



# Mapefill GP

## General purpose non-shrink 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 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 rebar 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.

### 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.

# Mapecfill GP

- Do not apply **Mapecfill 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 **Mapecfill 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 **Mapecfill GP** from one side only in a continual flow encouraging the discharge of air bubbles.

The use of **Mapecfill 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.

### Addition of fine gravel

For filling cavities that have dimensions greater than those indicated, add gravel with a maximum diameter of 8 to 12 mm not exceeding 50% by weight of **Mapecfill GP**.

Because certain characteristics may vary, such as workability and strength, it is advisable to carry out preliminary tests at the work site or to consult our Technical Service.

### Instructions to be observed before 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, **Mapecfill 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 anti-evaporant.

### 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 **Mapecfill GP** can yield 13-14 litres of grout.

### PACKAGING

**Mapecfill GP** is available in 25 kg bags.

### STORAGE

Store in a dry, sheltered place in original, unopened packaging.

### SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

It contains cement that when in contact with sweat or other body fluids produces an irritant alkaline reaction and allergic reactions to those predisposed. Use gloves and protective goggles. For further information refer to the safety data sheet.

FOR PROFESSIONALS.

### WARNING

*Although the technical details and recommendations contained in this report 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.*

**All relevant references of the product are available upon request**

## TECHNICAL DATA (typical values)

In compliance with:

- EN 196-1: 1995
- ASTM C939 - 97
- ASTM C940 - 98
- ASTM C827 - 97

### PRODUCT IDENTITY

<b>Consistency:</b>	powder
<b>Colour:</b>	grey
<b>Max. diam. of aggregate (mm):</b>	1
<b>Dry solids content (%):</b>	100
<b>Storage:</b>	12 months in original packaging, in dry place
<b>Hazard classification according to EC 99/45:</b>	irritant. Before using refer to the "Safety Instructions for the preparation and application" paragraph and the information on the packing and safety data sheet
<b>Customs class:</b>	3824 50 90

### APPLICATION DATA

<b>Colour of the mix:</b>	grey
<b>Mixing ratio:</b> - trowellable mix: - pumpable mix: - pourable mix:	25 kg of <b>Mapefill GP</b> with 3.25-3.88 litres of water 25 kg of <b>Mapefill GP</b> with 3.75-4.25 litres of water 25 kg of <b>Mapefill GP</b> with 4.25-4.75 litres of water
<b>Consistency:</b>	fluid
<b>Flow (ASTM C939):</b>	< 60 sec. (using 18% water)
<b>Specific gravity (kg/dm<sup>3</sup>):</b>	2.10-2.30
<b>pH of mix:</b>	> 11.5
<b>Temperature range:</b>	from +5°C to +40°C
<b>Pot life:</b>	60 min.

### FINAL PERFORMANCES

<b>Mechanical characteristics:</b>	the tests of flexibility and resistance to compression were carried out on prisms of 4x4x4x16, made and cured according to EN 196-1. <b>Mapefill GP</b> was prepared using 18% water
<b>Initial setting:</b>	7 hr
<b>Final setting:</b>	8 hr
<b>Compressive strength (MPa):</b> - 1 day: - 7 days: - 28 days:	> 20 > 50 > 55
<b>Flexural strength (MPa):</b> - 1 day: - 7 days: - 28 days:	> 5 > 7 > 8
<b>Bleeding (ASTM C940):</b>	absent
<b>Volume expansion (%) (ASTM C827):</b>	1.0



**BUILDING THE FUTURE**

## MAPEI GROUP CERTIFIED MANAGEMENT SYSTEMS (Quality, Environment and Safety)

<p><b>CERTIQUALITY</b> No. 250</p>	<p>The Mapei Environmental Management System</p> <p><b>ISO 14001</b></p> <p>Plant in Robbiano di Medaglia CERTIQUALITY No. 1230</p>	<p>The Mapei Environmental Management System</p> <p><b>ISO 14001</b></p> <p>Plant in Latina CERTIQUALITY No. 6127</p>	<p><b>EMAS</b></p> <p>VERIFIED ENVIRONMENTAL MANAGEMENT SYSTEM Plant in Robbiano di Medaglia</p>	<p>OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS <b>OHSAS 18001</b></p> <p>CERTIFIED BY <b>CERTIQUALITY</b></p> <p>PLANT IN ROBBIANO DI MEDAGLIA SA Certificate No. 3506</p> <p><b>MAPEI</b></p>	<p><b>CERTIQUALITY</b> No. 3358</p>	<p><b>ITC</b> No. 03 0063 SJ</p>	
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