

Technological, single-component structural mortar with high chemical resistance (Class AARS), suitable for reinforcement, patching and section increasing of load-bearing structures in concrete, reinforced concrete and masonry. Thixotropic, fibro-reinforced and with compensated shrinkage. Superior resistance to carbonation and attack of nitrates, sulphates and chlorides.



## KERABUILD® BETON

**HIGH MECHANICAL RESISTANCE** – The KERABUILD® BETON technology develops a high degree of resistance to adhesion, shear and compression which ensures correct bonding of patched areas with existing structures. Adhesion-promoting polymers with rigid, chemical reticulation, a mix of high-performance binders and fibres with high cohesive strength provide KERABUILD® BETON with the superior degree of resistance of a monolithic, structural concrete.

**GUARANTEED LONG LIFE** – The durability of structural reinforcements obtained with KERABUILD® BETON is guaranteed by the product's high levels of resistance to carbonation, chemical attack (Class AARS) and frost-thaw cycles and by its proven dimensional stability. The use of silicate micro-particles with pozzolanic action, fluidifying agents for the reduction of the water/cement ratio and interstitial crystallisation agents with expansive effect completes the mix design of KERABUILD® BETON, ensuring superior compactness and monolithic quality of restoration work.

**PERFECT THIXOTROPIC BALANCE** – Facilitated manual or mechanized application of KERABUILD® BETON is ensured by mass thixotropy tested to obtain a light, non-slip mixture. A mix of micro-silicate components ensures the right degree of slide on work tools and allows for rapid, secure application.

Developed by the Research and Development Division and guaranteed by the Training Center.  
Compliant with the CARE Project for the Protection of Health and the Environment:  
Building Division (Method M1 – Action E507).

# KERABUILD® BETON

## AREAS OF USE

### Reinforced, structural patching of:

- beams and pillars in reinforced concrete, load-bearing masonry with sandwich system
- slabs and vaults with insulation casting
- exterior foundation walls or basements with positive or negative hydrostatic pressure

### Reinforced, structural restoration of:

- irrigation channels
- tanks or basements with positive or negative hydrostatic pressure, load-bearing walls
- tunnels, bridges and viaducts

### Creation of:

- bases for structural support, filling of holes and cavities, restoration of industrial flooring

### Use

For indoor and outdoor use on concrete, reinforced concrete and masonry.

### Do not use

On walls in gypsum or gypsum-based, ready-for-use plasters, on dirty or flaky substrates, on residual traces of parting compounds, on old paint or finishing coatings, for high-thickness patching or levelling without composite-action reinforcement.

## PREPARATION OF SUBSTRATES

When creating composite-action patching, besides insertion of the required reinforcement materials the substrate must be perfectly cured, free from hygrometric shrinkage, solid (i.e. free from any weak or easily removable parts), clean, roughened and, when possible, also sanded or hack-hammered until the bare stone is uncovered.

Check that the concrete contains no traces of parting compound. Moisten substrates to be restored or reinforced to saturation point. Use of a high pressure washer is always recommended.

Remove carbonated areas and clean reinforcement rods to eliminate all traces of rust. Oxidised reinforcement rods must always be freed from any residual traces of old concrete over the entire surface, so as to ensure complete protective restoration of the metal.

Passivation treatment of cleaned, old reinforcement rods must be carried out while the metal is still clean, using KERABUILD® FERRI technological passivating mortar, to be applied with a double pass.

In patching work on concrete flooring, create a peripheral dividing line around the area to be treated by mechanical cutting, perpendicular to the surface and to a minimum depth of 20 mm.

Insertion of reinforcement meshes or rods must be carried out so as to ensure a minimum metal-covering thickness of 10 mm.

## ABSTRACT

*Prepare the substrates to be restored or reinforced by removing any loose or flaky parts and roughen until the bare substrate surface has been exposed. Make visible, clean and treat any oxidised reinforcement rods. Correctly position the required reinforcement materials, wash the supporting surfaces with a high pressure washer and apply on the still wet substrate a non-shrink, fibro-reinforced structural mortar with carbonation and sulphate-resistance characteristics such as KERABUILD® BETON manufactured by Kerakoll.*

## INSTRUCTIONS FOR USE

### Preparation

Prepare KERABUILD® BETON by mixing 25 kg of powder with approximately 4.3 litres of clean water. The mixture is obtained by pouring the water into a clean container and then gradually adding the powder. The mixing process can be performed in a cement mixer or in a bucket (working manually or with a mechanical, low-rev agitator) or using a continuous mixer until a homogeneous, lump-free mortar is obtained.

It is also possible to use a plaster sprayer to mix and simultaneously pump the product, using a stator-rotor suitable for the granulometric grading of the mixture.

Store the product in places protected against the heat in summer months and against the cold during the winter.

Use running water not subject to the influence of outside temperatures.

### Application

Restorations carried out with KERABUILD® BETON structural mortar must always be reinforced. KERABUILD® BETON must be applied with a trowel or by spraying, with subsequent passes, until the required thickness has been obtained. All cavities must be filled, the reinforcement rods must be carefully surrounded with the patching material and the mortar must be made compact, exercising adequate pressure during application. Finish off the mortar as it begins to set, using the appropriate floating equipment (rigid float, sponge spreader, smooth spreader). KERABUILD® BETON must be applied after having moistened the substrate to saturation point and having treated any reinforcement rods with the technological KERABUILD® FERRI passivating mortar. Allow the product to cure and keep it moistened during the first 24 hours after application.

Patching carried out on plane surfaces must take place in the absence of ventilation or covering the patched area with anti-evaporation sheets.

