ARDEX K 40™ RAPID

Rapid, High Flow Self-Leveling Underlayment

Engineered with ARDEX technology

Use to level and smooth interior concrete, terrazzo, ceramic and quarry tile and epoxy coating systems on concrete

Rapid dry technology – Install most flooring in as little as 2 hours

Levels from 1/8" (3 mm) up to 1" (25 mm) thick

Interior use only

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ARDEX K 40 RAPID

Rapid, High Flow Self-Leveling Underlayment

Suitable Substrates

- Concrete (structurally sound)
- Absorbent terrazzo on concrete*[1]
- Properly installed ARDEX moisture control systems on concrete:
  - o ARDEX MC™ RAPID
  - o ARDEX VB 100
- Other approved, non-porous materials on concrete*[1]:
  - o Non-porous (non-absorbent) cementitious terrazzo
  - o Ceramic, quarry or porcelain tiles
  - o Epoxy flooring systems
  - o Epoxy terrazzo
  - o Approved, properly prepared, non-water-soluble adhesive residue on concrete
  - o Concrete treated with certain curing compounds (test areas only; for full instructions, see: www.ardexamericas.com/services/properprep)

*[1] Must be sound, solid and well-bonded to underlying, structurally sound substrates.

Suitable Applications

- All grade levels
- Interior applications only; dry areas Only
- Areas to receive a suitable floor covering material, such as carpet, vinyl, ceramic, etc. Do not use as a wear surface. If a permanent wear surface is needed, see: www.ardexamericas.com/products/ardex-surfaces

Jobsite Conditions

During installation and cure, substrate and ambient temperatures must be a minimum of 50° F / 10° C. If installing over an in-floor heating system, turn the heating system off 48 hours before, during and at least 48 hours after completion of the installation.

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 relative humidity (RH) in accordance with ASTM F2170. Moisture control is required in the following circumstances:

- If the RH exceeds the most stringent of the following: 1) The limitations associated with the selected floor covering; 2) The limitations associated with the selected adhesive.
- If the RH exceeds 99%.

For high-moisture applications, especially in new construction, moisture control is recommended over on-ground slabs when the presence of an effective and intact underlying vapor retarder conforming with ASTM E1745 cannot be verified.

Moisture Control System Selection

ARDEX MC RAPID or ARDEX VB 100

If moisture control will not be installed, choose the appropriate primer in accordance with the next section.

Priming Method Selection (If moisture control will not be installed)

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

Substrate (Interior applications only; dry areas	Primer
Standard absorbent (porous) Concrete (structurally sound); Absorbent terrazzo on concrete	ARDEX P 51 1:1 or ARDEX P 4
Extremely absorbent concrete	ARDEX P 51 "Double prime" or ARDEX P 4
Non-absorbent (non-porous; burnished) Concrete	ARDEX P 82 or ARDEX P 4
Other approved, non-porous materials on concrete (See section entitled "Suitable Substrates" above.)	All: ARDEX P 82 All except epoxy flooring systems / epoxy terrazzo and adhesive residue: ARDEX P 4

Step 2: Substrate Preparation (Proper Prep™)

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

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

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

Non-water-soluble adhesive residue must be wet scraped to a thin, well-bonded residue (rfci.com). For additional information, see Article 1 above.

Minimum Preparation

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

Primer	Minimum Preparation
ARDEX P 4	In all cases, substrate must be clean
ARDEX P 51 ARDEX VB 100	Substrate must be clean and absorbent (ASTM F3191)
ARDEX P 82	Substrate must be clean and not absorbent.
ARDEX MC RAPID	Mechanically remove all adhesive residue, sealers, curing compounds, tiles, mortars and epoxy flooring systems 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 assembly, including the finishing course. Under no circumstances should this product or any other component of the assembly be installed over these.

Dormant control joints and dormant cracks that will not be honored 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.

If no moisture control system will be applied, dormant cracks can be patched with a trowel applied material, such as ARDEX FEATHER FINISH. Follow the instructions in the respective technical data sheet.

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 (If / as needed)

See section entitled "Moisture Evaluation and Testing" above. Install the ARDEX moisture control system in accordance with the appropriate technical data sheet:

(www.ardexamericas.com/products).

Priming (If moisture control will not be installed)

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), place approximately 3 - 6 ounces (89 - 177 mL) of 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.

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; appropriate measuring bucket; 1/2" (12 mm) heavy-duty drill (min. 650 rpm); 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:	6 - 6 1/2 quarts (5.7 - 6.1 L) clean water Per bag
Flow time:	10 minutes (70°F / 21°C)

Thickness of Application

Maximum Thickness of Application

Application	Maximum Thickness of Application
Over substrates primed with ARDEX VB 100	1/4" (6 mm)
Over substrates primed with ARDEX P 82 or ARDEX P 4	1/2" (12 mm)
All other cases	1" (2.5 cm)

Average minimum thickness: 1/8" (3 mm)

1/16" (1.5 mm) minimum over highest point on the floor will typically result in average minimum thickness of at least 1/8" (3 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 FEATHER FINISH 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.

As this product is installed in thin applications, the profile of the substrate can affect the flatness and smoothness of the product. The thickness of the application should be calculated based on the surface profile of the substrate and the specified tolerances of the subsequently installed finish surface.

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	≤ 1/2" (12 mm)	>1/2" (12 mm)
Wood flooring or flooring installed with high-performance adhesives, such as epoxies or urethanes:	12 hours	12 hours
Moisture-insensitive tile (ceramic, quarry, porcelain):	2 hours	2 hours
All other floor coverings:	2 hours	4 hours

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: www.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

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. Physical properties are typical values and not specifications.

Coverage:	Per bag At 1/8" (3 mm): 56 sq. ft. (5.2 m^2) Dependent on surface profile, density and porosity.
Maximum Thickness of Application:	Up to 1" (2.5 cm); See section entitled "Thickness of Application" above.
Compressive Strength (ASTM C109/mod – Air cure only):	8,000 psi (53 MPa; 526 kg/cm^2) At 28 days
Flexural Strength (ASTM C348):	2,000 psi (14 MPa; 140.6 kg/cm^2) At 28 days
Drying Time:	See section entitled "Drying Time and Installation of Flooring" above.
Packaging:	50 lb. (22.7 kg) bag
Storage:	Store in a cool, dry area. Do not leave units exposed to sun.
Shelf Life:	9 months, if unopened and properly stored
Warranty:	ARDEX Standard Limited Warranty applies. Also eligible for ARDEX SystemOne™ Warranty When used as a system. For full warranty details: www.ardexamericas.com.

Made in the USA.

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