MAPEGROUT ME 06

High strength, shrinkage compensated, super-flow micro-concrete.

WHERE TO USE

For structural repairs where particular thickness and the state of deterioration requires the use of high flow concrete and for, grouting of gaps with thicknesses ranging from 30 mm to 250 mm.

Some application examples

- Structural reinstatement of reinforced concrete beams and pillars.
- Reinstatement of floor beams and slabs after scarification of deteriorated areas.
- Restoring concrete floors (industrial, road, and airport).
- Grouting of machine baseplates, bridge bearing.
- Repair and reprofiling of pile tops.

TECHNICAL CHARACTERISTICS

Mapegrout ME06 is a ready-mixed powder composed of high-strength cement, selected aggregates, and special additives designed to be shrinkage compensated and prepared according to a formula developed in MAPEI research laboratories.

Mapegrout ME06, once mixed with water, becomes a fluid micro-concrete, suitable for pouring into formwork without segregation of the aggregates even when forming great thicknesses. Please note that in common with all other high-quality cementitious based materials, curing of **Mapegrout ME06** 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%.

Where concrete repairs are required, particularly as a result of chloride-induced corrosion of the reinforcing steel, the incorporation of **Mapeshield I** internal galvanic protection anodes should be considered or **Mapeshield E**, an external galvanic protection sheet that can be used to protect both repaired and unrepaired areas. Please consult the relevant technical data sheet in order to correctly select the type, size, and spacing of the anode system.

Mapegrout ME06, once cured, has the following properties:
- Very high flexural and compressive strength.
- Modulus of elasticity and coefficients of thermal expansions and permeability to water vapour similar to those of high-quality concrete.
- Low permeability.
- High adhesion to old concrete, providing it has been saturated with water beforehand, and reinforcing bars especially if they have been treated with **Mapefer** or **Mapefer 1K**, two-component and one component reinforcing steel primers.
- High abrasion resistance.

Mapegrout ME06 is recommended for voids up to 250 mm. Greater thicknesses may be achieved depending upon repair volume and location together with the configuration of reinforcement (Further technical recommendation can be obtained from the local Mapei representative).

RECOMMENDATIONS

• Do not use **Mapegrout ME06** on smooth concrete surfaces; roughen them well and insert reinforcing bars or dowels as needed.
• Do not use **Mapegrout ME06** for precision anchorages (use **Mapefill SP** or **Mapefil SP ME**).
• Do not use **Mapegrout ME06** for applications on vertical surfaces without formwork (use **Mapegrout Thixotropic** or any other suitable Mapei repair mortar).
• Do not add cement or any other additives to **Mapegrout ME06**.
• Do not add water after the mix has begun to set.
• Do not use **Mapegrout ME06** if its packing has been damaged or if it has been opened prior to use.

APPLICATION PROCEDURE

Preparing the substrate

• Remove degraded and or loose concrete until the substrate is solid, resistant, and rough. Any previous restoration work which is not soundly bonded should also be removed.
• Clean the concrete and reinforcing steel by sandblasting or other approved abrasive methods, to remove all dirt, rust, cement laitance, grease, oil, and previously applied paints.
• Pre-soak the substrate with water.
• Allow the excess water to evaporate before pouring; if necessary, use compressed air to facilitate the removal of the free-standing water. Seal drainage outlets and ensure formwork is secure to prevent movement and grout loss during placement.

Preparing the mortar

Pour 3.1-3.4 litres of potable grade water into a concrete mixer. Start the mixer and slowly and continuously pour in the **Mapegrout ME06**. Mix for 1-2 minutes: scrape any unmixed powder o↔ the sides of the mixer and remix for another 2-3 minutes until the mix is fluid and free from any lumps.
Depending on the quantity being prepared, a mortar machine or slow-speed drill with a suitable Mixing paddle can be used. Avoid excessive stirring of air into the mix. The expansion of **Mapegrout ME06** has been calculated to compensate for hygrometric shrinkage.
In order for the application to be effective, suitable grout-tight formwork must be provided and preferably water tested before final application.

