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# ARDEX X 4™

## Tile and Stone Mortar

Delivering performance and value for everyday tile installations.

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

Water and frost resistant

Easy to mix and apply

3-hour pot life

Use for interior and exterior floors and walls



**SystemOne™**

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# ARDEX X 4™

## Tile and Stone Mortar

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### Description and Usage

ARDEX X 4™ is a polymer-modified, mortar for setting quarry, ceramic and most natural stone\* tiles over common interior surfaces, including exterior-grade plywood, as well as over exterior concrete and masonry surfaces. ARDEX X 4 also can be used to install porcelain tile over common interior surfaces as well as exterior, horizontal concrete and masonry surfaces. ARDEX X 4 is recommended for most tile sizes, \*\* including mosaics.

### Substrate Preparation

ARDEX X 4 adheres to both dry and damp substrates that are structurally sound, solid and free from any contaminant that can act as a bond breaker. Plywood substrates must be dry, APA-rated, Type 1 exterior-grade plywood. Refer to ANSI A 108 AN-2 "General Requirements for Subsurfaces" and the Tile Council of North America's "Handbook for Ceramic Tile Installation" for detailed information on surface preparation and guidelines for substrate construction. Wallboards must be dry, sound and solidly anchored to structural components in the wall. 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.

Should pre-leveling or subfloor repair be required, use ARDEX AM 100™ Rapid Set Pre-Tile Smoothing and Ramping Mortar or ARDEX EB 2™ Fast Setting Screed Cement for exterior or interior use, or use ARDEX Liquid BackerBoard® Self-Leveling Underlayment for Interior Wood and Concrete Subfloors, ARDEX TL 1000™ Tile Leveler, Self-Leveling Underlayment or ARDEX TL PATCH® Tile Leveler, Underlayment Patch and Skimcoat for interior use, as appropriate. Observe the instructions and dry times in the ARDEX technical brochures.

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.

### Priming / Treating the Substrate

Highly absorbent substrates, such as plaster, existing tiles and certain non-porous substrates must be primed or treated as detailed below before proceeding with the tile installation.

### Highly absorbent substrates

Option 1: Apply a scratch coat of ARDEX X 4. Allow the scratch coat to harden and dry completely before proceeding with the tile installation.

Option 2 (interior, dry applications only): Prime with ARDEX P 51™ Primer diluted 1:3 with water and allow this course to dry thoroughly (min. 3 hours, max. 24 hours) before proceeding with the tile installation.

### Existing tiles (tile over tile applications), metal, glass, and certain other non-porous surfaces

Option 1: Apply a coat of ARDEX 8+9™ Rapid Waterproofing and Crack Isolation Compound, which must dry 1-2 hours before proceeding with the tile installation.

Option 2 (interior, dry applications only): Prime the existing tiles with ARDEX P 82™ Ultra Prime, and allow this course to dry thoroughly (min. 3 hours, max. 24 hours) before proceeding with the tile installation.

For more information, refer to the ARDEX Substrate Preparation Brochure at [www.ardexamericas.com](http://www.ardexamericas.com).

### Recommended Tools

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

### Mixing and Application

For one 40 lb. (18 kg) bag of ARDEX X 4, use 5 - 5 1/2 quarts (4.7 - 5.2 L) of clean water. To mix smaller quantities by hand, use 2.75 parts powder to 1 part water by volume. Pour water in the mixing container first, and then add the ARDEX X 4 while mixing for 2 to 3 minutes. For best results, mix with an ARDEX T-2 Ring Mixing Paddle and 1/2" heavy-duty drill (12 mm, min. 650 rpm). 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.

The pot life of ARDEX X 4 is approximately 3 hours at 70°F (21°C). Jobsite conditions and temperature may affect pot life. If the material begins to harden within this time, retemper with a drill and mixing paddle.

### DO NOT ADD MORE WATER!

Installation should proceed in accordance with ANSI A 108.5. After mixing, apply the 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. ARDEX X 4 is classified as having an extended open time of not less than 30 minutes. For optimum performance under typical site conditions, tiles should be fixed within 10 minutes and tiles can then be adjusted for up to 20 minutes (70°F / 21°C). Do not set tile or stone into skinned over mortar.



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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 the recommendations of the Tile Council of North America for proper transfer of ARDEX X 4 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. The position of the tile or stone may be adjusted for up to approximately 15 - 20 minutes after installation.

## Grouting

Wall tiles can be grouted after 8 hours; floor tiles after 24 hours in accordance with ANSI A 108.10 using ARDEX FL™ Rapid Set, Flexible, Sanded Grout, ARDEX FH™ Sanded Floor and Wall Grout, ARDEX FG-C™ Unsanded Floor and Wall Grout or ARDEX WA™ Epoxy Grout and Adhesive, as appropriate.

## Notes

FOR PROFESSIONAL USE ONLY.

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.

For cases requiring waterproofing, please refer to the ARDEX 8+9 Rapid Waterproofing and Crack Isolation Compound technical data sheet and the ARDEX 8+9 "5 Step Application Guide."

