

Mapelastic HPG

Flexible Waterproofing and Crack-Isolation
Membrane



DESCRIPTION

Mapelastic® HPG is a ready-to-use, highly flexible, liquid acrylic waterproofing membrane for installation under ceramic tile or stone on residential and light commercial interior floors and walls. Applied with a roller, trowel or brush, *Mapelastic HPG* has excellent compatibility with cement-based mortars. When installed with MAPEI's *Fiberglass Mesh*, *Mapelastic HPG* can also be used as a crack-isolation membrane and exceeds ANSI A118.10-L standards for waterproofing. In addition, *Mapelastic HPG* is IAPMO-listed for use as a shower-pan liner.

FEATURES AND BENEFITS

- Dual protection: Provides waterproofing and crack isolation
- Prevents in-plane floor cracks from transmitting through tile or stone
- Compatible with MAPEI's *Fiberglass Mesh* and *Mapecband*™ accessories
- Compatible with MAPEI mortars and grouts for complete system protection
- Durable and flexible; bonds to a wide range of surfaces
- Ready to use; easy to apply with roller, trowel or brush
- Install tile or stone after curing for 16 to 24 hours.
- Flood-test after 72-hour cure.

INDUSTRY STANDARDS AND APPROVALS

- ANSI: Exceeds A118.10-L standard (Liquid Applied Waterproofing Membranes for Thin-Set Ceramic Tile)
- ASTM C627 (Robinson): “Extra Heavy” service rating

WHERE TO USE

- For interior waterproofing vertically and horizontally behind tile and stone installations in residential to light commercial bathrooms, restrooms, kitchens and laundry rooms
- As a crack-isolation membrane over existing in-plane cracks up to 1/8" (3 mm) (see “One-Coat System” instructions below) and for handling up to an additional 1/8" (3 mm) in-plane movement (see “Two-Coat System” instructions below) when applied at the appropriate application thickness and system (see the section “Pre-treat existing in-plane cracks” below)

LIMITATIONS

- Do not use over any substrates containing asbestos.
- Do not apply directly over gypsum-based patching or leveling compounds (see the “Suitable Substrates” section below), sheet vinyl, vinyl composition tile (VCT), self-stick tile, laminate surfaces, metal or fiberglass surfaces, or poured epoxy floors.
- Do not apply directly over substrates consisting of plank wood flooring, presswood, particleboard, chipboard, oriented strand board (OSB), pressure-treated plywood, oil-treated plywood, Lauan plywood, Masonite or other dimensionally unstable materials.
- Do not use over cracks or control joints subject to out-of-plane movement, or in-plane movement greater than 1/8" (3 mm).
- 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 *Mapelastic HPG* is 3 lbs. per 1,000 sq. ft. (1.36 kg per 92.9 m²) per 24 hours as determined by a calcium chloride test kit. When the moisture vapor emission rate (MVER) is in excess of 3 lbs. per 1,000 sq. ft. (1.36 kg per 92.9 m²) per 24 hours, contact MAPEI's Technical Services for recommendations.
- Do not use for constant immersion, on plywood in exterior applications, as a roof deck membrane, or as a wear surface.
- Do not use with solvent-based materials.
- Do not use premixed mastics to set tile over *Mapelastic HPG*.
- Use only a MAPEI epoxy or urethane setting material when installing moisture-sensitive natural stone or manmade tiles, such as agglomerates, over *Mapelastic HPG*.

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 using wet-set methods of installation over impervious sheet membranes such as *Mapelastic HPG*. 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 *Mapelastic HPG*. Do not use thin-set or large-and-heavy-tile mortar to compensate for irregularities in the substrate or to increase the elevation of the finished installation. When installing natural stone, always do a mockup area of the proposed installation and allow materials to reach 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 (interior only)

- Fully cured concrete, at least 28 days old (see the “Limitations” section above)
- Masonry walls of cement block or brick
- Cured cement mortar beds and leveling coats
- Cement backer units (CBUs) – see the manufacturer’s installation guidelines
- Well-bonded, unglazed ceramic and porcelain tile, quarry tile and cement terrazzo floors

Note: Existing unglazed ceramic tile must be abraded, and existing cement terrazzo must be mechanically profiled. Both must be skimcoated with an appropriate MAPEI latex or polymer-modified mortar.

