MAPEGROUT GUNITE 300 AF

Prepacked one-component fiber reinforced cementitious mortar with accelerated setting for dry mix shotcrete

WHERE TO USE

Repair of deteriorated concrete, stone or masonry structures with dry mix shotcrete.

Some application examples

· Support to diggings in tunnels and/or foundation and outdoor shafts.
· Repair of concrete lining in tunnels.
· Lining of stone or masonry tunnels.
· Repair of hydraulic works such as canals, shafts, tunnels, basins, etc.
· Repair of industrial concrete structures.

TECHNICAL CHARACTERISTICS

Mapegrout Gunite 300 AF is a prepacked one-component fiber reinforced cement-based mortar with rapid setting time made up of highly sulphate resistant hydraulic binders, micro-silicates, selected aggregate and alkali-free accelerated setting additives manufactured according to a formula developed in the Mapei research laboratories.
Mapegrout Gunite 300 AF can be placed solely with a special dry mix spraying machine.
After it is mixed with water, **Mapegrout Gunite 300 AF** acquires a thixotropic consistency at the nozzle and can therefore be easily applied vertically or on the ceiling of tunnels in substantial thicknesses.
Rebound is between 5 and 12%.
After hardening **Mapegrout Gunite 300 AF**:
· has high flexural and compressive strength even at early ages;
· has modulus of elasticity similar to that of medium quality concrete;
· is watertight;
· excellently adheres to old concrete, as long as moistened with water beforehand, and to re-bars, especially if they have been treated with **Mapefer**;
· is sulphate resistant;
· resists carbonation;
· resists freeze/thaw cycles in the presence of sodium chloride according to SIA 162/1 part 9.

RECOMMENDATIONS

· Do not apply **Mapegrout Gunite 300 AF** on smooth surfaces. Roughen them first and, if necessary, add reinforcement if the thickness is more than 30 mm.
· Do not add cement or additives to **Mapegrout Gunite 300 AF**.

DIRECTIONS FOR USE

Substrate preparation

· Surfaces must be free of oil, grease, dust and loose material.
· Remove the deteriorated concrete down to where the substrate is sound, resistant and rough-textured. Any previous repairs that are not perfectly bonded must be removed.

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· Remove dirt, rust, cement laitance, grease oil, varnish or paint from the concrete and re-bars with a high pressure cleaner or by sandblasting.
· Saturate the substrate with water.
· Before beginning repairs with **Mapegrout Gunite 300 AF**, wait until the excess water evaporates. If needed, remove the free water using compressed air.

Applying the grout

Mapegrout Gunite 300 AF can be applied exclusively with a special dry mix spray machine and only after the surface has first been saturated with water. This preliminary operation can be carried out by using the hose of the spray machine to spray water on the substrate.
Turn the spraying machine on and pour **Mapegrout Gunite 300 AF** into the hopper.
After mixing with water, which takes place inside the nozzle of the hose, **Mapegrout Gunite 300 AF** acquires a thixotropic consistency and can be easily applied in thicknesses up to approximately 10-15 cm per layer.
For build-ups thicker than 15 cm, apply several coats. To facilitate bonding between coats, we recommend leaving the surface of the previous dried coat rough and then spray it lightly with water.

Recommended equipment

OCMER type OCM-030 compact or OCM-045 are recommended pumps for the best application of **Mapegrout Gunite 300 AF**.

PRECAUTION TO BE TAKEN AFTER PLACING THE GROUT

· After application, it is recommended to cure **Mapegrout Gunite 300 AF** carefully to prevent the water form evaporating too quickly, especially in warm or windy weather that may cause surface cracks due to plastic shrinkage.
· Spray water on the surface during the first 24 curing hours or apply a suitable anti-evaporating product.
· An anti-evaporating product may be used only if no subsequent covering is to be applied. In any case, the product must be later removed by sandblasting.

CLEANING THE EQUIPMENT

The mortar can be removed from tools with water if it has not yet hardened. The dry mix machine can be cleaned using high pressure air only. The nozzle should be cleaned with water.

CONSUMPTION

Approximately 20 kg/m² per cm of thickness (approximately 22 kg/m² per cm of thickness if considering 10% rebound).

PACKAGING

25 kg paper bags.

STORAGE

12 months in a sheltered dry place.
The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Mapegrout Gunite 400 AF is irritant, contains cement that in contact with sweat or other bodily fluids produces an irritant alkaline reaction and allergic reactions to those predisposed. Wear protective gloves and goggles.
For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Colour:	grey

Consistency:	powder
Bulk density (kg/m³):	1,250
Maximum diameter of aggregate (mm):	2.5
Dry solids content (%):	100
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
COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C - 50% R.H.)	
Colour of mix:	grey
Mix water (%):	13
Density of mix (kg/m³):	2,200
Application temperature range:	from +5°C to +35°C
FINAL PERFORMANCE DATA	
Mechanical properties:	compressive and flexural strength tests were performed on 4x4x16 cm mortar samples prepared and cured in compliance with the test methods prescribed by EN 196/1 (mix water 13%) using different mixing methods due to the rapidity of the product
Compressive strength (N/mm²): **– after 1 day:** **– after 7 days:** **– after 28 days:**	 > 20 > 35 > 40
Flexural strength (N/mm²): **– after 1 day:** **– after 7 days:** **– after 28 days:**	 > 5 > 6 > 7
Modulus of elasticity (N/mm²): **– after 28 days:**	 25,000

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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