

Geolite Magma 20

Mineral geo-mortar with geo-binder base for monolithic grouting in reinforced concrete. Pourable, rapid setting 20 min

Geolite Magma 20 is a pourable geo-mortar for passivating, repairing and consolidating structures in reinforced concrete with a swelling effect, for anchoring and fixing metal elements. Specific for operations at low temperatures and when quick use is needed.



Rating 4

1. Pourable for grouting, class R4
2. Rapid setting 20 min
3. Thicknesses from 10 to 100 mm
4. Based on geo-binder
5. For naturally stable, monolithic repairs
6. Modular setting times

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

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Areas of application

→ Intended use

- Passivation, restoration and monolithic consolidation of reinforced concrete structures and infrastructures which must be ready for use quickly even at low temperatures, such as industrial and airport flooring, pavements, drains

- Fastening and structural anchoring of sub-plates, tie-rods, plates, machinery, pre-fabricated structures, road traps, manholes, fences, road signs and protective barriers

Instructions for use

→ Preparation of substrates

Before applying Geolite Magma 20 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 9 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. Alternatively on horizontal concrete surfaces, apply Primer Uni 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 Magma 20 by mixing 25 kg of powder with the amount of water indicated on the packaging (we advise using the whole bag). The mixture can be prepared in a cement mixer (bearing in mind the fact that the mortar hardens quickly), or in a bucket using a mortar mixer or a drill-type mixing device with a low-rev agitator until the mixture is smooth and has no lumps.

→ Application

- For repair and/or reinforcement involving the use of Geolite Magma 20, apply the mortar by pouring it on the extrados of horizontal surfaces or in sealed and formworks treated with parting compound that assists air escape, using the correct application techniques. Application thicknesses of Geolite Magma 20 shall not be less than 10 mm. For applications involving thicknesses of more than 60-100 mm (according to the type of work to be carried out and the size of the operation), to contain hydration heat, mix up a fine grain concrete, adding Ghiaia 3.6 in a ratio of 25-40% by weight of the Geolite Magma 20 (25-40 kg of Ghiaia 3.6 for every 100 kg of Geolite Magma 20), so that the granulometric curve is optimised according to the application thickness.
- For grouting of bars, fill the hole previously made with Geolite Magma 20 by extruding the material with a special gun and insert the bar with a rotating movement.











Geolite Magma 20 must be integrated with the structure to be restored by incorporating the existing reinforcing rods, after freeing them from the concrete, or by inserting additional reinforcement in the form of rods or electro-welded mesh.




Allow the surfaces to cure for at least 24 hrs. Geolite Magma 20 can be applied at room temperatures of -10°C in the presence of substrates with a minimum temperature of $+5^{\circ}\text{C}$; it is advisable to store the product in a heated room. If no special precautions are taken, it is recommended to use Magma 20 at temperatures $\geq +5^{\circ}\text{C}$.

→ Cleaning



Residual traces of Geolite Magma 20 can be removed from tools and machines using water before the product hardens.

Certificates and marks





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



* 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 certified, pourable, with rapid-setting (20 min.), mineral geo-mortar with a geo-binder base, with extremely low petrochemical polymer content, free from organic fibres; specific for the passivation, repair, guaranteed long-lasting monolithic consolidation of concrete structures, and anchoring of metal elements, such as Geolite Magma 20 by Kerakoll Spa, for localised or generalised centimetre-thick monolithic repair and consolidation of reinforced concrete in damaged or deteriorated sections and simultaneous treatment of reinforcing bars, reconstruction of concrete floors, fastening and anchoring of metal elements, road traps, manholes and street furniture with rapid return to normal use even at low temperatures, by casting application after adequate preparation and wetting of the substrates until fully saturated. 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, CC and PCC type, for volumetric reconstruction and consolidation and EN 1504-6 for the anchoring with swelling effect; according to Principles 3, 4, 7 and 11 as defined by Standard EN 1504-9.

