



MAXGROUT®

200 EXPRESS



QUICK-SETTING, HIGH-PERFORMANCE AND FIBER-REINFORCED FLUID MORTAR FOR URGENT FILLINGS, ANCHORAGES AND STRUCTURAL REPAIR UP TO 20 cm THICKNESS

DESCRIPTION

MAXGROUT® 200 EXPRESS is a one-component, quick-setting, non-shrink fluid mortar with high mechanical properties made of special cements, well-graded mineral products, special admixtures and reinforced with fibres. It is specially designed for fillings, anchorages, and concrete repairs in thickness up to 20 cm when a rapid return to service is required. It meets the requirements of class R4 according to European standard EN-1504-3 and EN 1504-6.

- Anchoring and filling of wind towers, windmills with platform on land where high resistance to fatigue is required.
- Filling of steel column bases.
- Beam support in bridges.
- Anchoring and filling in adverse weather conditions and/or very low temperatures
- Filling of machinery foundation between concrete and steel plates.
- Anchoring of bolts, cables, etc.
- Repair of joints in pavements.

APPLICATION FIELDS

- Restoration of concrete structural elements recovering its original shape and function. EN-1504-9 standard. Principle 3 (CR) – Method 3.2 Recasting with mortar:
 - Concrete repairs affected by corrosion of reinforcements or defects by pouring concrete into formwork, as columns, beams, retaining walls, piles, etc.
 - Repair of structures damaged by frost, de-icing, salts, mechanical impacts, concrete, etc.
 - Repair of structures subject to dynamic loads.
- Reinforcement of concrete to increase or restore the bearing capacity by screed mortar in columns, beams, and slabs. EN-1504-9 standard. Principle 4 (SS)–Method 4.4. Structural strengthening by adding mortar.
- Restoration and passivation of steel bars. Preserving or restoring passivity by increasing cover to reinforcement with mortar (Principle 7-RP/7.1), and by replacing contaminated concrete (Principle 7-RP/7.2)
- Anchoring of pillars, beams, and trusses in concrete prefabricated structures.
- Anchoring of machinery, levelling of benches and supports of industrial equipment for urgent return to service.

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, even at low temperatures.
- High elasticity modulus, providing strengthening performance.
- High resistance to both impact and/or and repeated loads.
- High resistance to fatigue.
- High resistance to abrasion.
- Non-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 greases.
- Contains no chlorides or metal particles. It is non-corrosive for steel surfaces.

APPLICATION INSTRUCTIONS

Surface preparation

Concrete to be repair must be structurally sound, firm, without cement laitance and as uniform as possible, and preferably with a slight roughness. Remove all damaged and loose concrete until getting sound concrete and, sawcut the edges

perpendicularly to the surface to a minimum depth of 10 mm.

Expose all corroded reinforcement, removing all concrete until the edges of the bars are not affected by rust. Remove concrete all around the reinforcement for an efficient cleaning and to surround it with a minimum thickness of at least 1 cm of **MAXGROUT® 200 EXPRESS**.

Remove rust by wire brush, needle gun, sand or shot blasting, etc. For additional protection, an application of the oxide converter and protector **MAXREST® PASSIVE** (Technical Bulletin No. 12) can be used.

Then, clean the surface with high-pressure water. Surface must be clean and free of dust, grease, loose particles, or any other contaminants that may affect to adhesion of the product.

Once substrate has been prepared, dampen thoroughly the entire surface to be repaired with clean water, avoiding the formation of puddles.

Mixing

MAXGROUT® 200 EXPRESS is mixed only with clean water, free from contaminants, by a low-speed drill (400-600 rpm) or by a concrete mixer.

Pour 3,0 litres of clean water per 25 kg bag of **MAXGROUT® 200 EXPRESS** (12% by weight) in a clean container and then slowly add the product. Mix mechanically for 4 minutes until achieving a lump free and homogenous mortar. Smaller quantities can be mixed manually until all lumps disappear. In any case, do not mix for prolonged period nor use high-speed mixer that may introduce air bubbles.

Place **MAXGROUT® 200 EXPRESS** within the following 25 minutes.

Placing

MAXGROUT® 200 EXPRESS 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® 200 EXPRESS** 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

The optimum application temperature range is from 10°C to 25°C.

Do not apply 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 the grout on frozen or frosted surfaces.

For applications during hot temperatures and windy conditions, i.e., summertime, it is recommended to use iced or freezing water and store the material in a cool place. Cooling the base plate with freezing water is also advisable with such conditions.

Curing

Curing procedures should begin immediately after placement. 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 no. 49) can also be used. These curing procedures should be observed with hot temperature and wind or low humidity conditions.

