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MAPELASTIC FOUNDATION

Two-component, flexible cementitious mortar for waterproofing concrete surfaces subject to both positive and negative water pressure



WHERE TO USE

Waterproofing concrete and masonry structures subject to positive or negative hydrostatic pressure. It is recommended for foundation walls, car-parks and underground environments, basins, channels and swimming pools.

Some application examples

- Waterproofing concrete retaining walls.
- Waterproofing underground car-parks, cellars, sunken swimming pools and basins and lift pits against the counter-pressure of water.
- Waterproofing breeze-block walls pre-treated with a suitable MAPEI mortar.

TECHNICAL CHARACTERISTICS

Mapelastic Foundation is a two-component mortar based on cementitious binders, fine-grained selected inert materials, inorganic fibres, special additives and synthetic polymers in water dispersion, blended according to a formula developed in MAPEI's own Research & Development laboratories. When the two components are mixed together, a plastic consistency is obtained. It may be applied with a roller or by spray on both horizontal and vertical surfaces, at a thickness of at least 2 mm. Thanks to the high content and quality of the synthetic resins, the hardened layer of **Mapelastic Foundation** is highly flexible and remains stable under all environmental conditions. When mixed, the product is highly thixotropic, which reduces waste to a minimum during the application phase with a roller.

Mapelastic Foundation is completely waterproof against positive pressure, and is waterproof against negative pressure of up to 1.5 atm (15 m column of water). Once cured, it is resistant to soluble salts which are present in sea water or in the ground, such as chlorides and sulphates.

Mapelastic Foundation also has excellent bonding strength on all cementitious substrates if they have been suitably prepared. All these properties keep structures protected and waterproofed with **Mapelastic Foundation** perfectly dry over the years.

Mapelastic Foundation fulfils all the main criteria for the EN 1504-9 Standards ("*Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use of products and systems*") and the requirements for EN 1504-2 Standards according to PI-MC-IR principles ("*Protection systems for concrete surfaces*").

Product certified EC1 Plus by the GEV Institute (Gemeinschaft Emissions-kontrollierte Verlegewerkstoffe, e.V.) as a product with very low emission of volatile organic compounds.

RECOMMENDATIONS

- Do not use **Mapelastic Foundation** for coatings with a high thickness (more than 2 mm per coat).
- Do not apply **Mapelastic Foundation** at temperatures below +5°C.
- Do not apply **Mapelastic Foundation** on substrates saturated with water (surfaces must dry off before application).
- Do not add cement, inert materials or water to **Mapelastic Foundation**.
- Protect from rain and water contact for the first 24 hours after application.

APPLICATION PROCEDURE

Preparation of the substrate

A) Positive pressure (water under pressure directly onto the finish)

The surface to be treated must be sound and perfectly clean. Remove all cement laitance, flaky parts and traces of powder, grease, oil and mould oil by sand-blasting or washing with high-pressure water. If the structure to be waterproofed and protected with **Mapelastick Foundation** is in a poor condition, remove the damaged parts by hand or mechanical demolition, or by using a hydro-demolition system or a hydro-scarifier. Then carry out repairs with ready-mixed mortar from the **Mapegrouit** range.

Before applying **Mapelastick Foundation**, a coat of **Primer 3296** consolidating and dust-repellent acrylic primer in water dispersion must be applied on the surface to improve adhesion. Dilute the primer 1:1 with water and apply with a brush or roller.

B) Negative pressure (water under pressure seeping through the substrate onto the finish)

Remove all cement laitance, paint, flaky parts and traces of powder, grease, oil and mould oils by sand-blasting or washing down with high-pressure water. Remove any gravel clusters and then fill using **Mapegrouit 430**. Construction joints, cracks in reinforced concrete, spacers, pipe-work and other objects which pass through the concrete must be sealed using **Mapectroof Swell**. To seal cracks in the concrete and construction joints, demolish the area to be repaired around the said cracks or construction joint using mechanical means up to a depth of at least 6 cm. Apply **Mapectroof Swell** and then limit its expansion with a 6 cm border of **Mapegrouit 430**.

In the presence of water which continuously seeps through, seal off the flow using **Lamposilex** and then continue as described above. For pipe-work and other penetrating objects, demolish the reinforced concrete around these objects, extrude **Mapectroof Swell** and limit its expansion as described above. In the case of localised seeping water, seal the flow using **Lamposilex** hydraulic mortar.

