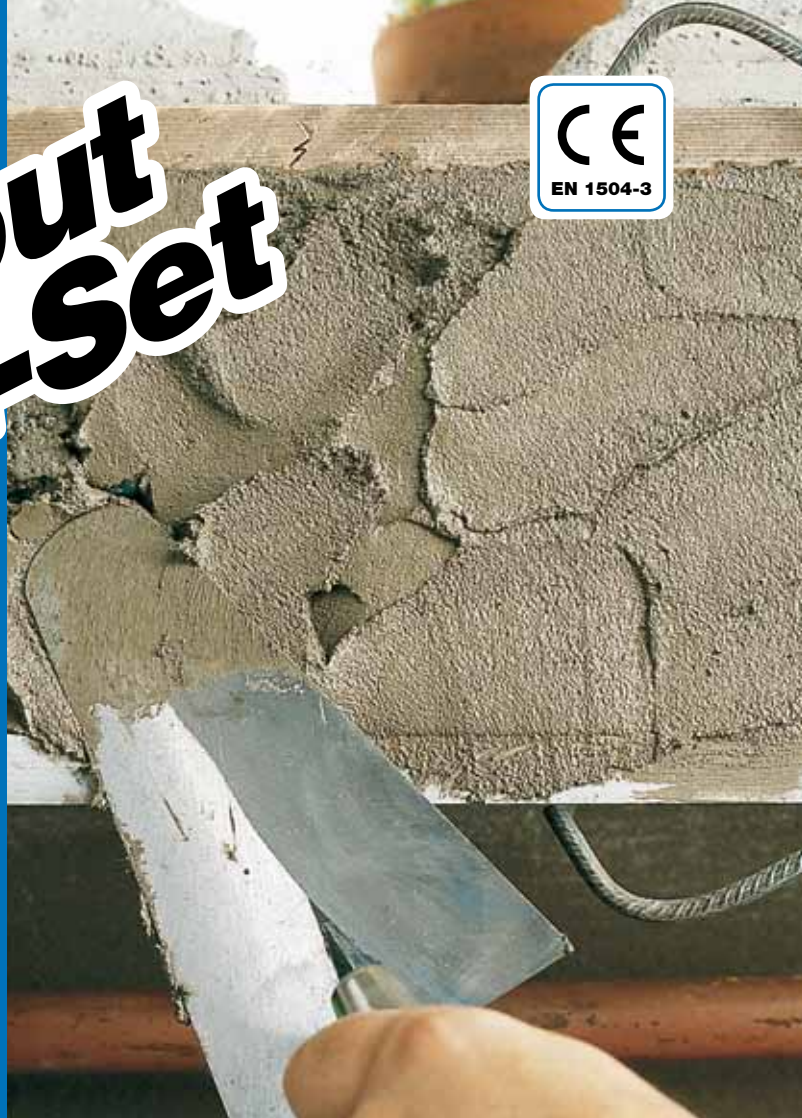




Mapegrout Fast-Set

Fast-setting and drying, shrinkage-compensated, fibre-reinforced mortar for concrete repair



WHERE TO USE

Repairing exterior vertical and horizontal deteriorated concrete surfaces.

Some application examples

- Restoration of deteriorated concrete structures, edges of pillars, beams, and balconies damaged by the oxidation of reinforcing rods.
- Fast repair of industrial concrete flooring.
- Sealing surface cracks (in all types of buildings) in concrete and cement renders.
- Fast smoothing of surface defects in concrete pour, such as aggregate bridging, shrinkage joints, formwork spacer holes, exposed rods, etc.
- Assembly of concrete pipes.
- Repair of damaged edges of concrete pipes.
- Pointing between bricks on structures to be waterproofed with **Idrosilex Pronto**.

TECHNICAL CHARACTERISTICS

Mapegrout Fast-Set is a pre-blended powder made of special hydraulic binders, selected aggregates, special additives and synthetic fibres in a formula developed in MAPEI's Research Laboratories.

Mixed with water, **Mapegrout Fast-Set** becomes an easily trowellable mortar with excellent thixotropic

properties enabling it to be applied up to 2-2.5 cm thick on vertical surfaces without slump.

Mapegrout Fast-Set sets in 30 minutes and can be subjected to loads a few hours after application.

Once hardened, **Mapegrout Fast-Set** has the following properties:

- high compressive and flexural strength;
- excellent impermeability to water;
- excellent adhesion to old concrete;
- good resistance to wear.

Mapegrout Fast-Set meets the requirements defined by EN 1504-9 (*"Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - General principles for the use of products and systems"*) and the minimum requirements claimed by EN 1504-3 (*"Structural and non structural repair"*) for structural mortars of class R3.

RECOMMENDATIONS

- Do not add more water to the mix after setting has begun in the attempt to make it trowellable again.
- Do not add cement, lime, gypsum or admixtures to **Mapegrout Fast-Set**.
- Do not use **Mapegrout Fast-Set** for restoration

work to be done with plaster sprayers (use **Mapegrout Thixotropic**).

- Do not use **Mapegrout Fast-Set** for precision anchors (use **Mapefill** or **Mapefill R**).
- Do not apply **Mapegrout Fast-Set** to dry or dirty surfaces.
- Do not leave bags of **Mapegrout Fast-Set** exposed to direct sun before use.
- Do not apply **Mapegrout Fast-Set** if temperature is lower than +5°C.
- Do not use **Mapegrout Fast-Set** if the bag has been damaged or previously opened.
- After hardening, **Mapegrout Fast-Set** could change colour, therefore its use is not recommended when it is left as a façade finish.

