

MAPEFILL GP

General purpose non-shrink grout



WHERE TO USE

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

Some application examples

- Anchoring of mechanical equipment.
- 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 1 mm diameter and special additives with an expansive agent 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 agent, 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 iron 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 EN 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.
- 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

TECHNICAL INFORMATION FOR THE APPLICATION	
Mixing ratio: <ul style="list-style-type: none">- Trowellable mix- Pumpable mix- Pourable mix	25 kg of Mapefill GP with 3.25-3.75 litres of water 25 kg of Mapefill GP with 3.75-4.25 litres of water 25 kg of Mapefill GP with 4.25-4.75 litres of water
Permitted application temperature:	Ambient and substrate temperature from +5°C to +40°C
Pot life:	1 h (at +20°C)

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 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 continual 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.

PRECAUTIONS TO BE TAKEN DURING AND AFTER 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 surface exposed to air the first 24 hours of curing or apply an antievaporant.

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 bags.

STORAGE

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

SAFETY INSTRUCTIONS FOR THE 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.co.uk.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)			
PRODUCT IDENTITY			
Conformity with:	UKCA 1504-6 EN 1504-6		
Type:	CC		
Consistency:	powder		
Colour:	grey		
Max. diam. of aggregate (mm):	1		
Dry solids content (%):	100		
Chloride ions content: – minimum requirements $\leq 0.05\%$ - according to EN 1015-17 (%):	≤ 0.05		
TECHNICAL INFORMATION FOR PRODUCT PREPARATION			
Mixing ratio:	25 kg of Mapefill GP with 3.25-3.75 litres of water 25 kg of Mapefill GP with 3.75-4.25 litres of water 25 kg of Mapefill GP with 4.25-4.75 litres of water		
Preparation of the mix:	while mixing, add approx. $\frac{3}{4}$ of the total amount of water. Then add slowly the product and the remaining mixing water while continuing mixing. Mix under high shear for at least 2 minutes until a smooth even paste is obtained		
CHARACTERISTICS OF THE FRESH MIX (at +20°C – 50% R.H.)			
Colour of the mix:	grey		
Consistency of the mix:	Super fluid		
Flow (ASTM C 939)	< 60 sec.		
Density of the mix (kg/m ³):	2.200		
pH of the mix:	< 11,5		
Pot life of the mix:	About 1 h		
Bleeding:	absent		
Initial setting time:	7 h		
Final setting time:	8 h		
FINAL PERFORMANCE (Preparation of 40x40x160 mm samples: pour the mortar in the centre of each compartment filling it up)			
Performance characteristic	Test method	Requirements according to EN 1504-6	Product performance
Compressive strength (MPa):	EN 12190	none	< 20 (after 1 day) < 50 (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)
Volume change in the plastic phase:	ASTM C940	none	1
Drawing resistance of the steel rods - movement under a 75 kN load (mm):	EN 1881	< 0.6	< 0.6
Reaction to fire:	EN 13501-1	Euroclass	A1, A1 _{fl}

N.B.

Whilst we try to ensure that any advice, recommendations or information given in our literature is accurate and correct, we have no control over the circumstances in which our product is used. It is therefore important that the end users satisfy themselves that the product and conditions are suitable for the envisaged application. No warranty can be given or responsibility accepted other than, that the product supplied by us will meet our written specification. End users should ensure that our latest product data and safety information sheets have been consulted prior to use.

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

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Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.

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461-5-2022 (UK)

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