MAPEFINISH HD

Two-component, highly sulphate resistant cementitious mortar to protect concrete subjected to high abrasion





EN 1504-2

IN COMPLIANCE WITH EUROPEAN STANDARD EN 1504-2 (C) PRINCIPLES MC-IR MAPEI SURFACE PROTECTION SYSTEMS FOR CONCRETE

WHERE TO USE

Protecting and levelling the surface of concrete subjected to high abrasion.

Some application examples

· Levelling defects on the surface of cast concrete.
· Skimming concrete repaired with products from the **Mapegrout** range.
· Protecting concrete against weak aggressive agents from the surrounding environment.
· Protecting depuration systems and drain manifolds.
· Repairing the wear layer on concrete industrial floors.

TECHNICAL CHARACTERISTICS

Mapefinish HD is a two-component, highly sulphate resistant cement-based mortar with high resistance to wear containing selected fine aggregates, special additives and synthetic polymers in water dispersion according to a formula developed in MAPEI's research laboratories.
When the two components are mixed together, a free-flowing mix is obtained which may be easily applied in layers up to 2 mm thick in a single coat, even on vertical surfaces. Thanks to its high content of synthetic resin, **Mapefinish HD** has high bond strength on all concrete surfaces and, once hardened, forms a tough, compact, layer which is impermeable to water and atmospheric agents.
Mapefinish HD meets the main requirements of EN 1504-9 ("*Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and systems*") and the requirements of EN 1504-2 coating (C) according to principles MC and IR ("*Concrete surface protection systems*").

RECOMMENDATIONS

· Do not apply **Mapefinish HD** in layers of more than 2 mm thick.
· Do not use **Mapefinish HD** to re-build areas more than 4 mm thick (use products from the **Mapegrout** or **Planitop** ranges).
· Do not apply **Mapefinish HD** at temperatures lower than +5°C.

APPLICATION PROCEDURE

Preparation of the substrate

The substrate must be prepared very carefully to guarantee that the system bonds well.
The surface to be treated must be sound and perfectly clean.
To get better results, prepare the surface by hydro-sandblasting or by washing thoroughly with high pressure water jets.

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Completely remove all traces of dust, efflorescence, traces of form release oil, rough edges, loose parts and rust from the surface of the cement or concrete.
Where necessary, rebuild and repair highly deteriorated areas with products from the **Mapegrout** range (see relative technical data sheet).
Saturate the concrete substrate with water.
Wait until excess water has evaporated. If necessary, use compressed air to help remove excess water.
Never apply the mortar on substrates which still have a surface film of water.

Preparation of the mortar

Pour component B (liquid) into a suitable clean container and slowly add component A (powder) while stirring with a mechanical mixer.
Carefully mix **Mapefinish HD** for several minutes then remove any powder which has stuck to the sides and bottom of the container.
Keep mixing until the blend is completely homogenous (completely lump-free). A low-speed mechanical mixer is recommended for this operation to avoid too much air being entrained into the mix.
Avoid mixing the product manually. If manual mixing is unavoidable, use a trowel and press the mortar against the sides of the container to break down all the lumps and stir well until the mix is well blended.

Application of the mortar

Spread the mortar on the prepared surface using a smooth trowel or by spray with a rendering machine at a thickness of up to 2 mm per layer. The total thickness of the skimming layer must never exceed 4 mm.
Thicker layers must be formed using products from the **Mapegrout** range.
The surface may be smoothed over with the same trowel used to apply the mortar or with a sponge float a few minutes after application.
If the surface dries out when smoothing over, dampen the surface with water to help the float slide more easily.
During hot or windy weather or on particularly sunny days, we recommend spraying water on the surface for the first few hours while it is hardening to avoid the mixing water evaporating off too quickly and causing cracking.



Application of Mapefinish HD by spray



Smoothing over Mapefinish HD with a metal spatula



Mapefinish HD after floating

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

· No special precautions need to be taken if the temperature is around +20°C.
· After application, **Mapefinish HD** must be cured carefully and the surface of the mortar must be protected to avoid the mixing water evaporating off too quickly.

CLEANING

Because of the high bond strength of **Mapefinish HD**, including on metals, we recommend cleaning tools with water before the mortar starts to set.
Once the mortar has set, tools must be cleaned using mechanical means.

CONSUMPTION

2.2 kg/m² per mm of thickness.

PACKAGING

29 kg units:
· component A: 25 kg bags;
· component B: 4 kg tanks.

STORAGE

Mapefinish HD may be stored for up to 12 months in its original packaging in a dry place.
The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.
Mapefinish HD component B may be stored for up to 24 months.
Store both components at a temperature of at least +5°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefinish HD component A is irritant, it 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. In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention.
Mapefinish HD component B is not considered dangerous according to the European regulation regarding the classification of mixtures. It is recommended to wear gloves and goggles and to take the usual precautions taken for the handling of chemicals.
For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.
PRODUCT FOR PROFESSIONAL USE.

Mapefinish HD*: two-component, normal-setting cementitous mortar for repairing and protecting concrete in compliance with EN 1504-2 coating (C) principles MC and IR*		
TECHNICAL DATA (typical values)		
PRODUCT IDENTITY		
Type:	PCC	
	component A	**component B**
Consistency:	powder	liquid
Colour:	grey	white
Maximum size of aggregate (mm):	0.5	–
Bulk density (g/cm³):	1.3	–
Density (g/cm³):	–	1.02
Dry solids content (%):	100	12
Ion chloride content: **– EN 1015-17 (%)** **– minimum requirement ≤ 0.05%:**	≤ 0.05	≤ 0.05
APPLICATION DATA (+20°C - 50% R.H.)		
Colour of mix:	grey	
Mixing ratio:	6.25 parts of **Mapefinish HD** component A with 1 part of **Mapefinish HD** component B	
Consistency of mix:	fluid-trowellable	
Density of mix (kg/dm³):	2,200	
Application temperature range:	from +5°C to +35°C	

Pot life of mix:	approximately 30 minutes
Surface drying time:	approximately 30 minutes

FINAL PERFORMANCE (thickness 2.5 mm)			
Performance characteristic	**Test method**	**Requirements according to EN 1504-2 coating (C) principles MC and IR**	**Performance of product**
Compressive strength (MPa):	EN 12190	not required	> 4 (after 1 day) > 40 (after 7 days) > 50 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	> 4 (after 1 day) > 7 (after 7 days) > 8 (after 28 days)
Bond strength on concrete (substrate type MC 0.40) according to EN 1766 (MPa):	EN 1542	For rigid systems with no traffic: ≥ 1.0 with traffic ≥ 2.0	≥ 2 (after 28 days)
Impermeability expressed as coefficient of permeability to free water ($kg/m^2 \cdot h^{0.5}$):	EN 1062/3	W < 0.1	W < 0.05 - Class III (low permeability) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (m):	EN ISO 7783/1	Class I S_D < 5 m Class II 5 m ≤ S_D ≤ 50 m Class III S_D > 50 m	S_D < 0.5 - Class I (permeable to water vapour)
Abrasion resistance:	ISO 5470	loss by weight less than 3000 mg with a H22 disk after 1000 cycles/load	< 1000 mg
Resistance to abrasion according to the Böhme method:	EN 13892/3	not required	Class A6
Reaction to fire:	EN 13501-1	Euroclass	E

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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