ARDEX X 3™ PLUS

LHT - Large and Heavy Tile and Stone Mortar

**Value and ARDEX Engineered Performance for LHT
and Most Other Everyday Tile and Stone Installations**

Formulated for large and heavy tile and stone and ungauged thicknesses

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

Use with uncoupling and anti-fracture membranes

For thicker bond coats: 3/32" to 1/2" (2.5 mm to 12 mm) after tile is embedded

Non-sag – for use on walls and floors

Minimizes slump

Easy to apply creamy consistency

Interior and exterior use

3-hour pot life

Meets or exceeds the ANSI A118.4 standard specification regarding property requirements of mortars for large and heavy tile, and ANSI 118.11

ISO C2 TE P1

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Suitable Substrates

- All common building substrates (concrete, plywood, CBU, drywall, etc.)
- Existing tiles (tile over tile)
- Metal

Some substrates require priming.

Suitable Applications

- Installation of most common tile types:
    - Not for moisture-sensitive tile and stone
    - Not for glass tile
- Dry or damp substrates (no standing water)
- Interior or exterior (not submerged)

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™)

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, and patching and leveling materials.

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

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

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

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*;* Priming / Treating Certain Substrates

Waterproofing / Crack Isolation Options

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, Existing Tiles and Other Non-Porous Surfaces

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.

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): Prime with ARDEX P 51 diluted 1:3 with water, and allow this course to dry thoroughly (min. 3 hours, max. 24 hours) before proceeding with the tile installation.

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

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

Times based on 70°F / 21°C.

Water ratio:	5 1/4 - 6 quarts (4.7 - 5.6 L) of clean water per bag; or 2 1/2 parts powder to 1 part water by volume (small batches)
Pot life:	3 hours
Open time:	Up to 30 minutes
Working time:	15 - 30 minutes

Pour 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!**

If mixing 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.

Location	Cure time prior to grouting
Floor tiles:	24 hours
Wall tiles:	8 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 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 our warm weather installation guidelines.

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

Please contact ARDEX before proceeding with any of these demanding applications.

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

Glass tiles in swimming pools and other submerged areas:

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

Glass tiles in non-submerged areas:

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 Thin Set Mortar

Technical Data According to ARDEX Quality Standards

All data based on 70°F/21°C. Physical properties are typical values and not specifications.

Coverage: (Varies with texture of substrate surface.)	1/4" x 1/4" (6 mm) sq. notch trowel = 90 ft² (8.4 m²) per bag 1/4" x 3/8" (6 mm x 9 mm) sq. notch trowel = 65 ft² (6 m²) per bag 1/2" x 1/2" (12 mm) sq. notch trowel = 45 ft² (4.2 m²) per bag
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 www.ardexamericas.com/services/warranties for full warranty details.

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.

ISO 13007 Classification	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa/10.2 kg/ cm²) 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/cm²) after 20 - 30 minutes

28-day test	Test Method	ANSI Specification	Test Results
Impervious ceramic (porcelain) mosaics shear strength	ANSI A118.4	>200 psi (1.38 MPa/14 kg/cm²)	393 psi (2.70 Mpa/27.6 kg/ cm²)
Glazed wall tile shear strength	ANSI A118.4	>300 psi (2.07 MPa/21 kg/cm²)	394 psi (2.71 Mpa/27.7 kg/ cm²)
Quarry tile to plywood shear strength	ANSI A118.11	>150 psi (1.04 MPa/10.6 kg/cm²)	175 psi (1.21 MPa/12.25 kg/cm²)

Made in the USA.

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