



MAXRITE® 500

QUICK-SETTING, POLYMER-MODIFIED, FIBER-REINFORCED, STRUCTURAL REPAIR MORTAR WITH CORROSION INHIBITORS



DESCRIPTION

MAXRITE® 500 is a single component, cement-based, microsilica and polymer-modified, fiber-reinforced restoration mortar with corrosion inhibitors. It is specially designed for high performance structural concrete repair exposed to an aggressive environmental ambient and provides an additional protection of the steel reinforcements. Its quick-setting and thixotropy allow the repair of new and old concrete in a simple way, without the need for using any form work.

Meets Class R4 according to European Standard EN-1504-3.

APPLICATION FIELDS

- Restoration of structural concrete elements, recovering original shape and function. EN 1504-3 standard, Principle 3 (CR) – Method 3.1 Applying mortar by hand, and Method 3.3 Spaying mortar in:
 - Repair of concrete affected by corrosion of reinforcements in marine environment, bridges, harbours, dams, etc.
 - Repair of general structural concrete on vertical or overhead surfaces, without form works.
 - Repair of lines and shapes in pre-fabricated concrete elements and structures damaged by mechanical impacts, corrosion of reinforcements, freeze/thaw cycles, etc.

- Repair of pillars, lintels, raincaps and architectural concrete exposed permanently to extreme weather condition.
- Repair of concrete affected by repeated loads.
- Structural strengthening of concrete elements. EN 1504-3 standard, Principle 4 (SS) – Method 4.4 Adding mortar.
- Restoration of passivity for rebars on concrete elements. EN 1504-3 standard, Principle 7 (RP) – Method 7.1 Increasing cover to reinforcement with mortar, and Method 7.2 Replacing contaminated concrete in:
 - Repair of concrete structures subject to carbonation process.
 - Increasing cover for concrete structures.
- Maintenance of industrial areas damaged by aggressive environment, acid rain, atmospheric pollution, etc.
- Patching of cold joints and making of concave corners prior to waterproofing jobs in reservoirs, swimming-pools, basements, etc.
- Maintenance of industrial areas damaged by aggressive environment, acid rain, atmospheric pollution, etc.
- Structural concrete repair affected by corrosion of reinforcements in marine environment, bridges, harbours, dams, etc.
- Repair of concrete structures with carbonation process.
- Repair of damaged concrete by deicing-salts, freeze/thaw cycles, mechanical impacts, etc.
- Concrete repair affected by repeated loads.
- Repair of pre-fabricated concrete elements.

ADVANTAGES

- Quick-setting. The repair can be accomplished in a single phase.
- Corrosion inhibitors prevent corrosion against chlorides and aggressive corroding agents, extending considerably the service life of the structure.
- Good chemical resistance in aggressive environmental ambient due to its microsilica content.
- Waterproof. Withstands freeze/thaw cycles.



- Offers high resistance to carbonation penetration.
- High adhesion to concrete and reinforcements. Does not require special primers. Loads are transmitted onto the repaired structure.
- High impact and mechanical strength. Long lasting repairs.
- Good thixotropy. Application in successive layers without slump or the need to use form work. Allows high thickness per layer from 5 to 50 mm.
- Easy workability and application.
- Single component mortar. Only requires water for mixing and it is odourless, making it suitable for poor ventilated areas.

APPLICATION INSTRUCTIONS

Preparation of the surface

Remove all damaged and loose concrete in the repair area, clean cut the edges perpendicularly to a minimum depth of 5 mm. Expose all corroded reinforcement, removing all the 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 **MAXRITE® 500**.

Eliminate 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 N°. 12) can be used.

Prior to application of **MAXRITE® 500**, dampen the exposed surface until saturated but do not leave free-standing water.

Mixing

MAXRITE® 500 is mixed exclusively with clean water, free from contaminants, either manually or mechanically by low speed drill (400 – 600 rpm). One 25 kg bag or drum of **MAXRITE® 500** requires about 3,5 to 4,0 litres of water to achieve proper consistency of a repair mortar (15% ± 1%). These quantities are indicative and should be checked depending on the desired consistency and the existing ambient conditions. Mix only the amount of



MAXRITE® 500 the applicator can place in about 10 minutes, because after this time, the mortar will have started its setting and will no longer be workable.

In hot weather (above 25 °C) it might be necessary to delay the setting time. Mix with cold water for this purpose, but do not add more water than above the recommended limit. Consequently, below 10°C it is advisable to use warm water, to speed up the setting of the product.

Application

For an optimum bonding, prepare a slurry mixing 5 parts of **MAXRITE® 500** with 1 part of water, mixing well until achieving a homogeneous consistency without any lumps. Apply the slurry using a **MAXBRUSH** type brush on the surface to be repaired and on the reinforcement bars, filling all voids and pores.

