ARDEX X 78™ MICROTEC®

Fiber Reinforced, Semi-Pourable, Polymer Modified Tile and Stone Mortar

Ideal for large format tile installations, especially in high traffic areas, interior or exterior

Use for setting glass, porcelain, quarry, ceramic and most natural stone* tiles

Use over exterior concrete and masonry surfaces, as well as over common interior surfaces, including exterior grade plywood

Extended open time of 60 minutes – double the ISO standards

Especially suited for large format tile installations

Very high bond strength, highly flexible for excellent shear resistance

Unique, semi-pourable consistency makes it extremely easy to mix and apply

Ideal for high traffic areas

Special additives virtually eliminate the risk of efflorescence

Use for interior and exterior floor and horizontal surfaces

Outstanding coverage – 105 sq. ft. per bag (1/4" sq. notch trowel)

4-hour pot life

Available in gray and white

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Suitable Substrates

- All common building substrates (concrete that has cured for at least 28 days, plywood in interior, horizontal applications, CBU in accordance with manufacturer guidelines, etc.)
- Existing tiles (tile over tile)
- Metal (Interior only and non-aluminum. Contact ARDEX Technical Service for instructions.)

Some substrates require priming.

Suitable Applications

- Interior or exterior (not over wood on exterior applications)
  - Dry or damp substrates (no standing water)
  - Pools and other submerged areas that are properly balanced in accordance with pool industry standards; not saltwater pools
- Installation of most common tile types:
  - Not for glass tiles in pools or other submerged areas
  - Not for moisture-sensitive tile and stone
  - Contact ARDEX Technical for highly absorbent tiles
  - Contact ARDEX Technical for resin-backed tiles and stone

Job Conditions

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

Step 1: Substrate Preparation (Proper Prep™)

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.

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 existing patching and leveling materials and all bond-breaking contaminants, including but not limited to: overwatered or otherwise loose or weak material; unapproved sealers; all adhesive residues.

Vacuuming

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

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

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

The plane of wall surfaces must be plumb and true. 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.

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

Interior or Exterior

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

Interior Only

ARDEX Liquid BackerBoard® Self-Leveling Underlayment for Interior Wood and Concrete Subfloors
ARDEX TL 1000™ Self-Leveling Underlayment
ARDEX TL 1400™ Self-Leveling Underlayment
ARDEX TL 2000™ Fiber Reinforced, Self-Leveling Underlayment
ARDEX SKM™ Skim Finish - Skimcoat Patch & Finishing Underlayment

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: *(if needed)* Waterproofing / Crack Isolation/ Uncoupling*;* Priming / Treating Certain Substrates

Note

Membrane application limits the allowable mortar thickness. See "Maximum Mortar Thickness over Membranes" under "Step 4," below.

Waterproofing / Crack Isolation Options (Interior Only)

ARDEX 8+9™ Rapid Waterproofing and Crack Isolation Compound
ARDEX S 1-K™ One-Component Waterproofing and Crack Isolation Membrane
ARDEX FLEXBONE® HEAT In-Floor Heating Systems
ARDEX UI 740™ FLEXBONE® Uncoupling Membrane
ARDEX UI 720™ FLEXBONE® Floating Uncoupling Membrane

Follow the instructions in the respective technical data sheet.

Metal Substrates

Contact the ARDEX Technical Service Department for application instructions over interior, non-aluminum metal substrates.

Existing Tiles and Other Non-Porous Surfaces

Option 1: Apply a coat of ARDEX P 4™ Pre-Mixed, Rapid-Drying, Multipurpose Primer, which must dry 30 - 60 minutes before proceeding with the tile installation.

Option 2 (interior, dry applications **only**): Mix the mortar with ARDEX E 90 ™ Admix in accordance with the technical data sheet, and install directly over the non-porous **surface.**

Gypsum (interior only)

Option 1: Apply a coat of ARDEX P 4, as directed above.

Option 2: Double prime with ARDEX P 51™ Primer, as detailed in the technical data sheet.

Other Highly Absorbent Substrates (plaster, etc.)

Option 1: Apply a scratch coat of the tile mortar. Allow the scratch coat to harden and dry completely before proceeding with the tile installation.

