

MAPEGROUT SV

Fast-setting and hardening compensated-shrinkage, easy-flow mortar for repairing concrete and for fixing inspection shafts, manholes and highway coating materials



WHERE TO USE

- Repairing badly-damaged concrete structures which require the use of high flowing mortars.
- Repairing industrial floorings, highways and airport works which need to be reopened to traffic within a short space of time.
- Rapid fixing of inspection shafts and manholes.

Some application examples

- Repairing concrete floorings for industrial use, shopping centres and warehouses.
- Repairing concrete floorings in airports.
- Repairing pedestrian concrete pavements
- Fixing road signs.
- Fixing concrete pylons for electricity lines or telephone lines.
- Fixing fencing.
- Fixing general highway coating materials.
- Anchoring kerbstones and protection barriers.
- Fixing drain covers and gas, electric and phone-line inspection shafts.

TECHNICAL CHARACTERISTICS

Mapegrout SV is a one-component, pre-blended mortar in powder form, made up of specific hydraulic binders, high-strength cement, graded aggregates and special admixtures according to a formula developed in MAPEI's Research Laboratories.

By varying the amount of mixing water accordingly, **Mapegrout SV** takes on either a fluid or highly fluid consistency. This makes the mortar suitable for casting, even at a greater thickness (up to 5 cm), into formwork or a defined space, without the risk of segregation.

For thicknesses over 5 cm, **Mapegrout SV** must be blended with 40% of **Gravel 6/10**. Thanks to its fast-setting properties, **Mapegrout SV** may take light foot traffic and may be even subject to wheeled traffic after approximately 2 hours from application at a temperature of +20°C.

Its special composition and the special admixtures contained in the product give the mortar high mechanical strength even after a very long period of time, and make it waterproof and with high resistance to abrasion.

Mapegrout SV 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 add cement or admixtures to **Mapegrout SV**.
- Do not use **Mapegrout SV** if the packaging is damaged.
- Do not add water once the mix has started to set.
- Do not apply **Mapegrout SV** on asphalt or surfaces treated with bitumen.
- Do not apply **Mapegrout SV** on smooth surfaces. Roughen the substrate (irregularities of at least 5 mm) and, where necessary, add contrast reinforcement.
- Do not use **Mapegrout SV** if the temperature is lower than +5°C. If it is necessary to use the product at a temperature which is not within the recommended temperature range, please contact our Technical Services Department.
- **Mapegrout SV** hardens very fast. Therefore, it is recommended to mix only amounts that may be poured within 15 minutes after preparation.

APPLICATION PROCEDURE

Preparation of the substrate

- Remove damaged or loose concrete until a sound, strong and rough substrate is obtained.
- Eliminate traces of paint, oil, powder and any other material which may impede the adhesion of **Mapegrout SV** to the substrate.
- Saturate the substrate with water.
- Before casting, wait until the excess water has evaporated. If necessary, this phase may be speeded up by using compressed air.

Preparation of the mortar

Pour 12-13% of water (3.0-3.25 litres for each 25 kg bag), according to the consistency required, into a cement mixer. Slowly add **Mapegrout SV** and mix for 1-2 minutes.

Remove all traces of powder not perfectly blended from the inside surface of the mixer and continue mixing for 2-3 minutes, until a completely homogenous paste is obtained.

If the thickness to be laid is greater than 5 cm, mix **Mapegrout SV** with 40% of **Gravel 6/10** and use 14% water for mixing (by weight of the mortar - 3.5 litres for each bag of **Mapegrout SV**).

Mapegrout SV remains workable for approximately 15 minutes at a temperature of +20°C.

Applying the mortar

Pour **Mapegrout SV** into the area prepared without the use of vibration, and smooth off the surface immediately with a trowel.

If necessary, after laying inspection shafts or manholes, re-asphalt the area. A thickness of at least 3 cm is recommended to allow the bitumen layer to adhere well and to withstand the passage of traffic without yielding.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

Low temperatures

- Make sure that the substrate is not frozen and protect the product from frost during the first 24 hours after applying.
- Mix the product with lukewarm water.
- Before using the product, protect it from frost and store it in a dry place.

