ARDEX TL 2000™

Fiber Reinforced, Self-Leveling Underlayment

The high flow, low prep solution for an optimal flat, smooth surface to install over wood and other common substrates

Easy to mix and apply; high flow material

No lath mesh or additives required over wood substrates

Provides a smooth, flat surface optimal for installing large format tiles and stone over wood, concrete, gypsum VCT, porcelain tiles, existing patching or leveling materials and non-water-soluble adhesive residue on concrete

Installs up to 1 1/4" (3 cm) neat, 2" (5 cm) with aggregate in most applications

Walkable in 2 to 3 hours

Install floor coverings in as little as 24 hours

ARDEX TL 2000

Fiber Reinforced, Self-Leveling Underlayment

Suitable Substrates

- Concrete (structurally sound)
- Absorbent terrazzo on concrete†
- Patching, leveling or fill materials
- Plywood subfloors (untreated)
- Solid hardwood†
- Gypsum††
- Properly installed ARDEX moisture control systems on concrete:
  - ARDEX MC™ RAPID
  - ARDEX VB 100
  - ARDEX VR 98™
- Other approved, non-porous materials on concrete†:
  - Non-porous (non-absorbent) cementitious terrazzo
  - Ceramic, quarry or porcelain tiles
  - Epoxy coatings
  - Epoxy terrazzo
  - Non-Water-Soluble Adhesive Residue on Concrete
  - Concrete treated with certain curing compounds (test area only; for full instructions, see www.ardexamericas.com/properprep

†Must be sound, solid and well-bonded to underlying, structurally sound substrates.

††Please be advised that gypsum is inherently weak. This product will provide a solid bonding surface for new flooring, but it cannot correct the weakness of an underlying gypsum surface.

Suitable Applications

- Areas to receive a suitable floor covering material, such as carpet, vinyl, ceramic, etc. Do not use as a wear surface.
- Above-grade
- On-ground substrates that have been treated with a suitable ARDEX moisture control system
- Dry areas only
- Interior applications only

Job Conditions

During installation and cure, substrate and ambient temperatures must be a minimum of 50° F / 10° C.

Step 1: Moisture Evaluation and Testing

This product is intended for interior, dry spaces. Hydrostatic pressure, plumbing leaks, flood factors and other sources of water infiltration must be identified and corrected prior to installation. This product is not a vapor barrier and will allow free passage of moisture vapor.

Test concrete in accordance with ASTM F2170.

For high-moisture floor coverings and adhesives, this product can be installed over concrete with relative humidity (RH) levels up to 99% provided: above-grade only.

All other cases: Moisture control is required if the RH exceeds the most stringent of the following: 1) the limitations imposed by the flooring manufacturer; 2) the limitations imposed by the adhesive manufacturer.

If moisture control is required, see "Moisture Control System Selection" section below. If moisture control is not required, see the "Priming Method Selection" section below.

Moisture Control System Selection

ARDEX MC RAPID or ARDEX VB 100: RH levels up to 100% on all grade levels.

ARDEX VR 98:

- RH levels are 98% or below (85% for radiant-heated slabs)
- The slab is either above-grade, or, the slab is built on a vapor retarder, which remains effective and intact, in conformance with ASTM E1745

If moisture control is not required, choose the appropriate primer in accordance with the next section.

Priming Method Selection (If moisture control is not required)

- ARDEX P 51™ Primer
- ARDEX P 82 ™ Ultra Prime
- ARDEX P 4™ Pre-Mixed, Rapid-Drying, Multipurpose Primer

Substrate (Dry areas only Interior applications only; above-grade or moisture mitigated)	Porosity	Priming Course
Concrete (structurally sound) Absorbent terrazzo on concrete	Standard absorbent (porous)	ARDEX P 51 1:1 or ARDEX P 4
	Non-absorbent (non-porous; burnished)	ARDEX P 82 or ARDEX P 4
	Extremely absorbent concrete	ARDEX P 51 "Double prime" or ARDEX P 4
Patching, leveling or fill materials	N/A	ARDEX P 51 1:1 or ARDEX P 4
Gypsum	N/A	ARDEX P 51 "Double prime" or ARDEX P 4
Wood	N/A	ARDEX P 51 Undiluted or ARDEX P 4
Non-Water-Soluble Adhesive Residue on Concrete	N/A	ARDEX P 51 Undiluted
Other approved, non-porous materials on concrete (See section entitled "Suitable Substrates" above.)	N/A	All except adhesive residue: ARDEX P 82 or ARDEX P 4

