ARDEX ProDrain®

Drainage System

Installation Guide for Balconies, Patios and Other Surfaces

Innovative, capillary-passive water management system with hydrophobic drainage mortar

For pre-sloped exterior wood or concrete balconies, patios, terraces, etc.

Helps prolong the life of exterior paver applications

Minimizes disbonding risk due to freeze and thaw cycling

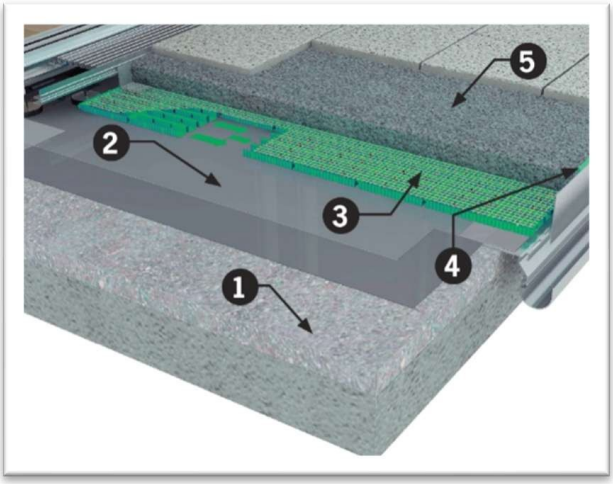
Minimizes the risk of efflorescence, staining and discoloration

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ARDEX ProDrain®

Drainage System

System Design



Components Shown

1. 1.5 to 2% sloped substrate
2. ARDEX TLT Waterproofing and Vapor Retarder Membrane
3. ARDEX ProDrain® Drainage Mat
4. ARDEX UD 146 Perimeter Edge Strip
5. ARDEX A 14™ or ARDEX A 11™ Drainage Mortar

Other Components

- Sloping and smoothing materials (as needed)
- Joints may be left open or filled with ARDEX SX™ 100% Silicone Sealant or ARDEX grouts (third-party grouts must be manufacturer approved for use with a drainage system)
- Drains and gutters optional
- Other accessories - see below

Suitable Substrates

For installations over living spaces, an intact roofing membrane must be previously installed by a professional roofing contractor.

- Exterior wood (pre-sloped)
- Exterior concrete
- Open grade base (OGB) (see "Installation Over Open Grade Base (OGB)")

Substrate must be flat and smooth with a 1.5 - 2% slope prior to installation. See section entitled "Step 2: Pre-Sloping / Smoothing Options (if needed)" Below.

Suitable Applications

- Installation of porcelain pavers (minimum size 12 x 12" / 30 x 30 cm; minimum thickness 3/4" / 2 cm)
- Installation of stone pavers (minimum size 12 x 12" / 30 x 30 cm; minimum thickness 1 1/8" / 3 cm depending on the breaking point listed by the manufacturer)
- Installations over open grade base (OGB) and non-highway vehicular traffic, in accordance with "Installation Over Open Grade Base (OGB)"

Jobsite Conditions

During installation and cure, substrate and ambient temperatures must be a minimum of 50 F / 10 C (Maximum 85°F / 29°C). Substrate must also be dry.

Step 1: Substrate Preparation (Proper Prep™)

It must be verified that the substrate is sufficiently sound to support the installation weight; verify with a structural engineer as necessary.

Floor surfaces must have minimal variation in the plane or slope as outlined by the Tile Council of North America (TCNA). Refer to ANSI A108.01 "General Requirements: Subsurface and Preparation by Other Trades" and the most current version of the TCNA "Handbook for Ceramic Tile Installation" for detailed information on surface preparation and guidelines for substrate construction.

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; and all adhesive residues.

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.

