



Planitop HDM Restauro

Two-component, pre-blended, fibre-reinforced, high-ductility hydraulic lime (NHL) and Eco-Pozzolan based light-coloured mortar, particularly recommended for “reinforced” structural strengthening of masonry substrates in combination with Mapegrid G 120, Mapegrid G 220 or Mapegrid B 250 and for evening out, stone, brickwork and tuff surfaces



WHERE TO USE

Smoothing and levelling layers on stone, brick and tuff surfaces.

For laying **Mapegrid G 120**, **Mapegrid G 220** and **Mapegrid B 250** basalt fibres glass fibre mesh in “reinforced” structural strengthening systems on facing walls, ceilings and masonry elements.

Some application examples

- Strengthening masonry facing walls, ceilings and general masonry work.
- Levelling and strengthening of structural elements in stone, brickwork and tuff.
- Laying and smoothing **Mapegrid G120**, a system for “localised” structural strengthening in the case of stresses induced by uneven substrates.
- Laying and smoothing **Mapegrid G 220** or **Mapegrid B 250** a system for “reinforced” structural strengthening against stresses induced by seismic activity.

TECHNICAL CHARACTERISTICS

Planitop HDM Restauro is a two-component, pre-blended, fibre-reinforced, light-coloured mortar composed of hydraulic lime (NHL), Eco-Pozzolan, natural sand, 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 (component A powder and component B liquid) they form a mix which is easy to spread, and which may be applied manually on vertical surfaces at a thickness of up to a maximum of 10 mm per coat.

Thanks to its content of synthetic resin in water dispersion, **Planitop HDM Restauro** has high bonding strength and, once hardened, forms a tough and compact layer which is impermeable to water and aggressive gases present in the atmosphere, but permeable to vapour.

Planitop HDM Restauro is classified as an M15 type masonry mortar according to EN 998-2 European Standards and a category CS IV GP type render according to EN 998-1, in that it reaches a compressive strength of $> 15 \text{ N/mm}^2$ (EN 1015-11) even though it is a mortar composed of lime and Eco-Pozzolan.

RECOMMENDATIONS

- Do not apply **Planitop HDM Restauro** if the temperature is lower than $+5^\circ\text{C}$.
- Do not add cement, aggregates or water to **Planitop HDM Restauro**.

APPLICATION PROCEDURE

Preparation of the substrate

To guarantee good adhesion, special care must be taken when preparing the substrate. It must be perfectly clean, sound and free of crumbling parts, dust, oil and old paintwork. Sandblasting, a vigorous cleaning cycle with high-pressure water jets are particularly suitable to eliminate efflorescence and soluble salts from the surface of the masonry. Clean the structure, therefore, with water.

If the product is applied on masonry, stone or tuff surfaces, any defects present must be repaired using **Mape-Antique Strutturale NHL**.

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Application of the first layer of Planitop HDM Restauro by trowel on the outer face of a vaulted ceiling



Positioning Mapegrid G 220 alkali-resistant glass fibre reinforcement mesh



Application of the second layer of Planitop HDM Restauro by trowel on the outer face of a vaulted ceiling to cover the Mapegrid G 220 with an even coat

Preparation of the mortar

Planitop HDM Restauro must be prepared according to the application selected using a mixer or drum mixer (for manual application) for large quantities or in the mixing unit of a rendering machine (for mechanical application).

For manual application, pour component B (liquid) into a suitable clean container and slowly add component A (powder) while stirring with a mechanical mixer. Carefully mix Planitop HDM Restauro for several minutes, making sure no powder remains attached to the sides or bottom of the container. Keep mixing until the blend is completely homogenous (with no lumps). A low-speed mechanical mixer is recommended for this operation, to avoid too much air being entrapped in the mix.

If the mortar is applied by spray, on the other hand, a rendering machine with a separate mixing unit must be used.

Applying of the mortar when laying Mapegrid G 120, Mapegrid G 220 or Mapegrid B 250

1. Apply a uniform, 4-5 mm-thick layer of Planitop HDM Restauro using a flat, metal trowel (or with rendering machine).
2. While the product is still "fresh", insert Mapegrid G 120, Mapegrid G 220 or Mapegrid B 250 by pressing it lightly with a flat trowel so that it adheres perfectly to the mortar.
3. Apply a second uniform layer of Planitop HDM Restauro approximately 4 mm thick in order to completely cover the mesh.
4. Smooth the surface while still "fresh" using a flat trowel.

