ARDEX GUIDE SPECIFICATION

ARDEX LU 100™ Self-Leveling Flooring Underlayment
A Self-Leveling Underlayment that Consists of a Blend of High Strength Cements and Powdered Polymers

SECTION 03 54 13
GYPSUM CEMENT UNDERLAYMENT

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 self-leveling underlayment that consists of a blend of high strength cements and powdered polymers used to level and smooth interior, above-grade concrete, wood, VCT, existing patching and leveling materials and non-water soluble adhesive residue on concrete.

1. ARDEX LU 100™ Self-Leveling Flooring Underlayment
2. ARDEX P 51™ Primer
3. ARDEX P 82™ Ultra Prime

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 C109M, 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 F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

E. ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

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. Contact ARDEX Americas (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

A. ARDEX LU 100™ 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, depending on the system installed.

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. ARDEX LU 100™ is a gypsum-based material. Do not install in applications on or below grade or in any areas subject to high moisture conditions. 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 GYPSUM CEMENT UNDERLAYMENT

A. Self-leveling, gypsum-cement-based underlayment

1. Acceptable Products:

   a. ARDEX LU 100™; Manufactured by ARDEX Americas, USA, 724-203-5000, www.ardexamericas.com

2. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F (23° C) and 50 percent relative humidity:

   a. Primer:

      i. Standard Absorbent Concrete: ARDEX P 51™ Primer diluted 1:1 with water
      ii. Extremely Absorbent Concrete: May require two applications of ARDEX P 51 to minimize the potential for pinholes forming in the ARDEX LU 100.
      iii. Wood and Non-Water-Soluble Adhesive Residue on Concrete: ARDEX P 51™ Primer undiluted
      iv. Other Non-Porous Substrates, such as burnished concrete, terrazzo, VCT, ceramic, quarry and porcelain tiles, epoxy coating systems and concrete treated with silicate compounds: ARDEX P 82™ Ultra Prime

   b. Application: Barrel Mix or Pump
   c. Compressive Strength: 5,000 psi (350 kg/cm^2) at 28 days, ASTM C109M
   d. Flexural Strength: 1,000 psi (70 kg/cm^2) at 28 days, ASTM C348
   e. Walkable: 2 – 3 hours
   f. VOC: 0

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

PART 3 – EXECUTION

3.1 PREPARATION

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

1. Concrete Subfloors: Prepare substrate in accordance with manufacturer’s instructions.

   a. 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 priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.

B. Crack and Joint Preparation

1. Moving Joints and Moving Cracks – honor all moving joints such as expansion joints, isolation joints as well as all moving cracks up through the underlayment.

C. 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. 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). The prepared residue should appear as nothing more than a transparent stain on the concrete after scraping.

D. Non-porous subfloors such as terrazzo, burnished concrete, epoxy coating systems, VCT, ceramic quarry and porcelain tiles must be clean and free of all waxes, sealers dust, dirt, debris and any other contaminant that may act as a bond breaker. If necessary, clean by mechanical methods such as shot blasting.

E. Wood Subfloors: Prepare substrate in accordance with manufacturer's instructions.

1. The wood subfloor either must be solid hardwood flooring; a minimum of 3/4" (19 mm) tongue-and-groove, APA-rated Type 1, exterior exposure plywood; or an approved OSB equivalent. The 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 properly fastened to create a sound, solid subfloor. 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. Open joints should be filled with ARDEX FEATHER FINISH®. It is the responsibility of the installation contractor to ensure that the wood subfloor is thoroughly clean and properly anchored prior to the installation of any ARDEX material.

3.2 APPLICATION OF ARDEX LU100™:

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: Comply with manufacturer's printed instructions.

D. Mixing: Comply with manufacturer's printed instructions.

E. Application: Comply with manufacturer's printed instructions and the following.

1. When installing ARDEX LU 100 with the ARDEX T-5 Smoother, install at a minimum thickness of 1/8" (3 mm) over the highest point in the floor, which typically results in an average thickness of 1/4" (6 mm) or more over the entire floor. When installing ARDEX

LU 100 with the ARDEX T-6 Spiked Roller, it is possible to install a minimum thickness of 1/16" (1.5 mm) over the highest point, which typically results in an average thickness of 1/8" (3 mm). ARDEX LU 100 can be installed up to 2” (5 cm) thick neat, and up to 5" (12.7 cm) with the addition of proper aggregate.To match existing elevations, ARDEX LU 100 can be tapered to as thin an application as the sand in the material will allow. If a true featheredge is needed, ARDEX recommends using ARDEX FEATHER FINISH for transitions.

2. Pour the mix onto the floor and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother, or spike roll the material with the ARDEX T-6 Spiked Roller. Work in a continuous manner during the entire self-leveling installation. Wear baseball or soccer shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX LU 100.

3. When installing ARDEX LU 100 with the ARDEX T-5 Smoother, install at a minimum thickness of 1/8" (3 mm) over the highest point in the floor, which typically results in an average thickness of 1/4" (6 mm) or more over the entire floor. When installing ARDEX LU 100 with the ARDEX T-6 Spiked Roller, it is possible to install a minimum thickness of 1/16" (1.5 mm) over the highest point, which typically results in an average thickness of 1/8" (3 mm). ARDEX LU 100 can be installed up to 2” (5 cm) thick neat, and up to 5" (12.7 cm) with the addition of proper aggregate.To match existing elevations, ARDEX LU 100 can be tapered to as thin an application as the sand in the material will allow. If a true featheredge is needed, ARDEX recommends using ARDEX FEATHER FINISH for transitions.

4. Pour the mix onto the floor and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother, or spike roll the material with the ARDEX T-6 Spiked Roller. Work in a continuous manner during the entire self-leveling installation. Wear baseball or soccer shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX LU 100.

F. Curing

1. Floor coverings can be installed after the underlayment has dried thoroughly. Allow the installation to dry a minimum of 48 hours prior to mat testing in accordance with ASTM D4263. To do this, place a piece of heavy plastic or a smooth rubber mat down over a 2’ X 2’ area. After 24 hours, lift the barrier material and inspect for surface darkening. A darkened area indicates excessive moisture is still present, and further drying time is required. Repeat the above test at regular intervals until no darkening is observed.

2. Once the installation is deemed dry, prime the entire area with ARDEX P 51 mixed with 3 parts water by volume. Apply the primer as outlined in the Priming section. Allow drying to a clear, thin film (min. 3 hours, max. 24 hours) before applying the thin set mortar or adhesive and floor covering. The application of ARDEX P 51 will help ensure that the adhesive or setting material has sufficient open time prior to placing the floor covering.

3. Drying time is a function of jobsite temperature and humidity conditions. While a 1/4” (6 mm) thick installation may be dry enough for some types of floor covering after only a few days, additional drying time may be necessary for deeper installations or for the installation of more moisture-sensitive flooring. Low substrate temperatures and/or high ambient humidity will extend the drying time. Adequate ventilation and heat will aid drying. Forced drying can dry the surface of the underlayment prematurely and is not recommended.

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