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

Step 2: Pre-Sloping / Smoothing Options (if needed)

- ARDEX AM 100™ Rapid Set Pre-Tile Smoothing and Ramping Mortar
- ARDEX A 38™ Rapid Set Screed

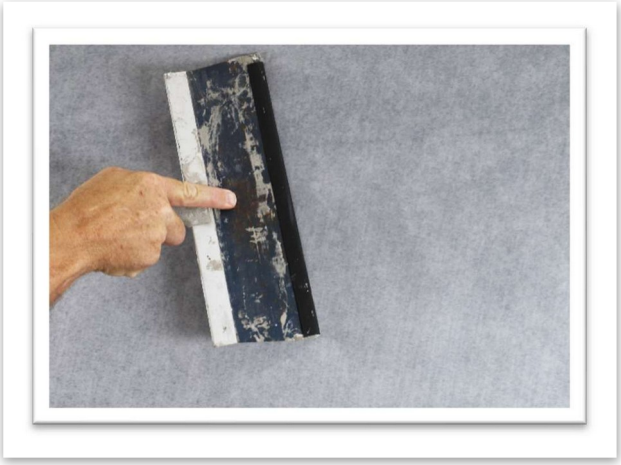
Substrate must be flat and smooth with a 1.5 - 2% slope prior to installation. Observe the substrate preparation, mixing, application and drying instructions in the appropriate ARDEX technical data sheet. Per ANSI A 108 AN-3.7, expansion joints must be provided over existing moving joints and moving cracks and where substrate materials change composition or direction.

Step 3: Profile Installation (Optional)



- ARDEX TLT 700 Multi-Purpose Construction Adhesive and Sealant
- ARDEX UP 340-30 ProFin® Edge Profile
- ARDEX UP 309 ProFin® Profile Connectors
- ARDEX UP 340-30 ProFin® 30 mm Backsplash Clips
- US 422 ProDrain AB-V Tape

Step 4: ARDEX TLT Membrane Installation



Install ARDEX TLT Membrane as a Vapor Retarder* with an ARDEX Mortar over the sloped substrate and place up to the plastic side of the ARDEX US 422 ProDrain Tape, covering the fleece. Please refer to the ARDEX TLT technical data sheet for application information.

Do not penetrate the membrane, including fixing any posts or railings once the draining system is installed.

* ARDEX TLT is NOT a replacement for waterproofing protection over occupied living spaces. Applications over occupied living spaces require an existing, intact primary roofing membrane prior to the installation of an ARDEX Exterior System. ARDEX TLT is to provide protection against vapor transmission from the substrate.

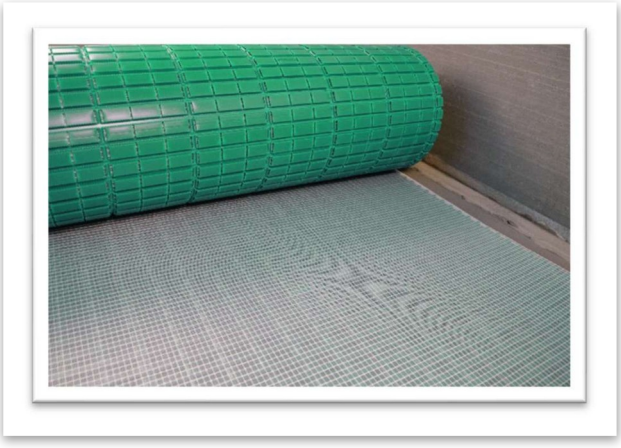
Step 5: ARDEX ProFin® Faceplate Installation (If / as needed)

Installations using 3/4" (1.9 cm) porcelain pavers do not typically require a faceplate when ARDEX UP 340-30 ProFin profile has been installed. For thicker pavers or natural stone assemblies, ARDEX ProFin faceplates can be used in conjunction with ARDEX UP ProFin profiles. See profile and faceplate combination height options for complete details.

To install an ARDEX UP Faceplate, simply clip onto the mechanically anchored profile. Corner trims are also available as needed. Leave a 3/16" (5 mm) gap between metals. Clip on connectors to bridge the gap. Use ARDEX TLT 700 for additional strength.



