



Mapelastastic™

All-Climate, Flexible, Cementitious Membrane for Waterproofing and Protecting Concrete and Masonry



DESCRIPTION

Mapelastastic is a cementitious membrane that waterproofs concrete and masonry. It also offers protection against chemical attack from de-icing salts, sulphates, chlorides and carbon dioxide that leads to deterioration and costly repairs. *Mapelastastic* is designed for applications on new concrete structures with hairline cracks, as well as any cementitious surface subject to vibrations and subsequent cracking. Use *Mapelastastic* on such hydraulic projects as irrigation canals and faces of dams, in addition to swimming pools, water features and storage tanks. Available in silver and white, *Mapelastastic* may also be used to waterproof balconies, suspended walkways and patios.

FEATURES AND BENEFITS

- *Mapelastastic's* specially formulated synthetic resins generate a hardened layer that remains flexible under all environmental conditions. The dried mortar remains waterproof up to 50 feet (positive side) hydrostatic head pressure and resists chemical attack from de-icing salts, sulphates, chlorides and carbon dioxide.
- *Mapelastastic* offers excellent protection to structures in coastal areas exposed to high humidity and salt, as well as those located in heavy industrial areas exposed to aggressive airborne chemicals and pollutants.
- Excellent protection against water and aggressive chemicals
- Outstanding bond to horizontal and vertical concrete, masonry and ceramic surfaces
- Available in silver (light gray) and white
- Remains highly flexible under all environmental conditions

- Suitable for irrigations canals, spillways, dams, storage tanks and pools, as well as for balconies, suspended walkways and patios
- *Mapelastastic* is carefully engineered to fully cover hairline and micro cracks evident in placed concrete, and to allow adequate flexibility so that cracks up to 1/32" (1 mm) may be bridged. This specific product engineering ensures that *Mapelastastic* will not conceal structural cracks that develop in concrete structures.

INDUSTRY STANDARDS AND APPROVALS

- ANSI: Exceeds A118.10 standard (Waterproofing membranes for thin-set ceramic tile)
- IAPMO: Listed for use as shower pan liner

LEED Points Contribution

LEED Points

MR Credit 5, Regional Materials*.....	Up to 2 points
IEQ Credit 4.2, Low-Emitting Materials – Paint & Coatings.....	1 point

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

WHERE TO USE

- Waterproofing of concrete irrigation canals and water containment structures
- Waterproofing of balconies, patios, fountains, water features, swimming pools, etc., before the installation of ceramic tile or natural stone



Mapelastic™

- Waterproofing of retaining walls, foundations and precast concrete elements embedded in the ground when protected with a drainage board approved by local building codes
- Protection barrier against the effects of carbonation on concrete pillars and concrete beams for road and railway viaducts, etc., after structural repair with MAPEI's *Planitop*®, *Planigrout*® or *Mapecem*® families of repair mortars
- Ideal solution for protecting structures having an insufficient layer of concrete covering on reinforcement steel
- Protection of concrete surfaces that can be exposed to seawater, de-icing salts (such as sodium and calcium chloride) and sulphates
- Protection of cement-based renders and concrete with shrinkage-produced cracks from the infiltration of water and aggressive airborne chemicals
- Flexible smoothing and protective layer for concrete structures, including those subjected to deformation under load (such as precast panels and beams)

LIMITATIONS

- *Mapelastic* is manufactured as a complete kit. Do not add cement, aggregates or water to the product.
- *Mapelastic* is a two-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers in water dispersion. Mixing together the two components produces a free-flowing mix that can be easily applied on both vertical and horizontal surfaces, at a thickness up to 80 mils (2 mm) in a single coat.
- *Mapelastic* is engineered to bridge hairline and micro cracks in concrete, ensuring no chlorides use these avenues to penetrate to the reinforcing bar. *Mapelastic* used without reinforcing fabric (*Mapetex*™ *Sel*) or MAPEI's *Fiberglass Mesh* will not bridge or hide developing cracks beyond 1/32" (1 mm).
- Do not use *Mapelastic* as a high-build coating. Application is limited to 80 mils (2 mm) per coat.
- Apply *Mapelastic* at temperatures between 46°F and 95°F (8°C and 35°C).
- When using *Mapelastic* to waterproof pools (when subsequently covered with an appropriate coating or finish), fish ponds, etc., do not fill until *Mapelastic* has cured for at least 28 days and has been repeatedly rinsed with hot water.
- Protect from rain and water spillage for the first 24 hours after application.
- *Mapelastic* may be used as a coating for service conditions of light foot traffic. In such installations, apply the first coat of *Mapelastic* with MAPEI's *Mapetex Sel* fabric. The subsequent coat may be applied with a 1:1