- Gypsum wallboard (walls only, primed, in approved application areas only)
- Radiant-heated, cement-based substrates
- 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).
- PVC, copper, brass, stainless steel penetrations (abraded)

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

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.”

SURFACE PREPARATION

- Apply when substrate and ambient temperatures are between 50°F and 95°F (10°C and 35°C).
- All suitable substrates must be smooth, structurally sound and free of any substance that could prevent adhesion.
- Do not use chemical means (acid etching or stripping) to prepare approved substrates. Use mechanical methods only.
- To remove any bond-inhibiting materials, concrete substrates should be mechanically cleaned and prepared by diamond-cup grinding or other engineer-approved methods to obtain an International Concrete Repair Institute (ICRI) concrete surface profile of #2. When concrete requires more mechanical

preparation, the profile will typically increase. In such cases, the surface can be made smooth by applying coats of MAPEI's *Planipatch*®.

See the "Surface preparation requirements" reference guide in the Tile & Stone Installation section of MAPEI's Website.

MIXING

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

- *Mapelastic HPG* is ready to use. No additional mixing is required.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

A. One-Coat System – For General Waterproofing and 1/8" (3 mm) In-Plane Crack Isolation

Pre-treat existing in-plane cracks, up to 1/8" (3 mm) wide

1. For expansion and control joints, see the "Expansion and Control Joints" section below.
2. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelastic HPG* at 40 mils (1 mm) in thickness and about 13" (33 cm) in width, centered over the cracks.
3. Embed a 12" (30 cm) wide piece of MAPEI's *Fiberglass Mesh*, with a roller or the trowel's flat side, into the fresh *Mapelastic HPG*. Overlap all mesh seams by 2" (5 cm).
4. Immediately top-coat the mesh with additional *Mapelastic HPG* to create a uniform, void-free surface.

Pre-treat coves and corners (within area being waterproofed)

1. Cut a 12" (30 cm) wide piece of MAPEI's *Fiberglass Mesh* to length. Fold in half (to enable tight fit on inside or outside corner). Set aside.

Note: The *Mapeband* cove roll (measuring 4.75' x 163 ft. [12 cm x 49.7 m]) may be used instead of MAPEI's *Fiberglass Mesh* to provide a durable, flexible transition at problem areas such as coves (floor/wall intersections) and corners.

2. Use 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelastic HPG* at 40 mils (1 mm) thick at least 8" (20 cm) to each side of the cove or corner.
3. Embed MAPEI's *Fiberglass Mesh* (or *Mapeband*) with the roller or the trowel's flat side into fresh *Mapelastic HPG*. Overlap all seams by 2" (5 cm).
4. Immediately top-coat the mesh (or *Mapeband*) with additional *Mapelastic HPG* to create a uniform, void-free surface.

Pre-treat drains

1. Drains must have a locking (bolt-down) collar.
2. If the locking collar is covered with concrete, remove concrete to a radius of 10" to 12" (25 to 30 cm) around the drain and angling down toward drain flange.
3. After the drain flange is exposed, loosen bolts on the locking collar and remove the collar from the flange.
4. Using *Planipatch*, smooth the area around the drain where concrete was removed.
5. Sand the flange top and clean.

6. Allow for a 16" x 16" (41 x 41 cm) square piece of MAPEI's *Fiberglass Mesh* around drain. Note: *Mapeband* drain flashing (available in convenient 16.75" x 16.75" [43 x 43 cm] size) may be used instead of MAPEI's *Fiberglass Mesh* to provide a durable, flexible transition at problems areas like drain/floor intersections.
7. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush, to apply *Mapelastic HPG* at 40 mils (1 mm) thick to an area larger than the pre-cut MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing).
8. Embed the pre-cut MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) with the roller or a trowel's flat side into fresh *Mapelastic HPG*.
9. Immediately top-coat MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) with *Mapelastic HPG* to create a uniform, void-free surface.

Complete the waterproofing system

1. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).
2. Use 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelastic HPG* over area to be waterproofed at 40 mils (1 mm) thick.
3. Let *Mapelastic HPG* dry for 4 to 6 hours.
4. Check for pinholes. Recoat as needed.
5. Let *Mapelastic HPG* dry for 16 to 24 hours at an ambient temperature of 73°F (23°C). It is then ready to receive tile, stone or bonded mortar toppings. Cure times depend on ambient temperature, substrate temperature, substrate porosity and jobsite humidity. Expect shorter drying times in warmer jobsite conditions, and longer drying times in cooler jobsite conditions.
6. With a knife, cut out the mesh (or drain flashing) that covers the drain throat. Cut out bolt holes.
7. Lift up the membrane from the flange at the throat. Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange, and then set and bolt down the drain collar.
8. Fill the depressed area around the drain with *Mapecem*® *Quickpatch* or *Planitop*® X to the desired height.
9. Let *Mapelastic HPG* cure for 16 to 24 hours.
10. Install ceramic tile or stone with a polymer-modified or epoxy mortar. See the section "Install Ceramic Tile or Stone" below.

B. Two-Coat System – For IAPMO-Listed Shower Pan Liner Installation and 1/8" (3 mm) Additional In-Plane Movement

Pre-treat cracks, coves corners and drains

1. Pre-treat existing cracks, coves, corners and drains per the pre-treating sections above.
2. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).

Complete the waterproofing system

1. Pre-cut pieces of MAPEI's *Fiberglass Mesh* to cover the entire area that will be waterproofed. Set aside.
2. Use a 1/8" (3 mm) V-notched trowel, short-nap (3/8" [10 mm]) roller or paintbrush to apply *Mapelastic HPG* at 40 mils (1 mm) thick, to create a uniform, void-free surface.
3. Embed pre-cut pieces of MAPEI's *Fiberglass Mesh* with a roller or a trowel's flat side into the fresh *Mapelastic HPG*. Overlap all seams by 2" (5 cm).
4. Wait until all pre-treated areas are dry to touch (after about 4 to 6 hours).
5. Apply a topcoat of *Mapelastic HPG* at 10 mils (0.25 mm) thick over entire area that is to be waterproofed.
6. With a knife, cut out MAPEI's *Fiberglass Mesh* (or *Mapeband* drain flashing) that covers the drain throat. Cut out bolt holes.

7. Lift up the membrane from the flange at the throat. Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange, and then set and bolt down the drain collar.
8. Fill the depressed area around the drain with *Mapecem Quickpatch* or *Planitop X* to the desired height.
9. Let the application dry for 72 hours before flood-testing per the ASTM standard.
10. Plug the drain and flood-test.
11. Install ceramic tile or stone per the section "Install Ceramic Tile or Stone" below.

INSTALL CERAMIC TILE OR STONE

- Use an appropriate MAPEI latex polymer-modified mortar that meets ANSI A118.4 or ANSI A118.11 industry standards, or an epoxy adhesive that meets ANSI A118.3 standards.

Note: When installing 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 *Ultracflex® LFT™ Rapid* or *Granirapid®*.

GROUTING

- Select an appropriate MAPEI Portland-cement grout that meets ANSI A118.6 or ANSI A118.7 industry standards, or an epoxy grout that meets ANSI A118.3 standards.

For additional information, instructions and recommended protection, see the respective Technical Data Sheet for the grout selected.

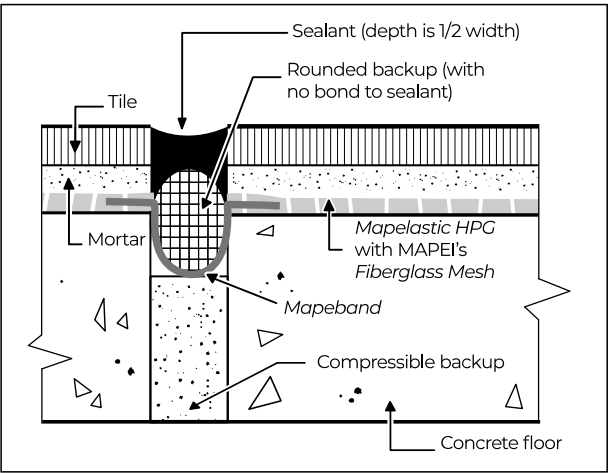
CLEANUP

- Fresh material can be cleaned with mild, soapy, warm water.
- Cured material must be mechanically removed.