While the slurry is still fresh, start placing **MAXRITE® 500** with the consistency of a repair mortar and apply layers between 5 and 50 mm thick. Place special attention in pressing with the trowel to prevent any air from being trapped. Mark the surface of each layer with the trowel to improve the adhesion of the following one, which can be placed after about 30 minutes approximately. Shape the last layer as desired before the final hardening occurs.

Once the repair is finished it can be coated with cement-based coating **MAXSEAL®** (Technical Bulletin N°.: 01) or **MAXSEAL FLEX®** (Technical Bulletin N°.: 29), or acrylic-based coating **MAXSHEEN®** (Technical Bulletin N°.: 17) available in a wide range of colours.

Application conditions

Do not apply below 5 °C or if lower substrate or ambient temperatures are expected during the 24 hours following the repair.

Curing

Under extreme conditions of wind or heat, lightly spray water over the repaired areas for at least an hour. It is also convenient to cover them during the first 24 hours if the temperature is above 30 °C and the relative humidity is below 50%.

Cleaning

Tools and equipments should be cleaned immediately with water after use. Once it sets can only be removed by mechanical methods.

CONSUMPTION

Estimated consumption of **MAXRITE® 500** are approximately 1,83 kg/m² per mm thickness.

One 25 kg sack of **MAXRITE® 500** fills approximately 13,5 litres (0,55 l/ kg of product).

IMPORTANT INDICATIONS

- If the slurry primer dries up or the previous layer is completely set, apply a new slurry coat to continue the job.
- Do not use any **MAXRITE® 500** leftovers to prepare a new batch.
- Do not use mixing methods which cause violent mix and do not mix for prolonged periods.
- Do not use curing compounds on the repair.
- Do not exceed the thickness per layer in application.
- Do not exceed the amount of mixing water recommended.
- The setting time is measured at 20 °C, higher temperatures reduce setting time and lower temperatures delay the setting time. At temperatures above 25 °C it may be advisable to use **MAXRITE® 700** (Technical Bulletin N°.: 51) because of its longer setting time.
- For any other application not specified in this technical bulletin consult our Technical Department.

PACKAGING

MAXRITE® 500 is supplied in 25 kg bags and drums.

STORAGE

Nine months in bags and twelve months in drums and cans, in their original unopened packaging, in a dry and covered place, protected from frost and humidity with temperature above 5 °C.

SAFETY AND HEALTH

MAXRITE® 500 is non-toxic, but is an abrasive compound by its composition. Avoid eye and skin contact. Rubber gloves and safety goggles must be used during the application. In case of skin contact, wash affected areas with soap and water. In case of eye contact, rinse with clean water but do not rub. If irritation continues, seek medical attention.

Safety Data Sheet of **MAXRITE® 500** is available by request.

Disposal of the product and its empty packaging must be done according to national regulations by the final user.

TECHNICAL DATA

Product characteristics	
<i>CE Marking, EN 1504-3.</i> Description. Structural repair mortar for concrete structures in building and civil engineering works. Type PCC and Class R4. Principles / Methods. Concrete restoration by applying mortar by hand (Principle 3-CR/3.1) and by spraying mortar (Principle 3-CR/3.3). 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)	
General appearance and colour	Grey powder
Maximum aggregate size, (mm)	0,8
Density for powder, (g/cm ³)	1,45 ± 0,1
Mixing water, (% by weight)	15 ± 1
Application and curing conditions	
Minimum application temperature for substrate and ambient, (°C)	> 5
Pot life at 20 °C & 50 % R.H., (min)	10
Initial / Final setting time at 20 °C & 50 % R.H., (min)	10 / 25
Cured product characteristics	
Density for cured and dry mortar, EN 1015-10 (g/cm ³)	2,15 ± 0,1
Requirement for repair products, EN 1504-5 (Class)	R4 / Structural
Compressive strength, EN 12190 (MPa)	
At 7 days	--
At 28 days	>45
Chloride ion content, EN 1015-17 (% by weight)	≤ 0,05
Adhesive bond on concrete at 28 days, EN 1542 (MPa)	≥ 2,0
Carbonation resistance, EN 13295, d _k (mm). Control concrete 4 mm	≤ 4,0
Elasticity modulus, EN13412 (GPa)	> 20
Thermal compatibility. Bond strength after 50 cycles (MPa)	
Part 1. Freeze-thaw, EN 13687-1	≥ 2,0
Part 2. Thunder shower, EN 13687-2	≥ 2,0
Part 4. Dry cycling, EN 13687-4	≥ 2,0
Capillary absorption, EN 13057. w (kg/m ² .h ^{0.5})	≤ 0,5
Reaction to fire, EN 13501-1 (Euroclass)	A1
Thickness / Consumption*	
Thickness per layer (mm)	5 – 50
Consumption (kg/m ² .mm thickness)	1,83

Tests, generally after 28 days
Mixing water: 14%

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 carried out 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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