

Mapefill

High-flow non-shrink cementitious anchoring grout



WHERE TO USE

For precision anchoring of machinery and metallic structures.

Some application examples

- Anchoring mechanical instruments.
- Anchorage metallic carpentry.
- Filling rigid joints between elements in concrete and precast concrete structures.
- Execution of underpinning.

TECHNICAL CHARACTERISTICS

Mapefill is a preblended powdered grout composed of high strength cement, graded aggregates and special additives with an expansive agent formulated by the MAPEI research laboratories.

Mapefill when mixed with water is transformed into a fluid grout without segregation that is able to fill intricate spaces.

Mapefill, due to its expansive agent, is characterized by a total absence of shrinkage in its plastic phase (UNI norm 8996) and its hardened phase (UNI norm 8147) and develops very high early flexural and compressive strength.

Mapefill 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** does not contain metal aggregates and aluminium dust.

RECOMMENDATIONS

- Do not use **Mapefill** for structural repair by pouring in forms (use **MapegROUT Hi-Flow**).
- Do not use **Mapefill** for vertical applications by spray or trowel (use **MapegROUT Thixotropic**).
- Do not add cement or additives to **Mapefill**.
- Do not add water when the mix begins to set.
- Do not use **Mapefill** if the bag is damaged or has already been opened.
- Do not apply **Mapefill** 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, oils, grease, debris and laitance.
- Soak the sides of the cavity to be filled with water. Before pouring, wait for the excess water to evaporate. To facilitate the elimination of unabsorbed water, use compressed air and a sponge if necessary.

Mapefill



Repairing rigid joints of a highway bridge with Mapefill

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey
Max. diam. of aggregate (mm):	2.5
Specific gravity (kg/dm ³):	1.3
Dry solids content (%):	100
Storage:	12 months in original packaging, in dry place
Hazard classification according to EC 99/45:	irritant. Before use refer to the "Safety Instructions for the preparation and application" paragraph and the information on the packing and safety data sheet
Customs class:	3824 50 90
APPLICATION DATA	
Colour of the mix:	grey
Mixing ratio:	100 parts of Mapefill with 14÷16.4 parts of water
Consistency:	fluid
Specific gravity (kg/dm ³):	2.25
pH of mix:	> 12-13
Application temperature range:	from +5°C to +35°C
Pot life:	approximately 1h
FINAL PERFORMANCES	
Compressive strength (MPa) (according to EN 196/1 - Mixing water 15%):	
- 1 day:	32
- 7 days:	55
- 28 days:	70
Flexural strength (MPa):	
- 1 day:	5.0
- 7 days:	8.0
- 28 days:	9.0
Bleeding (according to UNI 8998/89):	absent
Free expansion in plastic phase (according to UNI 8996/89):	≥ 0.3%
Modulus of elasticity secant on compression (MPa) (according to UNI 6556):	
- after 28 days:	> 25000

FLUIDITY OF MAPEFILL IN PROPORTION TO WATER CONTENT

CONSISTENCY	FLOW (%) UNI 7044	FLOW IN CHANNEL (cm) UNI 8997	LITERS OF WATER PER 25 KG BAG
Plastic	≥ 90		3.5-3.7
Fluid	≥ 160		3.7-3.9
Very fluid		≥ 55	3.9-4.1

Preparing the grout

Pour in a concrete mixer the amount of water corresponding to the desired consistency (see Table). Start concrete mixer and slowly add **Mapectill** continuously.

Mix for 1-2 min., remove from the sides of the concrete mixer any powder that is not well blended; remix for another 2-3 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

Pour **Mapectill** from one side only in a continual flow encouraging the discharge of air bubbles into the appropriate area which should not be less than twice the diameter of the bar to be anchored.

The use of **Mapectill** for connecting precast concrete elements and the filling of rigid joints is recommended for thicknesses 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 8-10 mm not exceeding 30% by weight of **Mapectill**.

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 the 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, **Mapectill** 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.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Contains cement. We remind you that the cement in contact with sweat or other body fluids produces an irritant alkaline reaction and allergic reactions to those predisposed. Wear gloves and protective goggles. For further information refer to the safety data sheet.

Cleaning

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

CONSUMPTION

1.95 kg/l of cavity to be filled.

PACKAGING

Mapectill is available in 25 kg bags.

STORAGE

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

FOR PROFESSIONALS.

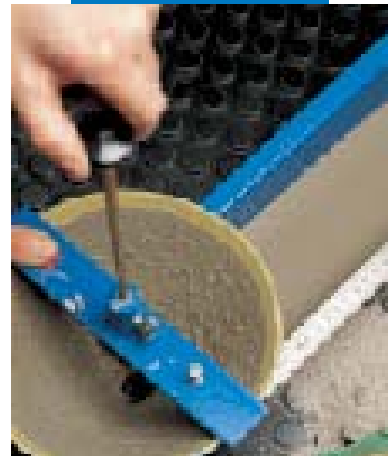
WARNING

N.B. 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**



Anchoring of metallic carpentry with Mapectill



Flow test recording to UNI 8997/89



Determination of retained expansion according to UNI 8147/80

Mapecfill



Free expansion in plastic phase according to UNI 8996/89



BUILDING THE FUTURE

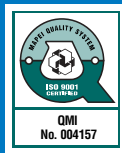
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