

Geolite 40

Mineral geo-mortar with geo-binder base for monolithic repair of reinforced concrete.

Geolite 40 is a thixotropic geo-mortar for passivating, repairing, finishing and protecting structures in reinforced concrete, anchoring and fixing metal elements. Specific for operations involving mobile platforms, low temperatures and where the result must be ready for use quickly.



Rating 4

1. Thixotropic, class R4
2. Semi-rapid setting 40 min
3. Thicknesses from 2 to 40 mm in a single coat
4. Based on geo-binder
5. For naturally stable, monolithic repairs
6. Modular setting times
7. Water-resistant
8. Paintable after 4 hours

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

kerakoll

Areas of application

→ Use

Passivation, localised and generalised repair, finishing and monolithic protection of reinforced concrete structures of any nature and size. Specific for medium or large size operations, fast

execution of work with same-day delivery. Rapid, precision fastening and structural anchoring of sub-plates, tie-rods, bars, plates, machinery on reinforced concrete.

Instructions for use

→ Preparation of substrates

Before applying Geolite 40 it is necessary to:

- restore the concrete substrate and 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, thoroughly removing all weakened concrete;
- 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. Alternatively on horizontal concrete surfaces, apply Geolite Base on a dry substrate in order to ensure regular absorption and promote the natural crystallisation of the geo-mortar.

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 Geolite 40 by mixing 25 kg of powder with the amount of water indicated on the packaging (we advise using the whole bag). Bearing in mind the fact that the mortar hardens quickly, 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

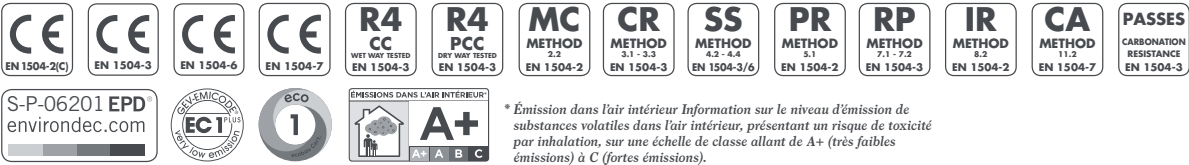
- In localised/generalised restoration work in which Geolite 40 is applied in thicknesses from 2 mm to 40 mm (maximum per layer), apply the mortar by hand using a trowel or mortar spray machine (bearing in mind the fact that the geo-mortar hardens very quickly).
- To make a protective finishing, Geolite 40 can be applied manually (with a steel spreader) or by machine in a minimum thickness of 2 mm, after first roughening the surfaces to a depth of 1-2 mm.
- For grouting of bars, fill the hole previously made with Geolite 40 by extruding the material with a special gun and insert the bar with a rotating movement.

Allow the surfaces to cure for at least 24 hrs.

→ Cleaning

Residual traces of Geolite 40 can be removed from tools and machines using water before the product hardens.

Certificates and marks



Abstract

Localised or generalised centimetre-thick monolithic repair of damaged or deteriorated sections of reinforced concrete and simultaneous treatment of reinforcing bars and millimetre-thick protective finishing of surfaces by application with a trowel, after adequate preparation and wetting of the substrates until fully saturated, of a certified, mineral, thixotropic, semi-rapid-setting (40 min.) geo-mortar with a geo-binder base, extremely low petrochemical polymer content, free from organic fibres, specific for the passivation, repair, finishing and guaranteed, long-lasting, monolithic protection of concrete structures and grouting of bars, such as Geolite 40 by Kerakoll Spa, GreenBuilding Rating 4, CE-marked and compliant with the performance requirements of Standards EN 1504-7 for the passivation of reinforcing bars, EN 1504-3, Class R4 for volumetric reconstruction and finishing, EN 1504-2 for the protection of surfaces and EN 1504-6 for the anchoring with swelling effect of steel reinforcement bars; according to Principles 2, 3, 4, 5, 7, 8 and 11 as defined by Standard EN 1504-9.

Technical Data compliant with Kerakoll Quality Standard		
Appearance	Powder	
Apparent volumetric mass	≈ 1320 kg/m³	UEAtc
Aggregate mineral content	silicate - carbonate	
Grading	0-0,5 mm	EN 12192-1
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Pack	25 / 15/ 5 kg bags	
Mixing water	≈ 4.6 l / 1 x 25 kg bag – ≈ 2.8 l / 1 x 15 kg bag – ≈ 0.9 l / 1 x 5 kg bag	
Flow of the mixture	160-180 mm	EN 13395-1
Density of the mixture	≈ 2010 kg/m³	
pH of the mixture	≥ 12,5	
Start/End of setting	≈ 35 – 40 min. (≈ 180 – 195 min. at +5 °C) – (≈ 25 – 30 min. at +30 °C)	
Temperature range for application	from +5 °C to +40 °C	
Minimum thickness	2 mm	
Maximum thickness per layer	40 mm	
Coverage	≈ 17 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 3541/11.01.02
HIGH-Tech			
Performance characteristic	Test Method	Requirements of standard EN 1504-7	Performance Geolite 40
Corrosion protection	EN 15183	no corrosion	value exceeded
Shear adhesion	EN 15184	≥ 80% of the value of the uncovered bar	value exceeded
	Test Method	Requirements of standard EN 1504-3, class R4	Geolite 40 Performance in CC and PCC conditions
Compressive strength	EN 12190	≥ 45 MPa (28 days)	> 6 MPa (4 hrs)
			> 20 MPa (24 hrs)
			> 35 MPa (7 days)
			> 45 MPa (28 days)
Flexural tensile strength	EN 196-1	None	> 2 MPa (4 hrs)
			> 5 MPa (24 hrs)
			> 6 MPa (7 days)
			> 9 MPa (28 days)
Adhesive bond	EN 1542	≥ 2 MPa (28 days)	> 2 MPa (28 days)
Resistance to carbonation	EN 13295	dk ≤ reference concrete [MC (0.45)]	value exceeded
Modulus of elasticity under compression	EN 13412	≥ 20 GPa (28 days)	22 GPa in CC 20 GPa in PCC
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

	Test Method	Requirements of standard EN 1504-2 (C)	Performance Geolite 40
Permeability to water vapour	EN ISO 7783-2	Reference class	class I: SD < 5 m
Capillary absorption and water permeability	EN 1062-3	$w < 0.1 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0.5}$	$w < 0.1 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0.5}$
Bond strength by pull off	EN 1542	$\geq 2 \text{ MPa}$	$> 2 \text{ MPa}$
Linear shrinkage	EN 12617-1	$\leq 0.3\%$	$< 0.3\%$
Thermal expansion coefficient	EN 1770	$\alpha_T \leq 30\cdot 10^{-6}\cdot\text{k}^{-1}$	$\alpha_T < 30\cdot 10^{-6}\cdot\text{k}^{-1}$
Resistance to abrasion	EN ISO 5470-1	loss of weight < 3000 mg	value exceeded
Adhesion following thermal shock	EN 13687-2	$\geq 2 \text{ MPa}$	$> 2 \text{ MPa}$
Resistance to impact	EN ISO 6272-1	Reference class	Class III : $\geq 20 \text{ Nm}$
Hazardous substances		compliant with point 5.4	
	Test Method	Requirements of standard EN 1504-6	Performance Geolite 40
Pull-out strength of steel rebars (movement in mm in relation to a 75 kN load)	EN 1881	$\leq 0,6 \text{ mm}$	$< 0,6 \text{ mm}$
Chloride ion content (determined on the product in powder form)	EN 1015-17	$\leq 0,05\%$	$< 0,05\%$
Hazardous substances		compliant with point 5.4	
Aggregate performance characteristic	Test Method	Requirements of standard UNI 8520-22	Aggregate performance Geolite 40
Alkali-aggregates reaction	UNI 11504	reactivity class	NR (non-reactive)

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 +40 °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



The Rating classifications refer to the GreenBuilding Rating Manual 2013. This information was last updated in May 2023 (ref. GBR Data Report – 05.23); please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see 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.