



# Mapelastastic 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

**Mapelastastic Foundation** is a two-component mortar based on cementitious binders, fine-grained selected inert materials, 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 **Mapelastastic 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.

**Mapelastastic 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.

**Mapelastastic 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 **Mapelastastic Foundation** perfectly dry over the years.

**Mapelastastic 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 R 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 **Mapelastastic Foundation** for coatings with a high thickness (more than 2 mm per coat).
- Do not apply **Mapelastastic Foundation** at temperatures below +5°C.
- Do not apply **Mapelastastic Foundation** on substrates saturated with water (surfaces must dry off before application).
- Do not add cement, inert materials or water to **Mapelastastic Foundation**.

# Mapelastic Foundation



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



Through element sealed using Mapeproof Swell



Retaining wall waterproofed after casting using 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 **Mapelastic 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 **Mapegrout** range. Before applying **Mapelastic 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 **Planitop Smooth and Repair R4 ZA**. Construction joints, cracks in reinforced concrete, spacers, pipe-work and other objects which pass through the concrete must be sealed using **Mapeproof 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 **Mapeproof Swell** and then limit its expansion with a 6 cm border of **Planitop Smooth and Repair R4 ZA**. In the presence of water which continuously seeps through, seal off the flow using **Lamposilex ZA** and then continue as described above. For pipe-work and other penetrating objects, demolish the reinforced concrete around these objects, extrude **Mapeproof Swell** and limit its expansion as described above. In the case of localised seeping water, seal the flow using **Lamposilex ZA** hydraulic mortar. In both cases, seal structural joints with **Mapeband TPE** tape bonded to the substrate with **Adesilex PG4** epoxy adhesive dusted with **0.5 Quartz**. Before applying **Mapelastic 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 **Mapelastic 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

**Mapelastic 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

**Mapelastic 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.

## 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/m<sup>2</sup> per mm of thickness.

Application by spray:

2.2 kg/m<sup>2</sup> 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.

# Mapelastic Foundation

## PACKAGING

32 kg kits:  
Component A: 22 kg bags;  
Component B: 10 kg drums.

## 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.

## 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.

## 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](http://www.mapei.com)

## 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 or replace requirements per the TDS in force at the time of the MAPEI product installation.*

*The most up-to-date TDS can be downloaded from our website [www.mapei.com](http://www.mapei.com).*

**ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.**



This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



BUILDING THE FUTURE

**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
<b>Consistency:</b>	powder	liquid
<b>Colour:</b>	grey	white
<b>Dry solids content (%):</b>	100	54

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

<b>Colour of mix:</b>	light grey
<b>Mixing ratio:</b>	component A : component B = 2.2 : 1
<b>Consistency:</b>	thixotropic
<b>Density of mix (kg/m<sup>3</sup>):</b>	1,650
<b>Recommended application temperature range:</b>	from +5°C to +40°C
<b>Pot life of mix:</b>	approximately 60 minutes
<b>EMICODE:</b>	EC1 R 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	
<b>Adhesion to concrete - after 28 days at +20°C and 50% R.H. (N/mm<sup>2</sup>):</b>	EN 1542	For flexible systems with no traffic: ≥ 0.8 with traffic: ≥ 1.5	> 1.0	
<b>Adhesion to concrete - after 7 days at +20°C and 50% R.H. + 21 days in water (N/mm<sup>2</sup>):</b>		not required	> 0.7	
<b>Elasticity expressed as elongation - after 28 days at +20°C and 50% R.H. (%):</b>	DIN 53504 modified	not required	60	
<b>Static crack-bridging at expressed as maximum crack width - after 28 days at +20°C and 50% R.H. (mm):</b>	EN 1062-7	from class A1 (0.1 mm) to class A5 (2.5 mm)	class A4 (+20°C) (> 1.25 mm)	
<b>Permeability to water vapour - equivalent thickness of air S<sub>D</sub> (m):</b>	EN ISO 7783-1	class I: S <sub>D</sub> < 5 m (permeable to vapour)	S <sub>D</sub> = 2.4	μ = 1200
<b>Impermeability to water, expressed as capillary absorption (kg/m<sup>2</sup>·h<sup>0.5</sup>):</b>	EN 1062-3	< 0.1	< 0.07	
<b>Permeability to carbon dioxide (CO<sub>2</sub>) - diffusion in equivalent air layer thickness S<sub>D,CO2</sub> (m):</b>	EN 1062-6	> 50	> 300	
<b>Impermeability to water under pressure (5 bar for 3 days) of positive lift expressed as water penetration:</b>	EN 12390-8 modified	not required	no penetration	
<b>Impermeability to water under pressure (1.5 bar) of negative lift expressed as water penetration:</b>	/	not required	no penetration	
<b>Reaction to fire:</b>	EN 13501-1	Euroclass	E	
		<b>Requirements according to EN 14891</b>	<b>Performance figures for Mapelastic Foundation</b>	
<b>Impermeability to water under pressure (1.5 bar for 7 days of positive lift):</b>	EN 14891-A.7	no penetration	no penetration	
<b>Crack-bridging ability at +23°C (mm):</b>	EN 14891-A.8.2	≥ 0.75	2.0	
<b>Crack-bridging ability at -5°C (mm):</b>	EN 14891-A.8.3	≥ 0.75	0.8	
<b>Initial adhesion (N/mm<sup>2</sup>):</b>	EN 14891-A.6.2	≥ 0.5	1.1	
<b>Adhesion after immersion in water (N/mm<sup>2</sup>):</b>	EN 14891-A.6.3	≥ 0.5	0.65	
<b>Adhesion after application of heat source (N/mm<sup>2</sup>):</b>	EN 14891-A.6.5	≥ 0.5	1.2	
<b>Adhesion after freeze-thaw cycles (N/mm<sup>2</sup>):</b>	EN 14891-A.6.6	≥ 0.5	0.7	
<b>Adhesion after immersion in basic water (N/mm<sup>2</sup>):</b>	EN 14891-A.6.9	≥ 0.5	0.75	
<b>Adhesion after immersion in chlorinated water (N/mm<sup>2</sup>):</b>	EN 14891-A.6.8	≥ 0.5	0.75	



**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**