

PLANITOP HB25

Polymer modified cementitious repair mortar



WHERE TO USE

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

Some application examples

- Repair of deteriorated concrete surfaces and soffits of beams, damaged by rusted reinforcing bars.
- Fast repairs to vertical, horizontal, overhead concrete or mortar surfaces.
- 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 HB25 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 HB25** forms an easy to apply thixotropic mortar that can be applied without sagging even in substantial thickness on overhead and vertical surfaces without formwork.

When fully cured, **Planitop HB25** has:

- Designed 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** or **Mapefer 1K**.

RECOMMENDATIONS

- Roughen the concrete surface prior to applying **Planitop HB25**.
- Use **Mapefill SP**, **Mapefill GP** or **Planigrout 300 SP** for anchoring applications.
- Do not use **Planitop HB25** for pumping into formwork (use **Mapegrout Hi-Flow SP**).
- Do not add cement or admixtures to **Planitop HB25**.
- Do not add water once the mix has begun to set.
- Do not use **Planitop HB25** if the bag has been damaged or already opened.

APPLICATION PROCEDURE

TECHNICAL INFORMATION FOR APPLICATION

Composition of mix:	100 kg of Planitop HB25 14-15.6 kg water
Maximum thickness per layer:	30 mm.
Application temperature range:	Surrounding temperature and substrate temperature from +5°C to +35°C
Pot life of mix:	30 minutes (at +23°C and 50% R.H.)
Drying time between layers:	4 hours (at +23°C and 50% R.H.)

Preparation of the substrate

- 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/gritblast or power brush the reinforcing bars until they are free of dirt, rust, cement laitance, grease, oil, varnish etc. Reinforcing bars must be treated with **Mapefer** or **Mapefer 1K** before applying **Planitop HB25**.
- Saturate the substrate with water. Before repairing with **Planitop HB25**, remove the excess water on the substrate. To facilitate the elimination of free water use compressed air or a sponge if needed.

Priming

- Mix **Planicrete** with cement in a ratio of 1 part to 2 parts by weight until a homogeneous slurry is achieved. Brush the slurry well onto the concrete surface prior to laying the mixed mortar (consumption of **Planicrete**: 2-5 Liters/m²)

Preparing the mortar

- Pour into the mixer the amount of water needed to obtain the consistency required for the application.
- Start the mixer and slowly add the **Planitop HB25** 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.
- Instructions for the preparation of the mortar to create samples for Lab testing are contained in the TECHNICAL DATA table.

Planitop HB25 is formulated to minimize plastic shrinkage.

Application of the mortar

The mortar can be applied with a trowel or spray without formwork even on overhead or vertical surfaces in maximum thickness of 30 mm per layer.

Planitop HB25 can also be sprayed, using a suitable type of equipment. Where necessary apply a second layer of **Planitop HB25** before the previous layer has finished setting (within 4 hours at +23°C).

A complete repair cycle would include repairing with **Planitop HB25**, smoothing with **Mapefinish** or **Mapelastic**, and painting with **Elastocolor**.

PRECAUTIONS TO BE TAKEN DURING APPLICATION



- In hot weather, protect the newly applied mortar from direct sunlight.
- After application, **Planitop HB25** 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 curing 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.

YIELD

Approximately 16.5 Liters / 25 kg bag of **Planitop HB25** when mixed with 3.5 Liters of water.

PACKAGING

25 kg bags.

STORAGE

Store in a dry, ventilated place.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

HKHA specification:	complies with HKHA TM1-TM8 (25 class)
Consistency:	powder
Colour:	grey
Maximum size of aggregate:	1 mm
Chloride content:	absent

TECHNICAL INFORMATION FOR THE PREPARATION OF THE PRODUCT

Composition of mix:	100 parts of Planitop HB25 with 15% of water
Preparation of the mix:	Mixing of the product according to EN 196-1

CHARACTERISTICS OF FRESH MIX (at +20°C - 50% R.H.)

Colour of mix:	grey
Consistency of mix:	plastic-thixotropic
Density of mix:	1950 kg/m ³

FINAL PERFORMANCE

According to curing defined in test methods

Performance characteristic	Test method	Performance of product
Compressive strength:		
- 7 days	HKHA/MTS	25 MPa
- 28 days		28 MPa
Flexural strength:		
- 7 days	BS 6319: Part 3	7.0 MPa
- 28 days		7.5 MPa
Tensile strength:		
- 7 days	HKHA/MTS	3.5 MPa
- 28 days		4.0 MPa
Bond strength:		
- 28 days	HKHA/MTS	4 MPa
Coutinho Ring Shrinkage Cracking:		
- 28 days	HKHA/MTS	Nil
Modulus of elasticity in compression:		
- 28 days	BS 6319: part 6	13 GPa
Air Permeability:		
- 35 days	HKHA/MTS	180 sec
Long term shrinkage:		
- 7 days	HKHA/MTS	680 µm/m
- 28 days		880 µm/m

NOTES:

Preparation of samples: compaction according to EN 196-1.

Curing samples at 23°C and 55% R.H. after 24h in the mould at 23°C and 95% R.H.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website, www.mapei.com.hk.

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 applications. 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.

The values declared in the TECHNICAL DATA table (typical values) were obtained in compliance with test methods and curing cycles defined in the technical standards referenced therein. Therefore please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com.hk

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