

# Ultraflex 1

Standard Tile Mortar with Polymer



## DESCRIPTION

*Ultraflex*<sup>®</sup> 1 is a standard-grade, single-component, polymer-modified thin-set mortar for most interior and exterior installations of tile. This mortar has an above average content of unique dry polymer, resulting in good adhesion to the substrate and tile. *Ultraflex 1* can be used for both 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. *Ultraflex 1* meets or exceeds ANSI A118.4E and ANSI A118.11 requirements when mixed with water.

## FEATURES AND BENEFITS

- Polymer-enriched for performance
- Good bond strength with plywood

## INDUSTRY STANDARDS AND APPROVALS

- ISO 13007: Classification C2E
- 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 most types of marble, granite and natural stone

## LIMITATIONS

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- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Do not use for moisture-sensitive stone (green marble as well as 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 light-colored and translucent natural stone, a white mortar is recommended.
- Installations of tile over nonporous surfaces (waterproofing membranes, sheet membranes, etc.) may require extended setting/curing times.
- Do not use for installations subject to prolonged water immersion.

Not recommended for areas subject to severe freeze/thaw conditions. Instead, use a liquid latex additive mortar system.

## SUITABLE SUBSTRATES

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- 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 on 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).
- MAPEI waterproofing, crack-isolation and sound-reduction membranes

## SUBSTRATE PREPARATION

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- 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 Systems section of MAPEI’s Website.

## MIXING

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

1. 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 spiral mixer. Mix thoroughly until mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
3. Let mixture stand ("slake") for 5 minutes.
4. Remix.
5. If mixture becomes heavy or stiff, remix without adding more liquid or powder.

## PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Choose a typical notched trowel (see the 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 Detail EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover any expansion joints with mortar.

## CLEANUP

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

## PROTECTION

- Protect from 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 adhesive)	≥ 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

## ANSI Specification

Test Method	Specification Standard	Test Results
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1.38 MPa) at 28 days	225 to 350 psi (1.55 to 2.41 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2.07 MPa) at 28 days	375 to 550 psi (2.59 to 3.79 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	245 to 400 psi (1.69 to 2.76 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 160 psi (1.03 to 1.10 MPa)

## Shelf Life and Product Characteristics

before mixing

Shelf life	1 year
Color	Gray, white

## Application Properties

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

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

\*Actual open time, pot life and time before grouting will vary based on jobsite conditions.

## Packaging

### Size and Color

Bag: 50 lbs. (22.7 kg), gray

Bag: 50 lbs. (22.7 kg), white

## Approximate Coverage\*\*

per 50 lbs. (22.7 kg)

Typical Trowel	Coverage
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 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\\_USA@mapei.com](mailto:sustainability_USA@mapei.com) (USA) or [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com) (Canada).

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For the most current product data and BEST-BACKED<sup>SM</sup> warranty information,  
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