



Mapelastick[®] 315

Professional, Cement-Based Waterproofing Membrane



DESCRIPTION

Mapelastick 315 is a trowel-applied, flexible, fiber-mesh-reinforced waterproofing and crack-isolation membrane for installation under ceramic tile or stone on indoor/outdoor residential, commercial and industrial intermittent wet or submerged applications. *Mapelastick 315* provides an excellent barrier to prevent water from migrating into other areas. *Mapelastick 315* is compatible with any polymer-modified cement-based mortar (ANSI A118.4 or better) or epoxy mortar (ANSI A118.3). *Mapelastick 315* exceeds ANSI A118.10 requirements for waterproofing and 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 up to 1/16" (1,5 mm) wide from transmitting through tile or stone
- Compatible with MAPEI's *Fiberglass Mesh* and *Mapeband™* accessories
- Compatible with MAPEI mortars and grouts for complete system protection
- Eliminates most surface preparation; excellent for smoothing over porous, uneven substrates
- Durable and flexible; bonds to a wide range of surfaces
- Install tile or stone after 8- to 12-hour cure.
- Flood-test after 72-hour cure.

INDUSTRY STANDARDS AND APPROVALS

- ASTM C627 (Robinson): Extra Heavy Service Rating
- ANSI A118.10 (Waterproofing Membranes For Thin-Set Ceramic Tile Installations): Exceeds; see "Product Performance Properties" section

- ANSI A118.12 Standard (Crack Isolation Membranes For Thin-Set Ceramic Tile Installations): Meets Standard Performance (1/16" [1,5 mm])

WHERE TO USE

- Interior/exterior floors, walls, countertops and ceilings of residential (homes, apartments, condominiums), commercial (airports, malls, office buildings, restaurants, fountains, pools) and industrial (dairies, breweries, food-processing plants)
- Bathrooms (tub surrounds, showers, shower pans) as well as kitchens and laundries (floors, walls, ceilings, countertops)
- Ideal for multi-family or multi-story buildings where high-quality waterproofing is imperative to prevent water damage in rooms adjacent or below
- Excellent for submerged applications such as swimming pools, spas, fountains, water features and steam rooms (when used in conjunction with a vapor barrier; see SR613-07 and SR614-07 in TCNA handbook, or TTMAC 321SR) when completely covered with ceramic tile or stone
- Balconies, decks and terraces over unoccupied space
- Interior/exterior building facades

LIMITATIONS

- Do not use over substrates containing asbestos.
- Do not apply directly over gypsum-based patching or leveling compounds (see "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, Luau 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 1/16" (1,5 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 315* 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 moisture vapor emissions are in excess of 3 lbs. per 1,000 sq. ft. (1,36 kg per 92,9 m²) per 24 hours, call MAPEI's Technical Services for recommendations.
- Do not use as a roof deck membrane or wear surface, or on plywood in exterior applications.
- Do not use with solvent-based materials.
- Do not use premixed mastics to set tile over *Mapelastic 315*.
- Use only a MAPEI epoxy or urethane setting material when installing moisture-sensitive natural stone or manmade tiles, such as agglomerates, over *Mapelastic 315*.

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 or medium-bed mortar methods of installation over impervious sheet membranes such as *Mapelastic 315*. 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 315*.

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 and exterior

- Fully cured concrete at least 28 days old (See "Limitations section")
- Masonry walls of cement block or brick
- Cured cement mortar beds (at least 3 days old)
- Cement backer units (CBUs)

Interior only

- Gypsum wallboard (walls only, in approved application areas only)
- Cured leveling coats (at least 3 days old)
- Approved gypsum underlayments. For specific instructions, see the technical bulletin "Installing

over gypsum" at www.mapei.com or contact MAPEI's Technical Services Department.

- Radiant-heated substrates
- Well-bonded, unglazed ceramic, porcelain and quarry tile, and cement terrazzo floors
- Spot-bonding to PVC, copper, brass and stainless steel pipes (abraded)
- 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 COFI exterior plywood "Select" or "Select Tight Face" conforming to CSA-0121 standard for Douglas fir. (See TCA handbook for additional information and the 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

- Apply when substrate and ambient temperatures are between 40°F and 95°F (4°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 the International Concrete Repair Institute (ICRI) concrete surface profile (CSP) 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 *Mapelastic 315* not exceeding 5/64" (2 mm) per coat.

- For details, see MAPEI's Surface Preparation Requirements document for tile and stone installation systems at www.mapei.com or contact MAPEI's Technical Services Department.

