

# Kerabuild® Eco Osmocem

Eco-friendly, osmotic action, mineral covering for the guaranteed, long-lasting protection and waterproofing of concrete structures, ideal for use in GreenBuilding. Recyclable as an inert material at the end of its life.

Kerabuild® Eco Osmocem is a single-component, thixotropic covering that complies with the performance requirements of EN 1504-2, surface protection systems (C), resistant to positive and negative hydraulic pressure.



**GREENBUILDING RATING®**

**Kerabuild® Eco Osmocem**

- Category: Inorganic Mineral Products
- Class: Protective and Waterproofing Products for Concrete
- Rating: Eco 1

					 Can be recycled as inert material

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

**PRODUCT STRENGTHS**

- Certified as suitable for the containment of drinking water
- Resistant to abrasion
- Resistant to environmental chemical attack (EN 206)

**ECO NOTES**

- Can be recycled as mineral inert material, avoiding waste disposal costs and environmental impact

**KERABUILD® REPAIR SYSTEM**

**KERABUILD® REPAIR SYSTEM** comprises a series of repair and consolidation tools, all complying with the Principles set down in EN 1504-9 (Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and assessment of conformity. General principles for the use of products and systems), formulated according to the structural element involved in the operation and the goals to be achieved. Each of the solutions proposed guarantees a Design Working Life (Vn) of 50 years or of 100 years, as foreseen by European codes when used in Europe.

By way of example, one way in which concrete can be restored with a guaranteed design working life of 100 years using Kerabuild® Eco Osmocem is outlined below:

Protection of reinforcement rods	Kerabuild® Eco Steel P	(EN 1504-7)
Concrete restoration	Kerabuild® Eco R4 Tixo	(EN 1504-3, R4)
Protection and finishing	Kerabuild® Eco Osmocem	(EN 1504-2, C)
	Kerakover Eco Acrilex Primer	
	Kerakover Eco Acrilex Plus	(EN 1504-2, C)

\* ÉMISSION DANS L'AIR INTÉRIEUR Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

## AREAS OF USE

### Use

Waterproofing of:

- foundations, lift shafts
- car parks and basement areas
- exterior foundation walls, also with negative hydrostatic thrust
- irrigation channels, drains, water tanks
- water (including drinking) collection tanks and reservoirs
- tunnels, galleries, siphons and dams
- bridges and viaducts

Fresh concrete castings, prefabricated concrete, structural plasters/renders.

### Do not use

On terraces, non-structural substrates, flexible substrates, walls in gypsum, plasterboard or ready-to-use gypsum-based plasters/renders.

## INSTRUCTIONS FOR USE

### Preparation of substrates

The substrate must be perfectly cured, free from hygrometric shrinkage, solid (i.e. free of loose or easily removable debris) and free from oil, grease and paint.

Check that the concrete contains no traces of parting compound. The most suitable cleaning methods are sandblasting, shot peening or washing with pressurised water. When working on weakened parts, when parts of the substrate are missing and also in the case of gravel beds, the substrate must be properly prepared with Kerabuild® Eco range mineral mortar.

Before application, substrates must be wet well but must not include any stagnant water.

In waterproofing operations for exterior foundation walls and underground structures, cut spacer rods at a depth of approximately 3 cm and fill the holes with Kerabuild® Eco Epobond organic mineral system.

Create rigid connection shells in horizontal and vertical corners with Kerabuild® Eco R3 Tixo mineral mortar after having produced by mechanical means a dove-tail channel in the wall-flooring or wall-wall contact line.

### Preparation

Prepare Kerabuild® Eco Osmocem by mixing 25 kg of powder with approximately 5 or 6 litres of clean water according to the chosen type of application. Mix with a low-rev, stirring device for approximately 2 minutes until a mixture with a fluid and smooth consistency is obtained. Pour almost all of the water required into a clean container and gradually add the powder during the mixing operation until the desired consistency is obtained. Leave the mixture to rest for approximately 5 minutes to allow for complete hydration of the micro-components and mix again for approximately 20 seconds before use.

**Expansion joints:** when waterproofing monolithic structures in the presence of expansion joints, it is necessary to connect the opposite surfaces with the Idrojoint 220 Flex strip, anchored to the substrate by means of the synthetic gum sealant Idrojoint Eco Gum and welded on the overlaying sections before laying Kerabuild® Eco Osmocem. If the joint is subject to positive pressure, the underlying seat which is free from movement must be grouted with Idrojoint Eco PU eco-friendly polyurethane sealant. If the joint operates with counterthrust, the negative pressure exercised on the central, elastic part of the joint will be counteracted by means of a sheet-metal profile anchored to the concrete with chemical anchoring pins applied to deep slots to allow for the effect of expansion.

### Application

Kerabuild® Eco Osmocem must be applied with a rigid brush in fibre or with a spreader, depending on the type of work required (simple waterproofing or simultaneous finishing of the substrate), or with a spray. Make adjustments to the mixing water in order to obtain a consistency suitable for the required application. Apply the first coat on a substrate moistened to saturation point but without the presence of stagnant water. Once the product has hardened, apply a second coat (normally 4 – 6 hours, depending on climatic conditions and the degree of absorbency of the substrate. In any case, do not apply the second coat after a period of 24 hours). Apply the second coat in a criss-cross direction as compared with the first coat. The layers of Kerabuild® Eco Osmocem must be applied with great care to ensure complete coverage of surfaces and proper connection of the walls and horizontal surfaces by means of connection shells.