In both cases, seal structural joints with **Mapectband TPE** tape bonded to the substrate with **Adesilex PG4** epoxy adhesive dusted with **0.5 Quartz**.

Before applying **Mapelastick Foundation**, a coat of **Primer 3296** consolidating and dust-repellent acrylic primer in water dispersion must be applied on the surface to improve adhesion. Dilute the primer 1:1 with water and apply with a brush or roller.

Preparation of the product

Pour component B (liquid) into a suitable, clean container. Then slowly add component A (powder) while stirring with a mechanical mixer. Carefully mix **Mapelastick Foundation** for a few minutes, making sure that no powder remains stuck to the sides or the bottom of the container. Keep stirring for approximately 3 minutes until a perfectly homogenous mix is obtained.

Leave the mix standing for approximately

2 minutes so that the polymer is completely dispersed, and then mix again for up to 2 minutes.

Use a low-speed mechanical mixer for this operation to avoid too much air entering the mix.

Do not prepare the mix by hand.

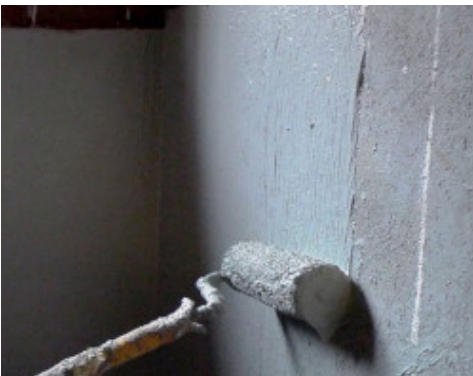
Manual application

Mapelastick Foundation must be applied with a roller or a trowel within 60 minutes of it being mixed in at least two coats, to give a final thickness of at least 2 mm. The second coat may be applied approximately 6 hours after the first coat. In all cases, the first coat must be perfectly dry.

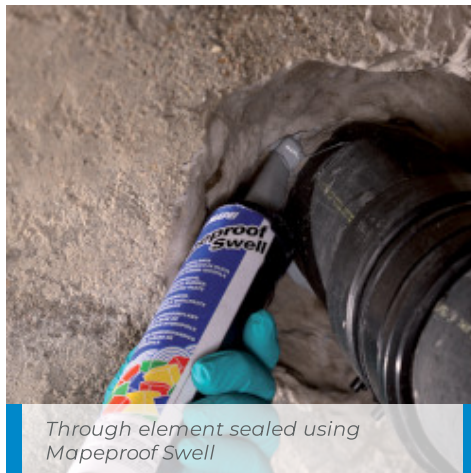
Spray application

Mapelastick Foundation may also be applied by spray using a rendering machine with a smoothing and finishing lance with a nozzle up to 10 mm diameter, and an air compressor with a capacity of at least 800 l/min.

The final thickness must be at least 2 mm. After applying the first layer, wait until it has cured (approximately 6 hours) and then apply a second layer. If there is water under negative pressure, finish off the surface of each coat with a trowel to form an even, well sealed layer. For water under positive pressure, we recommend finishing off at least the first coat with a trowel.



Application of **Mapelastick Foundation** by roller on a substrate evened out using **Planitop HDM Maxi**



Through element sealed using **Mapectroof Swell**



Retaining wall waterproofed after casting using **Mapelastick Foundation**



Mapelastic Foundation spread on by roller to waterproof against water in negative pressure



Mapelastic Foundation spread on by trowel to waterproof against water in negative pressure

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

- No special precautions need to be taken when the temperature is around +20°C.
- During hot weather, it is advisable to keep the product out of direct sunlight before use (powder and liquid).
- After application, and in particularly dry, hot or windy weather, we recommend protecting the surface against rapid evaporation with sheets.

CLEANING

Due to the high bond strength of **Mapelastic Foundation**, including to metal surfaces, we recommend washing work tools with water before the mortar sets. Once it has set, cleaning may only be carried out by mechanical means.

CONSUMPTION

Application roller:

1.65 kg/m² per mm of thickness.

Application by spray:

2.2 kg/m² per mm of thickness.

NB: the consumption figures indicated are for a seamless film on a flat surface and are higher if applied on uneven substrates.

PACKAGING

32 kg kits:

- component A: 22 kg bags;
- component B: 10 kg tanks.

STORAGE

Mapelastic Foundation component A may be stored for 12 months in its original packaging in a dry place.

Mapelastic Foundation component B may be stored for 24 months.

Component A complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapelastic Foundation component A contains cement that when in contact with sweat or other body fluids causes irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes.

