



Mapegrout SV

Fast-setting and hardening controlled-shrinkage, easy-flow mortar for repairing concrete and for fixing inspection shafts, manholes and highway dressing 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 dressing 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 additives 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 additives 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 additives to **Mapegrout SV**.
- Do not use **Mapegrout SV** if the packaging is damaged.



TECHNICAL DATA (typical values)						
PRODUCT IDENTIFICATION						
Class according to EN 1504/3:	R4					
Type:	CC					
Consistency:	powder					
Colore:	grey or black					
Maximum aggregate size (mm):	2.5					
Bulk density (g/cm ³):	1,300					
Dry solids content (%):	100					
Chloride ions content: - minimum requirements $\leq 0.05\%$ - according to EN 1015-17 (%):	≤ 0.05					
Storage:	12 months in original packaging in a dry place					
Hazard classification according to EC 1999/45:	irritant. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet					
Customs class:	3824 50 90					
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 (corresponding to 3.0-3.25 l of water for every 25 kg sack)					
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 12.5%)						
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	none	+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 - water/concrete ratio = 0.40) according to EN 1766 (MPa):	EN 1542	≥ 2 (after 28 days)	> 2 (after 28 days)			
Resistance to accelerated carbonatation:	EN 13295	Depth of carbonatation \leq reference concrete (MC 0.45 type with water/concrete ratio = 0.45) according to UNI 1766	test exceeded			
Depth of carbonatation (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:	Euroclass	value declared by manufacturer	A1			

Composition and characteristics of beton made using Mapegrout SV.
Composition of mix: 100 parts Mapegrout SV - 40 parts 6-10 mm Gravel - 14 parts water

Performance characteristics	Test method	Performance of product			
Density of mix (kg/m ³):	EN 12350-6	2360			
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

- 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 Advisory 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 while applying the product

Low temperatures

- Make sure that the substrate is not frozen and protect the product from freezing 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 and 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.

Manufactured in compliance with the regulations of the 2003/53/EC Directive.

Mapegrout SV



SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapegrout SV contains cement that, when in contact with sweat or other bodily fluids, produces an irritating alkaline reaction and allergic reactions to those predisposed. Wear protective clothing, gloves and eye/face protection.

For further information, please refer to the Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

WARNING

Although the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under

all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use these products, must ensure beforehand that they are suitable for their intended application and, in all cases, the user is to be held responsible for any consequences deriving from their use.

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

(GB) A. G. BETA

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