MIXING

1. Mix in full units only according to the following premeasured ratios: 1 U.S. gal. (3,79 L) of latex, plus 25 lbs. (11,3 kg) of powder (components of small kit); 2 U.S. gals. (7,57 L) of latex, plus 50 lbs. (22,7 kg) of powder.
2. Pour all of the *Mapelastic 315* latex into a clean mixing container. Gradually add all of the *Mapelastic 315* powder while mixing with a low-speed drill (at about 450 rpm).
3. Mix for 2 to 3 minutes to a smooth, homogenous, lump-free consistency. Do not overmix, which will trap air and affect waterproofing integrity.
4. When mixing complete units, the mortar will be somewhat fluid. If a stiffer mix is preferred for vertical applications, the latex quantity can be reduced by up to 10% by volume.
5. Do not dilute latex or add more than the recommended quantity of latex.
6. Promptly wash tools with water after each mix.

PRODUCT APPLICATION

For General Waterproofing

1. Pre-treat existing cracks
 - 1.1 *Mapelastic 315* may be applied directly to the substrate area that has existing in-plane cracks (up to 1/16" [1.5 mm] wide).
 - 1.2 Cut *Fiberglass Mesh* to cover the entire length and width of the crack, plus 3 times the width of the largest tile being used (see following table for ratios of tile size versus mesh width).
- | Tile Size | Minimum Width of Mesh Centered Over Crack |
|------------------------------|---|
| 8" x 8" (20 x 20 cm) or less | 24" (61 cm) |
| 10" x 10" (25 x 25 cm) | 30" (76 cm) |
| 12" x 12" (30 x 30 cm) | 36" (91 cm) |
| 16" x 16" (41 x 41 cm) | 48" (122 cm) |
| 24" x 24" (61 x 61 cm) | 72" (183 cm) |
- 1.3 Center the cut mesh over the crack's width and length. Mark on the floor where the mesh is to start.
 - 1.4 Set aside pre-cut sections (or entire rolls) of mesh.
 - 1.5 With the trowel's flat side, key a liberal amount of *Mapelastic 315* into substrate.
 - 1.6 Immediately apply additional *Mapelastic 315* and comb with a 3/16" x 5/32" (4,5 x 4 mm) V-notched trowel to ensure the proper thickness.

- 1.7 Embed *Fiberglass Mesh* into fresh *Mapelastic 315*. Lap all seams and ends in the *Fiberglass Mesh* by 2" (5 cm).
- 1.8 Using the trowel's flat side, immediately flatten the material to a smooth, voidless membrane with a thickness of up to 5/64" (2 mm).
2. Pre-treat coves and corners
 - 2.1 Pre-cut *Fiberglass Mesh* (or flexible *Mapeband* cove roll for superior surface transition protection) to length and 8" (20 cm) wide. Fold to leave 4" (10 cm) of mesh on each side of the crease. This will help in fitting the material tightly into the corner.
 - 2.2 With the trowel's flat side, key in a liberal amount of *Mapelastic 315*, at least 5" (12,5 cm) on each side of the internal corners. This will ensure bonding to the substrate.
 - 2.3 Immediately apply additional *Mapelastic 315* and comb with a 3/16" x 5/32" (4,5 x 4 mm) V-notched trowel to ensure the proper thickness.
 - 2.4 Embed the pre-cut mesh (or *Mapeband* cove roll) into the fresh *Mapelastic 315*. Lap all seams and ends in the mesh (*Mapeband* cove roll) by 2" (5 cm).
 - 2.5 Using the trowel's flat side, immediately flatten the material to a smooth, voidless membrane with a thickness of up to 5/64" (2 mm).
3. Pre-treat drains
 - 3.1 Drains must have a locking (bolt-down) collar.
 - 3.2 Concrete should be removed within an 8" to 10" (20 to 25 cm) radius around the drain and angling down toward the drain flange.
 - 3.3 Once the drain flange is exposed, loosen the bolts on the locking collar and remove the collar from the flange.
 - 3.4 Using MAPEI's *Planipatch*®, smooth the rough area around the drain where concrete was removed.
 - 3.5 Pre-cut a 20" x 20" (51 x 51 cm) piece of *Fiberglass Mesh*. In the center, cut out a hole identical in size to the opening in the drain flange. (Note: *Mapeband* drain flashing at 16-3/4" (43 cm) square can be used instead of *Fiberglass Mesh* for even greater waterproofing protection.
 - 3.6 With the trowel's flat side, key in a liberal amount of *Mapelastic 315* around the drain at least 1" to 2" (2,5 to 5 cm) greater than the size of the pre-cut mesh.
 - 3.7 Immediately apply additional *Mapelastic 315* and comb with a 3/16" x 5/32" (4,5 x 4 mm) V-notch trowel.
 - 3.8 Embed the pre-cut *Fiberglass Mesh* (or *Mapeband* drain flashing) into the fresh *Mapelastic 315*.
 - 3.9 With the trowel's flat side, immediately flatten material to a smooth, voidless membrane with a thickness of up to 5/64" (2 mm).