\*For setting moisture-sensitive natural stone or agglomerate tile, use ARDEX X 32™ MICROTEC® Fiber Reinforced Rapid Setting Thin to Thick Bed Mortar or ARDEX N 23 MICROTEC® Rapid Set Natural Stone and Tile Mortar (interior, dry applications only).

For setting glass tile in swimming pools and other submerged areas, use ARDEX WA. For setting glass tile in non-submerged applications, use ARDEX X 77™ MICROTEC® Fiber Reinforced Thin Set Mortar for interior or exterior applications or use ARDEX S 48™ Rapid-Set Thin Set Mortar / Mastic Hybrid for interior applications only.

For setting tile other than glass tile in swimming pools and other submerged areas, use ARDEX X 77 or ARDEX WA.

Balconies, terraces and building facades experience a great deal of movement due to temperature changes. For the best resistance to this movement, use ARDEX X 77 for vertical or horizontal applications or

ARDEX X 78™ MICROTEC® Fiber Reinforced, Semi-Pourable Thin Set Mortar or ARDEX FB 9 L™ Pourable ShearFlex® Mortar for horizontal applications.

\*\*For large-format tiles, use ARDEX X 77, ARDEX X 78 or ARDEX X 5™ Thin Set Mortar.

Please contact the ARDEX Technical Service Department before proceeding with any of the above demanding applications.

ARDEX X 4 is intended for use at material and surface temperatures between 50° and 85° F (10° to 29° C). Do not install below 50°F (10°C) surface and air temperatures. For warm weather installation instructions, please contact the ARDEX Technical Service Department.

Never mix with cement or additives. Observe the basic rules of tile work.

ARDEX recommends the installation of test areas to confirm the suitability of the product for its intended use.

Dispose of packaging and residue in accordance with federal, state and local waste disposal regulations. Do not flush material down drains.

## 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](http://www.ardexamericas.com).

## Technical Data According To ARDEX Quality Standards

All data based on a mixing ratio of 2.75 parts powder to 1 part water by volume at 70°F (21°C). Physical properties are typical values and not specifications.

**Mixing Ratio:** 5 - 5 1/2 quarts (4.7 - 5.2 L) of water per 40 lb. (18 kg) bag  
For smaller batches, use 2.75 parts powder to 1 part water by volume

### Approximate Coverage per 40 lb. (18 kg) bag:

1/4" x 1/4" x 1/4" Sq. Notch Trowel  
80 sq. ft. (7.4 sq. m)  
1/4" x 3/8" x 1/4" Sq. Notch Trowel  
60 sq. ft. (5.5 sq. m)  
1/2" x 1/2" x 1/2" Sq. Notch Trowel  
40 sq. ft. (3.7 sq. m)

**Open Time:** Up to 10 - 15 minutes

**Pot Life:** Approx. 3 hours

**Working Time:** Approx. 15 - 20 minutes

**Time to Grout:** Walls: 8 hours

**Floors:** 24 hours

**Colors:** Gray, White

**VOC:** 0

**Packaging:** 40 lb. (18 kg) bag

**Storage:** Store in a cool, dry area.  
Do not leave bags exposed to sun.

**Shelf Life:** 1 year, if unopened

**Warranty:** ARDEX Engineered Cements Standard Limited Warranty applies. Also eligible for the ARDEX SystemOne™ Warranty when used in conjunction with ARDEX grouts and ARDEX caulks.

ISO 13007 Classification		Classification Requirement	
C2 (cementitious, improved adhesion)		≥ 145 psi (1 MPa / 10.2 kg/cm <sup>2</sup> ) 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 <sup>2</sup> ) 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/cm <sup>2</sup> )	275 psi (1.9 MPa / 19.25 kg/cm <sup>2</sup> )
Glazed wall tile shear strength	ANSI A118.4	>300 psi (2.07 MPa / 21 kg/cm <sup>2</sup> )	350 psi (2.42 MPa / 24.5 kg/cm <sup>2</sup> )
Quarry tile to plywood shear strength	ANSI A118.11	>150 psi (1.04 MPa / 10.6 kg/cm <sup>2</sup> )	175 psi (1.21 MPa / 12.25 kg/cm <sup>2</sup> )

## Suitable uses for ARDEX X 4

Substrates	Interior or Exterior	Horizontal or Vertical	Tile Type
Concrete and other cementitious surfaces; existing tiles, metal and glass on concrete	Interior	Horizontal or vertical	Quarry, ceramic, porcelain and most natural stone*
	Exterior	Vertical	Quarry, ceramic and most natural stone*
Horizontal		Quarry, ceramic, porcelain and most natural stone*	
Plywood, plaster	Interior	Horizontal or vertical	Quarry, ceramic, porcelain and most natural stone*

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Updated 07-24-2014. Supersedes all previous versions.

Check [www.ardexamericas.com](http://www.ardexamericas.com) for updates.

For easy-to-use ARDEX Product Calculators and Product Information On the Go, download the ARDEX App at the iTunes Store or Google play.



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