Structures reinforced with KERABUILD® BETON may be decorated and protected with KERABUILD® COLORE technological, elastic and waterproof paint.

### Cleaning

Residual traces of KERABUILD® BETON can be removed from tools with water before the product has hardened.

## SPECIAL NOTES

In high-thickness coatings on continuous surfaces, a suitable electro-welded mesh has to be inserted and anchored to the substrate with mechanically applied anchoring pins. After having applied a rough coat with KERABUILD® BETON, position the reinforcement with the anchoring required by layout drawings and then cover with structural mortar.

Structural construction joints on particularly smooth, compact and non-absorbent concrete surfaces can be obtained by prior brush application of KERABUILD® EPORIPRESA, the technological, fluid epoxy system suitable for high-resistance construction joints with overlaying times longer than 30 minutes.

**TECHNICAL CHARACTERISTICS**

Appearance	Ready-mixed	
Apparent volumetric mass	≈ 1.39 kg/dm <sup>3</sup>	UEAtc
Mineralogical nature of inert material	Silicate-crystalline carbonate	
Granulometric interval	≈ 0 – 2.5 mm	UNI 10111
CARE	Method M1 – Action E507	
Storage	≈ 12 months in the original packaging in dry environment	
Packaging	Bags 25 kg	

**TECHNICAL DATA compliant with Kerakoll Quality Standard**

Mixing water	≈ 4.3 l / 1 bag 25 kg	
Spreading of mixture	≈ 70%	UNI 7044
Specific weight of the mixture	≈ 2.08 kg/dm <sup>3</sup>	UNI 7121
pH of mixture	≥ 12	
Pot life	≥ 1 h	
Temperature range for application	from +5 °C to +35 °C	
Minimum thickness	≥ 1 cm	
Maximum thickness per layer	≈ 3 cm	
Coverage	≈ 18 kg/m <sup>2</sup> per cm of thickness	

At a temperature of +23 °C, 50% R.H. and no ventilation.

**FINAL CHARACTERISTICS**

Static modulus of elasticity after 28 days	≈ 27000 MPa	UNI 6556
Adhesion to concrete after 28 days	≥ 2 MPa	UNI-EN 1542
Compressive strength after 24 h	R <sub>ck</sub> 15 MPa	UNI-EN 196/1
Compressive strength after 3 days	R <sub>ck</sub> 30 MPa	UNI-EN 196/1
Compressive strength after 28 days	R <sub>ck</sub> 45 MPa	UNI-EN 196/1
Shear strength after 28 days	≥ 4.6 MPa	UNI 6132
Resistance to carbonation k	≤ 0.6 mm / year <sup>0.5</sup>	Boll.cem 8/88- ICTS/TFB
Resistance to sulphates (expansion)	≤ 0.04%	
Resistance to frost/thaw cycles with de-freezing salts:		
- weight loss after 25 cycles	≤ 0.5 mg/mm	RILEM CDC 2/77
- depth of splintering after 25 cycles	≤ 1 mm	RILEM CDC 2/77

Values taken at +23 °C, 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

**WARNING**

- **Product for professional use**
- use at temperatures between +5 °C and +35 °C
- make sure the substrate is not frozen
- protect surfaces from direct sunlight and wind
- do not add different binders or additives to the mixture
- do not add water to the product during the hardening phase
- do not apply on dirty or loose surfaces
- allow the product to cure, keeping it moistened during the first 24 hours of hardening
- if necessary, ask for the safety data sheet
- for further information please consult the **Kerakoll Worldwide Global Service +39-0536.811.516**

**CANALE DI ADDUZIONE - BOTTE BENTIVOGLIO**

Guastalla, Reggio Emilia - ITALY

**IDROBUILD® ULTRACEM**

Technological, instant-setting water-proofing product for immediate avoidance of infiltration of water in counterthrust

**KERABUILD® BETON**

Technological, single-component structural mortar with high chemical resistance (Class AARS) for reinforcement and section increasing of load bearing structures in concrete

**IDROBUILD® OSMOCEM**

Technological, single-component water-proofing product with osmotic action, suitable for water containment in concrete structures



## THE KERAKOLL GLOBAL SERVICE

Wherever you are, and whatever your project needs are, you can always rely on the Kerakoll Service: highly-efficient, global customer support matching the high quality of our products.

Technical Service +39-0536.811.516 - Technical assistance in real time

Training Service - Professional training to support our quality

Guarantee Service - A long-lasting warranty

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## KERAKOLL QUALITY STANDARD

In all units of the Kerakoll Group, before being considered suitable for production, products undergo stringent testing in accordance with the very high requirements set by the Kerakoll Quality Standard: a process supported by the Centre for Applied Technology which assists the work of researchers with its sophisticated resources and laboratories. At the Kerakoll laboratories the various elements of formulations are carefully analysed to identify and eliminate any factors of weakness by means of simulation of real working conditions in building sites. After the testing cycles, the new products are submitted to the extreme fatigue of the Safety-Test process.



## SAFETY, HEALTH AND THE ENVIRONMENT

For an industrial system such as Kerakoll it is vitally important to ensure that human health and the environment are protected. The Kerakoll company policy is to ensure that every possible safeguard be taken to make sure that these factors are always considered, and regulations and specific methods have been developed over the years for this purpose at all levels of the organisation. The CARE Project is the result of the Group's concern for human health and the environment, and ensures that the Group's products are perfectly safe for use and that the building materials supplied to builders ensure a very high level of safety before, during and after their use.

The information given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions in your building yards and the execution of the work, this information represents general indications that do not bind our Company in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.

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