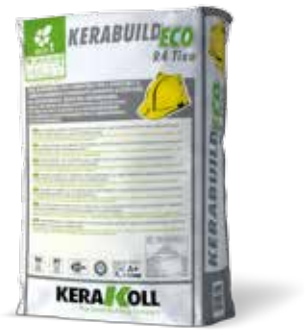
Kerabuild® Eco R4 Tixo



Eco-friendly, mineral mortar for the guaranteed, long-lasting restoration and consolidation of concrete structures, ideal for use in GreenBuilding. Recyclable as an inert material at the end of its life.

Kerabuild® Eco R4 Tixo is a polymer-modified, non-sag, fibre-reinforced, with compensated shrinkage and Zero Crack Risk mortar, that complies with the performance requirements of EN 1504-3 for class R4 structural mortars of type CC and PCC.

GREENBUILDING RATING®

Kerabuild® Eco R4 Tixo
- Category: Inorganic Mineral Products
- Class: Mineral mortars for concrete restoration
- Rating: Eco 1

eco 1	Regional Mineral ≥ 50%	Recycled Regional Mineral ≥ 30%	CO_2 ≤ 250 g/kg	Low Emission IAQ VOC Indoor Air Quality	Recyclable
					✓
					Can be recycled as inert material

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Excellent workability and ease-of-application
- Compliant with EN 1504-3 Class R4 for structures exposed to air (PCC) and in permanent contact with water (CC)
- Zero Crack Risk
- Resistant to environmental attack (EN 206)

ECO NOTES

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

AREAS OF USE

Use
Restoration and strengthening of parts of reinforced concrete structures and infrastructures such as bridges, viaducts, tunnels, water channels…

INSTRUCTIONS FOR USE

Preparation of substrates
Before applying Kerabuild® Eco R4 Tixo, roughen the substrate (to a depth of at least 5 mm) by mechanical scarification or hydro-demolition. Following this, eliminate any rust from reinforcement rods, then prepare them to St2 standard by first manually cleaning them or to Sa2 by mechanically cleaning (sandblasting) as specified in ISO 8501-1, then coat them in active/passive protective mortar .
After this, clean the substrate, removing any remaining dust, grease, oil or other contaminants using compressed air or a high pressure washer, wet the surface until it is fully saturated leaving no excess water what so ever.
Before applying Kerabuild® Eco R4 Tixo, check the resistance class of the concrete.
Before applying the mortar, check that the resistance class of the supporting concrete is suitable.
High-thickness patching on large surface areas: a suitable metallic reinforcement needs to be anchored to the substrate using anchoring pins.

* 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).

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INSTRUCTIONS FOR USE

Preparation
To prepare Kerabuild® Eco R4 Tixo, mix 25 kg of powder with 4.5 litres of water (we advise using the whole bag). A cement mixer can be used – mix until the mortar is smooth with no lumps. A mortar spray machine can also be used (gun or screw) to mix then apply the product. When mixing small quantities, use a bucket and drill-type mixing device with a low-rev agitator.
Store the product away from any sources of humidity and out of direct sunlight.

Application
Kerabuild® Eco R4 Tixo can be applied manually (trowel) or with a spray machine, in layers 10 mm to 35 mm thick, being careful to use the correct application technique.
When patched layers are more than 35 mm thick, insert a Ø 5, 10x10 cm electro-welded mesh. It should be anchored to the substrate at an appropriate spacing. When applying the product, make sure all cavities are filled and the reinforcement rods are totally incorporated into the restoration mortar. Kerabuild® Fiber, flexible polypropylene fibres can be used instead of the electro-welded mesh. Mix with Kerabuild® Eco R4 Tixo in a ratio of 0.8% by the weight of Kerabuild® Eco R4 Tixo (one 0.2 kg bag of Kerabuild® Fiber for each 25 kg bag of Kerabuild® Eco R4 Tixo).
Once applied, allow the product to level then finish using a sponge float and leave the wet surface to cure for at least 24 hours.

