

# Ultraflex 2

Professional Tile Mortar with Polymer



## DESCRIPTION

*Ultraflex*<sup>®</sup> 2 is a professional-grade, single-component, high-performance, polymer-modified thin-set mortar for interior and exterior installations of ceramic, porcelain and dimensional natural-stone tile. This mortar has a high content of unique dry polymer, resulting in excellent adhesion to the substrate and tile. *Ultraflex 2* meets or exceeds ANSI A118.4E and ANSI A118.11 requirements when mixed with water. *Ultraflex 2* can be used for interior and exterior installations of tile in most residential floor and wall applications. In commercial applications, use on interior floor and wall installations and exterior floors.

## FEATURES AND BENEFITS

- Polymer-enriched for high performance and deformability
- Smooth and creamy consistency for easy application

## INDUSTRY STANDARDS AND APPROVALS

- ISO 13007: Classification C2EP1
- ANSI: Exceeds ANSI A118.4E and ANSI A118.11 bond strength requirements

## WHERE TO USE

- Most interior/exterior residential installations on floors and walls
- Most interior/exterior commercial installations on floors
- Most interior commercial installations on walls

- Installation of ceramic and porcelain tile, quarry tile, pavers, Saltillo tile, and many types of marble, granite and natural stone

## LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Do not use for moisture-sensitive stone (green marble; some limestone and granite), agglomerate tiles or resin-backed tiles. Instead, use a suitable epoxy or urethane adhesive. See the respective Technical Data Sheet for more information.
- Do not use over dimensionally unstable substrates such as hardwood flooring, oriented strand board (OSB), substrates containing asbestos, or metal. See the “Suitable Substrates” section below.
- To use directly over gypsum-based patching or leveling substrates, apply a suitable sealer/primer before use. See the “Tiling over gypsum” technical bulletin in the Tile & Stone Installation Systems section of MAPEI’s Website.
- For installations of light-colored and translucent natural stone, a white mortar is recommended.
- Installations of tile over nonporous surfaces (waterproofing membranes, sheet membranes, existing tile, etc.) may require extended setting/curing times.
- Do not use for installations subject to water immersion, such as pools and spas.
- Use a MAPEI liquid latex additive mortar system for areas subject to severe freeze/thaw conditions.

## SUITABLE SUBSTRATES

- Concrete (cured at least 28 days)
- Masonry cement block, brick, cement mortar beds and leveling coats
- Cement backer units (CBUs) – see manufacturer’s installation guidelines
- Gypsum wallboard and plaster – interior walls in dry areas only (priming may be required). See the “Surface preparation requirements” reference guide in the Tile & Stone Installation Systems section of MAPEI’s Website.
- Plywood underlayments must be a Group 1 exterior-grade plywood CC-plugged or better, conforming to APA classification and U.S. Product Standard PS 1-95 or a “SELECT” or (SEL-TF) CANPLY classified exterior-grade plywood conforming to CSA-0121 standard for Douglas fir for direct-bond applications (interior, residential and light commercial floors and countertops in dry conditions only)
- Vinyl composition tile (VCT) and cutback residue (interior only)
- Existing ceramic and porcelain tile, quarry tile and pavers (interior only)
- MAPEI waterproofing, crack-isolation and sound-reduction membranes

Consult MAPEI’s Technical Services Department for installation recommendations regarding substrates and conditions not listed.

## SURFACE PREPARATION

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.

See the “Surface preparation requirements” reference guide in the Tile & Stone Installation section of MAPEI’s Website.

## MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

For 10-lb. (4.54-kg) size:

1a. Into a clean mixing container, pour about 1 to 1.2 U.S. qts. (0.95 to 1.14 L) of clean potable water. Gradually add 10 lbs. (4.54 kg) of powder while slowly mixing.

For 25-lb. (11.3-kg) size:

1b. Into a clean mixing container, pour about 2.5 to 3 U.S. qts. (2.37 to 2.84 L) of clean potable water. Gradually add 25 lbs. (11.3 kg) of powder while slowly mixing.

For 50-lb. (22.7-kg) size:

1c. Into a clean mixing container, pour about 5 to 6 U.S. qts. (4.73 to 5.68 L) of clean potable water. Gradually add 50 lbs. (22.7 kg) of powder while slowly mixing.

2. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-blade mixer or double-box mixer. Mix thoroughly until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
3. Let the mixture stand ("slake") for 5 minutes.
4. Remix.
5. If the mixture becomes heavy or stiff, remix without adding more liquid or powder.
6. Product has about a 2-hour working time after mixing.

## PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Choose a typical notched trowel (see the "Approximate Coverage" chart below) with sufficient depth to achieve more than 80% mortar contact to both the tile and substrate for all interior applications, and more than 95% for exterior installations and wet applications. It may be necessary to back-butter the tile in order to meet these requirements. (Refer to ANSI A108.5 specifications and TCNA Handbook guidelines.)
2. With pressure, apply a coat by using the trowel's flat side to key mortar into the substrate.
3. Apply additional mortar, combing it in a single direction with the trowel's notched side.
4. Spread only as much mortar as can be tiled before product skins over. Open time can vary with jobsite conditions.
5. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage.
6. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).

## EXPANSION AND CONTROL JOINTS

- Provide for expansion and control joints as specified per TCNA Method EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover any expansion joints with mortar.

## CLEANUP

- Use water only to clean tools and tile while the mortar is fresh.

## PROTECTION

- Protect from light traffic for 24 hours. Protect from heavy traffic for 7 days.
- Protect from frost and rain for 7 days.

### ISO 13007 Classification

Classification Code	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
E (extended open time)	≥ 72.5 psi (0.5 MPa) after 30 minutes
P1 (normal adhesion to plywood)	≥ 72.5 psi (0.5 MPa)

### ANSI Specifications

Test Method	Specification Standard	Test Results
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1.38 MPa) at 28 days	330 to 425 psi (2.28 to 2.93 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2.07 MPa) at 28 days	400 to 600 psi (2.76 to 4.14 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	350 to 475 psi (2.41 to 3.28 MPa)
ANSI A118.4E – extended open time	≥ 72.5 psi (0.5 MPa) at 30 minutes	Pass
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa) at 28 days	150 to 200 psi (1.03 to 1.38 MPa)

### Shelf Life and Application Properties

at 73°F (23°C) and 50% relative humidity

Shelf life	1 year
Open time*	30 minutes
Pot life*	> 2 hours

Time before grouting*	16 to 24 hours
VOCs (Rule #1168 of California's SCAQMD)	0 g per L

\* Open time, pot life and time before grouting vary based on jobsite conditions.

## Packaging

Size and Color
Bag: 10 lbs. (22.7 kg), gray – Canada and Puerto Rico only
Bag: 25 lbs. (22.7 kg), gray – Canada only
Bag: 50 lbs. (22.7 kg), gray
Bag: 50 lbs. (22.7 kg), white

## Approximate Coverage\*\*

Typical Trowel	Coverage for 10 lbs. (4.54 kg)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	15 to 18 sq. ft. (1.39 to 1.67 m <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	11 to 13 sq. ft. (1.02 to 1.21 m <sup>2</sup> )

Typical Trowel	Coverage for 25 lbs. (11.3 kg)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	38 to 45 sq. ft. (3.53 to 4.18 m <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	28 to 33 sq. ft. (2.6 to 3.07 m <sup>2</sup> )

Typical Trowel	Coverage for 50 lbs. (22.7 kg)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	75 to 90 sq. ft. (6.97 to 8.36 m <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	55 to 65 sq. ft. (5.11 to 6.04 m <sup>2</sup> )

\*\* Trowel dimensions are width/depth/space. Actual coverage will vary according to substrate profile and tile type.

## RELATED DOCUMENTS

- Reference guide: "Surface preparation requirements" for tile and stone installation systems\*\*\*
- Technical bulletin: "Tiling over gypsum"\*\*\*

\*\*\* At [www.mapei.com](http://www.mapei.com)

## ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com).

## WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

### LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at [www.mapei.com](http://www.mapei.com). **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

## CONTACT INFORMATION

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Flooring: 1-800-992-6273  
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1-800-361-9309

### Customer Service

1-800-42-MAPEI (1-800-426-2734)

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For the most current product data and BEST-BACKED<sup>SM</sup> warranty information, visit [www.mapei.com](http://www.mapei.com).

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