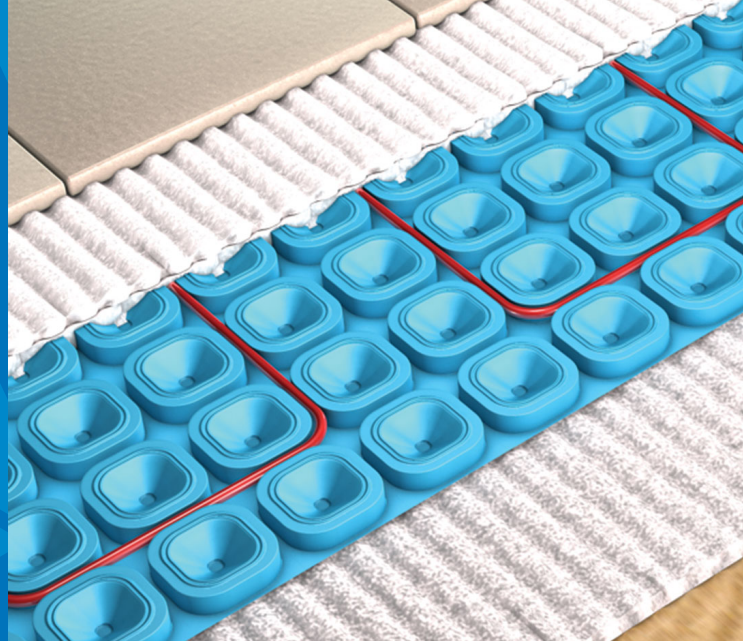


Mapeheat Membrane

Lightweight Uncoupling, Crack-Isolation and Waterproofing Membrane for Electrical Floor Heating



Technology from • Technologie de • Tecnologia de

Nuheat



DESCRIPTION

Mapeheat™ Membrane is a lightweight uncoupling, crack-isolation and waterproofing membrane that also provides vapor management and load support. This patented membrane is designed to speed the installation of tile and stone in interior rooms such as bathrooms, kitchens and three-season rooms where the luxury of radiant floor heating is desired. *Mapeheat Membrane's* thin profile works well with remodeling projects where the new floor will be installed directly over a preexisting one. Once the heating cable is set within *Mapeheat Membrane's* rounded square reliefs, a tile mortar can be applied immediately.

FEATURES AND BENEFITS

- Helps prevent transmission of in-plane substrate cracks up to 1/8" (3 mm)
- Recommended for use with polymer-modified mortars
- Thin profile: Membrane thickness is less than 1/4" (6 mm)
- Replaces plywood or cement board as tile underlayment
- Minimal roll memory for faster installation
- Heating cable installs easily, and lays flat and secure
- Suitable for areas with up to 25 lbs. (11.3 kg) MVER and 100% relative humidity
- Does not support mold growth

INDUSTRY STANDARDS AND APPROVALS

- ANSI: Passes A118.12 standard (Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation) and A118.10 standard (Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation)
- ASTM: C627 (Robinson) service rating for "Extra Heavy"

WHERE TO USE

- Use under ceramic and natural stone tile in interior residential spaces such as kitchens, bathrooms, shower floors and three-season rooms.
- Use as a substrate for self-levelers under engineered wood, sheet vinyl, luxury vinyl tiles, luxury vinyl planks, laminate flooring and mosaic tile.

LIMITATIONS

- Do not use over cracks or control joints subject to out-of-plane movement, or where in-plane movement exists greater than 1/8" (3 mm).
- Do not cover expansion joints. Refer to the most current TCNA Handbook, Method EJ171, or TTMAC Tile Installation Manual, Detail 301MJ.
- Do not use as a replacement layer of plywood or cement board under natural stone.
- Do not use over substrates containing asbestos, plank wood flooring, presswood, particleboard, chipboard, pressure- or oil-treated plywood, Lauan, Masonite, self-stick tile, laminate, metal, fiberglass or similar dimensionally unstable materials.
- Do not use for submerged applications or for floors subject to standing water.
- Do not use in exterior applications.
- Do not use premixed products to set tile over *Mapeheat Membrane*.
- Do not install moisture-sensitive tile or stone with water-based setting materials. Note: On occasion, dimensionally weak natural-stone tile that normally would not be categorized as moisture-sensitive (such as travertine, limestone, marble and agglomerates) can exhibit doming, cupping or curling when installed over impervious membranes such as *Mapeheat Membrane*.
- Do not use on bituminous substrates.
- Do not use on highly flammable material.
- Do not use with solid, hardwood flooring.
- Before the installation of mosaic tile, a self-leveler must be applied over *Mapeheat Membrane* at a minimum thickness of 1/4" (6 mm) above the highest point of the membrane.

