

Mapegrout T60

One-component sulphate-resistant, fibre-reinforced thixotropic grout for the repair of concrete



WHERE TO USE

Repair of degraded concrete structures or reinforced concrete structures subject to sulphate attack.

Some application examples

- Canal linings, hydraulic works, and tunnels that require resistance to sulphate attack.
- Repair and reconstruction of concrete coverings damaged by corroded reinforcing bars.
- Filling of rigid joints (e.g. between base and column, cracks in floors, joints between walls, etc.).
- Repair of precast structures.

TECHNICAL CHARACTERISTICS

Mapegrout T60 is a one-component pre-blended thixotropic cement-based mortar composed of sulphate-resistant hydraulic binders, synthetic polyacrylonitrile fibres, organic corrosion inhibitors, select aggregate and special water-retaining additives developed in the Mapei research laboratories.

RECOMMENDATIONS

- Do not use **Mapegrout T60** on smooth surfaces: roughen the surface thoroughly and add rebars if necessary.
- Do not use cement or admixtures with **Mapegrout T60**.
- Do not pour **Mapegrout T60** into forms (use **Mapegrout Hi-Flow**).

- Do not use **Mapegrout T60** for anchoring (use **Mapefill**).

HOW TO USE

Substrate preparation

- Remove degraded and loose concrete down to the solid, resistant and roughened part of the substrate. Any previous repair work that is no longer thoroughly bonded must also be removed.
- Sandblast the concrete and the reinforcing bars until they are free of dirt, rust, cement laitance, grease, oil, varnish or old paint.
- Saturate the substrate with water.
- Before repairing with **Mapegrout T60**, wait until the excess water has evaporated. To facilitate the elimination of free water, used compressed air or a sponge if needed.

Preparing the grout

Pour into the mixer the amount of water needed to obtain the consistency required for the application.

Application	Litres of water per 25-kg bag
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Trowel	3.9 to 4.1
Spray	4.0 to 4.3

- Start the mixer and slowly add the **Mapegrout T60** to the water in a continuous flow.

Mapegrout T60

- Mix for 1 to 2 minutes, then check to make sure the mix is well blended. Scrape any unmixed powder from the bottom and the sides of the mixer. Mix again for another 2 to 3 minutes.
- Depending on the amount needed, a mortar mixer or a drill with an agitator attachment may also be used. Mix at low speed to avoid entraining air.
- Avoid mixing manually unless absolutely necessary. If so, mix small amounts at a time for at least 5 to 6 minutes until a completely homogeneous paste is obtained.

Keep in mind that mixing by hand requires a larger amount of water. This adversely affects several of the mortar's properties, including mechanical strength, shrinkage, watertightness, etc.

Mapegrout T60 remains workable for approx. 1 hour at +20°C.

The expansion of **Mapegrout T60** is calculated to compensate for hygrometric shrinkage. For it to be effective, the expansion needs to be restrained by rebars or restraints inserted into the substrate.

Buildups of **Mapegrout T60** without restraints in thicknesses of more than 2 cm should be done only after inserting rebars and roughening the surface of the concrete, taking care to cover the reinforcement with a layer at least 2 cm thick.

Lesser thicknesses can be applied without rebars as long as the substrate has been thoroughly roughened to counter the expansion. The expansion phase ends during the first days of hardening.

Application procedure

The grout can be applied with a trowel or spray without formwork even on vertical surfaces or soffits.

Mapegrout T60 can also be sprayed on, using piston or scroll action sprayers (e.g. Turbosol, Putzmeister or Continental, etc.-type equipment), or the Putzmeister MP25 continuous mixing sprayer, setting the water level control at about 300 litres per hour.

For repairing concrete surfaces (e.g. balconies, columns, beams, etc.) we recommend treating the rebars with **Mapefer** after sanding them.

When further coats of **Mapegrout T60** are needed, leave the previous coat rough and wet the surface with water.

Precautions to be taken during application

- After applying, we recommend that the **Mapegrout T60** be carefully cured to prevent the water from evaporating too quickly, especially in hot weather, causing the surface to crack from plastic shrinkage. Spray water on the surface for the first 24 hours of curing, or apply an anti-evaporation compound.
- An anti-evaporation compound may only be used if no covering is subsequently planned for the surface, and in any case it must be subsequently removed by sanding.

Cleaning

Grout that has not yet hardened can be removed from tools with water. After setting, cleaning is very difficult and can only be done mechanically.

CONSUMPTION

Approx. 18.5 kg/m² per cm of thickness if used pure and 14.5 kg/m² if used mixed with 30% of 3 to 6÷8-mm aggregate.

PACKAGING

25-kg bags and 1500-kg "Big Bags".

STORAGE

Store in a dry, sheltered place.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Contains cement that, when in contact with sweat or other body fluids, produces an irritant alkaline reaction.

It is highly recommended to use gloves and eye protection.

For further information refer to the safety data sheet.

FOR PROFESSIONALS.

WARNING

N.B. - Although the technical details and recommendations contained in this product 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.

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION:

Colour:	grey
Consistency:	powder
Apparent specific weight:	1.2 kg/l
Maximum diameter of aggregate:	2.5 mm
Solids content:	100%
Storage:	12 months in a dry place in original packaging
Hazard classification according to EEC 88/379:	none
Customs class:	3824 50 90

APPLICATION DATA:

Colour of mix:	grey
Water content of mix:	15 ÷ 17%
Consistency of mix:	thixotropic
Flow (UNI 7044/72):	40 ÷ 80%
Density of mix:	2.1 ÷ 2.2 kg/l
Application temperature:	from +2°C to +35°C
Workability of mix (at +23°C - 50% R.H.):	1 hour
Inflammability:	no

FINAL PERFORMANCE DATA

Mechanical characteristics:	Tests of compressive and flexural strength were performed on mortar samples 4x4x16 cm prepared and cured in compliance with EN 196/1 (mixed with 17% water - curing +20°C / 95% R.H.).
Compressive strength - after 1 day: - after 7 days: - after 28 days:	> 20 MPa > 45 MPa > 60 MPa
Flexural strength - after 1 day: - after 7 days: - after 28 days:	> 5 MPa > 8 MPa > 9 MPa
Static modulus of elasticity under compression - after 28 days:	27,000-31,000 MPa
Adhesion to substrate (pull-out) measured on concrete - after 7 days at +23°C - 50% R.H.: - after 28 days at +23°C - 50% R.H.: - after 7 days at +23°C - 50% R.H. + 21 days in water at +20°C:	> 2 MPa > 2 MPa > 2 MPa
Adhesion to "Italian Highway Authority wedges" - after 7 days at +23°C - 50% R.H.: - after 28 days at +23°C - 50% R.H.:	> 4.0 > 5.5
Restrained expansion (UNI 8147) - after 7 days:	> 400 mm/m
Restrained expansion (UNI 8147) - after 28 days:	increase in expansion no greater than 30% over expansion measured after 7 days

The mechanical strength of **Mapegrout T60** with the addition of aggregate 30% by weight of the grout remains the same as the mechanical strength of the grout without the addition of aggregate.



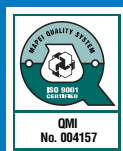
MAPEI GROUP CERTIFIED MANAGEMENT SYSTEMS (Quality, Environment & Safety)



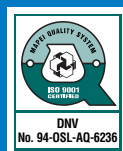
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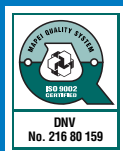
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