EXPANSION AND CONTROL JOINTS

1. Do not cover any substrate expansion joint or control joints with mortar or tiles.
2. Provide for expansion and control joints where specified per the most current TCNA handbook for ceramic tile installation, Method EJ-171 or TTMAC Tile Installation Manual, Detail 301MJ.
3. If waterproofing integrity is required in expansion and control joints, provide per the accompanying diagram. *Mapeband* cove roll can be bonded to both sides of the joint and filled with appropriate joint sealant or an expansion molding system.
4. Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
5. When necessary, cut tiles along both edges of the expansion joints. Do not allow tile or mortar to overlap the joints.
6. Install the specified compressible bead and sealant into all expansion and control joints.

Contact MAPEI's Technical Services for more information.



Product Performance Properties

Laboratory Tests	Results
Elongation – ASTM D412	150%
Viscosity	About 250,000 cps
Direct tensile bond strength – ASTM D4541	> 175 psi (1.21 MPa)
VOC content (SCAQMD Rule 1113)	< 100 g per L
Typical VOC content per SCAQMD Rule 1113 testing methods	10 g per L

Shelf Life and Product Characteristics
before mixing

Shelf life	2 years (when stored in original, unopened container)
Storage	Store in cool, dry place. Protect from freezing.
Color (cured Mapelastic HPG)	Light blue
Color (MAPEI's Fiberglass Mesh)	White

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

Drying time between coats	4 to 6 hours
Cure time before installing ceramic tile or stone	16 to 24 hours

Cure time before flood-testing	72 hours
Application temperature range	50°F to 95°F (10°C to 35°C)
Crack-isolation protection (one-coat system, with no mesh in field)	Existing in-plane cracks up to 1/8" (3 mm)
Crack-isolation protection (two-coat system with mesh)	1/8" (3 mm) of additional in-plane movement

Final Performance per ANSI A118.10 – Waterproofing Membranes for Thin-Set Ceramic Tile

4.1, Fungus and microorganism resistance	Complies
4.2, Seam strength	Exceeds
4.3, Breaking strength	Exceeds
4.4, Dimensional stability	Exceeds
4.5, Waterproofness	Complies (no moisture penetration)
5.3, Shear strength at 7 days	Exceeds
5.4, Water immersion shear strength at 7 days	Exceeds
5.5, Shear strength at 4 weeks	Exceeds
5.6, Shear strength at 12 weeks	Exceeds
5.7, Water immersion shear strength at 100 days	Exceeds

Final Performance per ANSI A118.12 – Crack-Isolation Membranes for Thin-Set Ceramic Tile

4.1, Fungus and microorganism resistance	Complies
5.1.3, Shear strength at 7 days	Exceeds
5.1.4, Water immersion shear strength at 7 days	Exceeds
5.1.5, Shear strength at 4 weeks	Exceeds
5.1.6, Shear strength after accelerated aging	Exceeds
5.2.3, Point load resistance after 28 days' cure	Exceeds
5.3, Robinson floor test (service rating)	"Extra Heavy"

Type of Installation and Coverage

Method	Minimum Thickness	MAPEI's <i>Fiberglass Mesh</i> Required	Approximate Coverage*
1-coat system (general waterproofing and crack isolation)	40 mils (1 mm)	Over cracks, coves/corners, around drains	40 sq. ft. per U.S. gal. (0.98 m ² per L)
2-coat system (for IAPMO shower pan liner installation)	50 mils (1.2 mm) = 1st coat at 40 mils (1 mm), 2nd coat at 10 mils (0.25 mm)	Over cracks, coves/corners, around drains, entire floor	32 sq. ft. per U.S. gal. (0.78 m ² per L)

* Depending on concrete profile and porosity

Packaging

Size	Approximate Coverage**
Pail: 1 U.S. gal. (3.79 L)	At 1 coat: 40 sq. ft. (3.72 m ²) At 2 coats: 32 sq. ft. (2.97 m ²)
Pail: 3.5 U.S. gals. (13.2 L), USA only	At 1 coat: 140 sq. ft. (13.0 m ²) At 2 coats: 112 sq. ft. (10.4 m ²)
Pail: 5 U.S. gals. (18.9 L)	At 1 coat: 200 sq. ft. (18.6 m ²) At 2 coats: 160 sq. ft. (14.9 m ²)

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

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-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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1-800-361-9309

Customer Service

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Edition Date: October 24, 2024 MK 3000140 (24-2219)

For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.

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