Option 2: Apply a coat of ARDEX P 4, as directed above.

Option 3: (interior, dry applications only): Double prime with ARDEX P 51™ Primer, as detailed in the technical data sheet.

Step 4: Mixing and Application

Recommended Tools

Margin trowel • Mixing container • ARDEX T-2 Ring Mixing Paddle • 1/2" (12 mm) heavy-duty drill (min. 650 rpm) • Appropriate notched trowel

Maximum Mortar Thicknesses Over Membranes

Membrane Type	Max. Thickness	Max. Trowel Notch Size
Unbonded uncoupling membranes:	1/4" (6 mm)	1/2" x 1/2" (12 mm x 12 mm)
All other membranes:	3/8" (9.5 mm)	3/4" x 3/4" (19 mm x 19 mm)

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

Times based on 70°F / 21°C.

Water ratio:	6 3/4 - 7 1/2 quarts (6.25 - 7 L) of clean water per bag; or 2 1/4 - 2 3/4 parts powder to 1 part water by volume (small batches)
Pot life:	4 hours
Open time:	Up to 60 minutes
Adjustment time:	15 minutes

Pour the water in the mixing container first, and then add powder while mixing for 2 to 3 minutes. For best results for full-bag batches, mix with an ARDEX T-2 Ring Mixing Paddle and 1/2" heavy-duty drill (12 mm, min. 650 rpm) and mixing paddle. DO NOT ADD MORE WATER! Additional water will weaken the compound and lower its strength.

Small batches may be mixed by hand. Use a margin trowel, and mix vigorously. Just prior to application on the substrate, the mixture should be stirred again to ensure a creamy, smooth, lump-free consistency.

Jobsite conditions and temperature may affect pot life. If the material begins to harden within published pot life, retemper with a drill.

Installation should proceed in accordance with ANSI A 108.5. After mixing, apply mortar to the substrate with the flat side of a trowel to obtain a solid mechanical bond. Apply to an area no greater than that which can be covered with tile while the mortar remains plastic. Do not set tile or stone into skinned over mortar.

Comb the mortar with a notched trowel of sufficient depth to ensure that the tile or stone is covered uniformly over the entire surface. Follow TCNA recommendations for proper transfer of mortar from the substrate to the tile or stone. The type and size of the tile or stone will dictate the size of the notched trowel to be used to achieve proper transfer.

When setting certain types of tile or stone, it may be necessary to trowel a layer of mortar on the back of each tile or stone prior to placement on the combed mortar bed in order to achieve the required mortar-to-tile contact. Press each tile firmly into the freshly combed mortar to ensure maximum mortar contact with the tile.

Step 5: Grouting Instructions and Options

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.

Cure time prior to grouting: 24 hours

ARDEX FL™ Rapid Set, Flexible, Sanded Grout
ARDEX FH™ Sanded Floor and Wall Grout
ARDEX FG-C™ MICROTEC® Unsanded Floor & Wall Grout
ARDEX WA™ High-Performance, 100% Solids Epoxy Grout and Adhesive

Grout in accordance with the respective technical data sheet and ANSI A 108.10.

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 tile flooring. As tiles vary, always contact and rely upon the tile manufacturer for specific directives, such as maximum allowable moisture content, mortar selection and intended end use of the product.

Never mix with cement or additives outside of our written 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.

ARDEX Tile and Stone Mortar Usage Guide

Moisture-sensitive natural stone or agglomerate tile (interior, dry applications only)**:**

- ARDEX X 32™ MICROTEC® Universal Rapid Setting and Drying Thin-to-Thick Bed Mortar
- ARDEX S 28™ MICROTEC® Rapid-Set, Rapid-Dry, Super-Format Tile and Uncoupling Membrane Mortar
- ARDEX N 23™ MICROTEC® Rapid Set Natural Stone and Tile Mortar

Saltwater pools; glass tiles in swimming pools and other submerged areas:

ARDEX WA™ High-Performance, 100% Solids Epoxy Grout and Adhesive

Glass tiles at pool splash lines:

