MAPEI

IN COMPLIANCE WITH EUROPEAN STANDARD
EN 998-1
GP-CS IV
MAPEI
RENDERING AND PLASTERING MORTAR

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

CE EN 998-1

CE EN 1504-2

Planitop 540

Water-repellent cementitious skimming mortar with a fine, natural finish for render and concrete

WHERE TO USE

Fine, natural finish skimming mortar for uneven concrete elements and "hardened" render units in interiors and exteriors before painting.

Some application examples

- Smooth finishing of cement-lime based or prepacked cured traditional renders.
- Levelling slightly rough concrete walls before painting.
- Levelling joints between precast predalles.
- Levelling ready mix concrete units such as panels, columns and beams.
- Levelling rough screeds and rendered walls before installing ceramic floor and wall coverings.

TECHNICAL CHARACTERISTICS

Planitop 540 is a one-component, pre-blended, normal-hardening fine-grained, water-repellent skimming mortar available in grey or white, based on cementitious binders, selected graded aggregates, admixtures and synthetic powder polymers prepared according to a special formula developed in the MAPEI Research laboratories.

Due to its special composition, the mortar obtained by mixing **Planitop 540** with water is easy to apply with a flat metal trowel and finished with a sponge float. Once cured it has a high bonding strength. **Planitop 540** can be applied at a maximum of 3 mm.

Greater thicknesses but not more than 6 mm must be carried out in at least 2 coats. Ceramic coverings can be applied after 4 days from the application of **Planitop 540** using MAPEI cementitious adhesives.

Because of its smooth finish, coloured skimming mortars are more suitable for **Planitop 540**, such as **Silexcolor Tonachino**, **Silancolor Tonachino** or **Quarzolite Tonachino**. Other types of paints such as **Elastocolor Paint**, **Silexcolor Paint**, **Silancolor Paint**, **Colorite Performance**, **Quarzolite Paint** or **Dursilite** can also be applied. The latter product may be used for decorating internal or external surfaces as long as they are partially covered and protected from direct exposure to the sun and rain. In good weather, coloured render or paint may be applied 1 week after applying **Planitop 540**.

Planitop 540 conforms to 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 of products and systems*") and the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR ("Concrete surface protection systems") and is classified as GP ("*General purpose mortar for internal/external render*"), category CS IV according to EN 998-1.

RECOMMENDATIONS

- Do not use **Planitop 540** for finishing thicknesses greater than 3 mm (use **Mapegrout LM2K** or **Planitop Smooth & Repair**).

Planitop 540

Applying Planitop 540 with a metal trowel

Applying Planitop 540 with a metal trowel

Smoothing the Planitop 540 surface with a metal trowel

- Do not apply **Planitop 540** at temperatures below +5°C or above +35°C.
- Do not add cement, lime, gypsum or aggregates to **Planitop 540**.
- Do not use directly on gypsum or anhydrite surfaces. Apply **Primer G** over gypsum-based renders.
- Do not apply **Planitop 540** on dirty or crumbling surfaces.
- Use **Mapefinish** or **Mapefinish HD** to protect hydraulic structures or surfaces subject to abrasion.
- Do not apply **Planitop 540** on painted surfaces or surfaces covered with plastic coatings (use **Planitop 200**, **Planitop 207** or **Planitop 210**).
- Do not use **Planitop 540** on windy days or when the surfaces are subject to direct sun light.
- Do not apply on dehumidified renders (use a skimming mortar from the **Mape-Antique** range or coloured finishings from the **Silexcolor** and **Silancolor** range).

APPLICATION PROCEDURE

Preparing the substrate

Surfaces must be perfectly clean and sound. If the substrate is dirty, it is recommended to wash the surface with water in order to remove any dust that could compromise the adhesion.

Before applying **Planitop 540** remove all the free water from the surface.

If, after having been washed, the surface still has dust, apply a MAPEI primer (seek Technical Services Department).

Preparing the smoothing compound

Pour 6-6.5 litres of water into a clean container and, while mixing slowly, add a 25 kg bag of **Planitop 540**.

Mix for several minutes making sure any unblended powder is removed from the bottom and sides of the container as mixing proceeds.

Mix until a homogeneous, completely lump-free mixture is obtained. A low speed mechanical stirrer is used to avoid excess air.

