GeoLite® Magma

Certified, eco-friendly mineral geo-mortar with a geo-binder base, for passivation, restoration and monolithic consolidation of deteriorated concrete structures, ideal for use in GreenBuilding. Very low petrochemical polymer content, free from organic fibres. Pourable, normal setting 60 min.

GeoLite® Magma is a pourable geo-mortar used to passivate, restore and consolidate reinforced concrete structures such as beams, pillars, slabs, flooring, pavements and civil engineering structures such as bridges, viaducts and to anchor and fix metal elements.





GREENBUILDING RATING

GeoLite® Magma

- Category: Inorganic Mineral Products
- Class: Mineral geo-mortars for monolithic concrete restoration
- Rating: Eco 5



ECO NOTES

- Based on geo-binder Eco-friendly concrete restoration
- Very low petrochemical polymer content Free from organic fibres Formulated with locally-
- sourced minerals meaning lower greenhouse gas emis-

sions during transport, with low CO₂ emissions With very low volatile organic compound emissions Can be recycled as mineral inert material, avoiding waste disposal costs and environ-

mental impact

PRODUCT STRENGTHS

- GEO-BINDER. Exclusive use of the innovative Kerakoll geo-binder with geo-polymer crystallisation revolutionises mortars used to repair concrete, guaranteeing levels of safety never before achieved and unique eco-friendly performance.
- MONOLITHIC. The first geo-mortar that forms a monolithic conglomerate that will surround, reconstruct and consolidate reinforced concrete works. The only mortar that is certified to passivate, reconstruct and consolidate in a single layer.
- CRYSTALLISING. The naturally stable, monolithic repairs carried out with GeoLite® crystallise with the concrete to guarantee the durability of a mineral rock.
- QUICK. The first geo-mortar that guarantees caisson removal after a single day, having reached suitable mechanical strength.
- TAILORED. The first range of geo-mortars with different setting times (60 – 20 min.) that can be mixed together to customise setting times according to conditions on the building site.



AREAS OF USE

Use

- Passivation, restoration and monolithic consolidation of reinforced concrete structures and infrastructures:
- by the formwork casting of concrete for vertical structures and at the soffit of horizontal elements;
- by pouring onto the top surface of horizontal elements or by bonded section underpinning in general.
- Fixing and anchoring of tie-rods, plates, and machinery.
- Ideal for GreenBuilding and Restoration of Modern Architecture.

INSTRUCTIONS FOR USE

Preparation of substrates

Before applying GeoLite® Magma roughen the surface of the concrete substrate (to a depth of at least 5 mm) by mechanical scarification or hydro-demolition, thoroughly removing all weakened concrete; after this all rust must be removed from the reinforcing rods, which must be cleaned by brushing (manual or mechanical) or sandblasting.

Therefore, clean the substrate, removing any remaining dust, grease, oil and other contaminants using compressed air or a high pressure washer. On horizontal concrete surfaces apply GeoLite® Base by spraying, using brush or roller until saturation point. GeoLite® Base promotes crystallisation of the substrate to GeoLite® Magma. Overlay the geo-mortar after 1 hour, but not after 8 hours.

Before applying GeoLite® Magma, check that the resistance class of the supporting concrete is suitable.

High-thickness patching on large surface areas: a suitable reinforcement (electro-welded mesh or rod) needs to be anchored to the substrate using anchoring pins.

00698GeoLite® Magma Code: E788 2012/05 EN



INSTRUCTIONS FOR USE

Preparation

Prepare GeoLite® Magma by mixing 25 kg of powder with the amount of water indicated on the packaging (we advise using the whole bag). A cement mixer can be used – mix until the mortar is smooth with no lumps; a suitable mortar machine can also be used to mix and then pump 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

To apply, pour or pump GeoLite[®] Magma into sealed formwork previously treated with parting compound that assists air escape, in thicknesses of 10 mm to 60 mm, using the correct application techniques.

