

Planitop G40SP

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 G40SP 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 G40SP** 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 G40SP** 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 G40SP** to repair structures subject to high compressive loads or high impact or abrasion: use **Mapegrout Thixotropic** instead.
- Do not use **Planitop G40SP** on smooth concrete surfaces. Roughen the surface thoroughly and add reinforcing if necessary.
- Do not use **Planitop G40SP** for anchoring (use **Mapefill SP**, **Mapefill GP** or **Planigrout 300**).
- Do not pour **Planitop G40SP** for pumping into formwork (use **Mapegrout Hi-Flow**).
- Do not add cement or admixtures to **Planitop G40SP**.
- Do not add water once the mix has begun to set.
- Do not use **Planitop G40SP** at temperatures lower than +5°C.
- Do not use **Planitop G40SP** 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.

- Sandblast/gritbrush 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 G40SP**, remove the excess water on the substrate. To facilitate the elimination of free water used compressed air or a sponge if needed.

Preparing the mortar

- Pour into the mixer the amount of water (for every 25 kg of **Planitop G40SP** powder, 5.0 kg for trowelling) needed to obtain the consistency required for the application.
- Start the mixer and slowly add the **Planitop G40SP** 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 G40SP** is calculated to compensate for plastic shrinkage. For it to be effective, the substrate needs to be adequately reinforced with steel bars.

Applying **Planitop G40SP** 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 G40SP can also be sprayed on, using suitable type of equipment. Reinforcing bars must be treated with **Mapefer** before applying the **Planitop G40SP**. Where necessary apply a second layer of **Planitop G40SP** before the previous layer has finished setting (within 4 hours at +23°C). The complete repair cycle calls for smoothing with **Mapefinish** or **Mapelast**, 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. Use cold water to prepare the mix. Store in a cool place.
- At low temperatures, prepare the mix with water heated to approx. +20°C.
- After application, **Planitop G40SP** 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 E**.
- Do not use an anti-evaporation compound if the surface is to be subsequently covered.

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 18.5 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 99/45:	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 G40SP with 18-20 parts water when applied with a trowel
Consistency of mix:	plastic-thixotropic
Flow (EN 1015/3) (mm):	130
Density of mix (kg/l):	1.82 ± 0.07
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:	> 8 > 30 > 40
Flexural strength (EN 196.1) (MPa): – after 1 day: – after 7 days: – after 28 days:	> 4 > 5 > 7
Adhesion to damp concrete (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	> 2.0 > 2.0

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