Step 2: Substrate Preparation (Proper Prep™)

For full details on Proper Prep, reference the following articles at ardexamericas.com/services/properprep:

- Article 1: Preparing Concrete for Bonded ARDEX or HENRY Applications
- Article 1.1: Preparing Concrete for ARDEX Underlayments
- Article 2: Preparing Wood for Bonded ARDEX Applications
- Proper Prep Brochure

If necessary, mechanically clean the substrate by shot blasting or similar means. Do not use acid etching, adhesive removers, solvents or sweeping compounds, as these are bond breakers. Sanding is not an effective method to remove contaminants from concrete.

Substrate must be dry and free of excess moisture and alkali. All substrates must be sound, solid and thoroughly clean of all bond-breaking contaminants, including but not limited to: overwatered or otherwise loose or weak material; dirt, dust, wax, grease, paints and oils; unapproved curing compounds and sealers; unsuitable adhesive residues.

Minimum Preparation

Depending on the selected priming course, additional prep may be needed, as follows:

Primer	Minimum Preparation
ARDEX P 4	Substrate must be clean
ARDEX P 51 1:1 ARDEX VR 98 ARDEX VB 100	Substrate must be clean and absorbent (ASTM F3191)
ARDEX P 82	Substrate must be clean and not absorbent.
ARDEX P 51 Undiluted	Substrate must be clean; Non-water-soluble adhesive residue must be wet scraped to thin, well-bonded residue (rfci.com).
ARDEX MC RAPID	Mechanically remove all adhesive residue, sealers, curing compounds, tiles, mortars and epoxy coatings down to clean, sound, solid concrete / terrazzo. Concrete and terrazzo substrates must be clean and prepared to a minimum CSP 3 / maximum CSP 5 (icri.org).

Following preparation, thoroughly vacuum to remove all excess dirt and debris.

Handle and dispose of asbestos and other hazardous materials in accordance with prevailing regulations, which supersede the recommendations in this document.

Step 3: Treating Joints and Cracks

All moving joints, including expansion joints and isolation joints, as well as all moving cracks, must be honored up through the entire flooring system, including the finishing course. Under no circumstances should this product, the moisture control system, the selected primer or any other component of the flooring system be installed over these.

Dormant control joints and Dormant cracks may be pre-filled; however, this filling is not intended to act as a repair method that will eliminate the possibility of telegraphing. Non-structural materials are unable to restrain movement within a concrete slab. Cracks will telegraph in any area that exhibits movement, such as an active crack, an expansion or isolation joint, or an area where dissimilar substrates meet. We know of no method to prevent this telegraphing.

If an ARDEX moisture control system will be installed (see "Moisture Testing" section above): All 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™ Low Viscosity Rigid Polyurethane Crack and Joint Repair and sand broadcasted to refusal in strict accordance with the technical data sheet.

For filling open joints in plywood subfloors, use ARDEX SKM™ Skimcoat Patch & Finishing Underlayment or similar in accordance with the technical data sheet at www.ardexamericas.com.

Step 4: Install Appropriate Moisture Control or Priming Course

Products may need longer drying times with low surface temperatures and/or high ambient humidity. Do not proceed with subsequent steps before product has dried thoroughly.`

Moisture Control System Installation *(Priming course if moisture control is required)*

If moisture control is required, install the ARDEX moisture control system in accordance with the appropriate technical data sheet (www.ardexamericas.com/products). See section entitled "Moisture Evaluation and Testing" above.

Priming *(If moisture control is not required)*

See section entitled Priming Method Selection above to select the appropriate primer based on the substrate.

Standard absorbent (porous) Concrete: ARDEX P 51 Mixed 1:1

Dilute primer with water at a rate of 1:1 by volume. Apply evenly with a clean, soft-bristled push broom. Do not use paint rollers, mops or spray equipment. Do not leave bare spots. Brush off puddles and excess primer.

