



Planitop HDM Maxi



Two-component, high-ductility, fibre-reinforced cementitious mortar with a pozzolanic-reaction binder base, applied at a maximum thickness of 25 mm for levelling stone, brick and tuff substrates before laying Mapegrid G 220



WHERE TO USE

Planitop HDM Maxi may be used on its own as a filler mortar or to repair brickwork, stone and tuff ceilings; further advantages are gained if used in conjunction with **Mapegrid G 220**, a special, alkali-resistant, primed glass fibre mesh for structural reinforcement applications.

Some typical application examples

- Strengthening masonry facing walls, ceilings and general masonry work.
- Smoothing over stone, brick and tuff elements before reinforced structural strengthening applications using **Mapegrid G 220**, for stresses induced by seismic activity.

TECHNICAL CHARACTERISTICS

Planitop HDM Maxi is a two-component, fibre-reinforced, high-strength-cement-based mortar with fine-grained selected aggregates, special admixes and synthetic polymers dispersed in water, blended according to a formula developed in MAPEI's own research laboratories.

When the two components (component A powder and component B liquid) are mixed together, an easy to spread mix is obtained which may be applied on vertical surfaces at a thickness of up to 25 mm per layer.

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

Planitop HDM Maxi meets the requirements defined by 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 minimum requirements claimed by EN 1504-3 (*"Structural and non structural repair"*) for structural mortars of class R2.

RECOMMENDATIONS

- Do not apply **Planitop HDM Maxi** if the temperature is lower than +5°C.
- Do not add cement, inert materials or water to **Planitop HDM Maxi**.
- **Planitop HDM** may be used in applications less than 6 mm thick.

APPLICATION PROCEDURE

Preparation of the substrate

To guarantee that the product bonds well, special care must be taken when preparing the substrate. It must be perfectly clean, sound and free from crumbly parts, dust, oil and old paintwork. Sandblasting or a vigorous cleaning cycle with high-pressure water jets are particularly suitable for this operation. Before applying the product, saturate the support leaving the surface dry, or in the case of particularly absorbent surfaces, they may be primed using **Primer G**.

Preparation of the mortar

Pour component B (liquid) into a suitable, clean container. Slowly add component A (powder) while

Planitop HDM Maxi: two-component, high ductility fibre-reinforced cementitious mortar for smoothing and levelling concrete in conformity with the requirements of EN 1504-3 class R2.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Type:	PCC
Custom class:	3824 50 90
COMPONENT A:	
Consistency:	powder
Colour:	grey
Maximum size of aggregate (mm):	1
Bulk density (kg/m³):	1,200
Dry solids content (%):	100
Chloride ions content - EN 1015-17 (%) – minimum required ≤ 0.05%:	≤ 0.05
Storage:	12 months in a dry place in its original packaging
Hazard classification according to EC 1999/45:	irritant. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet

COMPONENT B:

Consistency:	fluid liquid
Colour:	white
Density (g/ml):	1.07
Dry solids content (%):	13
Chloride ions content - EN 1015-17 (%) – minimum required ≤ 0.05%:	≤ 0.05
Storage:	24 months in a dry place in its original packaging
Hazard classification according to EC 1999/45:	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:	grey
Mixing ratio:	3.7 parts of Planitop HDM Maxi component A with 1 part of Planitop HDM Maxi component B
Consistency of mix:	plastic-thixotropic
Density of mix (kg/m³):	1,850
Maximum thickness applied (mm):	25
Application temperature range:	from +5°C to +35°C
Pot life of mix:	ca. 1 h

FINAL PERFORMANCE

Performance characteristic	Test method	Requirements according to EN 1504-3 for R2-class mortar	Performance of product
Compressive strength (MPa):	EN 12190	≥ 15 (after 28 days)	> 3 (after 1 day) > 15 (after 7 day) > 25 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	> 2 (after 1 day) > 6 (after 7 day) > 8 (after 28 days)
Compressive modulus of elasticity (GPa):	EN 13412	not required	11 (after 28 days)
Bond strength on concrete (substrate in MC 0.40) – water/cement ratio = 0.40) according to EN 1766 (MPa):	EN 1542	≥ 0.8 (after 28 days)	> 2 (after 28 days)
Bond strength on masonry (Planitop HDM with Mapegrid G220) (MPa):	–	not required	> 2 (after 28 days)
Thermal compatibility measured as bonding according to EN 1542 (MPa): – freeze-thaw cycles with deicing salts: – thunder-shower cycle: – dry thermal cycle:	EN 13687/1 EN 13687/2 EN 13687/4	≥ 0.8 (after 50 cycles) ≥ 0.8 (after 30 cycles) ≥ 0.8 (after 30 cycles)	≥ 0.8 ≥ 0.8 ≥ 0.8
Capillary absorption (kg/m²·h ^{0.5}):	EN 13057	≤ 0.5	< 0.3
Resistance to accelerated carbonatation:	EN 13295	not required	Depth of carbonatation ≤ the reference concrete (MC 0.45 type, water/concrete mixing ratio = 0.45) according to UNI 1766
Reaction to fire:	Euroclass	according to value declared by manufacturer	E

stirring with a mechanical mixer. Carefully mix the **Planitop HDM Maxi** for a few minutes, making sure that no powder remains stuck to the sides or the bottom of the container. Continue mixing until the components are perfectly homogenous (no lumps must be present). A low-speed mechanical mixer is particularly suitable for this operation, to avoid air being dragged into the mix. Do not prepare the mix by hand. Large quantities of mortar may be prepared using a bucket-type cement mixer.

Application of the mortar

1. Smooth over the surface by applying **Planitop HDM Maxi** with a trowel or by spraying, at a thickness of up to 25 mm per coat, until all irregularities are eliminated.
2. Leave the product to harden for 18-24 hours.
3. Apply an even, initial 3-4 mm thick layer of **Planitop HDM** using a flat, metallic trowel (for small surfaces, **Planitop HDM Maxi** may also be used without waiting the usual hardening times).
4. While the product is still "fresh", insert the **Mapegrid G 220** by pressing it lightly with a flat trowel so that it adheres perfectly to the mortar.
5. Apply a second even layer of the same product approximately 2-3 mm thick, so that the **Mapegrid G 220** is completely covered.
6. Smooth over the surface using a smooth trowel.

Adjacent longitudinal and transversal strips of **Mapegrid G 220** must overlap by at least 5 cm at the junction points.

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 Maxi** must be cured carefully after application; we recommend protecting the surface against rapid evaporation of water.

Cleaning

Due to the high bonding strength of **Planitop HDM Maxi**, 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

1.85 kg/m² per mm of thickness.

PACKAGING

31.75 kg kits:
component A: 25 kg paper bags;
component B: 6.75 kg drums.

STORAGE

Planitop HDM Maxi component A may be stored for up to 12 months when contained in its original packaging. The product conforms to the requirements of Directive 2003/53/CE.

Planitop HDM Maxi 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 Maxi component A contains cement which, in contact with sweat or other body fluids, produces an irritating alkaline reaction and, in some cases, an allergic rash. Use protective gloves and goggles.

The Safety data Sheet is available upon request for professional users.

PRODUCT FOR PROFESSIONAL USE.

WARNING

While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

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

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