



MAXRITE[®]-R THIX



FIBER-REINFORCED MORTAR WITH HIGH TIXOTROPY FOR STRUCTURAL CONCRETE REPAIR IN VERY HIGH THICKNESS

DESCRIPTION

MAXRITE[®] -R THIX is a one-component, shrinkage-compensated, fiber-reinforced, polymer-modified, repair mortar with very high thixotropy, designed for structural concrete repair, applied manually by trowelling without the need for using any form work. Meets Class R3 according to European Standard EN-1504-3.

Due to its excellent thixotropy, higher than conventional repair mortars, it provides a great workability and cohesion of the fresh mortar, allowing high thickness repairs on vertical surfaces (up to 100 mm) and overhead surfaces (up to 40 mm). It can be applied manually or by spraying means on concrete, prefabricated elements, mortars, etc.

APPLICATION FIELDS

- Restoration of structural concrete elements, recovering original shape and function. EN 1504-9 standard, Principle 3 (CR) – Method 3.1 Applying mortar by hand, and Method 3.3. Spraying mortar in:
 - Structural repair of concrete affected by corrosion of reinforcement in marine environments, bridges, ports, desalination plants, industrial areas, etc.
 - Maintenance of damaged industrial facilities or exposed to aggressive environments, acid rain, atmospheric pollution, etc.
 - Repair of concrete damaged by mechanical impacts, ice-thaw cycles, de-icing salts, etc.
 - Repair of concretes weakened by cyclic loads.
 - Repair of prefabricated concrete elements.

ADVANTAGES

- Excellent thixotropy and workability higher than conventional repair mortars, due to its gel-type technology.
- Very good cohesion of the fresh mortar allows repairs from 5 to 40 mm thickness on overhead surfaces and from 5 to 100 mm thickness on vertical surfaces.

- Mechanical properties similar or higher than concrete. Long-lasting repairs.
- Low water absorption. Resistant to freeze-thaw cycles.
- Good resistance to carbonation process.
- High adhesion on concrete surface and steel rebars. No special bonding agent/primer is required. Loads are transmitted onto the repaired structure.
- One-component, only water for mixing. Odourless and non-toxic, suitable for poor ventilated areas, etc.

APPLICATION INSTRUCTIONS

Substrate 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 5 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 **MAXRITE[®] -R THIX**.

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 No. 12) can be used.

Surface must be clean and free of paints, coatings, efflorescence, loose particles, grease, oils, curing agents, form release agents, dust, gypsum plasters, organic growth or any other contaminants that may affect to adhesion of the product. For cleaning the substrate, use sand blasting or high-pressure water cleaning methods, not being desirable aggressive mechanical means.

Once substrate has been prepared, saturate thoroughly the entire surface to be repaired with clean

water. Allow ponding water to drain away and then start the application. If surface gets dry, proceed to saturate it again with water.

Mixing

A 25 kg bag of **MAXRITE® -R THIX** requires about 4,5 to 5,0 litres ($19 \pm 1\%$ by weigh). Pour the powder into a recipient and then add the water required while mixing mechanically with a low-speed drill (400-600 rpm) equipped with disc **MAXMIXER**, until achieving a smooth, lump-free and homogeneous mortar with workable consistency.

Application

For an optimum bonding prepare a slurry primer, mixing 5 parts of **MAXRITE® -R THIX** with 1 part of water, mixing well mechanically with a low-speed drill until achieving a homogeneous consistency without any lumps. Apply the slurry using a hard hairbrush such as **MAXBRUSH**, on the surface to be repaired and on the reinforcement bars, filling all voids and pores.

While the bonding slurry is still fresh, start placing **MAXRITE® -R THIX** by trowel with the consistency of repair mortar and apply layers between minimum 5 mm and maximum 100 mm thickness for vertical surfaces, or minimum 5 mm and maximum 40 mm thickness for overhead applications. Provide the finish of the mortar surface before the final hardening occurs.

For mechanical means applications thoroughly saturate the surface plenty of water, but without forming puddles and apply **MAXRITE® -R THIX** in successive layers of 5-40 mm. Adjust the spraying pressure to minimise rebound and ensure good adhesion on the substrate.