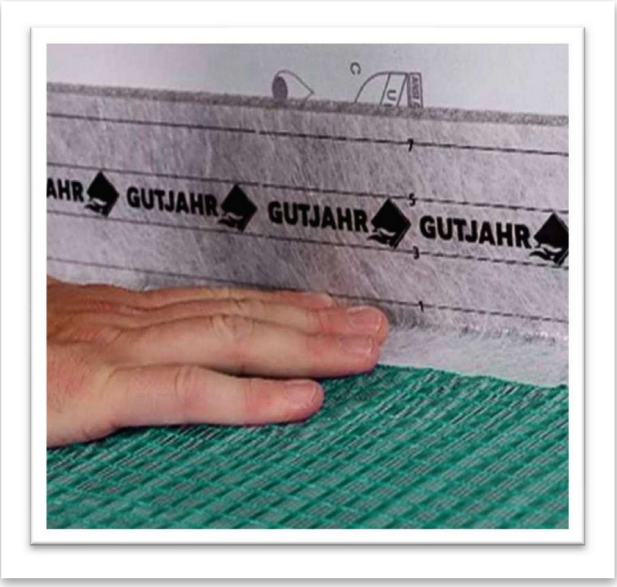
Step 6: Drainage Mat Installation



Roll the mat into place and cut to size using ARDEX FLEXBONE Shears or a utility knife. Ensure that the waterproofing or vapor retarder membrane is not cut.

NOTE: Roll the mat with the drainage channels facing the direction of the slope. Always ensure that the self-adhesive tape on the mat is facing outwards to allow the next mat to abut neatly. Use ARDEX UD 158 Seam Reinforcement Tape to join any roll ends.

Step 7: Installation of Perimeter Strip



Install the self-adhesive ARDEX UD 146 Edge Insulation Strip around the edges of the installation and the ARDEX UG 203 ProDrain Joint Tape around the drain housing. This allows movement between different materials and ensures the required 3/8" (10 mm) gap around the perimeter. After the tile is set, cut the edge insulation strip to the required height.

Step 8: Mixing and Placement of Drainage Mortar



Mix the ARDEX A 14 / A 11 Drainage Mortar with 5/64" - 5/16" (2 - 8 mm) aggregate per the technical data sheet installation instructions. Install at a minimum thickness of 2" (5 cm). The drainage mortar is not limited by a maximum thickness. Approved lath may be used to provide additional reinforcement, but not required. Proceed with next installation step immediately while drainage mortar is still wet.

Step 9: Paver Installation



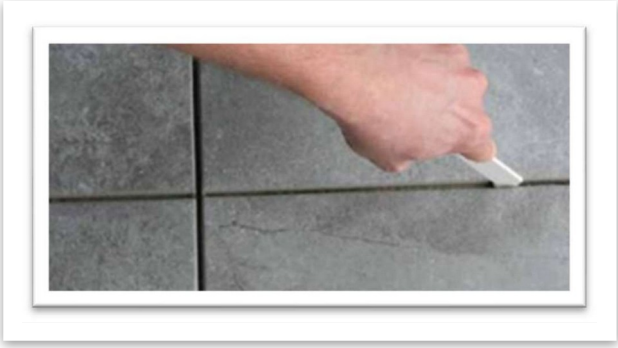
ARDEX X 90 / X 78: Mix in accordance with its technical data sheet.



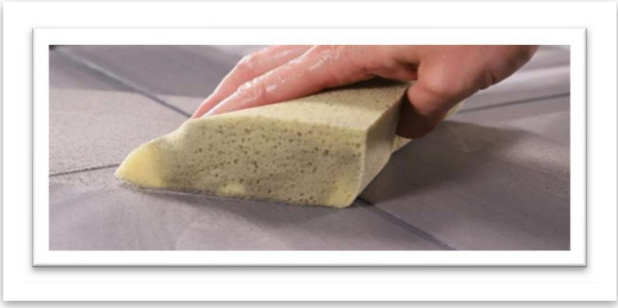
Flat trowel and then comb the mortar to the back of the paver using a 1/4" x 3/8" (6 mm x 10 mm) notched trowel. Always apply the mortar onto the paver NOT onto the drainage mortar, and install wet in wet.

