GeoLite® Gel

Eco-friendly, epoxy mineral adhesive, with high wettability for the impregnation of GeoSteel textiles and for structural anchoring, ideal for GreenBuilding. Solvent-free and with very low volatile organic compound emissions, safeguards the health of operators.

GeoLite® Gel is a two-component, epoxy thixotropic gel system, complying with the performance requirements of EN 1504-4 standard for bonding structural parts and with the guidelines of CNR–DT 200 R1/2013, for moist impregnation and glueing of structural reinforcement systems. It complies with the performance requirements indicated by EN 1504-6 for grouting of GeoSteel structural connectors or anchor bars.

CE EN 1504-4 · CE EN 1504-6 · GEV EMICODE EC 1 PLUS very low emission · CONTRIBUTES TO LEED POINTS

GREENBUILDING RATING®

GeoLite® Gel
- Category: Organic Mineral Products
- Class: ^Mineral geo-mortars for monolithic repair and for structural strengthening of concrete
- Rating: Eco 4

eco4®	Regional Mineral ