



MapeguardTM 2

Premium Crack-Isolation and Sound-Reduction Sheet Membrane



DESCRIPTION

Mapeguard 2 is a next-generation, flexible, thin, 40-mil (1-mm) lightweight, load-bearing, fabric-reinforced “peel-and-stick” crack-isolation membrane. After application, ceramic tile or stone can be installed immediately with any polymer-modified cement-based mortar. Glue-down wood flooring can also be installed with any MAPEI urethane adhesive.

Mapeguard 2 helps to prevent existing or future in-plane floor cracks (with movement up to 3/8" [10 mm] wide) from transmitting through grout, ceramic tile or natural stone. It also reduces the transmission of impact sound (footsteps, dropped objects, etc.) and airborne sound (voice, TV, etc.) through floors when installed under ceramic tile, stone or wood floor coverings.

FEATURES AND BENEFITS

- Dual protection – Provides crack isolation and sound reduction
- Lightweight – 35% lighter than previous generations of comparable membranes
- Semi-rigid sheet – Easy to position on floor and cut to size
- Split-back release film – Installs faster than membranes with 1-piece liners
- White surface – Easy to view under lower-light conditions
- Thin-film adhesive backing – Bonds to a variety of substrates
- Time-saving – Prime, peel, stick and then install tile or wood immediately
- No odor – Great for confined spaces
- Contains post-industrial recycled material

INDUSTRY STANDARDS AND APPROVALS

- ASTM C627 (Robinson): See the “Product Performance Properties” section for *Mapeguard 2*.
- ASTM E492-04 (Impact Sound), E90-04 (Airborne Sound), E2179 (Impact Sound): See the “Product Performance Properties” section for *Mapeguard 2*.
- ANSI A118.12 (Crack Isolation For Tile & Stone): See the “Product Performance Properties” section for *Mapeguard 2*. *Mapeguard 2* exceeds the high-performance standard for crack isolation.

LEED Points Contribution

LEED Points

MR Credit 4, Recycled Content* Up to 2 points

** Using this product may help contribute to LEED certification of projects in the category shown above. Points are awarded based on contributions of all project materials.*

WHERE TO USE

- Residential (homes, apartments and condominiums) and commercial (airports, malls, office buildings, restaurants and galleries) floors, both interior and exterior (with proper drainage)
- Ideal for multi-family or multi-story buildings to reduce noise transmission through floors

LIMITATIONS

(for *Mapeguard 2*, *MAPEI SM Primer*TM and *MAPEI SM Primer Fast*)

- Do not use over cracks or control joints subject to: out-of-plane movement; or in-plane movement greater than 3/8" (10 mm). Note: See the “Expansion Joints” section.

- Do not use over substrates containing asbestos, plank wood flooring, presswood, particleboard, chipboard, oriented strand board (OSB), pressure- or oil-treated plywood, Lauan plywood, Masonite, self-stick tile, laminate, metal or fiberglass surfaces, or poured epoxy floors or similar dimensionally unstable materials.
- Do not use where excessive substrate moisture and/or where negative hydrostatic pressure exists. The maximum amount of acceptable moisture in a concrete substrate for *Mapeguard 2* primed with *MAPEI SM Primer* is 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m²) per 24 hours as determined by a calcium chloride test kit. The maximum amount of acceptable moisture in a concrete substrate for *Mapeguard 2* primed with *MAPEI SM Primer Fast* is 8 lbs. per 1,000 sq. ft. (3,63 kg per 92,9 m²) per 24 hours as determined by a calcium chloride test kit. When moisture vapor emissions are in excess of 8 lbs. per 1,000 sq. ft. (3,63 kg per 92,9 m²) per 24 hours, call MAPEI's Technical Services for recommendations.
- Do not use on vertical surfaces; under glass tile installations; as a waterproofing or roof deck membrane or wear surface; for submerged applications; or on plywood in exterior applications.
- Do not use on exterior floors with improper drainage (no standing water).
- When using *Mapeguard 2* over gypsum-based floor-patching or leveling compounds, reference Technical Bulletin #010313-TB ("Gypsum-Based Floors and Walls: Which MAPEI Products Can Be Applied?").
- Do not use *Mapeguard 2*, *MAPEI SM Primer* or *MAPEI SM Primer Fast* with solvent-based materials.
- Do not use self-leveling products over *Mapeguard 2*.
- Do not use premixed products to set tile over *Mapeguard 2*.
- 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 wet-set or medium-bed mortar methods of installation are used over impervious sheet membranes such as *Mapeguard 2*. For this reason, areas requiring more than 3/8" (10 mm) buildup require the use of a self-leveling underlayment or cured mud-bed application before installation of *Mapeguard 2*. When installing natural stone, always do a mockup area of the proposed installation and allow materials to reach a full cure to ensure achieving the desired effect. For more information regarding these methods or materials, contact MAPEI's Technical Services before installation or design.

SUITABLE SUBSTRATES

- Fully cured concrete (at least 28 days old)
- Cement mortar beds and leveling coats
- Cement backer units (CBUs) – see manufacturer's installation guidelines
- Properly prepared cement terrazzo floors, and well-bonded ceramic tile and natural stone; and vinyl composition tile

- Exterior-grade plywood for interior residential floors and countertops in dry areas only. Plywood must be Group 1, CC-type, conforming to APA classification and U.S. Product Standard PS 1-95 or CANPLY exterior plywood "Select" or "Select Tight Face" conforming to CSA-0121 standard for Douglas fir. (See the TCNA Handbook for additional information and following statement regarding deflection.)

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

Tile Council of North America (TCNA) Statement on Deflection Criteria

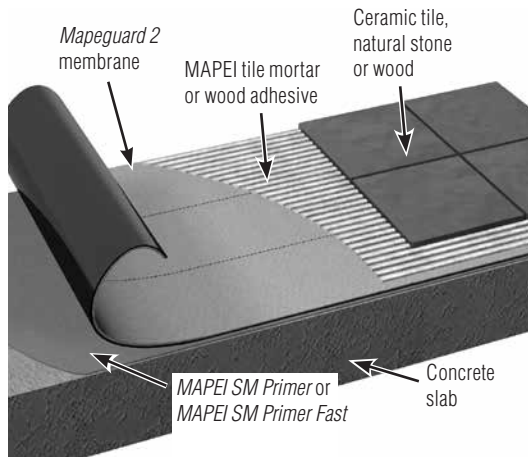
Floor systems, including the framing system and subfloor panels, over which tile will be installed should be in conformance with the IRC [International Residential Code] for residential applications, the IBC [International Building Code] for commercial applications, or applicable building codes.

Note: The owner should communicate in writing to the project design professional and general contractor the "intended use" of the tile installation, in order to enable the project design professional and general contractor to make necessary allowances for the expected live load, concentrated loads, impact loads, and dead loads including the weight of the tile and setting bed. The tile installer shall not be responsible for any floor framing or subfloor installation not compliant with applicable building codes, unless the tile installer or tile contractor designs and installs the floor framing or subfloor.

SURFACE PREPARATION

1. All suitable substrates must be smooth, structurally sound and free of any substance that could prevent adhesion.
2. Do not use chemical means (acid etching or stripping) to prepare approved substrates. Use mechanical methods only.
3. To remove any bond-inhibiting materials, mechanically clean and prepare concrete substrates by diamond-cup grinding or other engineer-approved methods to obtain the International Concrete Repair Institute (ICRI) concrete surface profile (CSP) #2. When concrete requires more mechanical preparation, the profile will typically increase. In such cases, the surface should be made smooth by applying *Planipatch*[®] powder mixed with diluted *Planipatch Plus*[™] liquid (1 part *Planipatch Plus* liquid per 3 parts water). For large areas, consider using one of MAPEI's self-leveling underlayments. See the respective Technical Data Sheets (TDSs) for more information.
4. See MAPEI's "Surface Preparation Requirements" document in the Product Information section of the Tile & Stone Installation Systems page on MAPEI's Website.

