

Planitop G40 SP

Polymer modified cementitious repair mortar

WHERE TO USE

Repair of deteriorated vertical or horizontal concrete surfaces with mortar possessing medium mechanical performance characteristics.

Some application examples

- Repair of deteriorated concrete surfaces, especially overhead works on ceilings and soffits of beams, damaged by rusted reinforcing bars.
- Reconstruction of concrete coverings of reinforcing bars on large areas.
- Repair of surface irregularities including exposed aggregate, joints between new and old concrete, holes in formwork concrete, protruding steel, etc.

TECHNICAL CHARACTERISTICS

Planitop G40 SP is a premixed powdered mortar composed of cement, graded aggregates and special additives manufactured from a formula developed in the MAPEI research laboratories.

When mixed with water **Planitop G40 SP** forms an easy to apply lightweight thixotropic mortar that can be applied without sagging even in substantial thickness on overhead and vertical surfaces without formwork.

When fully cured, **Planitop G40 SP** has:

- moderate flexural and compressive strength;
- modulus of elasticity, thermal expansion coefficient and permeability coefficient similar to that of medium quality concrete;

- excellent adhesion to existing concrete surfaces provided they are saturated with water and reinforcing bars are first treated with **Mapefer**.

RECOMMENDATIONS

- Do not use **Planitop G40 SP** to repair structures subject to high compressive loads or high impact or abrasion: use **Mapegrout Thixotropic** instead.
- Do not use **Planitop G40 SP** on smooth concrete surfaces. Roughen the surface thoroughly and add reinforcing if necessary.
- Do not use **Planitop G40 SP** for anchoring (use **Mapefill SP**, **Mapefill GP** or **Planigrout 300 SP**).
- Do not pour **Planitop G40 SP** for pumping into formwork (use **Mapegrout Hi-Flow SP**).
- Do not add cement or admixtures to **Planitop G40 SP**.
- Do not add water once the mix has begun to set.
- Do not use **Planitop G40 SP** at temperatures lower than +5°C.
- Do not use **Planitop G40 SP** if the bag has been damaged or already opened.

HOW TO USE

Substrate preparation

- Remove the deteriorated and loose concrete until sound substrate is achieved. Any previous repair work that is no longer thoroughly bonded must also be removed.

Planitop G40 SP

- Sandblast/gritblast or power brush the reinforcing bars until they are free of dirt, rust, cement laitance, grease, oil, varnish or old paint.
- Saturate the substrate with water. Before repairing with **Planitop G40 SP**, remove the excess water on the substrate. To facilitate the elimination of free water use compressed air or a sponge if needed.

Preparing the mortar

- Pour into the mixer the amount of water (for every 25 kg of **Planitop G40 SP** powder, 5.0 kg for trowelling) needed to obtain the consistency required for the application.
- Start the mixer and slowly add the **Planitop G40 SP** to the water in a continuous flow.
- Mix for 1 to 2 minutes, and then make sure the mix is well blended. Scrape any unblended powder from the bottom and the sides of the mixer. Mix again for another 2 to 3 minutes.
- Depending on the amount needed, an electric drill with a mixer attachment may also be used. Mix at low speed (typical 300 rpm) to avoid entraining air.
- Avoid mixing manually unless unavoidable. If so, mix small amounts at a time for at least 5 to 6 minutes until a completely homogeneous paste is obtained. Keep in mind that mixing by hand requires a larger amount of water. This adversely affects several of the mortar's characteristics, including mechanical strength, shrinkage, impermeability, etc.

The expansion of **Planitop G40 SP** is calculated to compensate for plastic shrinkage.

Applying **Planitop G40 SP** without formwork in thickness of more than 2 cm should be done only after reinforcing and roughening the surface of the concrete, taking care to cover the reinforcement with a layer at least 1 cm thick.

Lesser thickness can be applied without reinforcing as long as the substrate has been substantially roughened to counter the expansion. The expansion phase ends during the first days of curing.

Application procedure

The mortar can be applied with a trowel or spray without formwork even on overhead or vertical surfaces in maximum thickness of 50 mm per layer.

Planitop G40 SP can also be sprayed on, using a suitable type of equipment. Reinforcing bars must be treated with **Mapefer** before applying **Planitop G40 SP**. Where necessary apply a second layer of **Planitop G40 SP** before the previous layer has finished setting (within 4 hours at +23°C).

The complete repair cycle calls for smoothing with **Mapefinish** or **Mapelastic**, and then painting with **Elastocolor**.

Precautions to be taken during application

- No special precautions need to be taken at temperatures near +20°C.
- In hot weather, protect the newly applied mortar from direct sunlight. Store in a cool place.
- At low temperatures, prepare the mix with water heated to approx. +20°C.
- After application, **Planitop G40 SP** must be carefully cured. To prevent the mix water from evaporating too quickly, which can cause surface cracks from plastic shrinkage, spray water on the surface for the first 24 hours of curing, or apply an anti-evaporation compound such as Mapei's **Biblock** or **Mapecure SP**.

Cleaning

Mortar that has not yet hardened can be removed from tools with water. After setting, cleaning is very difficult and can only be done mechanically.

CONSUMPTION

Approximately 15 kg/m² per 10 mm of thickness.

PACKAGING

25-kg bags.

STORAGE

Store in a dry, ventilated place with shelter.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Contains cement that in contact with sweat or other body fluids produces an irritant alkaline reaction and allergic reactions to those predisposed. It is highly recommended to use gloves and eye protection. For further information, refer to the Material Safety Data Sheet.

FOR PROFESSIONALS.

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
of the product are available
upon request**

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Appearance:	powder
Colour:	grey
Maximum diameter of aggregate (mm):	1
Dry solid content (%):	100
Chlorides:	absent
Storage life:	12 months in a dry and ventilated place in original packaging
Health hazard according to EC 1999/45:	irritant. Before using refer to the "Safety instructions for the preparation and application" paragraph and the information on the packaging and Safety Data Sheet.

APPLICATION PROPERTIES

Colour of mix:	grey
Mix ratio:	100 parts Planitop G40 SP with 18-20 parts water when applied with a trowel
Consistency of mix:	plastic-thixotropic
Flow (EN 1015/3) (mm):	140
Density of mix (kg/m³):	1,800
pH of mix:	> 12
Application temperature range:	from +5°C to +35°C
Workability of mix:	60 minutes (at +23°C and 50% R.H.)
Drying time between layers:	4 hours (at +23°C and 50% R.H.)
Maximum thickness per layer:	50 mm

FINAL PROPERTIES

Compressive strength (EN 196.1) (MPa): – after 1 day: – after 7 days: – after 28 days:	 15 30 40
Flexural strength (EN 196.1) (MPa): – after 1 day: – after 7 days: – after 28 days:	 4 5 7
Adhesion to damp concrete (EN 1015.12) (MPa): – after 28 days at +23°C and 50% R.H.: – after 7 days at +23°C and 50% R.H. and 21 days in water	 > 1.0 > 0.8
Shrinkage ASTM C531 (%):	0.1
Volume change ASTM C827 (%):	1

**Planitop
G40 SP**

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