



Mapefill GP

General purpose non-shrink formable grout

WHERE TO USE

Recommended for grouting voids in structural elements such as: patching up honeycombs in concrete, filling gaps in precast elements, and grouting base plates and bridge bearings.

Some application examples

- Anchoring of mechanical equipments.
- Anchoring of steel bars.
- Filling of rigid joints between elements in concrete and precast concrete structures.
- Execution of underpinning.
- Pressure grouting of concrete structures.
- Grouting of machine baseplate, bridge bearing.
- Concrete repairs.

TECHNICAL CHARACTERISTICS

Mapefill GP is a preblended powdered grout based on high strength cement, graded aggregates with maximum 1 mm diameter and special additives formulated by the MAPEI research laboratories.

When mixed with water **Mapefill GP** is transformed into a very highly fluid grout without segregation that is able to fill intricate spaces.

Mapefill GP, due to its expansive action, is characterized by a total absence of shrinkage in the plastic (ASTM C827) and hardened phase, and develops early flexural and compressive strength.

Mapefill GP also has the following qualities:

- excellent impermeability to water;
- excellent adhesion to steel and concrete;
- excellent resistance to dynamic mechanical stress;
- modulus of elasticity and thermal expansion coefficient similar to those of high-quality concrete;
- **Mapefill GP** does not contain metal aggregates and aluminium dust;
- non-toxic;
- non-corrosive;
- chloride-free.

Mapefill GP meets all the main requirements for ENV 1504-9 (*“Products and systems for the protection and repair of concrete structures; definitions, requirements, quality control and conformity assessment. General principles for the use of products and systems”*) and the minimum requirements for EN 1504-6 (*“Anchoring steel reinforcement”*).

RECOMMENDATIONS

- Do not add cement or additives to **Mapefill GP**.
- Do not add water when the mix begins to set.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	powder
Colour:	grey
Max. diam. of aggregate (mm):	1
Dry solids content (%):	100

APPLICATION DATA

Colour of the mix:	grey
Mixing ratio: – fluid mix: – pourable mix:	25 kg of Mapefill GP with 3.25-3.88 litres of water 25 kg of Mapefill GP with 4.25-4.5 litres of water
Consistency:	fluid
Flow (ASTM C939):	< 60 sec. (using 18% water)
Density of the mix (kg/m ³):	2100-2300
pH of mix:	> 11.5
Application temperature range:	from +5°C to +40°C
Pot life:	60 min.

FINAL PERFORMANCE (18% blending water)

Performance characteristic	Test method	Minimum requirements according to EN 1504-6	Product performance
Compressive strength (MPa):	EN 12190	> 80% of the value declared by the manufacturer	20 (after 1 day) 45 (after 7 days) 55 (after 28 days)
Flexural strength (MPa):	EN 196/1	none	5 (after 1 day) 7 (after 7 days) 8 (after 28 days)
Free expansion max in the plastic phase (%):	ASTM 827	none	1
Drawing resistance of the steel rods - movement under a 75 kN load (mm):	EN 1881	< 0.6	< 0.21
Reaction to fire:	Euroclass	value declared by manufacturer	A1

- Do not use **Mapefill GP** if the bag is damaged or has already been opened.
- Do not apply **Mapefill GP** at temperatures below +5°C.

APPLICATION PROCEDURE

Preparing the substrate

- Remove all deteriorated concrete down to sound substrate.
- Scarify the surface and eliminate completely dust, oil, grease, debris and laitance.
- Soak the sides of the cavity to be filled with water. Before pouring, remove all excess water. To facilitate the elimination of unabsorbed water, use compressed air if necessary.

Preparing the grout

Pour up to 80% of the required water (see APPLICATION DATA) into a clean container and slowly add **Mapefill GP** continuously. Add the remaining water to achieve the desired mix. Mix for 1 to 2 minutes with a heavy duty mixer, remove from the sides of the concrete mixer any powder that is not well blended; remix for another 2 to 3 minutes until a fluid homogeneous paste is obtained. According to the quantities to be prepared, a grout mixer or a mechanical mixer can be used paying careful attention to avoid the formation of air bubbles. Mixing by hand is not recommended.

Application (anchoring)

Pour **Mapefill GP** from one side only in a continuous flow encouraging the discharge of air bubbles.

The use of **Mapefill GP** for connecting precast concrete elements and the filling of rigid joints is recommended for thickness up to 6 cm. It is not necessary to vibrate the grout mechanically; to facilitate the filling of spaces that are particularly difficult, use a wood list or an iron rod.

Grouting of thick section

For filling cavities that have dimensions greater than those indicated, please consult our Technical Service for Assistance.

INSTRUCTIONS TO BE OBSERVED BEFORE AND AFTER THE APPLICATION

- At temperatures around +20°C, no particular precautions are required.
- In hot weather it is advisable not to expose the material to sun and to use cold water in preparing the mix.
- In low temperatures it is advisable to use water that is at +20°C.
- After casting, **Mapefill GP** must be properly cured; the surface of grout exposed to the air must be protected from rapid water evaporation that can cause the formation of surface cracks due to plastic shrinkage especially in hot and/or windy weather.
- Spray water on the surface exposed to air the first 24 hours of curing or apply an anti-evaporant curing compound.

Cleaning

Fresh grout can be removed from tools with water. After curing, cleaning becomes very difficult and can only be done mechanically.

CONSUMPTION

Every 25 kg bag of **Mapefill GP** can yield 13-14 litres of grout.

PACKAGING

Mapefill GP is available in 25 kg paper bags.

STORAGE

Store in a dry, sheltered place in original, unopened packaging for 12 months.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Mapefill GP contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It can cause damage to eyes. During use wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention. For further and complete information about the safe use of our product please refer to the latest version of our 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

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

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