

MAPEGROUT TX 60 ME

Single component, thixotropic, high strength, fibre-reinforced structural repair mortar



WHERE TO USE

Repairs to both new and old concrete structures or reinforced concrete elements subject to aggressive atmospheric conditions, including chloride and sulphate attack.

Some application examples

- Repairs to honeycombing and other defects in all structural elements, such as beams, columns, walls and slabs in high-rise buildings.
- Repairs to marine and other civil structures, water production, treatment, intake and outfall structures and sewerage facilities.
- Tunnels, pipes and other below-ground construction.
- Cooling towers and chimneys and other industrial environments.
- Repairs to industrial facilities, including oil and gas, marine and other structures operating under extreme working environments.
- Water retaining and excluding structures, tunnels and canal linings.
- Filling of rigid joints (between base and column, cracks in floors, joints between walls, etc.).
- Repair of precast concrete elements.

TECHNICAL CHARACTERISTICS

Mapegrout TX 60 ME is a single-component, thixotropic cement-based mortar formulated to compensate for hygrometric shrinkage. **Mapegrout TX 60 ME** is composed of pre-blended hydraulic binders, synthetic polyacrylonitrile fibres, selected aggregates and special water-retaining additives developed in the MAPEI Research Laboratories. Under extreme 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 performance criteria 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 efficiency of the hydration process. The addition of **Mapecure SRA** in proportions of up to 0.25% by weight has the ability to reduce drying shrinkage 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**, external galvanic protection sheets, which can be used to protect both repaired and unrepaired areas. Please consult the relevant Technical Data Sheet to correctly select the type, size and spacing of the anodes system.

Mapegrout TX 60 ME 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 R4.

RECOMMENDATIONS

- Do not use **Mapegrout TX 60 ME** on smooth surfaces; roughen the surface and add rebars where necessary.
- Do not add cement or admixtures to **Mapegrout TX 60 ME**.
- Do not pour **Mapegrout TX 60 ME** into forms (use **Mapegrout ME 06** or **Mapegrout ME 05**).
- Do not use **Mapegrout TX 60 ME** for anchoring (use **Mapefill GP ME**, **Mapefill SP ME** or **Planigrout 300** range).
- Do not use damaged or previously opened **Mapegrout TX 60 ME** bags.

APPLICATION PROCEDURES

TECHNICAL INFORMATION FOR APPLICATION

Composition of the mix:	100 kg of Mapegrout TX 60 ME 16 - 17 kg of water 0.25 % Mapecure SRA (optional*)
Coat thickness:	from 10 to 60 mm.
Application temperature range:	Substrate and surrounding temperature from +5°C to +40°C
Pot life of mix:	approx. 60 min. (at +20°C)
Waiting time between coats:	max. 1-2h

**To allow expansion in air*

Preparation of the substrate

- Remove degraded and/or loose concrete until a sound and solid substrate is achieved.
- Where necessary clean the concrete and reinforcing steel by sweep blasting or other approved mechanical methods, to remove all dirt, any corrosion products, cement laitance, grease, oil, any previous coatings, and other deleterious elements.
- Any previous repairs that are no longer thoroughly bonded must also be removed.
- Pre-soak the substrate with clean, potable-grade water to obtain a saturated surface dry (SSD) condition.

Preparation of the mortar

Pour into the mixer or a rust-free mixing vessel, the pre-gauged amount of potable grade water needed to obtain the required consistency.

Application litres of water per 25 kg

Trowel 4.00-4.25

Spray 4.00-4.50

- Start the mixer and slowly add the complete bag of **Mapegrout TX 60 ME** to the water, in a continuous flow.
- Mix for 1 to 2 minutes; check to ensure the mix is well blended. Scrape any unmixed powder from the bottom and the sides of the mixer. Mix again for a further 2 to 3 minutes.
- For improved open-air curing of the mortar, it is recommended to add **Mapecure SRA** at the end of the mixing phase at a dosage of 0.25% by weight of the mortar (0.25 kg to every 100 kg of **Mapegrout TX 60 ME**).
- Depending on the amount of mixed material required, a mortar mixer or a slow-speed heavy-duty drill with an appropriate mixing paddle may also be used. Mix at low speed (300 rpm) to avoid entraining air.
- Avoid mixing manually, as this may adversely affect several of the mortar's characteristics, including mechanical strength, shrinkage, impermeability, etc.
- **Mapegrout TX 60 ME** remains workable for approx. 1 hour at +20°C.
- **Mapegrout TX 60 ME** can be applied at a minimum thickness of 10 mm up to 60 mm in a single layer. Additional buildup can be achieved subject to the repair area geometry, location, and roughness of the concrete substrate.