Mapelastic Foundation component B is not considered hazardous according to current standards and regulations regarding the classification of mixtures. During use wear protective gloves and goggles and take the usual precautions for the handling of chemicals. In case of contact with the eyes or skin wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

Mapelastic Foundation: two-component flexible waterproof mortar for protecting concrete. Complies with the requirements of EN 1504-2 Standards, PI, MC and IR principles and of EN 14891 (CM01P)

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

| | comp. A | comp. B |
|-------------------------|---------|---------|
| Consistency: | powder | liquid |
| Colour: | grey | white |
| Dry solids content (%): | 100 | 54 |

APPLICATION DATA OF PRODUCT (at +20°C - 50% R.H.)

| | |
|--|-------------------------------------|
| Colour of mix: | light grey |
| Mixing ratio: | component A : component B = 2.2 : 1 |
| Consistency: | thixotropic |
| Density of mix (kg/m ³): | 1,650 |
| Recommended application temperature range: | from +5°C to +40°C |
| Pot life of mix: | approximately 60 minutes |
| EMICODE: | EC1 Plus - very low emission |

FINAL PERFORMANCE (thickness 2.0 mm)

| Performance characteristic | Test method | Requirements according to EN 1504-2 coating (C) principles PI, MC and IR | Performance figures for Mapelastic Foundation | |
|---|---------------------|--|---|----------|
| Adhesion to concrete - after 28 days at +20°C and 50% R.H. (N/mm ²): | EN 1542 | For flexible systems with no traffic: ≥ 0.8 with traffic: ≥ 1.5 | > 1.0 | |
| Adhesion to concrete - after 7 days at +20°C and 50% R.H. + 21 days in water (N/mm ²): | | not required | > 0.7 | |
| Elasticity expressed as elongation - after 28 days at +20°C and 50% R.H. (%): | DIN 53504 modified | not required | 60 | |
| Static crack-bridging at expressed as maximum crack width - after 28 days at +20°C and 50% R.H. (mm): | EN 1062-7 | from class A1 (0.1 mm) to class A5 (2.5 mm) | class A4 (+20°C) (> 1.25 mm) | |
| Permeability to water vapour - equivalent thickness of air S _D (m): | EN ISO 7783-1 | class I: S _D < 5 m (permeable to vapour) | S _D = 2.4 | μ = 1200 |
| Impermeability to water, expressed as capillary absorption (kg/m ² ·h ^{0.5}): | EN 1062-3 | < 0.1 | < 0.07 | |
| Permeability to carbon dioxide (CO ₂) - diffusion in equivalent air layer thickness S _{DCO₂} (m): | EN 1062-6 | > 50 | > 300 | |
| Impermeability to water under pressure (5 bar for 3 days) of positive lift expressed as water penetration: | EN 12390-8 modified | not required | no penetration | |

| | | | |
|---|----------------|---|---|
| Impermeability to water under pressure (1.5 bar) of negative lift expressed as water penetration: | / | not required | no penetration |
| Reaction to fire: | EN 13501-1 | Euroclass | E |
| | | Requirements according to EN 14891 | Performance figures for Mapelastick Foundation |
| Impermeability to water under pressure (1.5 bar for 7 days of positive lift): | EN 14891-A.7 | no penetration | no penetration |
| Crack-bridging ability at +23°C (mm): | EN 14891-A.8.2 | ≥ 0.75 | 2.0 |
| Crack-bridging ability at -5°C (mm): | EN 14891-A.8.3 | ≥ 0.75 | 0.8 |
| Initial adhesion (N/mm ²): | EN 14891-A.6.2 | ≥ 0.5 | 1.1 |
| Adhesion after immersion in water (N/mm ²): | EN 14891-A.6.3 | ≥ 0.5 | 0.65 |
| Adhesion after application of heat source (N/mm ²): | EN 14891-A.6.5 | ≥ 0.5 | 1.2 |
| Adhesion after freeze-thaw cycles (N/mm ²): | EN 14891-A.6.6 | ≥ 0.5 | 0.7 |
| Adhesion after immersion in basic water (N/mm ²): | EN 14891-A.6.9 | ≥ 0.5 | 0.75 |
| Adhesion after immersion in chlorinated water (N/mm ²): | EN 14891-A.6.8 | ≥ 0.5 | 0.75 |

Adhesion values according to EN 14891 measured on **Mapelastick Foundation** and C2-type cementitious adhesive in compliance with EN 12004

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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2069-6-2019 en (IT)

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