normal mix of *Mapelastic*, or optionally with a 5% to 10% reduction in powder in the mix, and then broom-finished for slip-resistance.

A colored, flexible water-based acrylic sealer may be applied over *Mapelastic*. Due to the variety of available sealers, complete a mockup and subject it to traffic for at least 14 days to ensure satisfactory performance.

SUITABLE SUBSTRATES

- Properly prepared concrete, masonry, and ceramic surfaces

SURFACE PREPARATION

1. Protection and waterproofing of concrete structures and elements (e.g., pillars and beams for road and railway viaducts, cooling towers, underpasses, retaining walls, applications in coastal areas, fountains, swimming pools, planters, irrigation canals, dams, columns, balconies)

- The surface to be treated must be sound, stable and clean.
- Remove all cement laitance, loose material, grease, oil and release agents by sand-blasting or high-pressure water-blasting.
- If using *Mapelastic* to waterproof and protect a structure in poor condition, mechanically remove the damaged sections using chipping guns limited to 15 lbs. (6,80 kg), scarifiers, rotomilling or hydro-demolition equipment.

Note: Using high-pressure water for the previous 2 steps avoids damage to the reinforcement rods and prevents vibrations that could cause the onset of small cracks in adjacent concrete.

- After all rust has been removed by sandblasting and the reinforcement steel has been properly prepared (coated with MAPEI's *Mapofer*™ *1K* or *Planibond*® *3C*), repair any damage with ready-mixed mortar from MAPEI's *Planitop*, *Planigrout* or *Mapecem* product lines (see respective Technical Data Sheets).
 - Dampen absorbent surfaces with water before applying *Mapelastic*.
2. Waterproofing of patio decks, balconies and swimming pools (when covered with a suitable wear surface, coating, or finish; contact MAPEI Technical Services for questions regarding specific applications)

• Cementitious screed:

Repair cracks caused by plastic shrinkage with a suitable MAPEI epoxy. Use a suitable MAPEI repair mortar to level areas (to create slopes, fill dips, etc., up to 2" [5 cm]). While crack repair is recommended, MAPEI does not warrant that cracks will not reappear when following established repair techniques.

- **Existing concrete and ceramic floors:**

Existing floors and coverings in ceramic must be well-bonded to the substrate and free of substances that could compromise the bonding, such as grease, oil, wax and paint.

- **Renderers:**

Cementitious renders must be well-cured (7 days per 1" [2,5 cm] of thickness in good weather conditions), well-bonded to the substrate, and free of all dust and paint. Before treating absorbent surfaces with *Mapelast*, dampen surface with water.

MIXING

Note: Choose all appropriate safety equipment before use. Refer to Material Safety Data Sheet (MSDS) for more information.

1. Pour Part B (liquid) into a suitable, clean container. Slowly add Part A (powder) while stirring with a mechanical mixer (do not mix by hand).
2. Carefully mix *Mapelast* using a low-speed mechanical mixer (a low-speed mixer will help prevent air entrapment) for a few minutes. Make sure that no powder remains stuck to the sides or the bottom of the container.
3. Continue mixing until a homogenous mixture is obtained.
4. *Mapelast* can also be mixed with a mortar mixer. If this technique is used, make sure that the mix is homogenous and lump-free before pouring it into the hopper of the pump.

PRODUCT APPLICATION

Mapelast must be applied within 60 minutes of being mixed. Read all installation instructions thoroughly before installation.

Application by trowel without fabric or mesh reinforcement

1. Smooth the prepared surface by applying a thin layer of *Mapelast* with a smooth trowel.
2. Apply a second coat on the first layer while it is fresh, for a final thickness of about 80 mils (2 mm).