Cleaning

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

CONSUMPTION

A 25 kg bag of **MAXGROUT® 200 EXPRESS** fills a volume from about 12,5 litres (0,5 litres per kg), about 2,0 kg of **MAXGROUT® 200 EXPRESS** per square meter and mm of thickness.

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

IMPORTANT INDICATIONS

- Do not use leftovers to prepare a new mix.
- Do not use high speed mixers which may cause a violent mix. Do not over mix.
- Do not exceed the ratio of mixing water recommended.
- Do not add cement, aggregates or other not specified compounds to **MAXGROUT® 200 EXPRESS**.
- Do not exceed maximum thickness recommended per layer.
- Do not apply **MAXGROUT® 200 EXPRESS** on substrates vitrified or enamelled or treated with water repellent agents. Do not apply on bituminous materials, metals, wood, plasters, or paints.
- Do not use **MAXGROUT® 200 EXPRESS** for levelling and finishing of pavements.
- Observe at least 28 days of curing time for new concrete and mortar before application.

- Setting-time is measured at 20°C, higher temperature reduces setting-time and lower temperature delay setting-time.
- In contact with water or ground with sulphates, wastewater, or sea water, use the type **MAXGROUT® 200 EXPRESS ANTISULFAT**. Do not use in contact with pure, acidic, or carbonic waters.
- For further information, consult our Technical Department.

PACKAGING

MAXGROUT® 200 EXPRESS 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 frost

SAFETY AND HEALTH

MAXGROUT® 200 EXPRESS 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® 200 EXPRESS** is available by request.

Disposal of the product and its empty packaging must be made according to official regulations. The final user must make this disposal.

TECHNICAL DATA

CE Marking, EN 1504-3		
Description. Structural repair mortar for concrete structures in building and civil engineering works. Type CC and Class R4.		
Principles/Methods. Concrete restoration by applying mortar by hand (Principle 3-CR/3.1). Concrete restoration by recasting with mortar (Principle 3-CR/3.2). Structural strengthening by adding mortar (Principle 4-SS/4.4). Preserving or restoring passivity by increasing cover to reinforcement with mortar (Principle 7-RP/7.1), and by replacing contaminated concrete (Principle 7-RP/7.2)		
CE Marking, EN 1504-6		
Description. Cementitious mortar for steel rebar anchoring and filling by pouring. Principles / Methods. Installing bonded rebars in preformed or drilled holes in concrete (Principle 4-SS/4.2).		
Product characteristics		
Colour and appearance	Grey powder	
Aggregate size, (mm)	2,0	
Powder apparent density, (g/cm ³)	1,35 ± 0,10	
Mixing water, (% weight)	12	
Application conditions		
Minimum application temperature, (°C)	> 5	
Open time for placing at 22°C and 55% R.H., (min)	25	
Initial setting time at 22°C & 55% R.H., (min)	70	
Final setting time at 22°C & 55 % R.H., (min)	80	
Curing time at 22°C & 55% R.H., (min)	120	
Segregation	None	
Cured product characteristics		
Classification, EN 1504-3	R4 – Structural	
Mechanical strength, EN 12190, (MPa)	Compressive	Flexural
- 2 hours	25	4,0
- 4 hours	30	4,5
- 6 hours	35	5,0
- 1 day	40	5,5
- 7 days	75	7,5
- 28 days	80	10,5
Chloride ion content, UNE-EN 1015-17+A1, (weight %)	< 0,01	
Adhesion on concrete, EN 1542 (MPa)	3,5	
Elastic modulus, EN 13142 (GPa)	> 28,6	
Carbonation resistance, EN 13295 (mm) Control concrete 4 mm	Pass	
Thermal compatibility		
Part 1: Freeze / Thaw, EN 13687-1 (MPa)	≥ 2,0	
Part 2: Thunder shower, EN 13687-2 (MPa)	≥ 2,0	
Part 4: Dry cycling, EN 13687-4 (MPa)	≥ 2,0	
Capillary absorption, EN 13057 (kg/m ² ·h ^{0,5})	0,05	
Anchoring resistance by pull-out method, EN 1881	Displacement ≤ 0,6 mm under load of 75 kN	
Reaction to fire EN 13057-1 (Euroclass)	A1	
Consumption*/ Thickness		
Minimum / maximum recommended thickness per layer, (mm)	5 / 200	
Consumption as pure mortar (kg/m ² · mm thickness)	2,0 ± 0,1	

* These figures are for guidance only and may vary depending on porosity, texture, substrate conditions and application method. Perform a preliminary test on-site to ascertain the total consumption exactly

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. **DRIZORO®**, **S.A.U.** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. In order to know the real data, a test on the jobsite must be done, and it will be conducted under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.



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