### Cleaning

Residual traces of Kerabuild® Eco Osmocem can be removed from tools using water before the product hardens.

## SPECIAL NOTES

**Application of plaster/render on walls waterproofed with Kerabuild® Eco Osmocem:** to facilitate adequate bonding of the plaster/render with the waterproofing layer, once the product has hardened and in any case within a period of 24 hours following application of the last coat, apply a wide rough coat with Kerabuild® Eco R4 Tixo mineral mortar.

**Underground dwelling environments:** after waterproofing with Kerabuild® Eco Osmocem and rough-coating with Kerabuild® Eco R4 Tixo mineral mortar or Biocalce® Rinzafo, apply the natural bacteriostatic and fungistatic plaster/render Biocalce® Zoccolatura to guarantee a healthy living environment.

**Reservoirs for the containment of drinking water:** once the Kerabuild® Eco Osmocem covering has cured, wash it repeatedly using warm water before laying the tank in order to lower the pH of the cement-based covering.

## ABSTRACT

*Waterproofing, in the presence of water under positive or negative thrust, of structures in concrete, reinforced concrete, surfaces in cement-based plaster/render integral with the substrate, carried out with an eco-friendly, osmotic action, mineral covering for the guaranteed, long-lasting protection and waterproofing of concrete structures, such as Kerabuild® Eco Osmocem by Kerakoll SpA, bearing the CE mark, with GreenBuilding Rating Eco 1, suitable for the containment of drinking water and compliant with the performance requirements of standard EN 1504-2. Apply with a minimum 2 mm and maximum 6 mm thickness and coverage of ~ 1.5 kg/m<sup>2</sup> per millimetre of thickness.*

## TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	White or grey pre-mixed	
Apparent volumetric mass	≈ 1,28 kg/dm <sup>3</sup>	UEAtc
Mineralogical nature of inert material	silicate - crystalline carbonate	
Grading	0 - 400 µm	UNI 10111
Shelf life	≈ 12 months in the original packaging in dry environment	
Pack	Bags 25 kg	
Mixing water	≈ 5 – 6 l / 1 bag 25 kg	
Mixture spread	≈ 85%	UNI 7044
Specific weight of the mixture	≈ 1,73 kg/dm <sup>3</sup>	UNI 7121
pH of the mixture	≥ 12	
Pot life	≥ 1 hr	
Temperature range for application	from +5 °C to +35 °C	
Minimum thickness	≥ 2 mm	
Maximum thickness obtainable	≤ 6 mm	
Maximum thickness obtainable by coat	≈ 3 mm	
Waiting time:		
- for laying covering materials	≈ 24 hrs	
- for application of a rough coat	≈ 24 hrs	
Coverage	≈ 1,5 kg/m <sup>2</sup> per mm of thickness	

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

## PERFORMANCE

### HIGH-TECH

Resistance to the pressure of water:		
- thickness 2 mm	≥ 3 bar	DIN 1048
- thickness 6 mm	≥ 7 bar	DIN 1048
Containment of drinking water	suitable	Cert. ARPA 016830/06/RE
Adhesion to concrete after 28 days	≥ 3 N/mm <sup>2</sup>	EN 1542
Compressive strength after 28 days	≥ 25 N/mm <sup>2</sup>	EN 196/1
Resistance to abrasion after 28 days	≤ 3 g, H-22 abrasive disk, 500 g weight, 200 cycles	ASTM D 4060
Resistance to sulphates (penetration)	0 mm	
Resistance to chloride (penetration)	0 mm	UNI 7928a
Performances according to EN 1504-2 (C) standard		
Carbon dioxide permeability	SD (CO <sub>2</sub> ) > 50 m	EN 1062-6
Permeability to water vapour	class I: SD < 5 m	EN ISO 7783-2
Capillary absorption and water permeability	w < 0,1 kg·m <sup>-2</sup> ·h <sup>-0,5</sup>	EN 1062-3
Bond strength by pull off	> 0,8 MPa	EN 1542
Freeze/thaw cycles with de-icing salts	> 0,8 MPa	EN 13687-1
Chloride ion diffusion	null	UNI 7928

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

- abide by any standards and national regulations
- use at temperatures between +5 °C and +35 °C
- make sure the substrate is not frozen
- protect surfaces from direct sunlight and wind
- allow the product to mature, keeping it moistened during the curing phase
- joints present in the surfaces must be waterproofed with elastic products so as to ensure a perfect seal
- do not add different binders or additives to the mixture
- do not lay on gypsum, metal or wood
- do not apply on dirty or loose surfaces
- if necessary, ask for the safety data sheet
- for any other issues, contact the Kerakoll Worldwide Global Service - [globalservice@kerakoll.com](mailto:globalservice@kerakoll.com)

The Eco and Bio classifications refer to the GreenBuilding Rating Manual 2012. This information was last updated in October 2012 (ref. GBR Data Report - 11.12); please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see [www.kerakoll.com](http://www.kerakoll.com). KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet 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 Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.

Kerakoll  
Quality  
System

ISO 9001  
CERTIFIED

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