When casting at the top of horizontal surfaces, GeoLite[®] Magma should be poured or pumped in thicknesses of 10 mm to 60 mm. 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. In applications on horizontal and vertical surfaces that require thicknesses in excess of 60 mm, prepare a fine-grain concrete, adding Kerabuild[®] Ghiaia 6-10 in a ratio of 30% of the weight of GeoLite[®] Magma (30 kg of Kerabuild[®] Ghiaia 6-10 with 100 kg of GeoLite[®] Magma).

Before casting on concrete slabs or floors, always apply GeoLite® Base to saturation point and wait from 1 to max. 8 hours before casting. Allow the surfaces to cure for at least 24 hrs.

Cleaning

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

ABSTRACT

Passivation, restoration and monolithic consolidation of deteriorated concrete structural elements and civil engineering structures involving caisson casting, reconstruction of concrete floors, fixing and anchoring of metal elements by hand or machine casting of certified, eco-friendly, pourable, normal setting (60 min.) mineral geo-mortar with a crystalline reaction geo-binder base, extremely low petrochemical polymer content and free from organic fibres, specific for the passivation, restoration and guaranteed long-lasting monolithic consolidation of concrete structures and the anchoring of metal elements, such as GeoLite® Magma by Kerakoll® Spa, GreenBuilding Rating® Eco 5, that is CE-marked and compliant with the performance requirements of Standard EN 1504-7 (passivation of reinforcing bars), EN 1504-3, Class R4 (volumetric reconstruction and finishing) and EN 1504-6 (anchoring), according to Principles 3, 4, 7 and 11 as defined by EN 1504-9.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

ite he original packaging in dry environme	UEAtc EN 12192-1 nt			
ite he original packaging in dry environme	EN 12192-1 nt			
he original packaging in dry environme	EN 12192-1 nt			
he original packaging in dry environme	nt			
•				
y bag				
ith no shaker table vibration	EN 13395-1			
≈ 2250 kg/m³				
≥ 12,5				
) °C)				
10 °C				
For thicker layers, mix Geolite Magma with Kerabuild® Ghiaia 6-10				
ŗ	mix Geolite Magma with Kerabuild® Ghiaia 6-10 cm of thickness			



PERFORMANCE

Performance characteristic	Test Method	Requirements of standard EN 1504-7	GeoLite® Magma Performance	
Corrosion protection	EN 15183	no corrosion	value exceeded	
Shear adhesion	EN 15184	≥ 80% of the value of the uncovered bar	value exceeded	
Performance characteristic	Test Method	Requirements of standard EN 1504-3, class R4	GeoLite® Magma Performance in CC and PCC conditions	
Compressive strength	EN 12190	≥ 45 MPa (28 days)	> 30 MPa (24 hrs)	
			> 60 MPa (7 days)	
			> 80 MPa (28 days)	
		None	> 5 MPa (24 hrs)	
Flexural tensile strength	EN 196/1		> 8 MPa (7 days)	
			> 12 MPa (28 days)	
Adhesive bond	EN 1542	≥ 2 MPa (28 days)	> 2 MPa (28 days)	
Resistance to carbonation	EN 13295	depth of carbonation ≤ refer- ence concrete [MC (0,45)]	value exceeded	
Modulus of elasticity under compression	EN 13412	≥ 20 GPa (28 days)	28 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	
Performance characteristic	Test Method	Requirements of standard EN 1504-6	GeoLite® Magma Performance	
Resistance to the withdrawal of the steel bars movement in mm in relation to a 75 «N load)	EN 1881	≤ 0,6	< 0,6	
Chloride ion content (Determined on the product in powder form)	EN 1015-17	≤ 0,05%	< 0,05%	
Hazardous substances		compliant with point 5.4		

		- 1		
B. Y /	1814		1.1.1	
B ' A	1 11 - 1		L . II.	
_ 4				

- Product for professional use

- Abide by any standards and national regulations
- 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 globalservice@kerakoll.com

00698GeoLite® Magma Code: E788 2012/05 EN

The Eco and Bio classifications refer to the GreenBuilding Rating Manual 2012. This information was last updated in April 2012 (ref. GBR Data Report - 05.12); 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 hased on our technical and practical 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 S.p.a. Via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italy Tel +39 0536 816 511 - Fax +39 0536 816 581 info@kerakoll.com - www.kerakoll.com