It is critical to ensure that the primer is dry prior to proceeding with the next installation step. To determine if the primer 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**.**

Extremely absorbent concrete: ARDEX P 51 "Double prime"

Make an initial application of primer diluted with 3 parts water by volume. Let the initial application dry thoroughly (1 - 3 hours), and then install a second application of primer mixed 1:1 with water as detailed directly above

Wood and Non-Water-Soluble Adhesive Residue on Concrete: ARDEX P 51 Undiluted

Prime with ARDEX P 51 at full strength (do not dilute). Apply directly to the prepared substrate with a short-nap or sponge paint roller, leaving a thin coat of primer. Do not use a push broom. Do not leave any bare spots. Back roll with a dry roller to remove excess primer. Allow primer to dry to a clear, thin film (min. 3 hours, max. 24 hours).

Non-absorbent (non-porous; burnished) Substrates: ARDEX P 82

Follow the mixing instructions on the container, and apply with a short-nap or sponge paint roller, leaving a thin coat of primer. Do not leave any bare spots. Back roll with a dry roller to remove excess primer. ARDEX P 82 should be applied within 1 hour of mixing. Allow to dry to a thin, slightly tacky film (min. 3 hours, max. 24 hours).

Various, Approved Substrates: ARDEX P 4

Apply a thin, even layer to the substrate using a short-nap roller, sponge paint roller or paintbrush. Allow the primer to dry to a thin, opaque, white film (min. 30 minutes; 70°F / 21°C). Once dry, there is no time limit before the subsequent installation may proceed. However, please note that the subsequent installation should proceed as soon as possible to avoid surface contamination or damage to the primed surface.

Step 5: Mixing and Application

Recommended Tools

ARDEX T-1 Mixing Paddle; Mixing Container; 1/2" (12 mm) heavy-duty drill (min. 650 rpm); appropriate measuring bucket; ARDEX T-4 Spreader; ARDEX T-5 Smoother; cleated athletic shoes with non-metallic spikes; ARDEX T-6 Spiked Roller

Safety and OSHA Compliance

Handle each bag with care, emptying it in a manner that avoids creating a plume of dust. While mixing, use a standard "gutter hook" vacuum attachment in combination with a heavy-duty, bucket-style vacuum (Shop-Vac or similar) and HEPA dust extraction vacuum system.

Application Data

Water Ratio:	4.5 quarts (4.25 L) clean water Per bag
Flow time:	9 minutes (70°F / 21°C)

Thickness of Application

Maximum Thickness of Application

Application	Maximum Thickness of Application
Over substrates primed with ARDEX VR 98 or ARDEX VB 100	1/4" (6 mm)
Over substrates primed with Undiluted ARDEX P 51, ARDEX P 82 or ARDEX P 4	1/2" (12 mm)
All other cases	1 1/4" (3 cm) Neat 2" (5 cm) with aggregate

Average minimum thickness: 1/4" (6 mm)

1/8" (3 mm) minimum over highest point on the floor will typically result in average minimum thickness of at least 1/4" (6 mm).

To match existing elevations, product can be tapered to as thin an application as the sand in the material will allow. If a true featheredge is needed for transitions, use ARDEX SKM or similar in accordance with the technical data sheet at www.ardexamericas.com.

Manual

Mix two bags at a time. Pour the water in the mixing container first, and then add powder while mixing with the mixing paddle and a 1/2" (12 mm) heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2 to 3 minutes to obtain a lump-free mix. Do not overwater! Additional water will weaken the compound and lower its strength. Yellowish foam while mixing, or settling of the sand aggregate while placing, indicates overwatering.

Pour the mix onto the floor. Spread with spreader. Immediately smooth the material with the smoother, or spike roll the material with the spiked roller. Work in a continuous manner during the entire self-leveling installation. Wear cleated athletic shoes with non-metallic spikes to avoid leaving marks in the liquid.

Aggregate Extension (as needed)

Extend the product with aggregate as desired / required (see "Thickness of Application" section above) as follows:

1. Select washed and well-graded pea gravel that is no larger than 1/3 the depth of the intended pour and no smaller than 1/8". Do not use sand.

