**DESCRIPTION**

Mapelastic is a two-component cementitious membrane that waterproofs concrete and masonry. It also offers protection against chemical attack from de-icing salts, sulfates, chlorides and carbon dioxide.

**FEATURES AND BENEFITS**

- Mapelastic’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) of hydrostatic head pressure and resists chemical attack from de-icing salts, sulfates, chlorides and carbon dioxide.

- Mapelastic 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 irrigation canals, spillways and dams, as well as for balconies, suspended walkways and patios

- Mapelastic 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 Mapelastic will not conceal structural cracks that develop in concrete structures.

**WHERE TO USE**

- Waterproofing of concrete irrigation canals and water containment structures

- 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 sulfates

- 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)

**SUITABLE SUBSTRATES**

- Properly prepared concrete, masonry and ceramic surfaces

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

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

1. The surface to be treated must be sound, stable and clean.
2. Remove all cement laitance, loose material, grease, oil and release agents by sandblasting or high-pressure waterblasting.
3. If Mapelastic will be used 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 hydrodemolition 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.
4. After all rust has been removed by sandblasting and the reinforcement steel has been properly prepared (coated with MAPEI’s Mapeler™ 1K or Planibond™ 3C), repair any damage with a suitable MAPEI repair product.
5. Dampen absorbent surfaces with water before applying Mapelastic.

**Waterproofing of patio decks and balconies** (when covered with a suitable wear surface, coating or finish; contact MAPEI’s Technical Services Department for questions regarding specific applications)

- Cementitious screed:
  Repair all 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.

- Renders:
  Cementitious renders must be well cured (at 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 Mapelastic, dampen surface with water.

**MIXING**

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

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 Mapelastic 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. Mapelastic 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**

Mapelastic 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 Mapelastic 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.

**Application with MAPEI’s Mapetex™ Sel for membrane reinforcement**

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 Mapelastic at 40 to 60 mils thick to the substrate. While the material is still wet, lay Mapetex Sel into the material and run a flat-bladed trowel across the fabric until it is completely buttered with the first coat of Mapelastic. Ensure that any air pockets are removed.
3. Immediately apply a second coat of Mapelastic at 40 mils thick and finish to the desired finish.
4. If fabric is covered (encapsulated in Mapelastic with a final thickness of 80 mils or greater), no third coat is required.
5. During waterproofing operations, use MAPEI’s Mapeband™ TPE 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 and basins, insert a 3/16" x 3/16" (4.5 x 4.5 mm) layer of Fiberglass Mesh into the first layer of Mapelastic, 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 Mapelastic 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 Mapelastic and comb, using the V-notched side of the trowel, to ensure the proper thickness.

4. Embed Fiberglass Mesh into the freshly combed Mapelastic. Lap all seams and ends in the Fiberglass Mesh by 2” (5 cm).

5. Immediately after laying the mesh, smooth the Mapelastic with the trowel’s flat side.

6. To ensure a continuous membrane, wait 4 to 5 hours until the first coat of Mapelastic has set. Using the trowel’s flat side, apply another coat of Mapelastic up to 80 mils in thickness, to completely encapsulate the Fiberglass Mesh. Do not exceed 80 mils 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. After preparing the surface, apply Mapelastic with a low-pressure spray gun. Apply at a maximum thickness of 80 mils per coat.

2. If a thicker coat is required, Mapelastic must be applied in several coats.

3. Successive coats can only be applied once the previous one is dry (after 4 to 5 hours).

4. 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 Mapelastic. See the corresponding instructions above to complete installation with the selected fabric/mesh. If the fabric/mesh needs additional coverage, apply another layer of Mapelastic with a spray gun.

5. During waterproofing operations, use MAPEI’s Mapeband around expansion joints and joints between horizontal and vertical surfaces.

Application verification

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

TREATMENT OF CRACKS AND/OR MOVEMENT JOINTS

- Repair cracks with engineer-approved methods before installation of Mapelastic.

- If significant movement is expected along a crack, out-of-plane joint or movement joint, utilize MAPEI’s Mapeband TPE flexible waterproof tape (see the Technical Data Sheet for installation design and use).

CURING

- After applying Mapelastic, wait until it is dry before applying a subsequent finish.

- Let Mapelastic cure for 8 to 12 hours at an ambient temperature of 73°F (23°C) before applying bonded mortar toppings. Curing times depend on ambient and substrate temperatures, substrate porosity and job site humidity. Expect shorter drying times in warmer job site conditions, and longer drying times in cooler job site conditions.

