



Betonfix RCA

ST12-0421

Thixotropic, cement-based mortar with low modulus of elasticity for restoration and structural consolidations.



DESCRIPTION

Betonfix RCA is a thixotropic, hydraulic, ready-to-use mortar with compensated shrinkage and synthetic fibres, enriched with corrosion inhibitors.

Betonfix RCA has high resistance to sulphates and guarantees strong adhesion to concrete, stone walls and terracotta. The product does not contain metal particles and is chloride-free.

Betonfix RCA is CE marked according to the requirements of EN 1504-3 as a R3 mortar. Furthermore the product is in compliance with the EN 8147.

ADVANTAGES

- Final mechanical development required for R3 mortar within the first 7 days. With corrosion inhibitors, free from metal particles and free from chlorides. No cracking risk.
- Versatile: available in variants with different types of granulometry and fibers. Mixed with additives or latex is used for specialised applications.
- Durability and resistance to environmental aggression proven by work from the early 1980s.
- Excellent workability and easy application (manual or mechanized).

USES

Betonfix RCA is used for the restoration of deteriorated reinforced concrete structures such as pillars, beams, cornices, balcony mouldings, bridges, road and rail viaducts, canals, dams, tunnels. For structural and functional restoration of walls and stone or clay brick vaults.

WORKS

- Cortical restoration and protection of degraded reinforced concrete structures with exposed metal reinforcement (**SA65**)

APPLICATION

	Manual application		Setting time: 150 ± 30 mins
	Mechanical device application		Mixing water: 4-5 lt/ 25Kg variable according to the desired workability
	Max thickness per coat: 15-30 mm for horizontal application 15-30 mm for vertical application 15-20 mm for overhead application		

Carefully remove the deteriorated and brittle concrete using a hammer until the substrate is compact.

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

The "Pull off" concrete surface tensile strength must not be less than 1.5 MPa, as indicated by the quality control procedures of the substrate according to EN 1504-10. If the substrate has lower mechanical characteristics, please contact our Technical Dpt.

Where steel reinforcements are exposed, remove any adjoining concrete with a needle gun, hydrosand the entire surface and protect the steel reinforcement bars with **Betonfix KIMIFER** applied by brush in double coat.

Betonfix RCA is ready-to-use on the addition of potable water, according to the kind of application (with a trowel or spray).

Wet the area to be treated until SSD conditions eliminating any exceeding water stagnation.

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.

Making sure to add 3/4 of the required water first, then pour the product and the remaining water continuously until you obtain the consistency required.

Apply with a trowel or spray with suitable plastering machineries.

It is advisable to perform a bush-hammer based treatment on the whole area in order to achieve the correct roughness, then place, if needed, a suitable electro-welded galvanized metal mesh to ensure a higher stability of the intervention, and apply the mortar in order to create a coverage of the steel reinforcement bars with at least 2 cm thickness. For thicknesses over 6 cm replace **Betonfix RCA** with **Betonfix CR** (pourable) using suitable formworks.

In particular we suggest to use a plastering machine with the following characteristics:

- Hose diameter: 30 mm
- Hose length: 30 m
- D7-pumps
- All remaining characteristics corresponding to a plastering machine PFT G5.

CONSUMPTION

17 Kg/m²/cm.

PACKAGING

25 kg multilayer polythene bag

STORAGE

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

Characteristics	Value
Appearance	Powder
Colour	Grey
Specific apparent weight 9446	1,35 ± 0,1 g/cm ³
Hazard classification 1999/45/CE e 67/548/CEE	Irritant
Max dimension of the aggregate EN 1015-1	3 mm
Apparent volumetric mass of fresh mortar EN 1015-6	2050 ± 50 Kg/m ³
Consistency 7044/72	50-70 %
Mixing process EN 1015-9	80 ± 30 mins
Min. application temperature	+5 °C
pH of mixture	12 ± 0,5
Start setting time EN 196-3	150 ± 30 mins
End setting time EN 196-3	230 ± 30 mins
Obstructed expansion 8147	0,05 %

Characteristics (mixing water 18%)	EN 1504-3 limits for R3 mortars	Typical Value
Compressive strength in 28 dd EN 12190 [MPa]	≥ 25	In 1 day > 10 In 7 days > 25 In 28 days > 35