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4. Complete the waterproofing system
 - 4.1 Allow any previously treated areas to dry for about 4 to 6 hours.
 - 4.2 Install *Mapelastic 315* over the entire area.
 - 4.3 With the trowel's flat side, key a liberal amount of *Mapelastic 315* into substrate.
 - 4.4 Immediately apply additional *Mapelastic 315* and comb, using the V-notched side of a 3/16" x 5/32" (4,5 x 4 mm) trowel to ensure proper thickness.
 - 4.5 Embed *Fiberglass Mesh* into fresh *Mapelastic 315*. Lap all seams and ends in the *Fiberglass Mesh* by 2" (5 cm). Then, using the trowel's flat side, immediately flatten the material over the mesh to a smooth, voidless membrane with a thickness of up to 5/64" (2 mm).
 - 4.6 If needed to fully cover the *Fiberglass Mesh* (for a continuous waterproof membrane), apply additional thin coats of *Mapelastic 315* up to 5/64" (2 mm) in thickness, per coat, to completely encapsulate the *Fiberglass Mesh*. Do not exceed 5/64" (2 mm) per coat.
 - 4.7 Allow 4 to 6 hours of drying time between coats.
 - 4.8 Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange. Then set and bolt down the drain collar.
 - 4.9 Fill the depressed area around the drain with sand and cement mortar mix to the desired height.
 - 4.10 Let *Mapelastic 315* cure 8 to 12 hours at an ambient temperature of 73°F (23°C) before applying tile, stone or bonded mortar toppings. Curing times depend on ambient and substrate temperature, substrate porosity and jobsite humidity. Expect shorter drying times in warmer jobsite conditions, and longer drying times in cooler jobsite conditions.

For IAPMO-Listed Shower Pan Liner Installation

1. Follow directions from General Waterproofing instructions 2.1 through 4.6, and allow to dry.
2. To meet IAPMO requirements for a shower pan liner, apply a thin top coat of *Mapelastic 315* (without any additional mesh). Do not exceed 5/64" (2 mm) thickness per coat.
3. Allow 4 to 6 hours of drying time between coats.
4. Apply a bead of commercial-grade silicone caulk around the top outer edge of the drain flange. Then set and bolt down the drain collar.
5. Let *Mapelastic 315* cure for 8 to 12 hours at an ambient temperature of 73°F (23°C). It is then ready to receive tile, stone or bonded mortar toppings. Curing 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. If flood-testing the complete *Mapelastic 315* system, wait at least 72 hours at 73°F (23°C) after the last application

of *Mapelastic 315* (without mesh, tile or stone) before flood-testing (per ASTM standard).

For Crack Isolation Only

1. Existing cracks

Per the section "Pre-treat existing cracks" in the General Waterproofing instructions, address any existing cracks that are to be isolated from ceramic tile or stone.

2. Full floor for potential cracks up to 1/16" (1,5 mm)

- 2.1 Allow any previously treated areas to dry about 4 to 6 hours. Then install *Mapelastic 315* over the entire area (no mesh required).
- 2.2 With the trowel's flat side, key a liberal amount of *Mapelastic 315* into the substrate.
- 2.3 Immediately apply additional *Mapelastic 315* and comb, using the V-notched side of a 3/16" x 5/32" (4,5 x 4 mm) trowel to ensure proper thickness.
- 2.4 With the trowel's flat side, immediately flatten material to a smooth, voidless membrane with a thickness of up to 5/64" (2 mm).
- 2.5 Let *Mapelastic 315* cure 8 to 12 hours at an ambient temperature of 73°F (23°C) before receiving tile, stone or bonded mortar toppings.

CLEANUP

- Excess material should be removed from surface, hands and tools while fresh with a damp sponge and clean water.
- Cured material must be mechanically removed.

