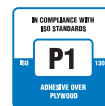


Keraflex Membrane Mortar

Premium, Extra Smooth, Large-and-Heavy-Tile Mortar with Polymer for Membranes



DESCRIPTION

Keraflex® Membrane Mortar is specifically designed for use as a mortar over and under uncoupling, crack-isolation, sound-reduction and waterproofing membranes. It is a faster-drying mortar when trapped between membranes and substrate or between membranes and tile.

FEATURES AND BENEFITS

- For use with installing uncoupling, floor-heating, waterproofing sheet and rubber sound-reduction membranes
- High-Transfer Technology™ for superior membrane-wetting properties
- Faster drying properties under and over membranes
- Primarily used to install approved membranes and to install tile over membranes
- Extra smooth, creamy consistency for ease of application
- Easy mixing, handling and troweling properties
- Ideal for application in lippage control systems
- Nonsag formula for large-format and heavy tile/stone in wall applications
- Nonslump formula for large-format and heavy tile/stone in floor applications
- For bond coats up to 1/2" (12 mm) in embedded thickness

- Polymer-enriched for high performance
- For use over plywood and a variety of membranes

INDUSTRY STANDARDS AND APPROVALS

- ISO 13007: Classification C2TES1P1
- ANSI: Exceeds A118.4HET, A118.11 and A118.15HET requirements

WHERE TO USE

- Interior/exterior residential and commercial installations on floors, walls and countertops in dry and wet areas
- Installation of most types and sizes of gauged porcelain tiles; most large and heavy tile and stone; all types of ceramic and porcelain tile, glass tile and Saltillo tile; and most marble, granite and natural stone
- For installing ceramic or porcelain tile in submerged applications (such as pools, fountains and water features)

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, cultured marble or resin-backed tiles. Instead, use suitable epoxy or urethane adhesives. See the respective Technical Data Sheets 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 primer/sealer before use. See the "Tiling over gypsum" technical bulletin in the Tile & Stone Installation Systems section of MAPEI's Website.
- Use a white mortar when installing light-colored stones and translucent marble.
- Installation of dimensionally weak stone (such as limestone and travertine) is limited to thin-set applications only.
- For large-format glass tile, see the technical bulletin "Installing large-format, opaque glass tiles" in the Tile & Stone Installation Systems section of MAPEI's Website.
- Follow the glass tile manufacturer's recommendations regarding limitations and appropriate use.
- For translucent or clear glass tiles, *Adesilex™ P10 Mosaic & Glass Tile* mortar is recommended due to its bright white color.
- Do not use for glass tile with a decorative coating on the tile backing.
- Some glass tile backings may not be suitable for use with *Keraflex Membrane Mortar*. Consult the recommendations of the Tile Council of North America (TCNA) and the glass tile manufacturer. All tiles should conform to ANSI 137.1 or ANSI 137.2 Glass Tile Standard; otherwise, see the tile manufacturer for additional information and recommendation.
- 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.

SUITABLE SUBSTRATES

- Concrete (cured for at least 28 days)
- Masonry cement block, brick, cement mortar beds, render coats 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)
- Foam backer board – 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).
- Vinyl composition tile (VCT), vinyl and cutback residue (interior installations)
- Existing ceramic and porcelain tile, cement terrazzo, quarry tile and pavers (interior, dry or intermittent exposure to water conditions)
- MAPEI waterproofing, crack-isolation, floor-heating, sound-reduction and uncoupling membranes

Note that glass tile may not be suitable over some of the above substrates, such as plywood. Consult the TCNA and glass tile manufacturer regarding installation recommendations over these substrates or membranes.

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 on MAPEI's Website.

Tile Council of North America (TCNA) Statement on Maximum Allowable Deflection

"Floor systems, whether wood framed or concrete, over which the tile will be installed... shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes. The owner should communicate in writing to the project design professional and general contractor the intended use of the tile installation, including in-service loads or information. Project design professional and general contractor must make necessary allowances for the expected live load, concentrated loads, impact loads and dead loads, including maximum allowable loads during construction and maintenance. The tile contractor shall not be responsible for problems resulting from any structural subfloor installation not compliant with applicable building codes, unless structural subfloor was designed and installed by the tile contractor."

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.
2. For nonsag/nonslump applications: Use about 6.1 to 6.7 U.S. qts. (5.77 to 6.34 L) of water.

For installation of MAPEI membranes: Use about 6.8 to 7.8 U.S. qts. (6.44 to 7.38 L) of water.

