MAPELASTIC
Flexible, Cementitious Membrane for Waterproofing and Protecting Concrete and Masonry

SECTION 07 10 00
Dampproofing and Waterproofing

PART 1 GENERAL

1.1 SECTION INCLUDES
- A. Products for maintenance of concrete, including the following:
  1. Polymer-modified, cementitious coating for waterproofing.
  2. Horizontal, vertical, and overhead waterproofing.

1.2 RELATED SECTIONS
- A. Section 07 10 00 – Dampproofing and Waterproofing.
- B. Section 07 11 16 – Cementitious Dampproofing.

1.3 REFERENCES
- A. ASTM International:
  1. ASTM E96 – Standard Test Method for Water Vapor Transmission of Materials.

1.4 SUBMITTALS
- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  1. Preparation instructions and recommendations.
  2. Storage and handling requirements and recommendations.
  3. Installation methods.
- C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color and patterns.

1.5 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Minimum 5 years' experience in manufacturing similar products.
- B. Installer Qualifications: Minimum 2 years' experience in installing similar products.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  1. Finish areas designated by Architect.
  2. Do not proceed with remaining work until workmanship is approved by Architect.
  3. Refinish mock-up area as required to produce acceptable work.

1.6 PRE-INSTALLATION MEETINGS
- A. Convene at least two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE AND HANDLING
- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Product Performance:

Adhesion to concrete	
After 28 days	158 psi (1.09 MPa)
After 7 days + 21 days in water	87 psi (0.87 MPa)
Elongation DIN 53504 (modified)	
After 28 days	30%
EN 12390-8 (modified) – 50 feet of positive hydrostatic head for 7 days	Waterproof
Crack bridging of non-reinforced Mapelastic	
After 28 days	1/32" (1 mm)
After 7 days + 21 days in water	1/42" (0.6 mm)
After 7 days + 24 months in water	1/50" (0.5 mm)
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 5/6" (2 mm) or 80 mils thickness – ASTM E96	About 1.4 perms

B. Acceptable Manufacturer:

MAPEI North America
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442
Toll-Free for CRS Technical Services: Tel. 888-365-0614
Email: CRS@mapei.com
Web: www.mapei.com

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

D. Substitutions: Not permitted.

2.2 CEMENTITIOUS WATERPROOFING

A. Two-Part, Flexible, Cementitious Membrane for Waterproofing and Protecting Concrete, Masonry and Ceramic: Packaged, dry and liquid mix for waterproofing.

1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic.

2. Permeability: About 1.4 perms at 80 mils thickness when tested according to ASTM E96.

2.3 MISCELLANEOUS MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I, II or III unless otherwise indicated.

B. Water: Potable.

2.4 MIXES

A. General: Mix products, in clean containers, according to manufacturer's written instructions.
1. Do not add water, thinners or additives unless recommended by manufacturer.

2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovels or trowels as units of measure.

3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

PART 3 EXECUTION

3.1 EXAMINATION

A. Properly prepared concrete, masonry and ceramic surfaces. The surface to be treated must be sound, stable and clean.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

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

A. The surface to be treated must be sound, stable and clean.

B. Remove all cement laitance, loose material, grease, oil and release agents by sandblasting or high-pressure waterblasting.

C. If Mapelastic will be used to waterproof and protect a structure in poor condition, mechanically remove the damaged section using chipping guns limited to 15 lbs. (6.80 kg), rotomilling or hydrodemolition equipment.

D. After all rust has been removed and the reinforced steel has been properly prepared (coated with Mapefer 1K or Planibond 3C), repair any damage with a suitable MAPEI repair product.

E. Dampen absorbent surfaces with water before applying Mapelastic.

Waterproof 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).

A. Cementitious screed:

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

B. 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.

C. Renders:

Cementitious renders must be well cured (at least 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.

3.3 MIXING

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

A. 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).

B. Carefully mix Mapelastic using a low-speed mechanical mixer (a low-speed mixer will help prevent air entrapment). Make sure that no powder remains stuck to the sides or the bottom of the container.

C. Continue mixing until a homogenous mixture is obtained.

D. 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.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

Mapelastic must be applied within 60 minutes of being mixed.

Application by trowel without fabric or mesh reinforcement:

A. Smooth the prepared surface by applying a thin layer of Mapelastic with a smooth trowel.

B. Apply a second coat on the first layer while it is fresh, for a final thickness of 80 mils.

Application by trowel with MAPEI's Fiberglass Mesh (2-coat system):

A. When waterproofing terraces, balconies, basins and swimming pools, insert a layer of Fiberglass Mesh into the first layer of Mapelastic to act as a reinforcement. The mesh must also be used in areas with small cracks or in areas that are particularly stressed.

B. 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.

C. Immediately apply additional Mapelastic and comb, using the V-notched side of the trowel, to ensure the proper thickness.

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

E. Immediately after laying the mesh, smooth the Mapelastic with the trowel's flat side.

F. 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 complete encapsulate the Fiberglass Mesh. Do not exceed 80 mils per coat.

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

Application by a spray method:

A. After preparing the surface, apply Mapelastic with a low-pressure spray gun. Apply at a maximum thickness of 80 mils per coat.

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

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

D. In areas with small cracks or that are highly stressed, insert a layer of Fiberglass Mesh into the Mapelastic. If the fabric/mesh needs additional coverage, apply another layer of Mapelastic with a spray gun.

E. 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.

3.5 TREATMENT OF CRACKS AND/OR MOVEMENT JOINTS

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

B. If significant movement is expected along a crack, out-of-plane joint or movement joint, utilize MAPEI's Mapeband TPE flexible waterproof tape. Refer to respective Technical Data Sheet for the installation's design and use.

3.6 CURING

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

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

C. 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 the ASTM standard).

END OF SECTION