PROTECTION

- Provide for dry, heated storage on site and deliver materials at least 24 hours before work begins.
- Do not store *Mapelastic 315* powder or latex in direct sunlight.
- Do not allow *Mapelastic 315* latex to freeze.
- Protect installed *Mapelastic 315* installation from contamination and damage by other trades before installing tile or stone.
- Protect *Mapelastic 315* installation from rain and freezing for at least 7 days.
- Protect *Mapelastic 315* installation from sharp point loading that may gouge it and compromise the waterproofing integrity.
- Protect finished floors from heavy equipment (fork lifts or scissor lifts, etc.) during remainder of construction.
- Protect walls from impact, vibration and hammering on adjacent and opposite walls for at least 7 days after *Mapelastic 315* installation.
- Cure times depend on ambient and substrate temperature, substrate porosity and jobsite humidity. Expect shorter drying times in warmer jobsite conditions, and longer drying times in cooler jobsite conditions.

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Product Performance Properties

Laboratory Tests	Results
Shear strength to concrete (after 7-day water or chlorinated water immersion)	> 213 psi (1,47 MPa)
Freeze/thaw (20 cycles, 40 cycles)	> 270 psi (1,86 MPa)

Shelf Life and Application Properties

Color (cured <i>Mapelastic 315</i>)	Gray
Color (<i>Fiberglass Mesh</i>)	White
Shelf life (powder)	1 year (when stored in original, unopened bag)
Shelf life (latex)	2 years (when stored in original, unopened container)
Pot life	About 1 hour (based on temperature and humidity)
Thickness per coat	5/64" (2 mm)
Finishing time (after applying each coat)	About 5 to 12 minutes
Drying time between coats	4 to 6 hours
Cure time before installing ceramic tile or stone	8 to 12 hours
Cure time before flood-testing	72 hours
Cure time before water immersion or freeze/thaw exposure	7 days (or as indicated by tile mortar)
Maximum crack-isolation protection (in plane)	1/16" (1,5 mm)

ANSI A118.10 (Waterproofing Membranes for Thin-Set Ceramic Tile)

4.1) Fungus and Micro-Organism 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) 7-Day Shear Strength	Exceeds
5.4) 7-Day Water Immersion Shear Strength	Exceeds
5.5) 4-Week Shear Strength	Exceeds
5.6) 12-Week Shear Strength	Exceeds
5.7) 100-Day Water Immersion Shear Strength	Exceeds

Packaging

Size	Product
Kit: 34 lbs. (15,4 kg)	Powder and latex
Bag: 50 lbs. (22,7 kg)	Powder
Pail: 2 U.S. gals. (7,57 L)	Latex
Drum: 55 U.S. gals. (208 L)	Latex

Approximate Product Coverages

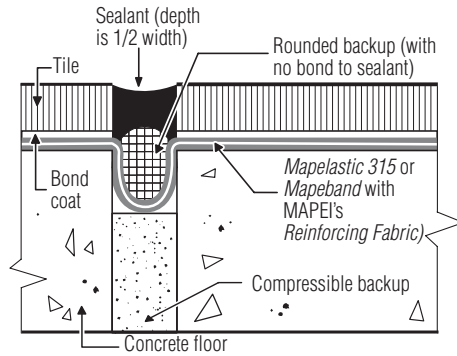
Product	Coverage*
Small kit: 34 lbs. (15,4 kg)	48 to 53 sq. ft. (4,46 to 4,92 m ²)
2 U.S. gals. (7,57 L) of latex, plus 50 lbs. (22,7 kg) of powder	96 to 100 sq. ft. (8,92 to 9,29 m ²)

* Coverage shown is for estimating purposes only. Actual jobsite coverages may vary according to substrate conditions, type of equipment, thickness applied and applications methods used.

Mapelastick 315



EXPANSION AND CONTROL JOINTS



1. Do not cover any substrate expansion or control joints with *Mapelastick 315*, mortar or tile. Provide where specified per Detail EJ-171 of the most current TCNA handbook for ceramic tile installation, or Detail 301MJ of the TTMAC Tile Installation Manual.
2. If waterproofing integrity is required in expansion and control joints, provide per the above drawing. *Mapeband* cove roll can be bonded to both sides of the joint and filled with an appropriate joint sealant or an expansion molding system.
3. Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.

Contact MAPEI's Technical Services Department for more information.

INSTALLING CERAMIC TILE OR STONE

Use an appropriate MAPEI latex polymer-modified mortar meeting ANSI A118.4 and ANSI A118.11 industry standards, or use an epoxy or urethane adhesive.

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 *Ultracontact™ RS* or *Granirapid®*.

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 Technical Data Sheet for the MAPEI grout selected.

RELATED DOCUMENTS

Reference guide: Surface Preparation Requirements for tile and stone installation systems

At www.mapei.com

Refer to the 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) or sustainability-durabilite@mapei.com (Canada).

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.**

We proudly support the following industry organizations:



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