Once the repair area is finished it can be protected with cement-based coating **MAXSEAL®** (Technical Bulletin No. 01) or **MAXSEAL® FLEX** (Technical Bulletin No. 29), or acrylic-based coating **MAXSHEEN®** (Technical Bulletin No. 17) available in a wide range of colours.

Application conditions

Do not apply when rainfalls are expected within the first 8-10 h after the application.

The optimum temperature range for application is from 10°C to 30°C. Do not apply with substrate and/or ambient temperature is at or below 5°C, or when temperatures are expected to fall below 5°C within 24 h after application. Do not apply to frozen or frost-covered surfaces.

With hot temperatures ($>30^{\circ}\text{C}$) and/or windy conditions, i.e. summertime, surface must be wet thoroughly with plenty of water prior to application. Avoid applications in areas exposed to direct sunlight with high temperatures.

Curing

Provide a moist curing by fogging at least the first 2 hours, protecting with wet burlaps or rags covered with plastic sheeting, or using a quality curing agent such as **MAXCURE®** (Technical Bulletin No. 49). These curing procedures must be observed mainly with high temperature ($>30^{\circ}\text{C}$), low relative humidity ($<50\%$) and/or windy conditions. Protect against freeze during curing-time.

Cleaning

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

IMPORTANT INDICATIONS

- Do not add cement, aggregates or other non-specified compounds to **MAXRITE® -R THIX**.
- Do not use high speed mixers which may cause a violent mix. Do not over mix.
- Do not use **MAXRITE® -R THIX** leftovers to prepare a new mix.
- Do not exceed the ratio of mixing water recommended.
- To keep the workability of the fresh mortar, mix again briefly but do not add more water.
- If the slurry primer dries up, or the previous layer is completely set, apply a new slurry coat to continue the job.
- Do not exceed maximum thickness recommended per layer.
- Setting-time is measured at 20°C, higher temperature reduces setting-time and lower temperature delay setting-time.
- In case of contact with sulphates, wastewater or sea water, use the type **MAXRITE® -R THIX ANTISULFAT**.
- For any other application not specified on this technical bulletin consult our Technical Department.

CONSUMPTION

Estimated consumption is approx. 2,05 kg/m² per mm thickness. One 25 kg bag of **MAXRITE® -R THIX** fills 14,6 litres approximately (0,58 l/kg of product).

Consumption depends on porosity, texture and substrate conditions, a preliminary test on-site will determine consumption exactly.

PACKAGING

MAXRITE® -R THIX is supplied in 25 kg bags, in grey colour.

STORAGE

Twelve months in its unopened and undamaged original sealed packaging. Store in a cool, dry and covered place, protected from moisture, freezing and away from direct exposure to sunlight at temperatures above 5°C.

SAFETY AND HEALTH

MAXRITE® -R THIX is non-toxic, but it is an abrasive compound. 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® -R THIX** is available by request.

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

TECHNICAL DATA

CE Marking, EN 1504-3.

- Description. Structural repair mortar for concrete structures in building and civil engineering works. Type PCC and Class R3.
- 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).

Product characteristics

General appearance and colour	Grey powder
Maximum aggregate size, (mm)	2,0
Density for powder, (g/cm ³)	0,8
Mixing water, (% by weight)	19 ± 1
Density for mixed product, (g/cm ³)	2,05 ± 0,1

Application and curing conditions

Minimum application temperature for substrate and ambient, (°C)	> 5
Setting time at 20°C and 50% R.H., - Initial, (h) - Final, (h)	 3-4 6-8

Cured product characteristics

Density for cured and dry mortar, (g/cm ³)	1,9 ± 0,1
Requirement for repair products, EN 1504-3 (Class)	Class R3
Compressive strength at 28 days, EN 12190 (MPa)	≥ 25
Chloride ion content, EN 1015-17:2001 (% by weight)	≤ 0,05
Adhesive bond on concrete at 28 days, EN 1542 (MPa)	≥ 1,5
Elasticity modulus, EN13412 (GPa)	≥ 15
Capillary absorption, EN 13057. w (kg/m ² ·h ^{0.5})	≤ 0,5
Reaction to fire	A1

Thickness / Consumption*

Maximum / Minimum thickness per layer, (mm)	5 / 100
Consumption (kg/m ² ·mm thickness)	2,05 ± 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. 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.