3. Gradually add 44 lbs. (20 kg) of powder while slowly mixing.
4. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-blade mixer or spiral mixer. Mix thoroughly until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
5. Let mixture stand ("slake") for 5 minutes.
6. Remix.
7. If the mixture becomes heavy or stiff, remix it without adding more liquid.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

For use in installing MAPEI membranes

1. Refer to the MAPEI membrane's Technical Data Sheet for additional specific per-product recommendations.
2. Inspect the subfloor before installing MAPEI membrane to ensure that the substrate is acceptable for tile or stone installation.
3. Always pre-cut and dry-fit MAPEI membrane in place.
4. Mix *Keraflex Membrane Mortar* for the substrate to a consistency on the high end of the recommended water range. The mortar should be able to hold a notched ridge while allowing for wetting out the backing of MAPEI membrane.
5. With pressure, apply a coat by using the trowel's flat side to key mortar into the substrate.
6. Apply additional mortar, combing it in a single direction using the trowel recommended per the membranes technical data sheet. Coverage may vary because of mortar consistency, trowel angle, floor flatness, substrate absorption, etc. If full coverage is not achieved, it may be necessary to use a larger trowel to achieve recommended coverage.
7. Spread only as much mortar that can be covered with the MAPEI membrane before the mortar skins over. Open times vary with membrane and jobsite conditions.
8. Embed MAPEI membrane into the mortar. Using a hand roller or preferably steel roller (not exceeding 75 lbs. or 34.0 kg), applying pressure to ensure proper embedding of the membrane.
9. Refer to the applicable MAPEI membrane technical data sheet for proper installation of roll edges or overlap of roll seams.
10. Lift the membrane occasionally to verify coverage. Proper installation results in full contact between the membrane backing, the substrate, and the tile-setting mortar.

For use in installing ceramic, porcelain and stone tile

1. Choose a 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 and wet applications. It may be necessary to flat-back trowel (back-butter) the tile to meet these requirements. Glass-tile installations require 100% continuous coverage. (Refer to ANSI A108.5 specifications and TCNA or TTMAC 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 the product skins over. Open time can vary with jobsite conditions.
5. Place 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 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).
7. For glass tile, follow immediately with a proper beating-in of the tiles to flatten ridges or notches. For the installation of sheet-mounted glass and marble mosaics, after using light pressure to establish contact with the fresh mortar, lightly tap the tile with a rubber-faced beating block and mallet.
8. 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). Remove all mortar from the surface of glass tiles.



Used under Mapeguard UM



Used over Mapeguard UM



Used over Mapeguard 2



Used under Mapeguard WP 200



Used under Mapeheat Membrane



Used over Mape sonic 2



Used over Mapesonic RM

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.
- When necessary, cut tiles along both edges of the expansion joints. Do not allow tile and mortar to overlap the joints.
- Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
- Install the specified compressible backer rod and sealant into all expansion and control joints.
- Glass tiles exhibit more dimensional change due to temperature fluctuations than do ceramic or porcelain tiles. Joint spacing recommendations in EJ171 (301MJ) give a range for interior and exterior applications. For glass-tile installations, add additional movement joints in order to reduce stresses.

CLEANUP

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

PROTECTION

- Do not allow light traffic for 24 to 48 hours.
- Protect the installation from general traffic for at least 72 hours, and from heavy traffic for at least 7 days.
- Protect the installation from rain for 72 hours, and from freezing for 21 days.
- Cure for 28 days before water immersion.
- All glass installations benefit from extended curing times before grouting or permitting foot traffic.
- After being grouted, glass tiles require at least 21 days of curing time before submersion in water.

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
T (vertical slip resistance)	≤ 0.019" (0.5 mm)

E (extended open time)	≥ 72.5 psi (0.5 MPa) after 30 minutes
S1 (normal deformation of mortar)	≥ 0.1" (2.5 mm)
P1 (normal adhesion to plywood)	≥ 72.5 psi (0.5 MPa)

ANSI Specifications*

Test Method	Specification Standard	Test Results
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa)	150 to 180 psi (1.03 to 1.24 MPa)
ANSI A118.15H – mortar for large and heavy tile	ASTM C627 Robinson Floor Test Lippage change < 1/64" (0.4 mm)	Pass
ANSI A118.15E – extended open time	≥ 75 psi (0.52 MPa) at 30 minutes	Pass
ANSI A118.15T – sag on vertical surfaces	≤ 0.02" (0.5 mm) at 20 minutes	Pass
ANSI A118.15 – shear strength, impervious ceramic (porcelain) mosaics	> 400 psi (2.76 MPa) at 28 days	420 to 500 psi (2.90 to 3.45 MPa)
ANSI A118.15 – shear strength, glazed wall tile	> 450 psi (3.10 MPa) at 7 days	490 to 550 psi (3.38 to 3.79 MPa)
ANSI A118.15 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	400 to 600 psi (2.76 to 4.14 MPa)

* Anything that meets A118.15 by definition exceeds A118.4.

Shelf Life and Application Properties

before mixing

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C) and 50% relative humidity
Colors	Gray and white

Application Properties

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

Open time**	30 minutes
Pot life**	> 2 hours
Time before grouting (walls)**	8 to 10 hours
Time before grouting (floors)**	12 hours
VOC content	0 g per L

Application temperature range	40°F to 95°F (4°C to 35°C)
Embedded thickness range	3/32" to 1/2" (2.5 to 12 mm)

*** Cold temperature or high humidity may alter these properties.*

Packaging

Size and Color
Bag: 44 lbs. (20 kg), gray
Bag: 44 lbs. (20 kg), white

Approximate Coverage***

per 44 lbs. (20 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 ²)
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 ²)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm), square-notch	38 to 45 sq. ft. (3.53 to 4.18 m ²)
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm), U-notch	25 to 30 sq. ft. (2.32 to 2.79 m ²)

**** 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" [†]
- Technical bulletin: "Installing large-format, opaque glass tiles" [†]

[†] 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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