughly clean and properly anchored.
 - b. Some flooring manufacturers recommend a finish-grade wood underlayment be installed over the existing wood subfloor. If necessary, ARDEX MRF can be used to smooth fasteners and/or joints in the wood underlayment. Please note that the wood underlayment must be suitable for the installation of the specific floor covering and must be installed in accordance with the wood underlayment manufacturer's recommendations.
5. Adhesive Residues on Concrete: For interior areas that do not have excessive moisture, ARDEX MRF can also be installed over non-water-soluble adhesive residue on concrete only. Adhesive residues on concrete must first be tested to make certain they are not water-soluble. Water-soluble adhesives must be completely mechanically removed down to clean concrete. The existing adhesive also must be tested to verify that it does not interact with the new flooring adhesive, and the new flooring must be tested to ensure it is not susceptible to bleed through of the existing adhesive. If adhesive interaction and/or migration are a concern, install an ARDEX self-leveling material. Non-water-soluble adhesives should be prepared to a thin, well-bonded residue using the wet-scraping technique as recommended by the Resilient Floor Covering Institute (www.rfci.com). If the adhesive is not well-bonded to the concrete or is brittle, powdery or otherwise weak, it must be completely, mechanically removed down to clean, sound, solid concrete. Any existing patching materials below the adhesive must be removed completely. The prepared residue should appear as nothing more than a transparent stain on the concrete after scraping.
6. Other Non-Porous Substrates: In interior areas that do not have excessive moisture, ARDEX MRF can also be applied over clean, sound and solidly bonded terrazzo, burnished concrete and epoxy coating systems. In interior or exterior areas, ARDEX MRF can be applied over clean, sound and solidly bonded ceramic, quarry and porcelain tiles. The substrate must be clean, including complete removal of existing waxes and sealers, dust, dirt, debris and any other contamination that may act as a bond breaker. Substrate preparation must be by mechanical means, such as shot blasting.

3.2 APPLICATION OF ARDEX MRF:

- 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. Priming:
 - 1. Gypsum: Make an initial application of ARDEX P 51 diluted with 3 parts water using a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry thoroughly (1 to 3 hours) before proceeding with the second application of ARDEX P 51 diluted 1:1 with water. Allow thorough drying to a clear, thin film (min. 30 minutes, max. 24 hours). It is critical to ensure that the ARDEX P 51 is dry prior to proceeding with the next installation step. To determine if the ARDEX P 51 is dry after a minimum of 30 minutes (max. 24 hours), pour water onto the surface of the primer in several areas and rub it with your finger. If the water remains clear, the primer is dry. If the water turns cloudy or milky, additional drying time is needed.
 - 2. Epoxy coating systems: Prime with ARDEX P 82. Do not leave any bare spots. Brush off puddles any excess primer. Allow primer to dry to a thin, slightly tacky film (min. 3 hours, max. 24 hours).
- D. Mixing: Comply with manufacturer's printed instructions and the following.
 - 1. Add 1.75 quarts (1.65 L) of clean potable water per 10-pound (4.5 kg) bag.
 - 2. Mix using a ½" (12 mm, MIN. 650 rpm) low speed heavy-duty mixing drill with an ARDEX T-2 Ring Mixing Paddle. Do not overwater.
 - 3. When mixing sanded materials, ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a wet/dry (Shop-Vac® style) vacuum and HEPA dust extraction vacuum system. Additionally, each bag should be handled with care and emptied slowly to avoid creating a plume of dust. Contact the ARDEX Technical Service Department for more details on ARDEX products and air quality management.
- E. Application: Comply with manufacturer's printed instructions and the following.
 - 1. For interior applications, ARDEX MRF can be installed from a true featheredge up to ½" (12 mm) over large areas. It can also be installed up to any thickness in small, well-defined areas. For exterior applications, ARDEX MRF can be installed at a skim coat over large areas and up to ¼" (6 mm) in small, well-defined areas. There is no minimum thickness requirement for this product.
 - 2. Apply the ARDEX MRF to the substrate with the flat side of a steel trowel (keying in) to obtain a solid mechanical bond before applying the desired thickness.
- F. Curing

1. Standard floor coverings such as ceramic tile, VCT, sheet vinyl and carpet can be installed approximately 30 minutes after installing a skim coat application of ARDEX MRF (70°F / 21°C). If installing wood flooring, or, if high-performance adhesives will be used, such as epoxies or urethanes, ARDEX MRF must first cure for 16 hours (70°F / 21°C).
2. If it is found that the adhesive being used is drying more quickly over the ARDEX MRF than over adjacent concrete, we recommend that the surface of the underlayment be primed with ARDEX P 51 diluted 1:3 with water. Allow the primer to dry thoroughly (1 -3 hours), and proceed with the installation of the adhesive. The use of the primer will even out the open time of the adhesive without affecting the bond or the long-term performance. Please note that this application for interior areas that do not have excessive moisture.
3. ARDEX MRF requires no special curing procedure and is ready to receive ARDEX MC™ RAPID or ARDEX VR 98™ once it has fully cured (minimum 2 hours; 70°F / 21°C).

3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the ARDEX underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

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