Adjacent longitudinal and transversal strips of Mapegrid G 120, Mapegrid G 220 or Mapegrid B 250 must overlap by at least 5 cm at the junction points.

Finishing the mortar

After applying Planitop HDM Restauro, if a smooth finish is required, use a MAPEI product such as Mape-Antique FC Ultrafine or Mape-Antique FC Civile or Mape-Antique FC Grosso (cement-free mortars of different grain size, made from lime and Eco-Pozzolan). Further protective coatings may be applied after complete hardening of the finishing layer. Use Elastocolor Paint (protective and decorative elastic paint based on acrylic resins in water dispersion) after applying a coat of Elastocolor Primer (solvent-based fixing primer with high penetration properties), or one of the silicate-based products from the Silexcolor range or one of the silicone resin-based products from the Silancolor range.

All covering materials are available in a wide range of colours, which may be created using the ColorMap® automatic colouring system.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

- No special precautions need to be taken when the temperature is around +20°C.
- In particularly dry, hot or windy conditions, Planitop HDM Restauro must be cured carefully; we recommend protecting the surface against quick evaporation of water.

Cleaning

Due to the high bonding strength of Planitop HDM Restauro, even on metals, we recommend that work tools are washed with water before the mortar sets. Once it has set, cleaning may only be carried out by mechanical means.

CONSUMPTION

1.9 kg/m² per mm of thickness.

PACKAGING

30 kg kits:
component A: 25 kg sacks;
component B: 5 kg cans.

STORAGE

Planitop HDM Restauro component A may be stored for up to 12 months when contained in its original packaging in a dry place.

Planitop HDM Restauro component B may be stored for up to 24 months. Both components must be stored at a temperature of at least +5°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Planitop HDM Restauro component A contains special hydraulic binders which, in contact with sweat or other body fluids may cause corrosion and damage to the eyes. Planitop HDM Restauro component B is not considered as dangerous according to the current regulation regarding the classification of mixtures.

During use wear protective gloves and goggles and take the usual precautions for handling chemicals. In case of contact with the eyes or skin wash immediately with plenty of clean 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 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

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Comp. A

Appearance:	powder
Colour:	light
Bulk density (kg/m ³):	1,400
Max diameter of aggregate (mm) (EN 1015-1):	1.5
Chloride content (EN 1015-17) (%):	< 0.05

Comp. B

Appearance:	fluid liquid
Colour:	white
Bulk density (g/cm ³):	1.02
Dry solids content (%):	10
Chloride content (EN 1015-17) (%):	< 0.05

APPLICATION DATA

Mixing ratio:	1 bag of component A (25 kg) with 1 canister of component B (5 kg)
Consistency of mix:	fluid-trowable
Density of mix (EN 1015-6) (kg/m ³):	1,900
Thickness applied (mm):	from 3 to 10 mm per coat
Application temperature range:	from +5°C to +35°C
Pot life of mix:	approx. 1 hour
Setting time (start / finish):	10 hours / 20 hours

FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN 998-1	Requirements according to EN 998-2	Performance of product
Compressive strength after 28 days (N/mm ²):	EN 1015-11	CS I (from 0.4 to 2.5)	from Class M 1 (> 1 N/mm ²) to Class M d (> 25 N/mm ²)	> 15 (Category CS IV) (Class M 15)
		CS II (from 1.5 to 5.0)		
		CS III (from 3.5 to 7.5)		
		CS IV (≥ 6)		
Bond strength to substrate (brickwork) (N/mm ²):	EN 1015-12	declared value and failure mode (FP)	not required	≥ 0,8 Failure mode (FP) = B
Initial shear strength (f _{vok}) (N/mm ²):	EN 1052-3	not required	chart value	0.15
Compressive modulus of elasticity (GPa):	EN 13412	not required	not required	8,000
Capillary action water absorption [kg/(m ² ·min ^{0.5})]:	EN 1015-18	from Category W 0 to Category W 2	declared value	Category W 2 ≤ 0.2
Coefficient of permeability to water vapour (μ):	EN 1015-19	declared value	chart value	≤ 60
Thermal conductivity (λ _{10,dry}) (W/m·K):	EN 1745	chart value	0,75	P - 50°C
Reaction to fire (Euroclass):	EN 13501-1	value declared by manufacturer	value declared by manufacturer	Class E



Freshly-mixed Planitop HDM Restauro



Application of Planitop HDM Restauro by spray on a brick wall



Application of Planitop HDM Restauro system with Mapegrid G 220 on a brick wall

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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

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.

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

