

Uncoupling Membrane Mortar

Premium, Large-and-Heavy-Tile and Thin-Set Mortar



DESCRIPTION

Uncoupling Membrane Mortar is a dry-set mortar for use in large-and-heavy-tile and thin-set applications for installing tile on floors and walls.

FEATURES AND BENEFITS

- For use with uncoupling membranes
- An economical large-and-heavy-tile and thin-set mortar for installing ceramic tile and select natural stone on floors and walls
- Can be mixed with MAPEI's *Polymer Additive* (instead of water) for enhanced performance, and for setting a wider range of tile and stone over additional substrates
- Approved for use with large-format tile larger than 15" (38 cm) and for bond coats up to 1/2" (12 mm) in embedded thickness

INDUSTRY STANDARDS AND APPROVALS

When mixed with water

- ANSI: Exceeds A118.1HT bond strength requirements

When mixed with *Polymer Additive*

- ANSI: Exceeds A118.4H and A118.11 bond strength requirements

SUITABLE TILE OR STONE OVER RECOMMENDED SUBSTRATES

When mixed with water

- Ceramic tile, quarry tile, pavers, Saltillo tile, large-format tile and most types of marble, granite and natural stone

When mixed with *Polymer Additive*

- All of the substrates above
- Porcelain tile

SUITABLE TILE OR STONE OVER UNCOUPLING MEMBRANE

When mixed with water

- Ceramic tile, quarry tile, pavers, Saltillo tile, porcelain tile, large-format tile and most types of marble, granite and natural stone

SUITABLE SUBSTRATES FOR UNCOUPLING MEMBRANES AND WATERPROOFING MEMBRANES

- (For the bond coat of the membrane, follow the uncoupling or waterproofing membrane manufacturer's recommendations for unmodified mortars mixed with water or modified mortars mixed with latex additive per their system warranty.) Read the instructions completely and contact the membrane manufacturer with any questions regarding construction of the tile assembly.

SUITABLE SUBSTRATES FOR DIRECT TILE INSTALLATIONS (without uncoupling/waterproofing membranes)

- When mixed with water
- Concrete (cured at least 28 days)
- Masonry cement block and brick
- Cement mortars and leveling coats

When mixed with MAPEI's *Polymer Additive* (see *Polymer Additive's* Technical Data Sheet for details)

- All the substrates above
- Gypsum wallboard – plaster – for 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.
- Vinyl composition tile (VCT), plastic laminate countertops, non-cushioned sheet vinyl and cutback residue (interior installations)
- Existing ceramic and porcelain tile, cement terrazzo, quarry tile and pavers (interior in dry conditions only)
- MAPEI waterproofing, crack-isolation and sound-reduction membranes
- Installations subject to water immersion, such as pools and spas
- Cement backer units (CBUs) – see manufacturer's installation guidelines
- 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).

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

WHERE TO USE

When mixed with water

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

When mixed with *Polymer Additive*

- All the uses listed above
- Most exterior commercial installations
- Installations subject to water immersion, such as pools and spas
- Areas subject to severe freeze/thaw conditions

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 suitable epoxy or urethane adhesives (see respective Technical Data Sheets for more information).
- Consult building code requirements for use on exterior commercial facades.
- Do not use over gypsum underlayments or oriented strand board (OSB).
- For light-colored and translucent natural stone, a white mortar is recommended.
- For areas subject to severe freeze/thaw conditions, mix with MAPEI's *Polymer Additive* instead of water.
- Large-and-heavy-tile mortars are not designed to correct uneven floors. Substrates must be flat and level (according to substrate flatness requirements in ANSI A108.02) before the installation of large-format tile.

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 Systems section of MAPEI's Website.

MIXING

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

1. Pour clean, potable water into a clean mixing container. For nonsag/nonslump applications, use about 6.5 to 7.5 U.S. qts. (6.15 to 7.10 L) of water. For MAPEI uncoupling and peel-and-stick membranes, use about 7.5 to 8 U.S. qts. (7.10 to 7.57 L) of water. Or, when needed instead of water, use 2 U.S. gals. (7.57 L) of *Polymer Additive*.
2. Gradually add 50 lbs. (22.7 kg) of powder while slowly mixing.

3. 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.
4. Let the mixture stand for 5 minutes.
5. Remix for 1 minute.
6. If the mixture becomes heavy or stiff, remix it without adding more liquid.

APPLYING FOR DIRECT TILE INSTALLATIONS (without uncoupling membranes)

Read all installation instructions thoroughly before installation.