APPLICATION PROCEDURE

Preparing the substrate

A) Restoring deteriorated concrete structures
Remove all damaged and loose concrete until the substrate is sound, strong and rough. Any previous repair work not adhering perfectly should be removed.

Clean concrete and reinforcing rods from dust, rust, cement laitance, grease, oil and paint by sandblasting or by careful brushing if surfaces are not excessively large. Protect all reinforcing rods with **Mapefer** or **Mapefer 1K**.

Wet substrate with water. Wait for any excess water to evaporate before applying **Mapegrout Fast-Set**. Compressed air can be used, if necessary, to facilitate removal of unabsorbed water. For better adhesion, it is advisable to brush on a coat of bonding slurry composed of 1 part of **Mapegrout Fast-Set** with 0.24-0.25 parts of water.

B) Repairing concrete flooring

Remove all damaged or loose concrete. Then chisel the edges of the repair area at right angles and clean it of all residues. Wet the substrate with water. If the substrate is particularly absorbent, brush on a coat of bonding slurry composed of 1 part **Mapegrout Fast-Set** with 0.24-0.25 parts water to avoid puddles.

Preparing the mix

While stirring, pour a 25-kg bag of **Mapegrout Fast-Set** into a container holding 3.75-4 litres (15-16%) of clean water and mix with an electric mixer until the product is smooth with no lumps. Given **Mapegrout Fast-Set**'s quick setting time, prepare only sufficient product for use within 10 minutes (at +20°C).

Applying the mix

A) Restoring deteriorated concrete structures
Apply the mix with a float or a trowel to the freshly slurried surface. Maximum thickness is 2-2.5 cm per layer. When particularly deep areas are to be repaired, apply several

layers of **Mapegrout Fast-Set** at intervals of approx. 15 minutes.

Once the repair work is finished, keep the restored patches damp for at least 24 hours.

Mapegrout Fast-Set can be painted with the products of the **Elastocolor** range after 3 days at +20°C.

B) Repairing concrete flooring

Lay **Mapegrout Fast-Set** with a trowel on the freshly slurried surface and finish with a plastering trowel.

After the application, protect the repaired surface from rapid water evaporation with sheets of polyethylene or wet bags.

Mapegrout Fast-Set can be set for light traffic after approx. 3 hours at +20°C.

PRECAUTIONS TO BE TAKEN DURING PREPARATION

No special precautions need be taken when temperature is approx. +20°C.

In warm weather do not expose material to direct sun and use cold water for preparing the mix.

In low temperatures, the water should be approx. +20°C and the material should be stored in heated areas because initial setting and curing is delayed at low temperatures.

N.B. - After hardening, **Mapegrout Fast-Set** could change colour, therefore its use is not recommended when it is left as a façade finish.

Cleaning

Before it hardens, **Mapegrout Fast-Set** can be cleaned from tools with water. After setting, residues can be removed by mechanical means.

CONSUMPTION

18 kg/m² per cm of thickness.

PACKAGING

25 kg bags.

STORAGE

Mapegrout Fast-Set may be stored for up to 12 months in its original packaging. The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47. The product is available in special 25 kg vacuum-packed polyethylene bags which may be stored outside for the entire construction phase of the site. Rain has no effect on its characteristics.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapegrout Fast-Set is irritant, it contains cement that when in contact with sweat or other body fluids causes irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes. In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention. It is recommended to use protective gloves and goggles.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Strength class according to EN 1504-3:	R3
Type:	PCC
Consistency:	powder
Colour:	grey
Maximum aggregate size (mm):	1
Bulk density (kg/m ³):	1,200
Dry solids content (%):	100
Chloride ions content - minimum requirements $\leq 0.05\%$ - according to EN 1015-17 (%):	≤ 0.05

PRODUCT APPLICATION DATA (at +20°C - 50% R.H.)

Colour of mix:	grey
Mixing ratio:	100 parts of Mapegrout Fast-Set with 15-16 parts water (approx. 3.75-4 l per 25 kg bag)
Consistency of mix:	thixotropic
Density of mix (kg/m ³):	2,150
pH of mix:	> 12
Application temperature range:	from +5°C to +35°C
Pot life of mix:	approx. 10 minutes
Setting time:	< 30 minutes
Set to light foot traffic:	2-3 h
Waiting time between layers:	approx. 15 minutes

FINAL PERFORMANCE (15.5% blending water)

Performance characteristic	Test method	Requirements according to EN 1504-3 for R3 class mortar	Product performance
Compressive strength (MPa):	EN 12190	≥ 25 (after 28 days)	> 10 (after 3 hours) > 20 (after 1 day) > 28 (after 7 days) > 40 (after 28 days)
Flexural strength (MPa):	EN 196/1	not required	> 4.0 (after 3 hours) > 4.5 (after 1 day) > 5.0 (after 7 days) > 8.0 (after 28 days)
Modulus of elasticity in compression (GPa):	EN 13412	≥ 15 (after 28 days)	24 (after 28 days)
Bond strength to concrete (MC 0.40 type substrate water/cement ratio = 0.40) according to EN 1766 (MPa):	EN 1542	≥ 1.5 (after 28 days)	> 1.5 (after 28 days)
Capillary absorption (kg/m ² ·h ^{0.5}):	EN 13057	≤ 0.5	< 0.05
Thermal compatibility to freeze-thaw cycles with deicing salts measured as according to EN 1542 (MPa):	EN 13687/1	≥ 1.5 (after 50 cycles)	> 1.5
Reaction to fire:	EN 13501-1	Euroclass	A1



For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

WARNING

Although the technical details and recommendations contained in this product data sheet 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 application; 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.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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