- If flood-testing the complete Mapelastic system, wait at least 72 hours at 73°F (23°C) after the last application of Mapelastic 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’s components and the mixed product out of direct sunlight before use.

- After application – and in particularly dry, hot or windy weather – protect the material from rapid evaporation by covering it with sheets.

LIMITATIONS

- Do not add cement, aggregates or water to Mapelastic.

- Mapelastic is a two-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers in water dispersion. Combining the two components produces a free-flowing mix that can be easily applied on vertical and horizontal surfaces, at a thickness up to 80 mils in a single coat.

- Mapelastic is engineered to bridge hairline and micro cracks in concrete, ensuring that no chlorides use these avenues to penetrate to the reinforcing bar. Mapelastic used without Mapetex Sel or 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 per coat.

- Apply Mapelastic at temperatures between 46°F and 95°F (8°C and 35°C).

- 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 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.
## Product Performance Properties

<table>
<thead>
<tr>
<th>Laboratory Tests</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion to concrete</td>
<td></td>
</tr>
<tr>
<td>After 28 days</td>
<td>158 psi (1.09 MPa)</td>
</tr>
<tr>
<td>After 7 days + 21 days in water</td>
<td>87 psi (0.6 MPa)</td>
</tr>
<tr>
<td>Elongation (modified) – ASTM D412</td>
<td></td>
</tr>
<tr>
<td>After 28 days</td>
<td>30%</td>
</tr>
</tbody>
</table>

### Waterproofing capacity

<table>
<thead>
<tr>
<th>Hydrostatic pressure test – ASTM D4068</th>
<th>Waterproof capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack bridging of non-reinforced Mapelastic</td>
<td></td>
</tr>
<tr>
<td>After 28 days</td>
<td>1/32&quot; (1 mm)</td>
</tr>
<tr>
<td>After 7 days + 21 days in water</td>
<td>1/42&quot; (0.6 mm)</td>
</tr>
<tr>
<td>After 7 days + 24 months in water</td>
<td>1/50&quot; (0.5 mm)</td>
</tr>
</tbody>
</table>

Crack bridging at breakage of Mapelastic membrane reinforced with Mapetex Sel mesh
- After 28 days: 1/16" (1.5 mm)
- Resistance to strong hydrostatic pressure: Up to 7 bar (234 ft. [71.3 m]) of 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 |

VOCs (Rule #1113 of California’s SCAQMD): 0 g per L

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 Product Characteristics before mixing

| Shelf life | 1 year when stored in original, unopened packaging at 73°F (23°C) |
| Storage    | Store in a dry place at a temperature of at least 41°F (5°C). |
| Colors     | Silver and White                                               |
| Physical state | Part A: Powder  
|              | Part B: Liquid                                                  |
| Density    | Part A: 87.4 lbs. per cu. ft. (1 400 kg per m³)  
|            | Part B: 68.7 lbs. per cu. ft. (1 100 kg per m³)                 |
### Application Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing ratio</td>
<td>1 Part A to 1 Part B</td>
</tr>
<tr>
<td>Consistency</td>
<td>Plastic (applied by trowel)</td>
</tr>
<tr>
<td>Mixed density</td>
<td>106 lbs. per cu. ft. (1 700 kg per m³)</td>
</tr>
<tr>
<td>Density after application by spraying</td>
<td>137 lbs. per cu. ft. (2 200 kg per m³)</td>
</tr>
<tr>
<td>Application temperature range</td>
<td>46°F to 95°F (8°C to 35°C)</td>
</tr>
<tr>
<td>Pot life</td>
<td>60 minutes</td>
</tr>
</tbody>
</table>

### CSI Division Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dampproofing and Waterproofing</td>
<td>07 10 00</td>
</tr>
</tbody>
</table>

### Packaging

<table>
<thead>
<tr>
<th>Size (Part A with Part B: 66.7 lbs. [30.3 kg])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bag, Part A: 50 lbs. (22.7 kg), Silver</td>
</tr>
<tr>
<td>Bag, Part A: 50 lbs. (22.7 kg), White</td>
</tr>
<tr>
<td>Jug, Part B: 2 U.S. gals. (7.57 L)</td>
</tr>
</tbody>
</table>

### Approximate Coverage* per 66.7 lbs. (30.3 kg) mix of Parts A and B

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 mils</td>
<td>Manual application: 94 sq. ft. (8.73 m²)</td>
</tr>
<tr>
<td>80 mils</td>
<td>Spray gun application: 72 sq. ft. (6.69 m²)</td>
</tr>
</tbody>
</table>

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

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.