

MAPEFILL SP

Premium super flow non-shrink cementitious grout



WHERE TO USE

Mapefill SP is a premium super flow non-shrink cementitious grout for precision anchoring of machinery and metallic structures.

TYPICAL APPLICATIONS

- Anchoring of mechanical equipment
- Anchoring of metallic carpentry
- Filling rigid joints between elements in concrete and precast concrete structures
- Execution of underpinning
- Pressure grouting of concrete structures
- Grouting of machine base plates or bridge bearings

TECHNICAL CHARACTERISTICS

Mapefill SP is a pre-blended grey powdered grout, based on high strength cement, 1mm graded aggregate, special additives and an expansive agent. When mixed with water, **Mapefill SP** is transformed into a non segregated, exceptionally high fluid grout that is able to fill intricate spaces.

Due to its expansive agent, **Mapefill SP** is characterised by a total absence of shrinkage in the plastic (ASTM C827) and hardened phase and develops early flexural and compressive strength.

Mapefill SP also has the following qualities:

- Excellent impermeability to water
- Excellent adhesion to steel and concrete
- Modulus of elasticity and thermal expansion co-efficient similar to those of high-quality concrete
- Excellent resistance to dynamic mechanical stress
- Non-toxic
- Non-corrosive
- Chloride-free

RECOMMENDATIONS

- Do not add cement or additives to **Mapefill SP**
- Do not add water when the mix begins to set
- Do not use **Mapefill SP** if the bag is damaged or has already been opened
- Do not apply **Mapefill SP** at temperatures below +5°C.

APPLICATION PROCEDURE

Preparing the substrate

- Remove all deteriorated concrete from the substrate
- Scarify the surface and eliminate the presence of dust, oil, grease, debris and laitance
- Soak the sides of the cavity to be filled with water.

Before pouring, remove all excess water from the cavity. To facilitate the elimination of unabsorbed water, use compressed air if necessary.

Preparing the grout

Pour up to 80% of the required water into a clean container and then slowly and continuously add the Mapefill SP powder.

Water ratio

Pumpable mix - 20kg bag **Mapefill SP** with 3.0 – 3.4 litres of water

Pourable mix - 20kg bag **Mapefill SP** with 3.4 – 3.8 litres of water

Add the remaining water to achieve the desired mix. Mix for 1 to 2 minutes with a heavy duty mixer. Remove any powder from the sides of the mixing container to ensure that all the powder is blended. Remix for another 2 to 3 minutes until a fluid homogeneous paste is obtained.

Depending on 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.

POT LIFE

Pot life of the mix at +23°C is approximately one (1) hour.

APPLICATION

Anchoring (Pourable Mix ratio only)

Pour **Mapefill SP** from one side only in a continual flow encouraging the discharge of air bubbles.

The use of **Mapefill SP** for connecting precast concrete elements and the filling of rigid joints is recommended for a thickness up to 60mm. 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 your Mapei Technical Representative for assistance

IMPORTANT INSTRUCTIONS

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 the sun and to use cold water when preparing the mix
- In cold temperatures it is advisable to use water that is at +20°C
- After casting, **Mapefill SP** 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 the surface exposed to the air for the first 24 hours of curing or apply an anti-evaporant.

CLEANING

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

CONSUMPTION

Every 20kg bag of **Mapefill SP** can yield 10 – 11 litres of grout.

PACKAGING

Mapefill SP is available in 20kg bags.

STORAGE

Mapefill SP may be stored in a dry, sheltered place in original unopened packaging for up to 12 months. Note: protect from moisture

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefill SP 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 Material Safety Data Sheet is available upon request, or



TECHNICAL DATA (typical values) In compliance with:	
- EN 196: 1995	
- ASTM C 939 - 97	
- ASTM C 940 - 98	
- ASTM C 827 - 97	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey
Maximum diameter of aggregate (mm):	1
Dry solids content (%):	100
Chloride Ion content (%):	absent
Storage:	12 months in its original sealed packaging in a dry place
Hazard classification according to EC 1999/45:	none. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Material Safety Data Sheet.
APPLICATION DATA	
Colour of the mix:	grey
Mixing ratio: - pumpable - pourable	20 kg bag Mapectill SP with 3.0 - 3.4 litres of water 20 kg bag Mapectill SP with 3.4 - 3.8 litres of water
Consistency:	super-fluid
Flow (ASTM C 939):	20-30 (using 19% water)
Mass density of the mix (kg/m ³):	2100 - 2300
pH of mix:	> 11.5
Temperature range:	from +5°C to +40°C
Pot Life	60 minutes
FINAL PERFORMANCES	
Mechanical characteristics:	The tests of flexural and compressive strengths were carried out on prisms of 4 x 4 x 16, made and cured according to EN 196-1 Mapectill SP was prepared using 19% water
Compressive strength (N/mm ²): - 1 day - 7 days - 28 days	25 55 > 60
Flexural strength (N/mm ²): - 1 day - 7 days - 28 days	5 7 8
Bleeding (ASTM C940):	absent
Volume expansion (%) (ASTM C827):	1.0

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.

LEGAL NOTICE

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