In order to completely disperse the contained admixtures, allow the mixture to stand for approximately 3 minutes after its preparation. Mix briefly before use.

Avoid preparing the mix manually.

Applying the smoothing compound

Apply the compound to a maximum of 3 mm thick with a flat metal trowel on the surface.

Porous substrates, such as renders or concrete, must be dampened with water beforehand.

The surface finishing of **Planitop 540** can be carried out either with a flat metal trowel or with a sponge float several minutes after its application.

During hot or windy weather, or in particularly hot areas, spray water on the surface of the smoothing compound when it starts to set (that is, when it may be pressed lightly without leaving fingerprints) and over the next few days when the mortar has completely hardened, to avoid quick drying and hygrometric shrinkage which may cause cracks to form.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

No particular precautions need to be taken at temperatures around +20°C.
At high or low temperatures or with strong ventilation, the normal precautions for the use of cementitious material need to be taken.

For a better finish and protective result, it is suggested to use coloured finishes from the **Silexcolor, Silancolor**, **Elastocolor**, **Quarzolite**, **Colorite** or **Dursilite** ranges. The latter product may only be used for decorating internal or external surfaces if they are partially covered and protected.

Cleaning

Due to **Planitop 540**'s high bonding strength, it is recommended to wash working tools with water before the mortar hardens.

Once **Planitop 540** hardens, tools can only be cleaned by mechanical means.

COLOUR

Grey or white.

CONSUMPTION

Approximately 1.2 kg/m² per mm of thickness.

PACKAGING

25 kg bags.

STORAGE

Planitop 540 can be stored for 12 months in original packaging and in a dry sheltered place.
The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Planitop 540 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.

Planitop 540: water-repellent cementitious skimming with a fine, natural-finish for internal and external concrete and render in compliance with EN 1504-2 and EN 998-1 standards

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey or white
Maximum size of aggregate (EN 1015-1) (mm):	0.4
Bulk density (kg/m^3):	1,200
Dry solids content (%):	100
APPLICATION DATA OF PRODUCT (at +20°C - 50% R.H.)	
Colour of mix:	grey or white
Mixing ratio:	100 parts of **Planitop 540** with 24-26 parts of water (6-6.5 litres of water per 25 kg bag of product)
Consistency of mix:	thixotropic-trowellable
Density of the mix (EN 1015-6) (kg/m^3):	1,600
Application temperature range:	from +5°C to +35°C
Pot life of mix (EN 1015-9):	approx. 1 hour
Maximum applicable thickness (mm):	3
Waiting time before laying ceramic coating:	4 days
Minimum waiting time before painting with coloured finishing products from the Silexcolor, Silancolor, Elastocolor, Quarzolite, Colorite or Dursilite ranges:	7 days

FINAL PERFORMANCE (25% mixing water)

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	15 (after 28 days)
Bond strength on concrete (substrate in MC 0.40) according to EN 1766 (MPa):	EN 1542	For rigid systems with no traffic: ≥ 1.0 with traffic: ≥ 2.0	> 1 (after 28 days)
Impermeability expressed as coefficient of permeability to free water (kg/m^2·h$^{0.5}$):	EN 1062-3	W < 0.1	W < 0.1 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 = 0.1 Class I (permeability to water vapour)
Performance characteristic	**Test method**	**Requirements according to EN 998-1**	**Performance of product**
Compressive strength after 28 days (MPa):	EN 1015-11	CS I (from 0.4 to 2.5)	Category CS IV
		CS II (from 1.5 to 5.0)	
		CS III (from 3.5 to 7.5)	
		CS IV (≥ 6)	
Bond strength to substrate (concrete) (MPa):	EN 1015-12	Declared value and failure mode (FP)	≥ 0.5 Failure mode (FP) = B
Capillary action water absorption [kg/(m^2·min$^{0.5}$)]:	EN 1015-18	W 0 (not specified) W1 (≤ 0.40) W2 (≤ 0.20)	Category W 2
Coefficient of permeability to water vapour (μ):	EN 1015-19	Declared value	≤ 25
Thermal conductivity ($\lambda_{10,dry}$) (W/m·K):	EN 1745	Chart value	0.45 (P = 50%)
Reaction to fire:	EN 13501-1	Euroclass	E

Finishing the Planitop 540 surface with a sponge float

Planitop 540

It is recommended to use protective gloves and goggles.
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 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

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