



MAXRITE[®]

INJECTION

SHRINKAGE-COMPENSATED, HIGH-RESISTANCE FLUID MORTAR MODIFIED WITH POLYMERS AND CORROSION INHIBITORS



DESCRIPTION

MAXRITE[®] INJECTION is a one-component and shrinkage-compensated mortar, formulated from cements and selected mineral products, modified with polymers and corrosion inhibitors. It comes in powder form, ready to use mixing only with water to achieve a high mechanical strength and adhesion, with excellent fluidity and non-segregating mortar. Contains no chlorides or metallic particles. It is designed for structural repair, fillings and anchorages exposed to an aggressive environmental ambient, providing additional protection for steel reinforcement and metallic elements.

MAXRITE[®] INJECTION meets the requirements of R4 Class according to EN-1504-3.

APPLICATION FIELDS

- Structural repair of damaged reinforced concrete by carbonation, deicing salts, industrial and marine environments, etc.
- As a load carrying between concrete and metallic structures due to its high adhesion.
- Maintenance of water treatment plants, industrial facilities, coastal structures, etc.
- Strengthening concrete structures.
- Filling of steel column bases.
- Anchoring of pillars in concrete prefabricated structures.
- Beam support in bridges.
- Anchoring of bolts, cables, etc.
- Filling of machinery foundation between concrete and steel plates.

ADVANTAGES

- Corrosion inhibitors protect and passive the reinforcement extending considerably the service life of the structure.
- High early and ultimate strength.
- Very good adhesion on concrete, reinforcements and metallic surfaces.
- Unaffected by extreme temperatures once set.
- Withstands repeated loads.
- Waterproof, resistant to water, oil and grease.
- Fireproof and non-toxic.
- Shrinkage-compensated and slightly expansive.
- Chloride-free and with no metallic particles, it is non-corrosive for steel surfaces.
- Excellent fluidity and self-levelling properties, allows application by injection or pouring.
- No segregation or bleeding in the mixing.

APPLICATION INSTRUCTIONS

Surface preparation

The surface must be structurally resistant and clean, free of dust, coatings, oil and grease. Clean by sand-blasting or similar for best adhesion on surfaces. Use high pressure air to clean loose particles. Before application saturate the concrete surface with water, but do not leave free-standing water prior to placing.

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[®] INJECTION**.

Eliminate rust by wire brush, needle gun, sand or shot blasting. Apply by brush the oxide converter and anti-corrosion protector **MAXREST® PASSIVE** (Bulletin No. 12).

Surface must be clean and free of dust, grease, salts, curing or de-moulding agents, paints or other films, etc. Prior to application of **MAXRITE® INJECTION**, dampen the exposed surface until saturated but do not leave free-standing water.

Mixing

Pour **MAXRITE® INJECTION** into a clean drum containing part of the water and start mixing. **MAXRITE® INJECTION** is mixed with water in a total amount of approximately 12% and 14% of product's weight (3 to 3,5 litres of water per 25 kg bag depending on the consistency required). Mixing is best done mechanically using a low speed mixing drill for 3 – 4 minutes, avoiding to introduce air bubbles into the mix. A concrete mixer can be also used. If mixed by hand, increase mixing time until lumps disappear. Place **MAXRITE® INJECTION** immediately after mixing, flowability can remain within the following 15 – 20 minutes at 20 °C.

For volumes greater than 0,1 m³ approximately or more than 4 cm deep, a mixture adding 8 kg of dry and clean sand from 3 to 5 mm per each 25 kg bag of **MAXRITE® INJECTION** should be done. Mix between 2,75 to 3 litres of water per bag, depending on the consistency required, but avoid any bleeding or segregation by an excess of water.

Placing

Use small mould supplements around placing area to help during placing procedure if required. **MAXRITE® INJECTION** is designed to be placed by low pressure pumping or simply pouring by gravity directly from the mixing container. Place continuously in one direction from one side to the other, in order to avoid cold joints and minimize the chance of air entrapment. The use of a manual vibration element, if necessary, will help in filling the volume required but avoid an excessive vibration as 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 ideal application temperature is from 10 to 25 °C. Do not apply when ambient or application surface temperature is below 5 °C

or if it is expected to fall within the 24 hours after placing.

Curing

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

Cleaning

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

CONSUMPTION

A 25 kg bag of **MAXRITE® INJECTION** fills an approximate volume of 13 -14 litres, depending on the mixing water (0,52 – 0,56 l/ kg of product). Approximately 1,8 - 2 kg/ m²/ mm. thickness of **MAXRITE® INJECTION**.

A mixture adding 8 kg of sand per 25 kg bag of **MAXRITE® INJECTION** fills an approximate volume of 17 – 18 litres, depending on the mixing water (0,68 - 0,72 l/ kg of product). Approximately 1,4 – 1,6 kg/ m²/mm thickness of **MAXRITE® INJECTION**. These estimative consumptions depend on substrate conditions, a preliminary test on-site will determine consumption 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 compounds.
- Do not exceed maximum thickness recommended per layer.
- Do not apply on substrates vitrified or enamelled or treated with water repellent agents. Do not apply on bituminous materials, metals, wood, plasters or paints.
- 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, residual water, or sea water, use the type **MAXRITE® FLOOR ANTISULFAT**.
- For any other application not specified in this technical bulletin consult our Technical Department.

PACKAGING

MAXRITE® INJECTION is supplied in 25 Kg bags.

STORAGE

Twelve months in its original unopened packaging, in a dry and covered place,

protected from humidity and frost, with temperatures above 5°C.

SAFETY AND HEALTH

MAXRITE® INJECTION is non-toxic but as all cementitious product 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® INJECTION** 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 recasting with concrete or 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).	
Appearance and colour	Grey powder
Maximum aggregate size, (mm)	2,0
Apparent density for powder, (g/cm ³)	1,25 ± 0,10
Mixing water, (% by weight)	13 ± 1
Application and curing conditions	
Minimum application temperature for substrate and ambient, (°C)	> 5
Pot life, (min)	15- 20
Setting time at 20°C and 50% R.H., (h)	5 – 6
Bleeding	None
Expansion, (%)	0,05
Fluidity, vibrating table (mm)	135
Cured product characteristics	
Cured product density, (g/m ³)	2,15 ± 0,1
Compressive strength at 28 days, EN 12190 (MPa)	>45
Flexural strength at 1 and 28 days, (MPa)	7 / 11,4
Chloride content, UNE-EN 1015-17:2001, (% by weight)	≤ 0,05
Adhesion on concrete, EN1542, (MPa)	≥ 2,0
Elasticity modulus, EN 13142, (GPa)	≥ 20
Consumption*/ Thickness	
Minimum/Maximum thickness per layer, (mm)	5 / 40
Estimated consumption, (kg/m ² per mm thickness)	2,0 ± 0,1

GUARANTEE

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