

ARDEX GUIDE SPECIFICATION

ARDEX VR 98™

Fast-Track, One-Component Moisture Vapor Retarder

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 ready-to-use, one-component, water-based, two-coat system formulated to suppress residual moisture in concrete with RH readings up to 98%. ARDEX underlayments may be installed over the second coat in approximately 2 hours without priming.

- 1. ARDEX VR 98™ Fast-Track, One-Component Moisture Vapor Retarder
- 2. ARDEX K 10™ Reactivable™, High-Flow, Self-Leveling Underlayment
- 3. ARDEX FEATHER FINISH® Self-Drying, Cement-Based Finish Underlayment

- B. Related Sections include the following:

- 1. Section 03 30 00, Cast-In-Place Concrete
- 2. 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 F2170 - Relative Humidity in Concrete Floor Slabs Using in situ Probes
- D. ASTM E1745 – Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
- E. ASTM D4263 – Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
- F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

- G. 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
- H. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

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® or ARDEX 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: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 3 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 ARDEX VR 98™ Warranty. Upon receipt and approval of the pre-installation checklist, a 15-year ARDEX VR 98™ Warranty is available for ARDEX LevelMaster Elite® Installers and a 10-year ARDEX VR 98™ Warranty is available for factory-trained installers.

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 MOISTURE VAPOR RETARDER

A. Fast-Track, One-Component Moisture Vapor Retarder

Acceptable Products:

- a. ARDEX VR 98™; 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+/-2°C) and 50% +/-5% relative humidity:
 - a. Application: Manual
 - b. Material Requirements on clean, absorbent concrete: Approx. 425 sq. ft. (39 sq. m) per unit at 2 coats of 8 mils (200 microns) each. Approx. 100 sq. ft. per gal (2.45 sq. m per L) at 2 coats of 8 mils (200 microns) each.
 - c. 14 pH solution (ASTM D1308): No effect
 - d. VOC: 37.5 g/L
 - e. Walkable: Minimum of 2 hours
 - f. Install Underlayment after final coat is applied: Minimum approximately 2 hours, maximum 24 hours

2.2 HYDRAULIC CEMENT UNDERLAYMENT

A. Hydraulic Cement-based Self-Leveling Underlayment.

1. Acceptable Products:

- a. ARDEX K 10™; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA, (724) 203-5000, www.ardexamericas.com

2.3 MAINTENANCE OF CAST-IN-PLACE CONCRETE

A. Self-Drying, Cement-Based Finish Underlayment

1. Acceptable Products:

- a. ARDEX FEATHER FINISH®; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA 724-203-5000, www.ardexamericas.com

2.4 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F/21°C).

PART 3 – EXECUTION

3.1 PREPARATION

A. 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 structurally sound and solid, surface dry and thoroughly clean and free of all dust, dirt, oil, grease, wax, asphalt, paint, patching compounds, curing and sealing compounds, form release and any contaminant that could act as a bond breaker. If necessary, mechanically clean the floor down to sound, solid concrete by shot blasting or similar and mechanically prepare the concrete to ensure the surface is porous. Over-water, frozen or otherwise weak concrete surfaces also must be cleaned down to sound, solid concrete by mechanical methods. Sanding equipment is not an effective method to remove contaminants from concrete. Acid etching, solvents, sweeping compounds and adhesive removers are not acceptable means of cleaning the substrate.
2. In order for the ARDEX VR 98 to obtain a solid bond, the concrete must be clean and absorbent.
3. The concrete must have a minimum tensile strength of at least 150 psi (10.5 kg/cm²) for areas to receive normal foot traffic and 200 psi (14 kg/cm²) for areas of heavy commercial traffic when tested in accordance with ASTM C1583.
4. Prior to beginning the installation, the relative humidity within the concrete must be measured (ASTM F2170). Results must be 98% RH or less. For RH results up to 98%, the installation area must be enclosed and acclimated and the ambient humidity must not exceed 60%.
5. If the slab is on or below grade, an effective and intact vapor retarder must be placed directly below the concrete in conformance with ASTM E1745.
6. The surface of the concrete must be completely dry at the time the ARDEX VR 98 is installed. Verify concrete surface dryness by mat testing in conformance with ASTM D4263. This test must be conducted for at least 4 hours, which is the time required for the ARDEX VR 98 to set sufficiently.
7. 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 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.

8. All dormant control joints and dormant cracks greater than a hairline (1/32" / 0.79 mm) must be pre-filled with a two-part, low viscosity, 100% solids, rigid crack and joint filler, such as ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair. 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 VR 98 installation.
9. All moving joints and moving cracks must be honored up through the ARDEX VR 98, 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 Semi-Rigid Joint Sealant.

3.2 APPLICATION OF ARDEX VR 98™:

- 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. Thoroughly mix ARDEX VR 98 with a low speed drill and paint mixing paddle until the material is evenly distributed throughout the container. Do not add water or other additives!
- D. Application: Comply with manufacturer's printed instructions and the following.
 1. Immediately apply the freshly mixed ARDEX VR 98 to the prepared concrete. For best results, pour the ARDEX VR 98 in a serpentine pattern and roll at a 90° angle to the direction of the pour using a short-nap paint roller. The use of a professional style roller cage is also highly recommended. Roll the material in a uniform direction, without interruption and at a thickness of 8 mils (200 microns). To minimize the potential for pinhole formation, work the ARDEX VR 98 into the surface with the roller to ensure maximum penetration. ARDEX VR 98 can also be worked into the surface with a paintbrush for hard-to-reach areas and corners. Once an area has been coated completely, allow this to dry to a tack-free film for a minimum of 30 minutes.
 2. Once the first coat is dry, apply the second coat at right angles to the first and install without interruption and in a uniform direction at a thickness of 8 mils (200 microns). Allow the second coat to dry completely (approximately 2 hours). Note: Do not allow more than 24 hours of dry time between coats. If the ARDEX VR 98 was not worked into the surface sufficiently enough to prevent pinholes, you must apply another coat of ARDEX VR 98.
 3. When the final coat of ARDEX VR 98 is completely dry (approx. 2 hours), install an ARDEX underlayment, such as ARDEX K 10 or ARDEX FEATHER FINISH, at a

minimum thickness of 1/8" (3 mm) and within 24 hours. Do not exceed an installation thickness of 1/4" (6 mm). If a trowelable ARDEX underlayment will be installed a trowel without sharp edges, such as a pool trowel, a plastic trowel or a rubber float, must be used to avoid damage to the ARDEX VR 98 during the application of the trowel-applied underlayment.

- E. It is not necessary to re-test the substrate for moisture emissions prior to installing the floor covering.

3.3 APPLICATION OF UNDERLAYMENT:

- 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, Installation and Cure of ARDEX Underlayment: Comply with manufacturer's printed instructions for mixing of material, installation and cure. For questions contact the ARDEX Technical Services Department at (724) 203-5000.
 - 1. Comply with manufacturer's printed instructions for mixing of material, installation, and cure.
 - 2. 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.

3.4 DIRECT APPLICATION OF FINISH FLOORING: Please review the technical data sheet for ARDEX VR 98 for specific considerations and directions.

3.5 FIELD QUALITY CONTROL

- A. Where required, contact manufacturer for field sampling methods and procedures.

3.6 PROTECTION

- A. Regarding the ARDEX VR 98 installation, avoid all general traffic over the ARDEX VR 98 surface until the ARDEX VR 98 is completely dry (approximately 2 hours). If the underlayment will not be installed immediately, protect the surface from construction traffic, dirt and debris using Masonite or similar. Regarding the underlayment installation, 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