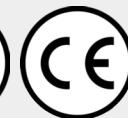


Betonfix MONOLITE R

ST10-1022

Thixotropic high-resistance, rapid-curing mortar, for structural and non-structural repair of reinforced concrete structures.



DESCRIPTION

Betonfix MONOLITE R is a non-shrink, rapid-curing, ready-to-use, thixotropic mortar with the addition of synthetic fibers.

It has high mechanical strength for both short and long curing, strong adhesion to concrete, high resistance against sulphates and excellent durability even in strong aggressive conditions (coastal areas, deicing salts, acid rain).

It is CE marked as an R4 mortar according to EN 1504-3 and for systems for the protection of reinforcement rods (according to 1504-7). It is CE marked as a protective coating according to 1504-2, intervention principles C, MC and IR.

The product Betonfix MONOLITE R is part of the Kimisteel GLV 650B SYSTEM which got the CVT n.207.

ADVANTAGES

- Performances: final mechanical development required for R4 mortars within the first 7 days.
- 3 in 1 System: passivation of armor, restoration and skim coating at the same time in just a day of work, with a single coat.
- Suitable for both structural repairs (cortical) and non-structural (skim-coating).
- Excellent workability and easy to apply (manual or mechanized).

USES

Consolidation, restoration and skim coating of reinforced concrete works (columns, beams, cornices, balcony risers, bridges and road and railway viaducts, canals, dams, tunnels).

APPLICATION

	Manual application		Rapid curing time: at 5°C and 65% H.R.: 35 ± 10 mins; at 21°C and 65% H.R.: 20 ± 10 mins;
	Mechanical devices application		Mixing water: 4,5-5 lt/ 25Kg variable according to the desired workability
	Max thickness per coat: 2-30 mm for horizontal application 2-20 mm for vertical application 2-20 mm for overhead application		

The substrate must be perfectly clean, compact, free from dust, grease, varnishings, etc.

Carefully remove degraded and inconsistent concrete using hammer and chisel until you get a compact substrate.

The superficial tensile strength of concrete "Pull off" mustn't be lower than 1,5 Mpa as indicated in the substrate quality check procedures according to EN 1504-10.

Remove the concrete in contact with the visible metal reinforcement using a needle gun and then sandblast it.

Soak the area to be treated and remove any possible standing water, before the casting.

Betonfix MONOLITE R is a ready-to-use product with the simple addition of drinking water for each package, depending on the quantity shown in the table.

Mixing must be carried out in a cement mixer or in the mixer of the spraying machine for at least 5 minutes until you get a proper plastic, homogeneous, lump-free mixture. A mortar mixer or a drill equipped with an agitator can be used, it depends on the quantity to be prepared. Mixing must take place at low speed to avoid entrapping air. Introduce 3/4 of water required and continuously both product and remaining water until you get the consistency desired.

Apply by trowel or by spray with suitable plastering machine.

It is recommended to roughen the surface by bush hammering and apply the mortar with a thickness such as to create a concrete layer of at least 2 cm.

The discretionary insertion of a suitable galvanized electro-welded metal mesh to improve the seal of the mortar layer does not alter its mechanical characteristics.

The setting values related to mechanized application are the following:

- machine type model PFT G5,
- with lung type D7,
- pipe parameters:
 - diameter d=30mm,
 - length L=30m.

CONSUMPTION

17 Kg/m²/cm.

PACKAGING

25 kg multilayer polythene bag

STORAGE

Protect from humidity. Products have to be stored in a dry, sheltered place. In these conditions and in intact containers, the product maintains its technical characteristics for 12 months.