IMPORTANT: Do not cover or block the entire surface of the drainage mortar with the setting mortar. Please note that completely covering the drainage mortar with the mortar will prohibit water from passing through the system properly.

Step 10: Finishing with ARDEX Grout



Allow the mortar to dry as detailed in the technical data sheet, and then clean the grout joints of any excess mortar. Also, clean the tile or paver surface and allow to dry. Once the surface is dry, mix and apply ARDEX FL™ Rapid Set Sanded Grout or ARDEX WA™ Epoxy Grout in accordance with the corresponding technical data sheet, and place into the grout joints.



NOTE: Once the ARDEX FL or ARDEX WA grout has dried properly, ARDEX SX™ 100% Silicone Sealant can be used to apply a soft bead of sealant around the perimeter and moving joints.

NOTE: Grouting must NOT be applied around the perimeter edge. All installations must include soft joints using ARDEX SX™ 100% Silicone Sealant in accordance with ANSI A 108.01-3.7 and TCNA EJ 171.

Installation Over Open Grade Base (OGB)

System components: ARDEX ProFin® profiles, faceplates and corners.

OGB Step 1: Soil Absorption Test

In the installation area, complete a soil absorption test (also called a percolation, or "perk," test) to determine how well drained the soil is.

1. Dig a hole at least 12" deep and 4 - 12" wide.
2. Fill the hole with water.
3. Measure the depth of the water with a ruler immediately and again after 15 minutes, recording the difference in depth.
4. Multiply the difference in depth by 4. This indicates how much water drains in an hour.
   - o A result of 10 - 30 minutes is indicative of good soil quality.
   - o Soil with clay and other small particles may exhibit inadequate drainage.

OGB Step 2: Base Requirements

The base must consist of ASTM #57 stone or a combination of ASTM #57 and ASTM #2 subbase aggregate. Use the following table to determine base requirements:

	Good quality soil (drainage time of 10 - 30 minutes)	Poor quality soil
Pedestrian walkways	4 - 6" #57	6" #2 followed by 6" #57
Driveways	8 - 12" #57	

- ASTM #57 stone is approximately 3/4" sub-angular stone, washed with no fines.
- ASTM #2 subbase aggregate is also sub-angular, with diameters ranging from 1 1/2 - 2 1/2".

OGB Step 3: Excavate and Lay Base

1. Excavate to proper minimum depth (see above).
2. Lay woven geotextile fabric to avoid system clogs.
3. Lay required base (see above) in 6" lifts, compacting between each lift.
4. If applicable, incorporate drainage pipe to redirect water.

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.

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. Observe the basic rules of tile work.

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.

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

Technical Data According to Manufacturer Quality Standards

Storage and Transport:	Store and transport rolls vertically in the original packaging. Store in temperatures from 32°F - 72°F (0°C - 22°C), and protect from sunlight.
Warranty:	Eligible for the ARDEX Exterior Drainage System 5-Year Limited Warranty. For full warranty details: ardexamericas.com/services/warranties.

Made in the USA and Germany.

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System Components and Available Accessories

System	Product	Description	Image	Size
Waterproofing	US 422 ProDrain AB-V Tape	Flashing Tape		65.6 ft. (20 m)
Matting	ARDEX UE 190-8 ProDrain®	Drainage Mat		107.6 sq. ft. (10 m²)
Matting	ARDEX UD 158 ProDrain®	Seam Reinforcement Tape		32.8 ft. (10 m) or 82 ft. (25 m)
Matting	ARDEX UD 146	Perimeter Edge Strip	N/A	65.5 ft. (20 m)

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