ARDEX K 40™ RAPID

Rapid, High Flow Self-Leveling Underlayment

Use to level and smooth interior concrete, terrazzo, ceramic and quarry tile, epoxy coating systems and non-water-soluble adhesive residue on concrete

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

Levels from 1/8” (3 mm) up to 1” (24 mm) thick

Interior use only

ARDEX Americas
400 Ardex Park Drive
Aliquippa, PA 15001 USA
888-512-7339
www.ardexamericas.com

ARDEX K 40™ RAPID

Rapid, High Flow Self-Leveling Underlayment

Suitable Substrates

- Concrete (structurally sound)
- Absorbent terrazzo on concrete†
- Properly installed ARDEX moisture control systems on concrete:
  - ARDEX MC™ RAPID
  - ARDEX PU 50™
  - ARDEX VR 98™
- Other approved, non-porous materials on concrete†:
  - Epoxy terrazzo; non-porous (non-absorbent) cementitious terrazzo
  - Ceramic, quarry or porcelain tiles
  - Epoxy coatings
  - Non-water-soluble adhesive residue
  - Concrete treated with certain curing compounds (test areas only; for full instructions, see www.ardexamericas.com/properprep)

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

Suitable Applications

- All grade levels
- 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 each on-grade or below-grade slab is built on a vapor retarder, which remains effective and intact, in conformance with ASTM E1745.

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 *(if moisture control is required)*

ARDEX MC RAPID can be used at RH levels up to 100% on all grade levels.

For ARDEX VR 98 or ARDEX PU 50 to be used, the concrete must meet the following conditions:

1. RH levels are 98% or below (85% for radiant-heated slabs).

2. 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)*

Primers

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

Substrate (Interior, dry substrates only; All grade levels)	Porosity	Primer
Concrete and cementitious terrazzo on concrete	Standard absorbent (porous)	ARDEX P 51 mixed 1:1 or ARDEX P 4
	Non-absorbent (non-porous; burnished)	ARDEX P 82 or ARDEX P 4
	Extremely absorbent	ARDEX P 51 "double prime" or ARDEX P 4
Other approved, non-porous materials on concrete (see the "Suitable Substrates" section above)	N/A	ARDEX P 82 (all) or ARDEX P 4 (all except adhesive residue)

Step 2: Substrate Preparation (Proper Prep™)

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

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

Shot blasting or other mechanical means must be used for Proper Prep. Sanding is not a sufficient means of cleaning or preparing concrete. Do not use acid etching, adhesive removers, solvents or sweeping compounds, as these are bond breakers.

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

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; unapproved sealers; unsuitable adhesive residues; patching and leveling materials.

Minimum Preparation

Depending on the selected moisture control system or primer, additional prep may be needed, as follows:

Primer	Minimum Preparation
ARDEX P 4	Substrate must be clean
ARDEX P 51 ARDEX VR 98 ARDEX PU 50	Substrate must be clean and absorbent (ASTM F3191)
ARDEX P 82	Substrate must be clean and not absorbent. 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. Concrete and terrazzo substrates must be clean and prepared to a minimum CSP 3 / maximum CSP 5 (icri.org).

Vacuuming

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

Step 3: Treating Joints and Cracks

Under no circumstances should this product, the moisture control system and/or the selected primer be installed over moving joints or moving cracks. Honor all moving joints, including expansion joints and isolation joints, as well as all moving cracks, up through the product and flooring.

While dormant control joints and dormant cracks may be pre-filled, 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 ARDEX MC RAPID, ARDEX VR 98 or ARDEX PU 50 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 ARDEX MC RAPID, ARDEX VR 98 or ARDEX PU 50 will not be installed, dormant cracks and dormant joints can be patched with ARDEX FEATHER FINISH® Self-Drying, Cement-Based Finish Underlayment or similar trowel-applied material in accordance with the technical data sheet.

Step 4: Install Appropriate Moisture Control System or Priming Method

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

If moisture control is required, install ARDEX MC RAPID, ARDEX VR 98 or ARDEX PU 50 in accordance with the appropriate technical data sheet (www.ardexamericas.com/products). To select the appropriate moisture control system, see the "Moisture Control System Selection" section above.

