

MAPEFILL GP ME

General purpose non-shrink cementitious grout



WHERE TO USE

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

Some application examples

- Anchoring of mechanical plant and machinery.
- Anchorage of steel bolts and other metallic fixtures.
- Filling of rigid joints between elements in concrete and precast concrete structures.
- Underpinning works.
- Pressure grouting of concrete structures.
- Grouting of machine baseplates.

TECHNICAL CHARACTERISTICS

Mapefill GP ME is a preblended powdered grout based on high-strength cement, graded aggregates and special additives with an expansive agent formulated by the MAPEI research laboratories.

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

Mapefill GP ME, due to its expansive agent, is characterized by a total absence of shrinkage in the plastic (ASTM C940) phase, and develops early flexural and compressive strength.

If **Mapefill GP ME** is prepared by only adding water, it must be cured under damp conditions, in order to guarantee that the product expansive properties develop completely and correctly.

Please note that, in common with all other high-quality cementitious based materials, curing of **Mapefill GP ME** is essential under extreme and arid climatic conditions and/or where correct or adequate curing cannot be maintained, the addition of **Mapecure SRA** is highly recommended in order to ensure the required properties are attained.

Mapecure SRA is considered a technologically advanced additive system that has the capability of slowing down the evaporation rate of the mixing water thereby promoting the development and efficiency of the hydration process. The addition of **Mapecure SRA** in proportions of up to 0.25% has the ability to reduce drying shrinkage by between 20% and 50%.

Mapefill GP ME also has the following qualities:

- excellent impermeability to water
- excellent adhesion to rebar and concrete
- excellent resistance to mechanical stress
- modulus of elasticity and thermal expansion coefficient similar to those of high-quality concrete
- non-toxic
- non-corrosive

- chloride free

RECOMMENDATIONS

- Do not add cement or additives to **Mapesfill GP ME**
- Do not add water once the mix has begun to set
- Do not use **Mapesfill GP ME** if the bag is damaged or has already been opened
- Do not apply **Mapesfill GP ME** at temperatures below +5°C

APPLICATION PROCEDURE

TECHNICAL INFORMATION FOR THE APPLICATION

Composition of the mix – Flowable mix:	25 kg of Mapesfill GP ME 3.8-3.9 kg of water
Composition of the mix – Fluid mix:	25 kg of Mapesfill GP ME 4.4-4.6 kg of water
Application temperature range:	Surrounding and substrate temperature from +5 °C to +50 °C
Pot life of mix:	approx. 1 hour (at +20°C)

Preparation of the substrate

Remove all deteriorated concrete down to sound substrate. Scarify the surface and completely eliminate dust, oil, grease, debris and laitance. Pre-soak the sides of the cavity or void by filling with water. Before pouring, ensure all excess water is removed. Use clean, compressed air if necessary.

Preparation of the grout

Pour up to 80% of the required mixing water (see APPLICATION DATA) into a clean, rust-free container and whilst mixing slowly add **Mapesfill GP ME** continuously. Add remaining water to achieve the desired consistency. Mix for 1 to 2 minutes, scrape the sides of the mixing container to remove any powder that is not well blended; remix for another 2 to 3 minutes until a fluid homogeneous mix 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 entraining of air bubbles. Mixing by hand is not recommended. Do not use a free fall mixer. The instructions for the preparation of the mortar to be used for samples preparation for laboratory tests are reported in the "Technical Data" table.

Application (anchoring)

Pour **Mapesfill GP ME** from one side only in a continual flow encouraging the discharge of air bubbles. It is not necessary to vibrate the grout mechanically. However, to facilitate the filling of spaces that are particularly difficult, use an iron rod or other suitable methods. When using **Mapesfill GP ME** for connecting precast concrete elements and filling of rigid joints, a thickness of 60 mm should not be exceeded.

Grouting of thick sections

For filling cavities greater than 100 mm, consult your local MAPEI Technical Services for assistance.

Instructions to be observed before and after application

In hot working conditions (greater than +35°C), the following precautions should be taken:

- Avoid direct exposure to sunlight for stored material and also mixing equipment.
- Use cool water (approx +20°C) for mixing.
- Prior to use, the product must be stored under shaded, ambient conditions no higher than +35°C.
- Avoid application during the hottest time of the day and/or direct sunlight.
- Mix only sufficient material that can be applied using available labour and equipment to ensure a continuous and uninterrupted application.

After casting, **Mapesfill GP ME** 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. Ensure curing in accordance with good concrete practice. Spray water on surface exposed to air the first 24 hours of curing or apply an anti-evaporant such as **Mapecure E** or **Mapecure S**.

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 ME** yields 13-14 litres of grout.

PACKAGING

Mapefill GP ME is available in 25 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Mapefill GP ME** has a shelf life of 12 months. If stored at high temperature and or high humidity conditions the shelf life may be reduced.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instruction on the safe use of our products can be found on the latest version of the Safety Data Sheet available on our website www.mapei.ae.

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION DATA

Consistency:	Powder
Colour:	grey
Maximum size of aggregate:	2 mm
Chloride ion content – minimum requirements $\leq 0,05\%$ - according to EN 1015-17%:	≤ 0.05

TECHNICAL INFORMATION FOR PRODUCT PREPARATION

Mixing ratio:	100 parts in weight of Mapefill GP ME with 18 % of water (Only for mechanical strengths: 100 parts in weight of Mapefill GP ME with 15 % of water)
Preparation of the mix:	While mixing, add approx. 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 homogeneous paste without lumps is obtained.
Curing condition:	CC (according to Annex A – EN 12190)

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

Colour of mix:	Grey
Consistency of mix:	Fluid

Flow (ASTM C939):	< 60 sec.
Density of mix:	2250 kg/m ³
Bleeding:	absent
Volume change in plastic phase (ASTM C 940):	1 %
Time for expansion:	
- start	10 min.
- finish	90 min.

FINAL PERFORMANCE

According to curing defined in the tests methods

Performance characteristic	Test method	Product performance	
Compressive strength: - 1 days - 7 days - 28 days	EN 12190	18% of water 20 MPa 55 MPa 70 MPa	15% of water 35 MPa 65 MPa 85 MPa
Flexural strength: - 1 days - 7 days - 28 days	EN 196-1	18% of water 5 MPa 7 MPa 8 MPa	15% of water 6 MPa 8 MPa 9 MPa
Modulus of elasticity	ASTM C 469	27000 MPa	-
Impermeability to water – depth of penetration:	EN 12390-8	< 5 mm	-

Note:

Sample preparation 40 x 40 x 160 mm: pour the mortar in the center of each compartment of the mould, taking care to fill it.

IMPORTANT NOTES

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 installers 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. The installer 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.ae

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into other project-related documents, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation. The most up-to-date TDS can be downloaded from our website www.mapei.ae.

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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

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