SUITABLE SUBSTRATES

- Cured or young concrete. When used over young (green) concrete, the concrete must have cured for at least 7 days and be suitable to support tile installation traffic as determined by the project design professional, construction manager or general contractor.
- Cement mortar beds and leveling coats
- Cement backer units (CBUs) – see manufacturer's installation guidelines
- Industry-approved, exterior-grade plywood and APA Sturd-I-Floor, Exposure 1 OSB (in interior, dry areas only). Regarding deflection requirements, refer to the local building code; to the TCNA Handbook, Field Installation

Requirements, subsection “Maximum Allowable Deflection for Floor System and Substrate;” to the TTMAC 09 30 00 specifications guide; and to ANSI A108.01, Section 3.4.

- Existing, well-bonded ceramic tile and dimensionally stable natural stone
- Existing, structurally sound vinyl floor without any foam or under cushioning mat
- Existing, cement terrazzo floors

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

SURFACE PREPARATION

- All suitable substrates must be smooth, structurally sound and free of any substance that could prevent or reduce proper bond and/or affect product performances.
- If moisture in the substrate would be an issue for the intended flooring, such as moisture-sensitive engineered wood and LVT, install a MAPEI moisture barrier product on the substrate before installing *Mapeheat Membrane*.
- Gypsum-based patching or leveling compounds may leave a dusty residue on the surface. Clean the dusty substrate before applying primer and an approved MAPEI adhesive. See the technical bulletin “Tiling over gypsum” in the Tile & Stone Installation Systems section of MAPEI’s Website.
- Wood subfloors must be prepared according to ANSI A108.01 and A108.02; to the TCNA Handbook, Field Installation Requirements, subsection “Maximum Allowable Deflection for Floor System and Substrate;” and to the TTMAC 09 30 00 specifications guide.
- Do not use chemical means (acid etching or stripping) to prepare approved substrates. Use mechanical methods only.
- Concrete substrates must be flat, smooth and absorptive. To remove any bond-inhibiting materials, concrete substrates should be mechanically prepared to obtain the International Concrete Repair Institute (ICRI) concrete surface profile (CSP) #2.

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

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

- Apply *Mapeheat Membrane* when substrate and ambient temperatures are between 50°F and 95°F (10°C and 35°C).
- Use a 1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) square-notch trowel for bonding the membrane to the substrate.

Bonding *Mapeheat Membrane* to the substrate

1. Select an appropriate MAPEI latex polymer-modified mortar with the ISO 13007 classification C2E or better, and meeting ANSI A118.4 or ANSI A118.11 industry standards or better.
2. Pre-cut and dry-fit *Mapeheat Membrane* in place, and then set aside.
3. Apply the mortar to the substrate. If the substrate is existing tile, stone, vinyl or terrazzo, apply a primer such as MAPEI’s *ECO Prim Grip*™ before applying the mortar.
4. Lay the previously cut portion of *Mapeheat Membrane* over the wet mortar, fabric side down.
5. Lay the next sheet of *Mapeheat Membrane*, taking care to align it with the previous one, without overlapping. Align the square reliefs.

6. For a proper bond between *Mapeheat Membrane* and the floor, use a 50-lb. (22.7-kg) or heavier roller over the installed membrane. For smaller pieces of membrane, use a wood float, steel trowel or hand roller to apply pressure.
7. After rolling, as the installation progresses, clean off any excess mortar that may have squeezed up through the seams between the membrane sections.
8. Allow the mortar to cure.

Installing the electrical cable

For complete cable installation instructions, refer to the Technical Data Sheet (TDS) for *Mapeheat Cable* at www.mapei.com.

Waterproofing (optional for installing ceramic tile)

1. After the cable has been properly installed, use a 1/4" x 3/16" (6 x 4.5 mm) sawtooth trowel to apply the same mortar used to bond the membrane to the substrate. The mortar should be keyed in over the adjoining seams with the trowel's flat side. Be sure to fill in any holes or voids, taking care not to damage the heating cable with the trowel.
2. *Mapeguard*® ST or *Mapeguard WP ST* sealing tape will be applied over the seams that are covered with wet mortar. First, center the seam tape over the seams with at least 2" (5 cm) on each side of a seam. Then apply the seam tape, working the sealing tape into the mortar with a grout float or the trowel's flat side while the mortar is still workable.
3. To waterproof around the walls of the installation area, take a pre-measured length of the seam tape and fold it in half along its length. One side of the fold will be adhered to the floor, and the other side will be adhered up the wall. To accomplish this, follow the installation methods detailed in steps 1 and 2.
4. Next, embed the seam tape into the mortar with a grout float or the trowel's flat side, taking care not to puncture the membrane or damage the heating cable.
5. Mortar should be under the seam tape only. Use a damp sponge to clean off any visible excess mortar on *Mapeheat Membrane* so as not to hinder bonding during flooring installation.
6. Flood testing should be performed before installing the finished flooring. Do not flood-test while the heating cable is activated.