PRODUCT APPLICATION



- Apply when substrate and ambient temperatures are between 40°F and 95°F (4°C and 35°C).
- Install *Mapeguard 2* only in conjunction with undiluted *MAPEI SM Primer* or *MAPEI SM Primer Fast*.
- Allow *MAPEI SM Primer* or *MAPEI SM Primer Fast* to dry tacky before installing *Mapeguard 2*.

1. Individual crack isolation before installing tile

1.1 *Mapeguard 2* may be applied directly to the substrate area that has existing in-plane cracks (with movement up to 3/8" [10 mm] wide).

1.2 Cut *Mapeguard 2* to size so that the length and width of the membrane will cover the entire length and width of the crack, plus 3 times the width of the largest tile being used.

1.3 Center the cut membrane over the crack's width and length. Mark on the floor where the membrane is to start.



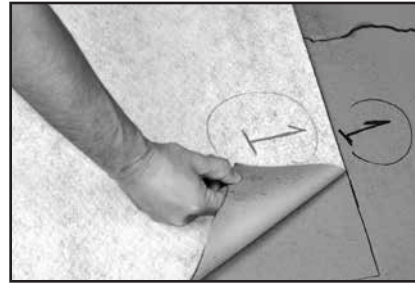
1.4 Set aside precut sections (or entire rolls) of *Mapeguard 2*. Continue with installation instructions at Step 2.3.

2. Full-floor crack isolation (or sound reduction)

2.1 To effectively isolate and protect an entire tile installation from existing or future substrate cracks, and to achieve effective sound reduction, *Mapeguard 2* must be installed over 100% of the substrate that will be covered with ceramic tile or stone. For effective sound reduction, an approved acoustical sealant should fill gaps between the end of the tile or wood and walls, columns, etc.

2.2 Unroll *Mapeguard 2* and cut it to size for the substrate to be tiled. For easier handling and installation, each roll may be cut into shorter lengths (such as 10 feet [3,05 m]) before installation. Ensure that all edges or ends of each roll abut edges or ends of other rolls. To ensure a flat surface and proper sound reduction, do not overlap edges or ends from one roll onto another.

2.3 Number each sheet and mark its starting point on the floor.



2.4 Set aside precut sections of *Mapeguard 2*.

3. *MAPEI SM Primer* or *MAPEI SM Primer Fast* application

3.1 Using a roller or brush, prime the clean, properly prepared substrate with *MAPEI SM Primer* or *MAPEI SM Primer Fast*.



3.2 Allow the primer to dry until tacky (about 10 to 15 minutes).

4. *Mapeguard 2* installation

4.1 Peel back the first 1" (2,5 cm) of release film from the end of the precut sections or roll.



4.2 Apply this leading edge at the previously marked starting point to the primed and tacky substrate.

4.3 Continue removing short amounts of release film and apply the membrane to the substrate. Continue until the substrate is covered with the membrane.

4.4 To ensure a positive bond between the sticky membrane and substrate, roll a 75-lb. to 100-lb. (34,0-kg to 45,3-kg) roller over the installed membrane.



- 4.5 Using a razor knife, remove any wrinkles, or objects trapped beneath the membrane, and then repair.



- 4.6 Chalk lines or other layout methods are easily applied over the light-colored *Mapeguard 2* surface.



5. Tile mortar or wood adhesive

Use an appropriate MAPEI latex polymer-modified mortar meeting ANSI A118.4 and ANSI A118.11 industry standards to set tile, or use a urethane adhesive to install wood. For moisture-sensitive tile or stone, use MAPEI's *Planicrete® W* urethane adhesive.

Note: For installation of tile larger than 18" x 18" (46 x 46 cm), longer mortar-cure times may be required before tile can be grouted or walked on. For shorter turnaround times when installing larger tile, use a MAPEI rapid-set mortar such as *Ultracontact™ RS* or *Granirapid®*.

For additional information, instructions and recommended protection, see the respective MAPEI TDS for the mortar or adhesive selected.

