



Mapefer

Two-component, anti-corrosion cementitious mortar for protecting steel reinforcement rods



WHERE TO USE

- Anti-rust protection of concrete reinforcement.
- Bonding promoter for repair mortars of concrete.

Some application examples

Prevents corrosion and restores alkalinity in reinforcing rods during concrete repair with **Mapegrout** non-shrink mortars or with normal cement mortars modified with synthetic resin latexes. It can be applied both below and above grade.

TECHNICAL CHARACTERISTICS

Mapefer is a two-component mortar based on polymers in water dispersion, cement binders and corrosion inhibitors, to be applied on reinforcing rods to prevent rust formation, made according to a formula developed in the MAPEI research laboratories.

Mapefer is supplied ready-to-use, as two pre-dosed components: component A (powder) and component B (liquid).

The two parts must be mixed without the addition of water or any other ingredients.

Once hardened, it is resistant to saline mist according to EN 15183 standards and impermeable to aggressive water and gases present in the atmosphere.

The anti-rust action of **Mapefer** is provided through:

- the presence of corrosion inhibitors which protect the metal surfaces from oxidation;
- its high level of alkalinity;
- its excellent adhesion to metal.

Mapefer complies with the principles defined in EN 1504-9 (*"Products and systems for protecting and repairing concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use and application of systems"*), and the minimum requirements of EN 1504-7 (*"Reinforcement corrosion protection"*).

RECOMMENDATIONS

- Do not dilute **Mapefer** with water during preparation or when setting has started.
- Do not add cement or aggregates to **Mapefer**.
- Do not leave sandblasted rods without protection for a long time. Apply **Mapefer** immediately after sandblasting.
- Do not apply **Mapefer** when the temperature is below +5°C.



Demolition of degraded concrete



Cleaning reinforcing rods



Mixing Mapefer

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	component A	component B
Consistency:	powder	fluid liquid
Colour:	white	blue
Maximum size of aggregate (mm):	0.5	–
Density (EN 2811-1) (g/cm ³):	–	1.02
Dry solids content (EN 480-8) (%):	100	11
pH (ISO 4316):	–	9.5
Hazard classification according to EC 1999/45:	irritant	none
	Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet	

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

Colour of mix:	blue
Mixing ratio:	component A : component B = 3 : 1
Consistency of mix:	plastic-trowellable
Density of mix (kg/m ³):	1,850
pH of mix:	> 12.5
Application temperature range:	from +5°C to +35°C
Pot life of mix:	approximately 1 hour
Waiting time between each coat:	approximately 2 hours
Waiting time before applying repair mortar:	6-24 hours
Minimum thickness of Mapefer (mm):	2

FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN 1504-7	Performance of product
Bond strength on concrete (substrate in MC 0.40 – water/cement ratio = 0.40) according to EN 1766 (MPa):	EN 1542	none	≥ 2
Pull-out strength of steel reinforcement bars – load required for 0.1 mm of slip:	EN 15184	Load equal to at least 80% of the load on steel reinforcement without protection	meets specifications
Resistance to corrosion: – 10 condensation cycles in water; – 10 cycles in sulphur dioxide according to EN ISO 6988; – 5 days in saline mist according to EN 60068-2-11	EN 15183	After the series of cycles, the protected rods must be corrosion-free. Penetration of rust at the ends of the steel plates with no protection must be < 1 mm	meets specifications

APPLICATION PROCEDURE

Preparing the rods

To ensure that **Mapefer** is able to develop its anti-corrosion properties efficiently it is essential that the rods to be treated are free from all surrounding degraded and carbonated concrete and from loose particles, grease, oil and rust.

Sandblasting is recommended to clean the rods down to white metal.

If for logistic reasons this is not possible, vigorous brushing of the metal surface should be carefully and thoroughly carried out.

Additional or substitute rods must be prepared in the same way.

Preparing the product

Pour component B (liquid) into a clean container and while mixing, slowly add component A, then mix vigorously for a few minutes to obtain a homogeneous mix.

Following these procedures, a brushable mortar, with a pot life of 60 minutes, is obtained.

Applying the mix

Apply two coats of **Mapefer** with a brush.

The second coat can be applied approx. 2 hours after the first and preferably within 24 hours.

It is recommended that the surfaces of the rods be completely covered in one homogeneous coat.

This is not difficult because brush application with **Mapefer** is extremely easy.

The total thickness of the two coats must be 2 mm.

Inevitably, during the application, the surrounding concrete will also receive treatment. This will not create any problems as **Mapefer** also greatly improves the adhesion of all mortars.

The application of the repair mortar (e.g. products of the **Mapegrout** line) that follows, can be carried out on cured **Mapefer** after approx. 6 hours at +20°C.

Precautions to be observed during application

The product can be applied when the ambient temperature is between +5°C and +35°C. However, in hot weather the mixed material should not be exposed to direct sunlight, as the pot life will be reduced.

Cleaning

While still fresh, **Mapefer** can be removed from brushes and tools with water.

Once hardened, it can only be removed mechanically.

CONSUMPTION

120 g/m of **Mapefer** for 8 mm diameter rebar and 240 g/m of **Mapefer** for 16 mm diameter rebar (2 mm thick coat of product applied).

PACKAGING

Mapefer is available in 2 kg buckets (A+B).

STORAGE

Store **Mapefer** in a dry place at temperatures above +5°C.

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

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefer component A contains cement that when in contact with sweat or other body fluids may produce an alkaline irritating reaction. While mixing component A with component B and while using **Mapefer**, please wear protective gloves and goggles.

For further and complete information about a safety use of our product please refer to our latest version of the Material 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

All relevant references for the product are available upon request and from www.mapei.com



Application of Mapefer



Mapefer



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