Characteristics	Typical Value
Aspect	Powder
Colour	Grey
Apparent specific weight UNI 9446	1,35 ± 0,1 g/cm ³
Hazard classification 1999/45/CE & 67/548/CEE	Irritant
Granulometric interval EN 1015-1	0,1 – 0,5 mm
Apparent volumetric mass of fresh mortar EN 1015-6	2050 ± 30 Kg/m ³
Consistency of the mix EN 13395-1	40-50 %
Initial hardening time EN 196-3 a 21°C & 65% H.R.	a 5°C and 65% H.R. 35 ± 10 min. a 21°C and 65% H.R. 20 ± 10 min.
Final hardening time EN 196-3 a 21°C & 65% H.R.	a 5°C and 65% H.R. 50 ± 10 min. a 21°C and 65% H.R. 30 ± 10 min.
Minimum application temperature	+5 °C
pH of the mix	12 ± 0,5
Dangerous substance	According to DM 10/05/2004

Characteristics (mixing water 18%)	Limits EN 1504-3 for R4 mortars	Typical Value
Compressive strength EN 12190 [MPa]	≥ 45	1 day ≥ 15 7 days ≥ 35 28 days ≥ 50
Flexural strength EN 196-1 [MPa]	No request	1 day > 5 7 days > 7 28 days > 8

Characteristics (mixing water 18%)	Limits EN 1504-3 for R4 mortars	Typical Value
Secant modulus of elasticity on compression EN 13412 [GPa]	≥ 20	≥ 20
Chloride content EN 1015-17 [%]	≤ 0,05	≤ 0,05
Adhesion to CLS (EN 1542) [MPa]	≥ 2	≥ 2
Thermal compatibility measured as adhesion (EN 1542) after 30 dry thermal cycles EN 13687-4 [MPa]	≥ 2	≥ 2
Thermal compatibility measured as adhesion (EN 1542) after 30 thundershower cycles EN 13687-2 [MPa]	≥ 2	≥ 2
Thermal compatibility measured as adhesion (EN 1542) after 50 freezethaw cycles with de-icing salts EN 13687-1 [MPa]	≥ 2	≥ 2
Resistance to accelerated carbonation, EN 13295	Carbonation depth, dk < Concrete for reference Type MC 0.45 a / c	OK
Impermeability to water (capillary absorption coefficient, EN 13057) [Kg/m ² ·h ^{1/2}]	≤ 0,5	< 0,5
Reaction to fire	-	A1

Characteristics (mixing water 18%)	Limits EN 1504-7	Typical Value
Test of protection against corrosion* (EN 15183) after 10 cycles of condensation with water, 10 cycles of sulfur dioxide in accordance with EN ISO 6988, 5 days of saline fog according to EN 60068-2-11	After the series of cycles, coated steel bars must be free of corrosion. The penetration of rust at the end of the steel plate without coating must be <1 mm	OK
Pull-out strength of the bars treated (EN 15184), relative load to a displacement of 0.1 mm	Load of at least 80% on uncoated armor	OK
Determination of the glass transition temperatures (EN 12614)	At least 10°K above the maximum operating temperature	NPD

*The test was carried out with a coating thickness of 30 mm.

Characteristics (mixing water 18%)	Limits EN 1504-2 Coating C, principles MC and IR	Typical Value
Adhesion to concrete EN 1542	Flexible systems without trafficking > 0,8 Mpa with trafficking > 1,5 Mpa Rigid systems without trafficking > 1 Mpa with trafficking > 2 Mpa	>2 n/mm ²

Characteristics (mixing water 18%)	Limits EN 1504-2 Coating C, principles MC and IR	Typical Value
Permeability EN ISO 7783-2	Class I (permeable to vapour) $S_d < 5$ m Class II $5 \text{ m} \leq S_d \leq 50$ m Class III (not permeable to vapour) $S_d > 50$ m	Class I
Capillar absorption and water permeability EN 1062-3	$< 0,1 \text{ Kg/m}^2 \cdot \text{h}^{0,5}$	$< 0,1 \text{ Kg/m}^2 \cdot \text{h}^{0,5}$
Reaction class to fire	Declared value	A1

WARNING

Product intended for professional use.

For thicknesses less than 3 cm use Betonfix KIMIFER to passivate the reinforcement.

In different batches a light colour shift may occur own to raw material shade, this does not affect the technical properties of the product.

Do not remix with water any product that has already started to set.

Do not add cement, additives or other Betonfix mortars.

Before using, check bags have not been damaged, and do not use the product if there are lumps.

Use all the material once the package is opened.

Take all necessary precautions to ensure correct curing of the castings.

Do not cast at temperatures below $+5$ ° C.

Wet with water for the first 48 hours, or cover with plastic sheets or damp jute bags.

Do not use anti-evaporation products if there is no provision for further coatings.

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.