6. Glue-down wood-flooring installation
(for sound reduction)

Apply a MAPEI urethane adhesive (*Ultrabond ECO 975*, *Ultrabond ECO 980* or *Ultrabond ECO 985*). Follow the wood-flooring manufacturer's instructions and recommended trowel size. Note: Wood by nature will normally expand and contract with variances in ambient relative humidity. Moreover, it is MAPEI's experience that different species and/or different wood construction of wood floors (e.g., engineered floors) will undergo greater or lesser dimensional changes. Because of this, some expansion and contraction of planks used for wood flooring can be expected and therefore will not be considered a defective condition resulting from using MAPEI's membrane.

7. Nail-down wood-flooring installation
(for sound reduction)

7.1 Follow Steps 2.2, 2.3 and 2.4 above.

7.2 Follow the wood-flooring manufacturer's instructions.

EXPANSION JOINTS

1. Do not cover any substrate expansion joints with *Mapeguard 2*, mortar or tiles. Provide for expansion joints where specified. Refer to the most current TCNA handbook for ceramic tile installation, Detail EJ171-07, or TTMAC Tile Installation Manual, Detail 301MJ.
2. When necessary, cut tiles along both edges of the expansion joints. Do not allow tiles and mortar to overlap the joints.
3. Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
4. Install the specified compressible bead and sealant into all expansion and control joints.

GROUTING

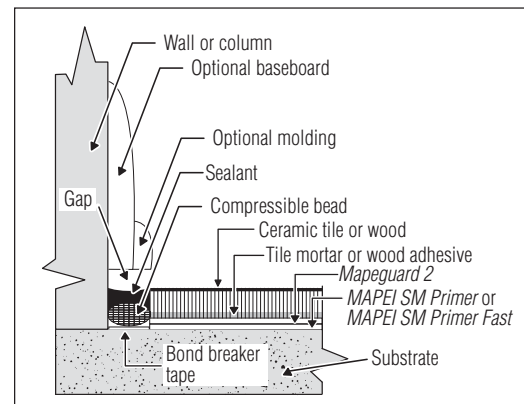
Select an appropriate MAPEI Portland-cement grout meeting ANSI A118.6 or ANSI A118.7 industry standards, or an epoxy grout meeting ANSI A118.3 industry standards. For additional information, instructions and recommended protection, see the respective TDS for the MAPEI grout selected.

CLEANUP

Remove excess *MAPEI SM Primer* or *MAPEI SM Primer Fast* with mineral spirits.

PROTECTION

- Provide for dry, heated storage on site and deliver materials at least 24 hours before tilework begins.
- Do not store *Mapeguard 2*, *MAPEI SM Primer* or *MAPEI SM Primer Fast* in direct sunlight.
- Do not allow *MAPEI SM Primer* or *MAPEI SM Primer Fast* to freeze.
- Protect *Mapeguard 2* from spills, contamination and damage before and during tilework to ensure a positive bond with the mortar.
- 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.



Product Performance Properties (for Mapeguard 2)

Thickness	0.04" or 40 mils (1 mm)
Maximum crack movement capacity	3/8" (10 mm) wide, in-plane
Fabric color	White
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Shelf life	1 year when stored in a dry area in original shipping container at between 40°F and 95°F (4°C and 35°C)

ANSI A118.12 (Crack-Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation)

4.1 – Fungus and micro-organism resistance:
4.1.2 – 14-day incubation: Pass
5.1 – Shear strength to ceramic tile and cement mortar
5.1.6 – After accelerated aging: Pass
5.2 – Point load test:
5.2.3 – Point load resistance after 28-day cure: Pass
5.3 – Robinson floor test:
MAPEI Corporation and MAPEI Inc. certify that the following Robinson tests (for tile) were conducted and warrants the systems noted.