| Technical Data compliant with Kerakoll Quality Standard | | |
|---|---|------------|
| Appearance | powder | |
| Apparent volumetric mass | ≈ 1360 kg/m³ | UEAtc |
| Aggregate mineral content | silicate - carbonate | |
| Grading | 0 – 2.5 mm | EN 12192-1 |
| Shelf life | ≈ 6 months from production in the original sealed packaging, protect from humidity | |
| Pack | 25 kg bags | |
| Mixing water | ≈ 3.5 l / 1 x 25 kg bag | |
| Flow of the mixture | 270 – 290 mm with no shaker table vibration | EN 13395-1 |
| Density of the mixture | ≈ 2220 kg/m³ | |
| pH of the mixture | ≥ 12.5 | |
| Pot life | ≈ 30 min. (at +5 °C) / ≈ 25 min. (at +10 °C) / ≈ 15 min. (at +21 °C) | |
| Start/End of setting | ≈ 20 – 30 min. (≈ 35 – 40 min. at +5 °C) | |
| Temperature range for application | from +5 °C to +40 °C | |
| Minimum thickness | 10 mm | |
| Maximum thickness | 60-100 mm (according to the type of work and the size of the operation) for thicker layers, mix Geolite Magma 20 with Ghiaia 3.6 | |
| Coverage | ≈ 19.5 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 3543/11.01.02 | |
| HIGH-TECH | | | | | |
| Performance characteristic | Test Method | Requirements of EN 1504-7 | Performance | | |
| Corrosion protection | EN 15183 | no corrosion | value exceeded | | |
| Shear adhesion | EN 15184 | ≥ 80% of the value of the uncovered bar | value exceeded | | |
| Compressive strength (N/mm²): | Test Method | Requirements of EN 1504-3 class R4 | Performance in CC and PCC conditions | | |
| | | | -10 °C* | +5 °C | +21 °C |
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| Flexural tensile strength (N/mm²): | EN 196-1 | None | | | |
| - 2 hrs | | | | +5 °C | +21 °C |
| - 4 hrs | | | | | |
| - 24 hrs | | | | | |
| - 7 days | | | | | |
| - 28 days | | ≥ 45 | | | |
| - 2 hrs | | | | | |
| - 4 hrs | | | | | |
| - 24 hrs | | | | | |
| - 7 days | | | | | |
| - 28 days | | | | | |
| Adhesive bond | EN 1542 | ≥ 2 N/mm² (28 days) | > 2 N/mm² (28 days) | | |
| Resistance to carbonation | EN 13295 | d _k ≤ reference concrete [MC (0.45)] | value exceeded | | |
| Modulus of elasticity under compression | EN 13412 | ≥ 20 GPa (28 days) | | | |
| - in CC | | | 28 GPa | | |
| - in PCC | | | 27 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 | | |

| Performance | | | |
|--|----------------------|--|---|
| | Test Method | Requirements of EN 1504-6 | Performance |
| Pull-out strength of steel rebars (movement in mm in relation to a 75 kN load) | EN 1881 | ≤ 0.6 mm | < 0.6 mm |
| Chloride ion content (determined on the product in powder form) | EN 1015-17 | ≤ 0.05% | < 0.05% |
| Hazardous substances | | compliant with point 5.4 | |
| | Test Method | Requirements of standard | Performance |
| Resistance to severe chemical attacks (group 3: unused heating oil, diesel oil and oils for engine and gear) | EN 13529 | analysis of damage and bond strength ≥ 2 N/mm ² | no deterioration and bond strengths > 2 N/mm ² |
| Embedded bar adhesive tension | RILEM-CEB-FIP-RC6-78 | | > 25 N/mm ² |
| Aggregate performance characteristic | Test Method | Requirements of UNI 8520-22 | Aggregate performance |
| Alkali-aggregates reaction | UNI 11504 | reactivity class | NR (non-reactive) |

* Room temperature -10°C for the first 12 hours and thereafter +5°C, substrate and dust temperature +5°C

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 2012. This information was last updated in December 2024 (ref. GBR Data Report – 12.24); 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 of your building site 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.