Characteristics (mixing water 18%)	EN 1504-3 limits for R3 mortars	Typical Value
Flexural tensile strength EN 196/1 [MPa]	Not required	In 1 day > 2 In 7 days > 5 In 28 days > 6
Compressive elastic secant modulus EN 13412 [GPa]	≥ 15	19
Chloride content EN 1015-17 [%]	≤ 0,05	≤ 0,05
Adhesion to concrete (EN 1542) [MPa]	≥ 1,5	2
Adhesion to concrete (EN 1542) after dry cycles EN 13687-4 [MPa]	≥ 1,5	> 1,5
Adhesion to concrete (EN 1542) after thunder-shower cycles EN 13687-2 [MPa]	≥ 1,5	> 1,5
Adhesion to concrete (EN 1542) frost-thaw cycles EN 13687-1 [MPa]	≥ 1,5	> 1,5
Resistance to accelerated carbonation, EN 13295	Depth of carbonation, dk < Concrete MC 0,45 a/c	OK
Waterproofing (capillary absorption coefficient, EN 13057) [Kg/m ² ·h ^{1/2}]	≤ 0,5	< 0,5
Reaction to fire class EN 13501-1	Euroclass	A1

WARNING

Product intended 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 remix by adding water to the product when it has already started to set.

Do not add concrete, additives or other Betonfix mortars.

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. Take all necessary precautions to ensure correct curing of the casting. Do not use at temperatures of under +5 °C. Wet with water for the first 48 hours, or cover with plastic sheets or damp jute bags. Do not use anti-evaporation agents in case other coatings are to be performed.

The marking obligations are not related to the intrinsic nature of a given product, but to the use to which a specific material is used: before making the order in Kimia, the buyer shall submit all the documentation available to the construction supervision in order to determine the materials suitability (in terms of certifications and performance) in relation to the use for which they are intended.

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

SK65 - Cortical restoration and protection of degraded reinforced concrete structures with exposed metal reinforcement

(SK 65) Accurate removal of degraded and inconsistent concrete by hammering until a you see a compact substrate.

Remove concrete from metal reinforcements by means of a needle gun.

Positioning of new collaborative metal reinforcement in case of noticeable oxidation of existing irons with a strong reduction of the section and grout with special epoxy resins.

Hydro-sandblasting or sandblasting of concrete and metal reinforcement. Wet the area to be treated and remove any stagnant water at the time of casting.

For the treatment of the rods, use Betonfix KIMIFER mortar by Kimia S.p.A. or similar product. The product will be applied by brush in a double coat with a total consumption of about 0.5 Kg/m². The first coat will be spread on the metal reinforcement to be protected, the second coat will be applied, as an adhesive bridge, also on the concrete to be restored.

For the cortical restoration, use Betonfix RCA mortar by Kimia S.p.A. or similar product. Apply with a trowel or spray with suitable plastering machines. Consumption: 17 kg/m² every cm of thickness.

The ready-to-use anti-shrinkage hydraulic mortar with a thixotropic effect containing synthetic fibers and corrosion inhibitors will be prepared and applied scrupulously following the indications given on the technical sheets supplied by the manufacturer and must have the following characteristics:

- Compressive strength UNI EN 12190 at 1 days: ≥ 10 MPa; at 7 days: > 25 MPa; at 28 days: > 35 MPa.
- Tensile flexural strength UNI EN 196/1 at 1 days: > 2 MPa; at 7 days: > 5 MPa; at 28 days: > 6 MPa.
- Elastic secant modulus on compression EN 13412 [Gpa]: 19;
- Concrete adhesion (UNI EN 1542) = 2 Mpa

The mortar will be CE marked as R3 according to UNI EN 1504-3. The manufacturer will be able to provide specific reports relating to the initial type tests performed at notified laboratories for the most relevant data (adhesion, carbonation resistance, elastic modulus and chloride content).

Kimicover BLINDO by Kimia S.p.A. will be used for any anti-carbonation protective coating. or similar product diluted with 10-15% of drinking water applied in a double coat by brush, roller or spray respecting a total consumption not lower than 0.5 kg / m².