High temperatures and/or windy conditions

- Always saturate the substrate with water.
- Mix the product with cold water.
- Protect the fresh surface of the mortar from quick evaporation, which could cause plastic shrinkage cracks, with **Mapecure S** or **Mapecure E**.

Cleaning

Fresh mortar may be removed from tools used for preparing and laying the mix with running water. Once the product has set, it can be only removed mechanically.

COLOURS

Grey or black.

CONSUMPTION

- Used neat: 20 kg/m² per cm of thickness.
- Blended: – 14.5 kg/m² per cm of thickness; (5.7 kg/m² **Gravel 6/10**).

PACKAGING

25 kg paper bags.

STORAGE

12 months, if stored in a covered, dry area.

The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapegrout SV 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.

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.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Class according to EN 1504/3:	R4
Type:	CC
Consistency:	powder
Colour:	grey or black
Maximum aggregate size (mm):	2.5
Bulk density (kg/m ³):	1,300
Dry solids content (%):	100
Chloride ions content: – minimum requirements ≤ 0.05% - according to EN 1015-17 (%):	≤ 0.05
APPLICATION DATA (at +20°C - 50% R.H.)	
Colour of mix:	grey or black
Mixing ratio:	100 parts of Mapegrout SV with 12-13 parts of water (3.0-3.25 l of water for every 25 bag)
Consistency of mix:	fluid - super fluid
Density of mix (kg/m ³):	2,300
pH of mix:	> 12
Application temperature range:	from +5°C to +35°C
Application temperature range:	+5°C +10°C +20°C
Pot life of mix:	60 mins 20 mins 15 mins
Final hardening:	100 mins 60 mins 35 mins

FINAL PERFORMANCE (blending water 13%)

Performance characteristic	Test method	Minimum requirements according to EN 1504-3 for R4 class mortar	Product performance			
Compressive strength (MPa):	EN 12190	≥ 45 (after 28 days)		+5°C	+10°C	+20°C
			2 h	4	15	20
			4 h	20	25	25
			1 d	34	34	34
			7 d	45	45	45
			28 d	55	55	55
Flexural strength (MPa):	EN 196/1	not required		+5°C	+10°C	+20°C
			2 h	2	4	4
			4 h	4	5	5
			1 d	7	7	7
			7 d	8	8	8
			28 d	9	9	9
Modulus of elasticity in compression (GPa):	EN 13412	> 20 (after 28 days)	25 (after 28 days)			
Bond strength to concrete (MC 0.40 type substrate - w/c ratio = 0.40) according to EN 1766 (MPa):	EN 1542	≥ 2 (after 28 days)	> 2 (after 28 days)			
Resistance to accelerated carbonation:	EN 13295	Depth of carbonation < reference concrete (MC 0.45 type with w/c ratio = 0.45) according to UNI 1766	test exceeded			
Capillary absorption (kg/m ² ·h ^{0.5}):	EN 13057	≤ 0.5	< 0.5			
Thermal compatibility, measured as bond strength according to EN 1542 (MPa): – freeze-thaw cycles with deicing salts: – storm cycles: – dry heat cycles:	EN 13687/1 EN 13687/2 EN 13687/4	≥ 2 (after 50 cycles) ≥ 2 (after 30 cycles) ≥ 2 (after 30 cycles)	> 2 > 2 > 2			
Reaction to fire:	EN 13501-1	Euroclass	A1			

Composition and characteristics of beton made using Mapegrout SV. Composition of mix: 100 parts Mapegrout SV - 40 parts Gravel 6/10 - 14 parts water						
Performance characteristics	Test method	Performance of product				
Density of mix (kg/m ³):	EN 12350-6	2,360				
Consistency of mix (Slump in cm):	EN 12350-2	25				
Compressive strength (MPa):	EN 12390-3		+5°C	+10°C	+20°C	
		1 h	–	–	15	
		2 h	4	14	20	
		4 h	20	25	25	



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

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