	ASTM C627 Service Rating (Robinson)		
	Residential Applications	Commercial Applications	Industrial Applications
Actual rating	Extra heavy rating	Extra heavy rating	Extra heavy rating
MAPEI grout	<i>Keracolor™ S</i>	<i>Opticolor™</i>	<i>Kerapoxy® IEG</i>
12"x 12" (30 x 30 cm) unglazed solid-body porcelain (with 1/4" [6 mm] joints)	Yes	Yes	Yes
MAPEI mortar	<i>Ultraflex™ 2</i>	<i>Kerabond/Keralastic™</i>	<i>Granirapid®</i>
<i>Mapeguard 2</i>	Yes	Yes	Yes
<i>MAPEI SM Primer</i> or <i>MAPEI SM Primer Fast</i>	Yes	Yes	Yes
6" (15 cm) concrete slab	Yes	Yes	Yes

ANSI A118.12 (Crack-Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation)

5.4 – System crack resistance test:
5.4.9 – Standard performance: Exceeds
5.4.9 – High performance: Exceeds

ASTM Standards for Sound Reduction; MAPEI Corporation and MAPEI Inc. certify that the following sound tests (for tile and wood flooring) were conducted and results supplied by NGC Testing Services, Buffalo, NY.

		Sound-Reduction Ratings (Over 6" [15 cm] Concrete Slab)			
		Solid Porcelain Tile ¹		Engineered Oak Flooring ²	
ASTM Test Methods	Type of Sound Transmission Measurement	Suspended Ceiling ³	No Suspended Ceiling ⁴	Suspended Ceiling ³	No Suspended Ceiling ⁴
E492-04 (IIC)	Impact sound	64	47	71	51
E2179-03 (Delta IIC)	Impact sound	N/A	16	N/A	N/A
E90-04 (STC)	Airborne sound	66	52	66	51

For sound-reduction ratings, higher numbers are preferred over lower numbers.

¹ 12" x 12" (30 x 30 cm) solid-body, unglazed, porcelain tile installed with Ultraflex 2 mortar (with 1/4" x 3/8" x 1/4" [6 x 10 x 6 mm] square-notched trowel) and Keracolor S grout

² 3/8" x 3" (10 mm x 7,5 cm) engineered, prefinished oak flooring installed with Ultrabond ECO 980 (with 3/16" x 5/32" [4,5 x 4 mm] sawtooth trowel)

³ Drywall grid suspension system consisting of 5/8" (16 mm) Type X gypsum board (2.3 lbs./sq. ft. [11,2 kg/m²]) attached with screws 12" (30 cm) on center to suspended grid suspension system; and 12" (30 cm) plenum with 3-1/2" (8,9 cm) lay-in fiberglass insulation (0.16 lbs./sq. ft. [0,78 kg/m²])

⁴ Bare concrete ceiling in room below

Mapeguard²



Product Performance Properties (for MAPEI SM Primer or MAPEI SM Primer Fast)

Color (dry)	Clear
Drying time before installing ceramic tile or stone	10 to 15 minutes (depending on temperature, humidity and substrate porosity)
Shelf life	1 year when stored in original, unopened container at between 40°F and 95°F (4°C and 35°C)

Packaging

Product	Code	Size	Weight (Each)	Coverage*
MAPEI SM Primer	7071001	1 U.S. gal. (3,79 L)	9 lbs. (4,08 kg)	300 to 350 sq. ft. (27,9 to 32,5 m ²)
MAPEI SM Primer	7071005	5 U.S. gals. (18,9 L)	45 lbs. (20,4 kg)	1,500 to 1,750 sq. ft. (139 to 163 m ²)
MAPEI SM Primer Fast	33354	1 U.S. gal. (3,79 L)	9 lbs. (4,08 kg)	300 to 350 sq. ft. (27,9 to 32,5 m ²)
Mapeguard 2	04051	39.4" x 68.6" (1 x 20,9 m)	42 lbs. (19,0 kg)	225 sq. ft. (20,9 m ²)

* Coverage shown is for estimating purposes only. Actual jobsite coverage depends on substrate conditions, type of roller or brush used.

Refer to the SDS for specific data related to health and safety as well as product handling.

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 or 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.**

We proudly support the following industry organizations:



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(954) 246-8888

Technical Services

1-800-992-6273 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service

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

Services in Mexico

0-1-800-MX-MAPEI (0-1-800-696-2734)

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