Priming *(if moisture control is not required)*

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

Primers may need longer drying times with low surface temperatures and/or high ambient humidity. Do not install product before primer has dried thoroughly.

Absorbent Concrete: ARDEX P 51 Mixed 1:1

Dilute ARDEX P 51 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 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.

Extremely Absorbent Concrete: ARDEX P 51 "Double Prime"

Make an initial application of ARDEX P 51 diluted with 3 parts water by volume. Let the initial application dry thoroughly (1 - 3 hours), and then install a second application of ARDEX P 51 mixed 1:1 with water as detailed directly above.

Non-Porous Surfaces: 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 • ARDEX T-10 Mixing Drum • 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

Safety and OSHA Compliance

Handle each bag with care, emptying it in a manner that avoids creating a plume of dust. While mixing, use the ARDEX DUSTFREE™ or 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 - 6.5 quarts (5.68 - 6.15 L) of clean water per bag
Flow time	10 minutes (70°F / 21°C)

Thickness of Application

Application	**Max. Thickness**
Over ARDEX VR 98	1/4" (6 mm)
Over substrates primed with ARDEX P 82 or ARDEX P 4	1/2" (12 mm)
All other applications	1" (24 mm)

Manual

Mix two bags at a time. Pour the water in the mixing container first, and then add powder while mixing with an ARDEX T-1 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! Yellowish foam while mixing, or settling of the sand aggregate while placing, indicates overwatering.

Pour the mix onto the floor. Spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother. 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.

Where thicker applications are needed, ARDEX recommends using a suitable ARDEX self-leveling product, such as ARDEX K 13™ Premium Self-Leveling Underlayment. Reference the appropriate technical data sheet for suitable substrates and recommendations for substrate preparation and priming.

Install at a minimum thickness of 1/16'' (1.5 mm) over the highest point in the floor, which typically results in an average thickness of 1/8'' (3 mm) or more over the entire floor.

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, ARDEX recommends using ARDEX FEATHER FINISH or other unsanded ARDEX patching material for transitions.

Please note that for 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 floor covering.

Pumping

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

Wear Surface

This product is not to be used as a permanent wear surface, even if coated or sealed. Install a suitable floor covering material, such as carpet, vinyl flooring, ceramic tile, etc. For resurfacing and leveling indoor concrete floors in warehouses, storage areas, hallways or other areas where a wear surface is required, use ARDEX SD-T® Self-Drying, Self-Leveling Concrete Topping or other ARDEX self-leveling topping.

Step 6: Drying Time and Installation of Flooring

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.

	Thicknesses of 1/2" (12 mm) or less	**Thicknesses greater than 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

FOR PROFESSIONAL USE ONLY by licensed, bonded 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.

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. If the installation is not proceeding as expected, contact the ARDEX Technical Service Department before proceeding further.

Never mix with cement or additives outside of ARDEX recommendations. 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.

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 ARDEX 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 sq. m) Coverage varies with texture of substrate surface.
Max. Thickness:	Varies up to 1" (24 mm); see the "Thickness of Application" section above.
Compressive Strength (ASTM C109/mod – Air cure only):	8,000 psi (562 kg/cm2) at 28 days
Flexural Strength (ASTM C348):	2,000 psi (140.6 kg/cm2) at 28 days
Drying Time:	See the "Drying Time and Installation of Flooring" section above.
VOC:	0
Packaging:	50 lbs (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 L.P. Standard Limited Warranty applies. Also eligible for the ARDEX/HENRY SystemOne™ Warranty when used in conjunction with select HENRY® Flooring Adhesives.. See ardexamericas.com/services/warranties for full warranty details.

Made in the USA.

Copyright 2021 ARDEX, L.P. All rights reserved. Content updated 2021-05-17. Supersedes all previous versions. Latest version available at ardexamericas.com. For technical updates, visit ardexamericas.com/services/technical-services/techupdates.

ARDEX Americas
400 Ardex Park Drive
Aliquippa, PA 15001 USA
888-512-7339
www.ardexamericas.com