Installation of ceramic/porcelain tile and stone

1. For regular installations, utilize the same mortar used to bond *Mapeheat Membrane* to the substrate. For fast-track installations, use one of MAPEI's rapid-setting mortars with MAPEI's *Ultracolor*® Plus FA grout. For large and heavy tiles, use a MAPEI mortar that meets the ANSI A118.4 or ANSI A118.15 standard.
2. Mix the mortar to a consistency on the high end of the recommended water range for mixing.
3. Select an appropriate trowel per instructions on the mortar's TDS. Use the trowel's flat side to fill the cavities of *Mapeheat Membrane* with mortar. Alternatively, a rubber grout float can be used to fill the cavities with mortar.
4. Use the trowel's notched side to apply a tile-setting layer of the same mortar over the prefilled *Mapeheat Membrane*. If a heating cable was inserted into the membrane, be careful not to damage the cable with the trowel. Spread only as much mortar as can be covered before the mortar skins over. Open times vary with jobsite conditions and mortar choice.
5. Begin to install the tile/stone. Occasionally remove and check some tiles for proper coverage per ANSI guidelines.
6. For waiting times before grouting and protection from light foot traffic, refer to the TDSs of the MAPEI tile-setting mortar and grout being utilized. Depending on site conditions, tile size, temperature and humidity, waiting times may need to be extended.
7. When cleaning out grout joints before grouting, be careful not to damage the cables that may be underneath.

- Wait at least 72 hours after the completed installation of tile before reactivating the heating cable.

Installation of moisture-sensitive tile and stone

- To prefill the cavities of *Mapeheat Membrane*, utilize a polymer-modified mortar approved for moisture-sensitive tile/stone.
- Mix the mortar to a consistency on the high end of the recommended water range for mixing.
- Select an appropriate trowel. Use a trowel's flat side to fill the cavities of *Mapeheat Membrane* with mortar. Alternatively, a rubber grout float can be used to fill the cavities with mortar.
- Allow the mortar to cure overnight.
- Use the trowel's notched side to apply a tile-setting layer of *Kerapoxy*® 410 100%-solids, epoxy setting mortar over the prefilled *Mapeheat Membrane*, following directions on the TDS for *Kerapoxy 410*.
- Begin to install the tile/stone. Occasionally remove and check some tiles for proper coverage per ANSI guidelines.
- For waiting times before grouting and protection from light foot traffic, refer to the TDSs for *Kerapoxy 410* and the grout being utilized. Depending on site conditions, tile size, temperature and humidity, waiting times may need to be extended.
- When cleaning out grout joints before grouting, be careful not to damage the cables that may be underneath.
- Wait at least 72 hours after the tile installation before reactivating the heating cable.

Installation of alternate floor coverings (engineered wood, sheet vinyl, luxury vinyl tile, luxury vinyl plank, laminate)

- Apply any MAPEI self-leveler over *Mapeheat Membrane* at a minimum thickness of 1/4" (6 mm) above the highest point of the membrane.
- Using a primer as a pre-step is not necessary.
- Allow the self-leveler to cure.
- Install floor covering using an appropriate adhesive according to its TDS.
- Wait at least 72 hours after the flooring installation before reactivating the heating cable.

Note: Tile/stone is the most efficient floor covering for providing maximum heat conductivity and thermal output per square foot (meter). Because other floor-covering types may not transfer heat at the same rate, they may not warm the floor to the same degree as ceramic tile and stone will, unless heating cables are set at a higher temperature.

Caution: The technical data sheet and/or installation instructions for any chosen floor covering must confirm compatibility with radiant floor-heating systems. In addition, the temperature of the heating cable must not exceed the floor covering's maximum allowable temperature.

