



# MAXGROUT® HR

## QUICK-SETTING AND HIGH-PERFORMANCE FLUID MORTAR FOR URGENT FILLINGS, ANCHORAGES AND STRUCTURAL REPAIRS

### DESCRIPTION

**MAXGROUT®-HR** is a one-component, non-shrink fluid mortar with high mechanical properties and formulated from special cements, well-graded mineral products and special admixtures. It is a suitable product for fillings, anchorages and concrete repairs when a rapid return to service is required.

### APPLICATION FIELDS

- Anchoring of pillars in concrete prefabricated structures.
- Beam support in bridges.
- Filling of machinery foundations by pouring between concrete and steel plates.
- Anchoring of bolts, cables and, filling of penetrating pipes, etc.
- Urgent structural repairs and strengthening of damaged or weak concrete structures such as foundations, beams, pillars, etc.
- Repair of joints in pavements.

### ADVANTAGES

- Its short setting time, lower than 2 hours, allows a fast return to service for the anchored elements.
- High early and ultimate mechanical strengths.
- High impact resistance and repeated loads.
- High resistance to abrasion.
- Compensated shrinkage.
- Very fluid, it fills all gaps and the whole voids.
- High cohesion of the fresh mortar without segregation or bleeding.
- One-component product. Only water is required for mixing.

- Resistant to water, oil and grease.
- Contains no chlorides or metal particles, it is non-corrosive for steel surfaces.

### APPLICATION INSTRUCTIONS

#### Surface preparation

The surface must be structurally sound and clean, free of dust, coatings, efflorescences, oils, demoulding agents, gypsum or any other foreign materials that could affect to adhesion. Before the application of **MAXGROUT®- HR**, the surface must be saturated with clean water, but do not leave free-standing water.

#### Mixing

Pour **MAXGROUT®- HR** into a clean drum containing the mixing water and then start the mixing in order to break up any lumps. Use 3,25 to 3,75 litres of water per 25 kg bag depending on the required consistency (13% and 15% by weight). Mixing is best done by mechanical means such a slow speed mixing drill (400 – 600 rpm) until achieving a homogeneous product in colour and appearance. Do not mix for prolonged period nor use high-speed mixer that may introduce air bubbles. A concrete mixer can be also used. If product is mixed by hand, increase the mixing time until all lumps disappear. Place **MAXGROUT®- HR** within the following 15 – 20 minutes.

For volumes greater than about 0,1 m<sup>3</sup> or thickness greater than 5 cm, a mixture adding 8 kg of dry and clean sand with size from 3 to 5 mm per each 25 kg bag of **MAXGROUT®** should be done. Mix all together with 3 to 3,25 l of water per bag, depending on the required consistency, but avoid any bleeding or segregation by an excess of water.

## Placing

**MAXGROUT®- HR** is placed simply pouring by gravity directly from the mixing container. In order to avoid cold joints and minimize the chance of air entrapment, **MAXGROUT®- HR** should be placed in a continuously way and also in one direction from one side to the other. If it is necessary, a manual vibration element can be used in order to help to fill the volume but an excessive vibration must be avoided as possible because it may cause bleeding and air entrapment. Air vents should be provided to facilitate the exit of air from the space to be filled.

## Application conditions

In winter, do not apply **MAXGROUT®- HR** when ambient or application surface temperature is below 5 °C or if such temperatures are expected within the 24 hours after placing. Do not apply on frozen or frosted surfaces.

For applications during hot temperatures and windy conditions, i.e. summer time, it is recommended to use cold water and store **MAXGROUT®- HR** in a cool place. Cooling the base plate with cold water is also advisable with such conditions. Do not apply at ambient temperatures above 40 °C.

## Curing

Provide a moist curing by fogging or protecting the area with wet burlap or rags covered with plastic sheeting. A quality curing compound such as **MAXCURE®** (Technical Bulletin n°: 49) can also be used. Curing procedures should begin immediately after the placement and be observed mainly with high temperature and wind or low humidity conditions.

## Cleaning

All tools and equipments must be cleaned immediately with water after use. Once the fluid mortar sets can only be removed by mechanical methods.

## CONSUMPTION

Pure product application: A 25 kg bag of **MAXGROUT®- HR** fills a volume from about 12,5 to 13,75 litres, depending on the mixing water (0.5 – 0.55 l/kg). Approximately 2 kg of **MAXGROUT®- HR** per square meter and mm of thickness.

Mixture application: A mixture consisting of 8 kg of sand per 25 kg bag of **MAXGROUT®- HR** fills a volume from about 16,25 to 17 litres, depending on the mixing water (0,65 – 0,68 l/kg). Approximately 1,4 kg of **MAXGROUT®- HR** per square meter and mm of thickness.

These figures may vary depending on substrate conditions and application method. A preliminary test on-site will determine the coverage exactly.

## IMPORTANT INDICATIONS

- Do not use more water for mixing than the ratio recommended.
- Do not add cement or other not specified compound to **MAXGROUT®- HR**.
- Do not use **MAXGROUT®-HR** for levelling and finishing of pavements.
- For other uses not specified in this Technical Bulletin or further information, consult our Technical Department.

## PACKAGING

**MAXGROUT®- HR** is supplied in 25 kg bags.

## STORAGE

Twelve months in its original unopened containers. It must be stored in a dry and covered place at temperatures above 5°C, protected from humidity and frost.

## SAFETY AND HEALTH

As all cementitious products, **MAXGROUT®- HR** is non-toxic but it is an abrasive compound. Both protective rubber gloves and safety goggles must be used to prepare and apply the mixture. In case of skin contact, wash the affected areas with soap and water. In case of eye contact, rinse thoroughly with clean water but do not rub. If irritation continues, seek medical attention.

For further information, Safety Data Sheet for **MAXGROUT®- HR** is available by request.

The final user must do disposal of the product and its empty containers according to official regulations.

## TECHNICAL DATA

Properties of powder product	
Colour and appearance	Grey powder
Aggregate size (mm)	0 – 3
Powder apparent density (g/cm <sup>3</sup> )	1,35 ± 0,05
Properties of fresh product	
Mixing water/ product weight (%)	13 – 15
Open time for placing (min, at 20 °C)	15 - 20
Initial setting time (min, at 20°C)	30 - 45
Final setting-time (min, at 20 °C)	60 - 75
Segregation of fresh mortar	None
Properties of hardened product	
Compressive strength (MPa)	Mixed with 13% of water
24 hours	55
7 days	59
28 days	65
Flexural strength (MPa)	
24 hours	6,0
7 days	7,5
28 days	8,9
Elasticity modulus (MPa)	> 4·10 <sup>4</sup>
Adhesion on concrete (MPa)	> 2,5
Adhesion on steel reinforcement (MPa)	> 2,5

## GUARANTEE

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