Cleaning
Residual traces of Kerabuild® Eco R4 Tixo can be removed from tools using water before the product hardens.

ABSTRACT

Restoration and consolidation of deteriorated reinforced concrete structural elements by applying, either manually with trowel or spraying, an eco-friendly mineral mortar for guaranteed long-lasting restoration and consolidation of concrete structures, such as Kerabuild® Eco R4 Tixo manufactured by Kerakoll Spa, bearing the CE mark, with GreenBuilding Rating® Eco 1 and compliant with the performance requirements of standard EN 1504-3, for Class R4, CC and PCC structural mortars.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	Powder	
Apparent volumetric mass	1430 kg/m^3	UEAtc
Aggregate mineral content	silicate - carbonate	
Grading	0 – 2,5 mm	EN 12192-1
Shelf life	≈ 12 months in the original packaging in dry environment	
Pack	25 kg bags	
Mixing water	≈ 4.5 l / 1 x 25 kg bag	
Flow of the mixture:		
- after 5 minutes	150 – 170 mm	EN 13395-1
- after 60 minutes	140 – 150 mm	EN 13395-1
Density of the mixture	≈ 2050 kg/m^3	
pH of the mixture	≥ 12,5	
Pot life	≥ 1 hr	
Temperature range for application	from +5 °C to +35 °C	
Minimum thickness	10 mm	
Maximum thickness per layer	35 mm	
Coverage	≈ 17,5 kg/m^2 per cm of thickness	

Values taken at +21 °C, 60% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

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PERFORMANCE

HIGH-TECH

Performance characteristic	Test Method	Requirements of standard EN 1504-3, class R4	Kerabuild® Eco R4 Tixo Performance in conditions	
			CC	PCC
Compressive strength	EN 12190	≥ 45 MPa (28 days)	> 20 MPa (24 hrs)	
			> 35 MPa (7 days)	
			> 50 MPa (28 days)	
Flexural tensile strength	EN 196/1	None	> 5 MPa (24 hrs)	
			> 6 MPa (7 days)	
			> 7 MPa (28 days)	
Adhesive bond	EN 1542	≥ 2 MPa (28 days)	> 2 MPa (28 days)	
Resistance to carbonation	EN 13295	depth of carbonation ≤ reference concrete [MC (0,45)]	value exceeded	
Modulus of elasticity under compression	EN 13412	≥ 20 GPa (28 days)	23 GPa (28 days)	
Thermal compatibility with freeze/thaw cycles with de-icing salts	EN 13687-1	bond strength after 50 cycles ≥ 2 MPa	> 2 MPa	
Capillary absorption	EN 13057	≤ 0.5 kg·m^{-2}·h-0.5	< 0.5 kg·m^{-2}·h$^{-0.5}$	
Chloride ion content (Determined on the product in powder form)	EN 1015-17	≤ 0,05%	< 0,05%	
Reaction to fire	EN 13501-1	Euroclass	A1	

LEED®

LEED® Points Contribution*	LEED® Points	
MR Credit 4 Recycled materials content	up to 2	GBC Italia

** LEED® is an environmental performance measurement system designed for new and existing commercial, institutional, and residential buildings, based on energy and environmental principles commonly recognized and accepted by the international scientific community. The LEED® building sustainability assessment system is a voluntary system. To calculate the score, consult the rules provided by the Italy LEED® Manual (edition 2009).*

WARNING

- Product for professional use
- abide by any standards and national regulations
- use at temperatures between +5 °C and +35 °C
- do not add binders or additives to the mixture
- do not apply to dirty, loose and flaking surfaces
- do not apply on gypsum, metal or wood
- following application, protect from direct sunlight and wind
- allow the product to cure during the first 24 hours
- if necessary, ask for the safety data sheet
- for any other issues, contact the Kerakoll India Helpline (Toll Free) 1800-200-6550 - info@kerakollindia.com

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