2. Mix with water first, and then add 1 part by volume of the selected pea gravel, mixing until the aggregate is completely coated.

3. Note that the addition of aggregate will diminish the workability of the product and may make it necessary to install a neat coat.

If a neat coat is needed:

1. Allow the initial application to dry as detailed in "Drying Time" section below.

2. Prime the initial application with ARDEX P 51 mixed 1:1 (see "Priming" section above).

3. Install a neat coat as detailed above.

Pumping

Product may be pumped using ARDIFLO™ Automatic Mixing Pumps. ARDIFLO Pumps provide high productivity and smooth, consistent installations. Pumps may be rented from an authorized ARDEX Distributor. Please contact the ARDEX Technical Service Department with regard to pumping.

Step 6: Drying Time and Installation of Flooring

Drying Time

All dry times are calculated at 70°F (21°C). Drying time is a function of jobsite temperature and humidity conditions. 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 product prematurely and is not recommended.

	Thickness of Application	
	≤ 3/8" (9 mm)	>3/8" (9 mm)
Walkable:	2-3 hours	2-3 hours
Installation of Flooring:	24 hours	Mat test††

††Mat test: Allow the installation to dry a minimum of 24 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.

Required Priming Prior to Flooring Installation

Flooring Type	Primer
Ceramic, quarry or porcelain tiles	ARDEX P 4, or ARDEX P 51 Mixed 1:1 With water (parts by volume)
All other cases:	ARDEX P 51 Mixed 1:3 With water (parts by volume)

Once the installation is confirmed dry as detailed in the "Drying" section above, it is necessary to prime in order to ensure the adhesive or setting material has sufficient open time prior to placing the floor covering. Select the appropriate primer as detailed directly above. Apply the primer, and allow it to dry, as detailed in the "Priming" section above.

Notes

Intended for use by professional contractors who are trained in the application of this product and/or similar products. Not sold by ARDEX through home improvement centers. For information on ARDEX Academy trainings, visit ardexamericas.com. Never mix with cement or additives outside of our written recommendations. In accordance with industry standards, and to determine the suitability of the products for the intended use, always install an adequate number of properly located test areas including the finish flooring. As floor coverings vary, always contact and rely upon the floor covering manufacturer for specific directives, such as maximum allowable moisture content, adhesive selection and intended end use of the product..

Observe the basic rules of concrete work, including the minimum surface and air temperatures detailed above. Install quickly if the substrate is warm, and follow the warm weather installation guidelines available on our website. If the installation is not proceeding as expected, contact the ARDEX Technical Service Department before proceeding further.

Dispose of packaging and residue in accordance with prevailing regulations. Do not flush material down drains. Do not reuse packaging.

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 Manufacturer Quality Standards

Physical properties are typical values and not specifications. All data based on a partial, in-lab mix. Mixing and Testing completed at 70°F / 21°C and in accordance with ASTM C1708, as applicable.

Coverage:	Per bag At 1/4" (6 mm): 25 sq. ft. (2 sq. m) Per bag At 1/8" (3 mm): 50 sq. ft. (4.5 sq. m) Dependent on surface profile, density and porosity.
Maximum Thickness of Application:	Up to 2" (5 cm); See section entitled "Thickness of Application" above.
Compressive Strength (ASTM C109/mod – Air cure only)):	6,000 psi (420 kg/cm^2) At 28 days
Flexural Strength (ASTM C348):	1,600 psi (112 kg/cm^2) At 28 days
Drying Time:	See section entitled "Drying Time and Installation of Flooring" above.
VOC:	0
Packaging:	50 lb. (22.7 kg) bag
Storage:	Store in a cool, dry area. Do not leave units exposed to sun.
Shelf Life:	12 months, if unopened and properly stored
Warranty:	ARDEX L.P. Standard Limited Warranty applies. Also eligible for ARDEX Tile and Stone SystemOne™ Warranty When used as a system. For full warranty details: ardexamericas.com/services/warranties.

Made in the USA.

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Visit www.youtube.com/ARDEX101 to watch ARDEX product demonstration videos. For recommended installation tools, visit DTA USA at www.dtausagroup.com. For easy-to-use ARDEX Product Calculators and Product Information On the Go, download the ARDEX App.

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