ARDEX K 521

Self-Leveling Concrete Topping with Aggregate Surface

Resurface indoor concrete

Walkable in 2-3 hours, polish in as little as 24 hours

Dual water ratio

Use for interior floors only

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

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Self-Leveling Concrete Topping with Aggregate Surface

Suitable Substrates

- Concrete (structurally sound)
- Absorbent terrazzo on concrete† (Contact ARDEX Technical Service for instructions)
- Properly installed ARDEX moisture control systems on concrete

†Must be sound, solid and well-bonded to underlying, structurally sound substrates. It is the responsibility of the installation contractor to ensure the substrate is rigid, well supported, properly anchored and free of undue flex and vibration.

Suitable Applications

- All grade levels
- Dry areas only
- Interior applications only
- Areas to receive foot and/or moderate, rubber-wheeled forklift traffic and similar*
- Not for heavy-duty manufacturing, industrial floors or chemical environments requiring customized industrial toppings
- Not for polished applications in commercial kitchens, bathrooms, sports areas, shopping mall common areas, other heavy commercial environments, industrial project with constant forklift traffic or any environment with chemical staining agents

*Excessive service conditions such as and similar to the following will cause gouging and indentations:

- Steel- or hard plastic-wheeled traffic
- Dragging heavy metal equipment, loaded pallets with protruding nails, heavy furniture and/or fixtures over the floor

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. Moisture control is required if the RH exceeds 85%.

Priming course if moisture control is required: ARDEX MC RAPID. If moisture control is not required, See section entitled “Priming Method Selection” below.

Priming Method Selection**

- ARDEX EP 2000
- ARDEX MC RAPID (primer application)

**ARDEX EP 2000 and ARDEX MC RAPID are highly reactive epoxies that bond tenaciously to the substrate to minimize cracking in ARDEX toppings. Follow mixing and application instructions in the appropriate technical data sheet, including sand-broadcast to refusal.

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
- Proper Prep Brochure

Mechanically prepare 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; all curing compounds and sealers; and all adhesive residues.

Minimum Preparation

In all cases, substrate must be clean. 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

Under no circumstances should any product herein be installed over joints (including control joints, expansion joints, isolation joints, etc.) or moving cracks. Honor all joints and moving cracks.

All 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.The filling of dormant cracks as described above is recommended to help prevent the cracks from showing through the topping. However, should movement occur, cracks will reappear.

ARDEX cannot be responsible for problems that arise from joints, existing cracks or new cracks that may develop after the system has been installed.

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.

ARDEX MC RAPID 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).

Priming *(If moisture control is not required):* ARDEX EP 2000 or ARDEX MC RAPID (primer application)

Mix and apply the selected epoxy as directed in the technical data sheet. While the epoxy is fresh, immediately broadcast fine sand to refusal. Once the epoxy is cured, all excess sand must be collected and removed. Vacuum remaining sand using a heavy-duty, bucket-style (Shop-Vac-style) vacuum and HEPA dust extraction vacuum system.

Step 5: Mixing and Application

Recommended Tools

ARDEX T-1 Mixing Paddle; Mixing Container; 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; appropriate measuring bucket

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

Mixing Ratios

Heavy traffic / heavy loads (rolling or static):	1 3/4 quarts (1.65 L) ARDEX E 25* + 3 quarts (2.8 L) clean water Per bag
Light / normal traffic	3 1/2 or 3 3/4 quarts (3.31 - 3.55 L) clean water**** Per bag

****Lower water level allows aggregates to be suspended higher in the mix, requiring less processing to achieve aggregate reveal.

*The addition of ARDEX E 25™ Resilient Emulsion is required to increase the resiliency. Follow the mixing instructions below, adding the ARDEX E 25 after adding the water to the mixing container.

Flow time

10 minutes (70°F / 21°C)

Thickness of Application

Maximum Thickness of Application

2" (5 cm)

Average minimum thickness***

3/8" (9.5 mm)

3/16" minimum over highest point on the floor will typically result in average minimum thickness of at least 3/8".

Mixing and Application

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.

Step 6: Dry Time and Polishing

Product must be sealed or coated with a material suitable for the intended operating conditions of the installation environment. 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.

Polished	With ARDEX E 25 added: 48 hours With water Only: When hardened and dried to a uniform tonality (Typically 24 hours)
Walkable	With ARDEX E 25 added: 24 hours With water Only: 2 - 3 hours

For instructions regarding the polishing, treatment and sealing of your polished concrete floor, please refer to the Formatted Specification for ARDEX Surfaces or ARDEX APCS on the corresponding product page at www.ardexamericas.com. If a pinhole filler is required, ARDEX SD-M™ Designer Floor Finish™ can be used in accordance with the instructions in its technical data sheet.

Cracking

This product and other, similar thinly applied non-structural toppings are not capable of restraining movement in the structural slab, which could lead to reflective cracking. Telegraphing is common where there is slab deflection, vibration from truck traffic and/or subways, swaying or "racking" of high rise buildings, existing cracks or joints in the slab and/or electrical boxes, vents or other metal inserts. While priming with ARDEX EP 2000 is the best way to minimize the possibility of reflective cracking, cracks may telegraph up into the surface in any area that exhibits movement.

Additionally, certain jobsite conditions can lead to hairline cracking. Hairline cracking, while aesthetically unpleasant, typically does not affect the overall performance of the topping. The most common cause of hairline cracking is excessively rapid moisture evaporation from the topping during cure due to low ambient humidity and/or rapid air movement in the space. Hairline cracking can also occur when there is even slight movement or deflection in the existing substrate.

If cracking occurs, we recommend sounding the affected areas to ensure that the topping is well-bonded to the substrate.

Step 7: Care and Maintenance of ARDEX Surfaces

For instructions regarding care and maintenance of your polished concrete floor, please refer to the Formatted Specification for ARDEX APCS on the corresponding product page at www.ardexamericas.com.

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 sealer / coating. As finish materials vary, always contact and rely upon the sealer / coating manufacturer for specific directives, such as maximum allowable moisture content 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.

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

ARDEX wear surfaces are not intended to be perfectly homogeneous in appearance. The physical act of spreading and smoothing will result in optical variations in the appearance of the floor even though it is very flat. Variations in the overall finished appearance are an intended effect and should be expected.

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.

Compressive Strength (ASTM C109/mod – Air cure only):	6,800 psi (47.6 MPa; 476 kg/cm2); 28 days
Flexural Strength (ASTM C348):	1,300 psi (9 MPa; 91 kg/cm2); 28 days
Coverage:	Per bag At 3/8" (9 mm): 14 - 15 sq. ft. (1.3 - 1.4 m^2) Per bag At 1/2" (12 mm): 9 - 10 sq. ft. (0.8 - 0.9 m^2)
Drying Time:	See section entitled Dry Time and Polishing 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:	9 months, if unopened and properly stored
Warranty:	ARDEX L.P. Standard Limited Warranty applies. For full warranty details: ardexamericas.com/services/warranties.

Made in the USA.

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www.ardexamericas.com.

ARDEX Americas
400 Ardex Park Drive
Aliquippa, PA 15001 USA
888-512-7339
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