



# Mapecfill 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 baseplates, bridge bearings.
- Concrete repair.

### TECHNICAL CHARACTERISTICS

Mapecfill 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 **Mapecfill GP** is transformed into a very highly fluid grout without segregation that is able to fill intricate spaces.

**Mapecfill 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.

**Mapecfill GP** also has the following qualities:

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

### RECOMMENDATIONS

- Do not add cement or additives to **Mapecfill GP**.
- Do not add water when the mix begins to set.
- Do not use **Mapecfill GP** if the bag is damaged or has already been opened.

- 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 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 **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.

### **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 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**

**Mapecfill GP** is not hazardous according to the ruling standards on the classification of mixtures. It is recommended to take the usual precautions for handling chemical products. The Safety Data Sheet is available on request.

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 1999/45:</b>	none. 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 3.25-3.75 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 (using 19% water)
<b>Flow (ASTM C939):</b>	< 60 sec. (using 19% water)
<b>Specific gravity (kg/m<sup>3</sup>):</b>	2100-2300
<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 flexural and compressive strengths were carried out on prisms of 4x4x16, made and cured according to EN 196-1. <b>Mapefill GP</b> was prepared using 19% 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