MAPEGROUT T80

Single component sulphate and chloride resistant, fibre-reinforced thixotropic mortar for the repair of concrete



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 floors that require resistance to oils, lubricants and which are subject to heavy abrasion such as those typically found in industrial environments.
- All types of structural repair requiring application by trowel or spray.
- Repair of load bearing elements such as reinforced columns, pre-stressed or post-tensioned beams and slabs, etc.
- Canal linings, water retaining and water excluding structures, tunnels and manholes in particular, utilities that require resistance to sulphate attack.
- Repairs to concrete in marine environments or those that require resistance to chloride ingress.
- Repair and reinstatement of concrete cover damaged by corroded reinforcing steel.
- Repairs to industrial facilities including oil and gas, marine and other structures operating under extreme working environments.
- Filling of rigid joints (e.g. between base and column, cracks in floors, joints between walls, etc.).
- Repair of precast structures.

TECHNICAL CHARACTERISTICS

Mapegrout T80 is a single component, thixotropic cement-based mortar formulated to compensate for hygrometric shrinkage. **Mapegrout T80** is composed of pre-blended hydraulic binders, synthetic polyacrylonitrile fibres, organic corrosion inhibitors, selected aggregates and special water-retaining additives, developed in the MAPEI Research Laboratories.

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 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 sheet which 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 T80 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 T80** on smooth surfaces; roughen the surfaces and add rebars where necessary.
- Do not add cement or admixtures to **Mapegrout T80**.
- Do not pour **Mapegrout T80** into forms (use **Mapegrout ME 06** or **Mapegrout ME 05**).
- Do not use **Mapegrout T80** for anchoring (use **Mapefill GP ME**, **Mapefill SP ME** or **Planigrout 300** range).
- Do not use previously opened or damaged bags of **Mapegrout T80**.

APPLICATION PROCEDURES

Preparation of the substrate

- Remove all 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	Liters of water per 25 kg bag
Trowel	3.75-4.25
Spray	4.00-4.50

- Start the mixer and slowly add the complete bag of **Mapegrout T80** to the water, in a continuous flow;
- Mix for 1 to 2 minutes; 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 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 T80**);
- 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;
- A void mixing manually as this may adversely affect several of the mortars characteristics, including mechanical strength, shrinkage, impermeability, etc;
- **Mapegrout T80** remains workable for approx. 1 hour at +20°C;
- **Mapegrout T80** can be applied at a minimum thicknesses of 10 mm up to 60 mm in a single layer. Additional buildup can be achieved subject upon the repair area geometry, location and roughness of the concrete substrate.

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 T80 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 higher buildup of **Mapegrout T80** is required, leave the surface of the previous layer in a rough condition, allow to harden, then wet the surface with water to SSD condition, prior to applying the second layer.

Spray application

Mapegrout T80 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 observed during application

In hot working conditions the following precautions should be taken:
- a void 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;
- u se cool water for mixing;
- a void application during the hottest time of the day and/or in direct sunlight;
- m ix 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 T80** 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 membrane 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 it can only be removed mechanically.

Yield

13 litres / 25 kg.

PACKAGING

25 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Mapegrout T80** 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

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)

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PRODUCT IDENTITY			
Class according to EN 1504-3:		R4	
Type:		CC	
Consistency:		powder	
Colour:		grey	
Maximum size of aggregate (mm):		2.5	
Bulk density (kg/m³):		1450	
Dry solids content (%):		100	
APPLICATION DATA			
Colour of mix:		grey	
Mixing ratio:		100 parts of **Mapegrout T80** with 15-17 parts water (approx. 3.75-4.25 ltrs per 25 kg bags) and 0.25% of **Mapecure SRA** (one 0.25 kg bottle for 4 bags of **Mapegrout T80**)	
Consistency of mix:		thixotropic	
Density of mix (kg/m³):		2195	
pH of mix:		> 12.5	
Application temperature range:		from +5°C to +50°C	
Pot life of mix:		ca. 1 hour	
Waiting time between each layer:		max 1-2 hours	
FINAL PERFORMANCE (16% mixing water)			
Performance characteristic	**Test method**	**Requirements according to EN 1504-3 standards for R4 class mortar**	**Performance of product**
Compressive strength (MPa):	EN 12190	45 (after 28 days)	35 (after 1 day) 60 (after 7 days) > 80 (after 28 days
Flexural strength (MPa)	EN 196/1	Not Required	6 (after 1 day 9 (after 7 days) 10 (after 28 days)
Drying shrinkage according to ASTM C157-93:		< 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

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