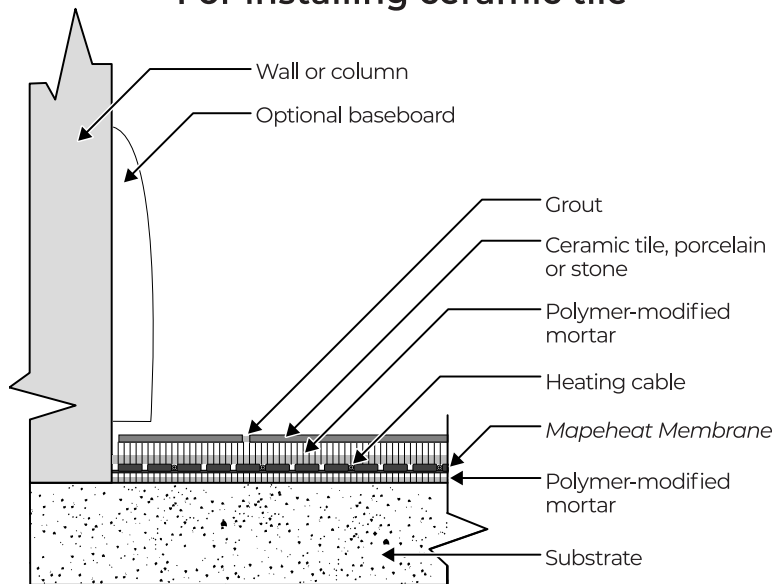
EXPANSION JOINTS

- Honor expansion joints through *Mapeheat Membrane*, tiles and grout per tile industry standards.
- When necessary, cut tiles along both edges of the expansion joints. Do not allow tiles and mortar to overlap the expansion joints.
- Provide for movement joints as required by TCNA Method EJ171, or by TTMAC Specification Guide 09 30 00, Detail 301MJ.

PROTECTION

- Protect *Mapeheat Membrane* from direct exposure to sunlight or extreme heat.
- Provide for dry storage on site at between 40°F and 95°F (4°C and 35°C). Deliver materials at least 24 hours before application.
- For information about waiting before grouting and protecting from light foot traffic, refer to the TDSs of the MAPEI tile-setting mortar and grout being utilized. Depending on site conditions, temperature and humidity, the waiting times may need to be extended.
- Protect the flooring installation from heavy traffic or rolling loads for at least 72 hours if using a rapid-set mortar and 7 days if using a large-and-heavy-tile mortar.
- Protect installation from contamination and damage before and during tilework.
- Always provide proper protection of finished floors when heavy equipment (such as fork lifts or scissor lifts) is to be used over installations with sheet membrane underlayments during construction.

For installing ceramic tile



Product Performance Properties

Laboratory Tests	Results
Material	Polypropylene
Thickness	7/32" (5.5 mm)
Weight of nonwoven polypropylene bottom layer	1.5 U.S. oz. per sq. yd. (50 g per m ²)
Weight of polypropylene membrane	22.1 U.S. oz. per sq. yd. (750 g per m ²)
ASTM C627 (Robinson)	
19.2" (49 cm) o.c., wood substrate	"Extra Heavy" classification
Concrete slab	"Extra Heavy" classification
Shear strength – A118.12	

At 7 days	51 psi (0.35 MPa)
At 28 days	52 psi (0.36 MPa)
Breaking strength – A118.10	
Longitudinal	355 psi (2.45 MPa)
Transverse	282 psi (1.94 MPa)

Shelf Life and Product Characteristics

Shelf life	5 years when stored in original, unopened packaging in a dry area at 73°F (23°C)
Physical state	Membrane
Color	Blue
Application temperature range	50°F to 95°F (10°C to 35°C)

Packaging and Coverage

Size	Coverage
Roll: 16'4" x 3'3" (5 x 1 m)	54 sq. ft. (5.02 m ²) per roll
Roll: 49'3" x 3'3" (15 x 1 m)	161 sq. ft. (15.0 m ²) per roll
Sheet: 2'9" x 3'3" (0.84 x 1.0 m)	9 sq. ft. (0.84 m ²) per sheet, 25 sheets per box

Patents Issued*

US 8,176,694 B2
US 9,188,348 B2
US 9,416,979 B2
US 9,518,746 B2
US 9,625,163 B2
US 9,719,265 B2
US 9,977,931 B2
US 10,006,644 B2
US 10,107,505 B2
US 10,215,423 B2

* Additional patents are pending.

RELATED DOCUMENTS

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

** At www.mapei.com

ADDITIONAL INFORMATION

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.

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.**

CONTACT INFORMATION

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Flooring: 1-800-992-6273
Concrete and heavy construction: 1-888-365-0614
Canada:
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-BACKEDSM warranty information,
visit www.mapei.com.

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