Application with *Mapetex Sel* fabric for membrane reinforcing (1-coat system)

1. Utilizing *Mapetex Sel* provides additional dimensional stability and crack-bridging capability of greater than 1/8" (3 mm).
2. Apply (by trowel or spray) an initial coat of *Mapelast* at 40 to 60 mils (1 to 1,5 mm) thick to the substrate. While material is still wet, lay *Mapetex Sel* fabric into the material and run a flat-bladed trowel across the fabric until it is completely buttered with the first coat of *Mapelast* (ensure that any air pockets are removed).
3. Immediately apply a second coat of *Mapelast* (40 mils or 1 mm thick), and finish to the desired finish.
4. If mesh is covered (encapsulated in *Mapelast* and final thickness is 80 mils [2 mm] or greater), no third coat is required.
5. During waterproofing operations, use MAPEI's *Mapeband* around expansion joints and joints between horizontal and vertical surfaces.

Alternative application by trowel with MAPEI's *Fiberglass Mesh* (2-coat system)

1. When waterproofing terraces, balconies, basins and swimming pools, insert a 3/16" x 3/16" (4,5 x 4,5 mm) layer of *Fiberglass Mesh* into the first layer of *Mapelast*, to act as a reinforcement. The mesh must also

be used in areas with either small cracks or in areas that are particularly stressed.

2. Key *Mapelast* into the surface by applying a thin layer with the flat side of a 3/16" x 3/16" (4,5 x 4,5 mm) V-notched trowel.
3. Immediately apply additional *Mapelast* and comb, using the V-notched side of the trowel, to ensure the proper thickness.
4. Embed *Fiberglass Mesh* into the freshly combed *Mapelast*. Lap all seams and ends in the *Fiberglass Mesh* by 2" (5 cm).
5. Immediately after laying the mesh, smooth the *Mapelast* with the trowel's flat side.
6. To ensure a continuous membrane, wait 4 to 5 hours until the first coat of *Mapelast* has set. Using the trowel's flat side, apply another coat of *Mapelast* up to 80 mils (2 mm) in thickness, to completely encapsulate the *Fiberglass Mesh*. Do not exceed 80 mils (2 mm) per coat.
7. During waterproofing operations, use MAPEI's *Mapeband* around expansion joints and joints between horizontal and vertical surfaces.

Application by spray method

1. Read all installation instructions thoroughly before installation.
2. After preparing the surface, apply *Mapelast* with a low-pressure spray gun. Apply at a maximum thickness of 80 mils (2 mm) per coat.
3. If a thicker coat is required, *Mapelast* must be applied in several coats.
4. Successive coats can only be applied once the previous one is dry (after 4 to 5 hours).
5. In areas with small cracks or that are highly stressed, insert *Mapetex Sel* non-woven fabric or a 3/16" x 3/16" (4,5 x 4,5 mm) square *Fiberglass Mesh* into the *Mapelast*. See corresponding instructions above to complete installation with selected fabric/mesh.
6. If the fabric/mesh needs additional coverage, apply another layer of *Mapelast* with a spray gun.
7. During waterproofing operations, use MAPEI's *Mapeband*™ around expansion joints and joints between horizontal and vertical surfaces.

Installing ceramic tiles on *Mapelast*

1. Install tiles with the appropriate MAPEI cementitious adhesive. For swimming pools or where mosaics are installed, use the *Granirapid*® or *Kerabond/Keralastic*™ system, or the combination of *Adesilex*™ P10 and *Keraply*™.
2. Grout joints between the tiles with a suitable cementitious grout, such as *Keracolor*™ S or *Ultracolor*® Plus.
3. Seal expansion joints with an appropriate joint sealant material.

Application verification

Before applying covering surfaces over *Mapelast*, perform a flood test to verify the integrity of the application.

TREATMENT OF CRACKS AND/OR MOVEMENT JOINTS

1. Repair cracks with engineer-approved methods before installation of *Mapelast*.
2. If significant movement is expected along a crack, out-of-plane joint or movement joint, utilize MAPEI's *Mapeband TPE* flexible waterproof tape (see respective TDS for installation design and use).