- ARDEX X 77™ MICROTEC® Fiber Reinforced Tile and Stone Mortar WHITE mixed with ARDEX E 90™ Admix
- Glass tiles in non-submerged areas:
- ARDEX X 77™ MICROTEC® Fiber Reinforced Tile and Stone Mortar (interior or exterior applications)
- ARDEX S 48™ Rapid-Set Thin Set Mortar/ Mastic Hybrid (Interior applications only)

Balconies, terraces and building facades that experience a great deal of movement due to temperature changes:

- ARDEX X 90 OUTDOOR™ MicroteC3 Rapid-Set, Flexible Tile and Stone Mortar
- ARDEX X 77™ MICROTEC® Fiber Reinforced Tile and Stone Mortar
- ARDEX X 78™ MICROTEC® Fiber Reinforced, Semi-Pourable, Polymer Modified Tile and Stone Mortar

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 Physical properties are typical values and not specifications.

Coverage:	1/4” x 1/4” (6 mm) sq. notch trowel = 105 ft² (9.75m²) per bag 1/4” x 3/8” (6 mm x 9 mm) sq. notch trowel = 75 ft² (6.97 m²) per bag 1/2” x 1/2” (12 mm) sq. notch trowel = 50 ft² (4.65 m²) per bag Coverage varies with texture of substrate surface.
Colors:	Gray and white
VOC:	0
Packaging:	40 lb (18 kg) bag
Storage:	Store in a cool, dry area. Do not leave units exposed to sun.
Shelf Life:	1 year, if unopened and properly stored
Warranty:	ARDEX L.P. Standard Limited Warranty applies. Also eligible for ARDEX SystemOne® Warranty when used in conjunction with select ARDEX tile and stone installation materials. See ardexamericas.com/services/warranties for full warranty details.

ISO 13007 Classification	Classification Requirements
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa/10.2 kg/ cm^2) after standard aging, heat aging, water immersion and freeze/thaw cycles
T (vertical slip resistance)	≤ 0.019" (0.5 mm)
E (extended open time)	≥ 72.5 psi (0.5 MPa/5 kg/cm^2) after 20 - 30 minutes
F (fast setting)	≥ 72.5 psi (0.5 MPa/5 kg/cm^2) at 6 hours
S1 (normal deformation of mortar)	≥ 0.1" (2.5 mm) <0.2" (< 5mm)

28-day test	Test Method	ANSI Specification	Test Results
Impervious ceramic (porcelain) mosaics shear strength	ANSI A118.15 F	≥50 psi (.35 MPa/3.5 kg/cm^2)	Pass
Impervious ceramic (porcelain) mosaics shear strength	ANSI A118.15	>400 psi (2.76 MPa/28 kg/cm^2)	642 psi (4.42 MPa/45.1 kg/ cm^2)
Impervious ceramic (porcelain) mosaics shear strength with freeze-thaw cycling	ANSI A118.15	>250 psi (1.73 MPa/17.5 kg/cm^2)	467 psi (3.22 MPa/32.8 kg/cm^2)
Impervious ceramic (porcelain) mosaics shear strength with heat aging	ANSI A118.15	>400 psi (2.76 MPa/28 kg/cm^2)	529 psi (3.65 MPa/37.2 kg/cm^2)
Glazed wall tile shear strength	ANSI A118.15	>450 psi (3.11 MPa/31.5 kg/cm^2)	757 psi (5.22 MPa/53.2 kg/cm^2)
Quarry tile shear strength	ANSI A118.15	>150 psi (1 MPa/10.5 kg/cm^2)	594 psi (4.10 MPa/41.7 kg/cm^2)
Quarry tile to plywood shear strength	ANSI A118.11	>150 psi (1 MPa/10.5 kg/cm^2)	225 psi (1.55 MPa/15.8 kg/cm^2)

7-day test	Test Method	ANSI Specification	Test Results
Impervious ceramic (porcelain) mosaics shear strength with water immersion	ANSI A118.15 F	≥200 psi (1.38 MPa/14 kg/cm^2)	480 psi (3.31 MPa/33.7 kg/cm^2)

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 ardexamericas.com.

Made in the USA.

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