1. Choose a notched trowel (see the “Approximate Coverage” chart below), with sufficient depth to achieve greater than 80% mortar contact with both the tile and substrate for all interior applications, and greater than 95% for exterior installations and wet applications. It may be necessary to back-butter tiles 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 mortar to the substrate, combing it in a single direction parallel to the tiles’ shortest dimension with the trowel’s notched side.
4. Spread only as much mortar as can be tiled before the 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 the trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the 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).

APPLYING BOND COAT FOR UNCOUPLING MEMBRANE INSTALLATION

Read all installation instructions thoroughly before installation.

1. Refer to the membrane manufacturer’s guidelines for installation instructions and trowel recommendations.
2. Spread only as much mortar as can be covered with the uncoupling membrane before the product skins over. Open time can vary with jobsite conditions.

APPLYING FOR TILE INSTALLATION OVER UNCOUPLING MEMBRANES

Read all installation instructions thoroughly before installation.

1. Follow the uncoupling membrane manufacturer’s installation guidelines.
2. Choose a notched trowel (see the “Approximate Coverage” chart below), with sufficient depth to achieve greater than 80% mortar contact with both the tile and substrate for all interior applications, and greater than 95% for exterior installations and wet applications. It may be necessary to back-butter tiles in order to meet these requirements. (Refer to ANSI A108.5 specifications and TCNA Handbook guidelines.)
3. With pressure, apply a coat by using the trowel’s flat side to completely fill the cavities on the surface of the membrane and achieve a mechanical bond to the membrane.

4. Apply additional mortar, combing it in a single direction with the trowel's notched side.
5. Spread only as much mortar as can be tiled before the product skins over. Open time can vary with jobsite conditions.
6. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to the trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage.
7. 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 per TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover expansion joints with mortars.

CLEANUP

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

PROTECTION

- Protect installation from light foot traffic and wait to grout for 24 to 48 hours.
- Protect from heavy traffic for 7 days.
- Protect from rain or frost for 7 days.
- Large-format tile and low-absorption tile may require a longer time to fully set before tiles can be grouted.

ANSI Specifications

Test Method	Specification Standard	Test Results
When mixed with water		
ANSI A118.1 – shear strength, impervious ceramic (porcelain) mosaics	> 150 psi (1.03 MPa) at 28 days	175 to 225 psi (1.21 to 1.55 MPa)
ANSI A118.1 – shear strength, glazed wall tile	> 250 psi (1.72 MPa) at 7 days	275 to 330 psi (1.90 to 2.28 MPa)
ANSI A118.1 – shear strength, quarry tile to quarry tile	> 100 psi (0.69 MPa) at 28 days	225 to 300 psi (1.55 to 2.07 MPa)
ANSI A118.1H – mortar for large and heavy tile	ASTM C627 Robinson Floor Test, lippage change < 1/64" (0.4 mm)	Pass
ANSI A118.1T – sag on vertical surfaces	≤ 0.02" (0.5 mm)	Pass
When mixed with Polymer Additive		
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1.38 MPa) at 28 days	200 to 300 psi (1.38 to 2.07 MPa)

ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2.07 MPa) at 7 days	300 to 400 psi (2.07 to 2.76 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	200 to 300 psi (1.38 to 2.07 MPa)
ANSI A118.4H – mortar for large and heavy tile	ASTM C627 Robinson Floor Test Lippage change < 1/64" (0.4 mm)	Pass
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa) at 28 days	150 to 250 psi (1.03 to 1.72 MPa)

Shelf Life and Application Properties*

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

Shelf life	1 year when stored in original, unopened packaging
Open time*	20 to 30 minutes
Pot life*	> 2 hours
Time before grouting*	24 to 48 hours
VOC content	0 g per L

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

Packaging

Size and Color
50 lbs. (22.7 kg), gray

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	85 to 95 sq. ft. (7.90 to 8.83 m ²)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	65 to 75 sq. ft. (6.04 to 6.97 m ²)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm), square-notch	40 to 50 sq. ft. (3.72 to 4.65 m ²)
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm), U-notch	35 to 40 sq. ft. (3.25 to 3.72 m ²)

** Coverage estimates are for flat substrates; use over a membrane will significantly reduce coverage rate as a result of filling voids in the membrane. Trowel dimensions are width/depth/space. Actual coverage will also vary according to tile type.

RELATED DOCUMENTS

- Reference guide: "Surface preparation requirements" for tile and stone installation systems***

*** At 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_USA@mapei.com (USA).

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. **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.**

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For the most current product data and BEST-BACKEDSM warranty information,
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