CURING

1. After applying *Mapelastic*, wait until dry before applying ceramic tiles or subsequent finish.
2. Let *Mapelastic* 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 temperatures, substrate porosity and jobsite humidity. Expect shorter drying times in warmer jobsite conditions, and longer drying times in cooler jobsite conditions.
3. If flood-testing the complete *Mapelastic* system, wait at least 72 hours at 73°F (23°C) after the last application of *Mapelastic* (without mesh, tile or stone) before flood-testing (per ASTM standard).

CLEANUP

- Due to the high bonding strength of *Mapelastic*, wear protective gloves when working with it.
- Wash hands and tools with water immediately after use and before the mortar sets. Note that once the product has set, it can only be removed by mechanical means.

PROTECTION

- During hot weather, keep the product (both liquid and powder) out of direct sunlight before use.
- After application, and in particularly dry, hot or windy weather, protect the surface from rapid evaporation by covering it with sheets.

Product Performance Properties

Laboratory Tests	Results
Consistency	Part A: Powder Part B: Liquid
Color	Part A: Gray Part B: White
Density (lbs./cu. ft. [kg/m ³])	Part A: 87.4 (1 400) Part B: 68.7 (1 100)

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Final Performance

Laboratory Tests	Results
Adhesion to concrete After 28 days After 7 days + 21 days in water	158 psi (1,09 MPa) 87 psi (0,6 MPa)
Elongation DIN 53504 (modified) After 28 days	30%
Waterproofing capacity	
EN 12390-8 (modified) (50 feet positive hydrostatic head for 7 days)	Waterproof
Crack bridging of nonreinforced <i>Mapelastic</i> After 28 days After 7 days, + 21 days in water After 7 days, + 24 months in water	1/32" (1 mm) 1/42" (0,6 mm) 1/50" (0,5 mm)
Crack bridging at breakage of <i>Mapelastic</i> membrane reinforced with <i>Mapetex Sel</i> mesh After 28 days	1/16" (1,5 mm)
Resistance to strong hydrostatic pressure	Up to 7 bar (234 ft. [71,3 m]) water head, positive side
Permeability (at 5/64" [2 mm] or 80 mils thickness) (ASTM E96)	About 1.4 perms
Performance compliance with ANSI A118.10	
Fungus resistance of flexible membrane substrate	Conforms
Seam strength	Conforms
Breaking strength	Conforms
Dimensional stability	Conforms
Waterproofness	Conforms
Shear strength to ceramic tile and cement mortar	Conforms

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Shelf Life and Application Properties

Shelf life	Part A: 1 year; Part B: 1 year
Storage	In a dry place and at a temperature of at least 41°F (5°C)
Color	Gray
Mixing ratio	1 Part A to 1 Part B
Consistency	Plastic (applied by trowel)
Density of mix (lbs./cu. ft. [kg/m ³])	106 (1 700)
Density after application by spraying (lbs. per cu. ft. [kg per m ³])	137 (2 200)
Application temperature range	46°F to 95°F (8°C to 35°C)
Pot life	60 minutes

CSI Division Classifications

Dampproofing and Waterproofing	07 10 00
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Packaging

Product Code	Size (Part A with Part B: 66.7 lbs [30,3 kg])
39251000	Bag, Part A: 50 lbs. (22,7 kg), Silver
39252000	Bag, Part A: 50 lbs. (22,7 kg), White
39257000	Jug, Part B: 2 U.S. gals. (7,57 L)

Approximate Product Coverage*

Yield at 80 mils (2 mm) thickness
Manual application: 0.65 to 0.7 lbs. per sq. ft. (3,1 to 3,44 kg per m ²), for 95 to 103 sq. ft. (8,8 to 9,6 m ²) per mixed unit
Spray gun application: 0.75 to 0.85 lbs. per sq. ft. (3,65 to 4,2 kg per m ²), for 78 to 89 sq. ft. (7,25 to 8,27 m ²) per mixed unit

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.



Mapelastic™



Refer to MAPEI's MSDS for specific data related to VOCs, health and safety, and handling of product.

STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **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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