Code: E1300 2025/07 EN

Metric R4 Tixo

Fibre-reinforced thixotropic mortar with compensated shrinkage for reinforced concrete structural repair.

Metric R4 Tixo is a class R4 mortar with high mechanical resistance, high resistance to wear and aggressive environmental agents, for repairing and consolidating reinforced concrete structures.

GREENBUILDING RATING
REF. GBR DATA REPORT 12.24
APPROVED

Rating 2

- × Regional Mineral ≥ 60%
- × Recycled Regional Mineral ≥ 30%
- × CO_2 Emission ≤ 250 g/kg
- ✓ VOC Low Emission
- ✓ Recyclable

1. **Thixotropic, class R4**
2. **Thicknesses from 10 to 50 mm in a single coat**
3. **For structural layered repairs of reinforced concrete**
4. **Good adhesion capacity when cast on ceiling intrados**
5. **Applicable with a machine**

kerakoll

Areas of application

→ Intended use
- Repair and structural consolidation of weakened reinforced concrete and prestressed reinforced concrete elements of any nature and size:
- Structural repair of prefabricated concrete elements
- Structural repair of elements subject to cyclic stress, shocks and abrasions
- Reconstruction of concrete covers in reinforced concrete and prestressed reinforced concrete structures
- Smoothing of concrete surfaces and superficial defects
- Filling of rigid joints
- Bedding and sealing of concrete curbs

Instructions for use

→ Preparation of substrates
Before applying Metric R4 Tixo it is necessary to:
- thoroughly remove all weakened concrete until a solid, resistant substrate is obtained; roughen it by mechanical scarification or hydro-demolition to a depth of ≥ 5 mm, equivalent to level 8 of the Test kit for preparation of reinforced concrete and masonry substrates
- remove the rust from the reinforcing bars, which must be cleaned by brushing (manual or mechanical) or sandblasting;
- clean the treated substrate using compressed air or a high pressure washer;
- saturate with water until the substrate is saturated yet with no excess water on the surface.

Check that the resistance class of the supporting concrete is suitable.
In case of thick patched layers and on large surface areas, provide a reinforcing welded mesh anchored to the substrate.

→ Preparation
Prepare Metric R4 Tixo by mixing the powder using the amount of water indicated on the packaging (we advise using the whole bag).

The mixture can be prepared in:
- a mixer, mixing until a smooth, lump-free mortar is obtained;
- a suitable mixing pump;
- a mortar mixer or drill-type mixing device with a low-rev agitator.

→ Application
- Treat the reinforcing bars with Metric Rebar before applying Metric R4 Tixo.
- In localised and/or generalised repair work in which Metric R4 Tixo is applied in thicknesses from 10 mm to 50 mm (maximum per layer), apply the mortar by hand using a trowel or a mortar spray machine.
- For multiple-layer applications, leave the surface roughened and work after the previous layer has begun to set, no later than 12 hours.
- Before float finishing with a sponge float, wait for appropriate timing depending on weather conditions.
- Mechanized application: it is recommended to use a continuous cycle pump equipped with a stator suitable for the maximum grain size of the product (2.5 mm) or an indirect mixing pump.

Allow to cure during the first 24 hrs.

→ Cleaning
Residual traces of Metric R4 Tixo can be removed from tools and machines using water before the product hardens.

Certificates and marks

CE EN 1504-3 · R4 CC WET WAY TESTED EN 1504-3 · R4 PCC DRY WAY TESTED EN 1504-3 · EPD-IES-0011316 environdec.com · GEV-EMICODE EC 1 PLUS very low emission · B · Aticelca® 11137-0006

When properly emptied, the packaging is recyclable as paper (up to 80 per cent) according to the ATICELCA® 501 method.

eco 2

EMISSIONS DANS L'AIR INTÉRIEUR* A+ A+ A B 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).*

Abstract

Supply and laying of a fibre-reinforced, thixotropic mortar with compensated shrinkage, such as Metric R4 Tixo by Kerakoll, for localised or generalised centimetre-thick structural repair of damaged or deteriorated sections of reinforced concrete, by application with a trowel or by machine, after adequate preparation and wetting of the substrates until fully saturated. GreenBuilding Rating 2, CE-marked and compliant with the performance requirements of Standard EN 1504-3, Class R4, type CC and PCC, for volumetric reconstruction; according to Principles as defined by Standard EN 1504-9.

Technical Data compliant with Kerakoll Quality Standard		
Appearance	powder	
Apparent volumetric mass	≈ 1430 kg/m³	UEAtc
Aggregate mineral content	silicate - carbonate	
Grading	0 – 2.5 mm	EN 12192-1
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Pack	25 kg bags	
Mixing water	≈ 4.5 l / 1 x 25 kg bag	
Flow of the mixture	150 – 170 mm	EN 13395-1
Density of the mixture	≈ 2130 kg/m³	
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	50 mm	
Coverage	≈ 18 kg/m² 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.

Performance			
VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions			
Conformity	EC 1 plus GEV-Emicode		GEV certified 17759/11.01.02
HIGH-TECH			
Performance characteristic	**Test Method**	**Requirements of EN 1504-3 class R4**	**Performance**
Compressive strength (N/mm²):	EN 12190		
- 24 hrs			> 20
- 7 days			> 45
- 28 days		≥ 45	> 55
Flexural tensile strength (N/mm²):	EN 196-1	None	
- 24 hrs			> 5
- 7 days			> 6
- 28 days			> 8
Adhesive bond after 28 days	EN 1542	≥ 2 N/mm²	> 2 N/mm²
Carbonation resistance:	EN 13295	d_k ≤ reference concrete [MC (0.45)]	value exceeded
Modulus of elasticity under compression:	EN 13412	≥ 20 GPa (28 days)	
- CC			21 GPa
- PCC			20 GPa
Thermal compatibility with freeze/thaw cycles with de-icing salts	EN 13687-1	bond strength after 50 cycles ≥ 2 N/mm²	> 2 N/mm²
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
Aggregate performance characteristic	**Test Method**	**Requirements of UNI 8520-22**	**Aggregate performance**
Alkali-aggregates reaction	UNI 11504	reactivity class	NR (non-reactive)

Values taken at +21 °C, 60% 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
→ store the product away from any sources of humidity and out of direct sunlight
→ 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 Worldwide Global Service +39 0536 811 516 - globalservice@kerakoll.com

Kerakoll Spa
via dell'Artigianato 9
41049 Sassuolo - MO

+39 0536.816.511
info@kerakoll.com

www.kerakoll.com