Instructions for the preparation of mortar samples for lab testing are reported in the TECHNICAL DATA section.

Reinforcement steel preparation

For repairing concrete elements damaged due to reinforcement corrosion, it is recommended to use mechanical means of abrasion in order to remove the corrosion deposits from the exposed reinforcement prior to coating with **Mapefer** or **Mapefer 1K**.

APPLICATION

Hand application

Mapegrout TX 60 ME may be applied by trowel to vertical surfaces in layers up to 60 mm thick, or for overhead applications in layers up to 30 mm thick, without the use of formwork.

Where a higher buildup of **Mapegrout TX 60 ME** is required, leave the surface of the previous layer in a rough condition, allow it to harden, then wet the surface with water to SSD condition, prior to applying the second layer.

Spray application

Mapegrout TX 60 ME can be spray applied using a suitable piston or worm-screw type rendering machine, such as a Turbosol or Putzmeister. Do not use a continuous mixing type rendering machine.

PRECAUTIONS TO BE TAKEN DURING APPLICATION

In hot working conditions, 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 in a shaded area out of direct sunlight.
- Use cool water for mixing.
- Avoid application during the hottest time of the day and/or in direct sunlight.
- Mix only sufficient material that can be applied using available labour and equipment.

At low temperatures, prepare the mix with water heated to approx. +20°C.

Curing

In accordance with good concrete practice, all exposed surfaces of **Mapegrout TX 60 ME** must be immediately cured after application, using wet hessian covered with polythene sheeting; failure to cure the open surfaces can cause the formation of cracks due to plastic shrinkage, especially in hot and/or windy climatic conditions; **Mapecure SRA** should also be considered.

Spray water onto the surface of the application within the first 8-12 hours and repeat the operation for at least the first 48 hours. As an alternative, after finishing the application of the material, apply a coat of curing membranes such as **Mapecure E**, **Mapecure S**, or **Elastocolor Primer**. Film-forming curing membranes can impair the adhesion of subsequent finishes; please consult your local MAPEI technical representative for further advice.

CLEANING

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

CONSUMPTION

13.0 litres / 25 kg

PACKAGING

25 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Mapegrout TX 60 ME** has a shelf life of 12 months. If stored at high temperatures and/or high humidity conditions, the shelf life may be reduced.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instruction on the safe use of our products can be found on the latest version of the Safety Data Sheet available on our website www.mapei.ae.

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION

Class according to EN 1504-3:	R4
Type according to EN 1504-1:	CC
Consistency:	powder
Colour:	grey
Maximum size of aggregate:	2.5 mm
Ion-chloride content according to EN 1015-17: (minimum requirement according to EN 1504 ≤ 0.05%)	≤ 0.05 %

TECHNICAL INFORMATION FOR THE PREPARATION OF THE PRODUCT

Composition of the mix:	100 parts by weight of Mapegrout TX 60 ME with 16-17% of water
Preparation of mix:	Mixing of product according to EN 196-1

CHARACTERISTICS OF FRESH MIX (at +20°C - 50% R.H.)

Colour of mix:	grey
Consistency of mix:	Thixotropic
Density of mix:	2230 kg/m ³

FINAL PERFORMANCES according to curing times defined in test methods

Performance characteristic	Test method	Requirements EN 1504-3 R4	Product performance
Compressive strength: - 1 day - 7 days - 28 days	EN 12190	- - ≥ 45 MPa	> 20 MPa > 45 MPa > 60 MPa
Flexural strength: - 1 day - 7 days - 28 days	EN 196-1	Not required	> 5 MPa > 6 MPa > 8 MPa
Direct tensile adhesion to concrete:	EN 1542	≥ 2.0 MPa	> 2.0 MPa

NOTES: Preparation of samples: compaction according to EN 196-1.

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 specifications. 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.ae.

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.ae.

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.

1306-4-2023 (UAE)

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