Betonfix PL

ST10-0221

Injectable mortar with high resistance to sulphates. It is used for microposts and connecting-rods in chemically aggressive ground.

EN 1504-6 CE

DESCRIPTION

Betonfix PL is a hydraulic ready-to-use mortar with high resistance to sulphates. Betonfix PL reaches a high mechanical resistance for both short and long curing. It has high fluidity without presenting segregation or bleeding phenomena. The product does not contain chlorides or other aggressive agents which could cause damage to the metal reinforcements or can be harmful to the user.
The product is CE marked as product suitable for anchornings systems according EN 1504-6

ADVANTAGES

- Expansive, high-resistance mortar, even at short curing time. High resistance to sulphates.
- Remarkable fluency without bleeding phenomena.

USES

Betonfix PL is used for armoured micro-poles, tie rods, riveted joints with high resistance to chemical attack from sulphates, chlorides and nitrates. **Betonfix PL** allows for a rapid stressing of the tie rods (2-3 days at +20 °C). The product can be mixed and injected with normal equipment.

WORKS

- Anchoring in rock and soil with high-resistance rods against sulphates (**SA5**);
- Repair of mixed masonry with injections of special cementitious mortars resistant to sulphates (**SA54**);
- Reinforcement of foundations with reinforced micropiles with excellent resistance to sulphates (**SA66**);
- Consolidation of foundations by injecting grouts resistant to sulphates (**SA67**).

APPLICATION

	Pourable		Curing time normal: 100 ± 30 mins
			Mixing water: 4,4-5,2 lt/ 20Kg Variable according to the desired workability

Betonfix PL is ready-to-use on the addition of drinking water per each pack. The product can be mixed and injected with the normal equipment. Avoid application at temperatures below +2 °C.

CONSUMPTION

1,5 Kg/dm³

PACKAGING

20 Kg bags

STORAGE

Protect from humidity. Store the product in a dry, sheltered place. Stored in these conditions and in unopened containers, the product remains stable for 12 months.

Characteristics	Value
Appereance	Powder
Colour	Grey
Apparent specific weight UNI 9446	1,0 ± 0,1 g/cm³
Mixing water	4,4 – 5,2 liters
Hazard classification 1999/45/CE e 67/548/CEE	Irritant
Maximum inert material size EN 1015-1	200 µ
Apparent volumetric mass of wet mortar EN 1015-6	2100 ± 50 Kg/m³
Consistency UNI 7044/72	>200 %

Pot life EN 1015-9	60 ± 20 mins
Setting time (start) EN 196-3	100 ± 30 mins
Setting time (end) EN 196-3	300 ± 30 mins
Minimum application temperature	+2 °C
pH of mixture	12 ± 0,5
Exudation UNI 8988	Absent

Characteristics of the hardened product	Value
Compression strength 1 day EN 12190	> 35 MPa
Compression strength 7 days EN 12190	> 60 MPa
Compression strength 28 days EN 12190	> 70 MPa
Flexural strength 1 day EN 12190	> 4 MPa
Flexural strength 7 days EN 12190	> 5 MPa
Flexural strength 28 days EN 12190	> 7 MPa
Secant modulus of elasticity on compression at 28 days UNI 6556	28980 ± 1000 MPa

Characteristics	EN 1504-6 limits "Anchoring of steel armor"	Typical Value
Slip-resistance of steel bars Movement referred to a load of 75 KN [mm] EN 1881	≤ 0,6	Ok
Reaction to fire EN 13501-1	Euroclass	A1
Cloride ion content	≤ 0,05%	Ok

WARNING

Product for professional use.
Given the possibility that different supplies of the same raw materials have slightly discordant colors, including a lot of production and the other may be minor color variations that do not affect in any way the technical performance of the products supplied.
Do not mix with other binders (concrete, lime, gypsum).
Before using, check bags have not been damaged, and do not use the product if there are any lumps.
Use the entire contents once the bag has been opened.
Do not remix by adding water to the product when it has already started to set.