Applying the fluid repair

To avoid air entrapment, pour **Mapegrout ME06** continuously into the lowest part of the prepared formwork, ensuring that adequate venting has been provided. Water from **Mapegrout ME06** must not be absorbed by the formwork, which should be pre-treated with a shutter-release oil (e.g. MAPEI's **Form Release Agent DMA 1000**).
Mapegrout ME06 does not need to be vibrated. Ensure all areas of the formwork have been filled. If necessary, use steel rods to tamp the micro-concrete into particularly difficult areas.

Precautions to be observed during the 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.
• Prior to use, the product must be stored under shaded, ambient conditions no higher than +35°C.
• Use cool water (approx. +20°C) for mixing.
• 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, **Mapegrout ME06** must be properly cured; the surface of the repair 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 air for the first 24 hours of curing or apply an anti-evaporant.
• After pouring **Mapegrout ME06**, we recommend that it is cured carefully, especially in hot or windy weather, to avoid the water evaporating too quickly and causing the formation of surface cracks due to plastic shrinkage. Spray water on the surface after 8-12 hours of laying the mortar and repeat the operation every 3-4 hours for at least the first 48 hours. As an alternative, after finishing the mortar, spread on a layer of **Mapecure E**, anti-evaporation treatment in water emulsion with a low-pressure pump, **Mapecure S,** solvent-based curing film for mortar and concrete, or **Elastocolor Primer**, a solvent-based, high-penetration primer for absorbent substrates and curing agent for repair mortars. **Mapecure E** and **Mapecure S**, as with all the best quality products in the same category which are currently available on the market, impede the bonding of successive dressing layers. Therefore, if a smoothing layer of paint is to be applied later, it must be completely removed by sandblasting. **Elastocolor Primer** is used as an anti-evaporation treatment, on the other hand, a final protective layer of **Elastocolor** Paint or **Elastocolor Rasante** may be applied directly on the treated surface without having to remove.

Cleaning

Before hardening, the slurry can be cleaned from tools with water. After setting, cleaning is very difficult and it can only be removed mechanically.

YIELD

12.3 litres/25 kg

PACKAGING

25 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Mapegrout ME06** 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

Mapegrout ME06 contains cement that when in contact with sweat or other body fluids causes an irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to the eyes. During use wear protective gloves and goggles and take the usual precautions for handling chemical products. If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention.
For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

TECHNICAL DATA (typical values)	
PRODUCT IDENTIFICATION	
Class according to EN 1504-3:	R4
Type:	CC
Consistency:	powder
Color:	grey
Maximum aggregate diameter (mm):	4
Density (kg/m³):	1300
Dry solids content (%):	100
APPLICATION DATA (at +20°C - 50% R.H.)	
Colour of the mix:	grey
Mixing Ratio:	one 25 kg bag of **Mapegrout ME06** with 3.1-3.4 litres of water
Consistency of mix:	fluid
Density of mix (kg/m³):	2300
pH of the mix:	12.5
Application temperature range:	from +5°C to +50°C
Pot life at +23°C and 50% R.H.:	approximately 1 hour
Application thickness (mm):	250
FINAL PERFORMANCE (at +20°C - mixing water at 12.5%)	

Mechanical Characteristic: (according to EN 196-1) Compressive strength N/mm²): – after 1 day: – after 7 days: – after 28 days:	 20 60 80
Flexural strength (according to EN 196) (N/mm²) – after 1 day: – after 7 days: – after 28 days:	 6 9 10
Adhesion to the substrate (according to EN 1542) (measured by pull-o- test on damp concrete) (N/ mm²) – after 28 days:	 > 2 (concrete failure)
Rapid Chloride Permeability (Coulombs) according to ASTM C1202:	< 1000
Drying shrinkage according to ASTM C157-93: - after 7 days: - after 28 days:	 < 300 microstrain < 500 microstrain

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.com

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.com.

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