For further information and advice on safe handling, storage and disposal of chemical products, the user must refer to the most recent Safety Data Sheet, containing physical, ecological, toxicological and other data related to safety.
All technical data shown in this Technical Data Sheet are based on laboratory tests. Actual measurement data may vary due to circumstances beyond our control.
The information and requirements indicated in this Technical Data Sheet are based on our current knowledge and experience and are to be considered, in any case, purely indicative. They cannot guarantee the final result of the applied product and they have to be confirmed by exhaustive practical applications; therefore the user must test the suitability of the product for the intended application and its purpose. Users must always refer to the latest version of the local technical data sheet related to the product.

TECHNICAL SPECIFICATIONS

SK5 - Anchoring in rock and soil with high-resistance sulphate rods
SK54 - Repair of mixed masonry with injections of special cementitious mortars resistant to sulphates
SK66 - Reinforcement of foundations with reinforced micropiles with excellent resistance to sulphates
SK67 - Consolidation of foundations through the injection of grouts resistant to sulphates

(**SK 5**) Anchoring in rock and soil with high-resistance tie rods against sulphates by means of drilling and insertion of tie rods; injection of Betonfix PL by Kimia S.p.A. or similar product, mixed and injected with normal equipment. Consumption: 1.5 kg per liter to fill.

(**SK 54 - SK 67**) Grouting of all cracks. If the masonry is plastered, check the perfect adhesion of the plaster to the substrate to avoid bagging.
Horizontal drilling of the mortar joints of the wall with rotating diamond probes to avoid dangerous vibrations. The perforations will be 4 per sm with a diameter of 20-24 mm to guarantee a homogeneous saturation of the masonry.
Positioning and sealing in the perforations of logs usable as injectors. Accurate internal wash of the masonry with lightly pressed water through copper injectors previously positioned from top to bottom.
Injection with normal manual or electrical equipment, until the complete saturation of the walls of Betonfix PL. by Kimia S.p.A. or similar product. The masonry will be saturated when the mortar will drop out from the injector immediately above those of the injection. Material consumption will be 150 kg/cm.
After the injection work, remove all the injectors and prepare the masonry for possible interventions.

(**SK 66**) Drilling of special small steel posts with high bearing capacity for foundations, subfoundations, anchors, performed with rotating probes o rotopercussion, with the possibility of drilling with different inclinations. Drilling can also be performed in presence of heterogeneous substrates such as mixed masonry, stones of different hardness, vegetable soil.
Insertion of N 80 steel tubular armor perforations consisting of muffled clips in length from 3 to 5 meters, so as to allow you to work at a total length of 60 meters, fitted with non-return valves at intervals of about one half at the bottom for about 50% of the total length. Creation of membrane between the ground wall and the steel core by low pressure injection of Betonfix PL by Kimia S.p.A. or similar product. High pressure injection in more shots, through the valves. Consumption of material will be 1500 kg/cm.
The ready-to-use high-resistance sulphate hydraulic injection mortar will be prepared and applied by carefully following the instructions given in the technical data sheets provided by the manufacturer and must have the following characteristics:

• Compressive strength EN 12190 at 1 days> 35 MPa; at 7 days> 60 MpPa; at 28 days> 70 MPa.
• Flexural strength EN 196/1 at 1 days> 4 MPa; at 7 days> 5 MPa; at 28 days> 7 MPa.
• Compression modulus UNI 6556: 28980 ± 1000 MPa
• Resistance to the extraction of steel bars. Displacement relative to a load of 75 KN [mm] EN 1881: specification exceeded.

The mortar will be CE marked according to EN 1504-6. The product will also have been tested through notified laboratories with regard to sulphate resistance (in particular it will be shown that, given the percentages of tricalcium aluminate C3A and those of 2C3A + C4AF, it can be defined, according to UNI 9156 and FA 262 Nov. 1988, "ad high resistance to sulphates").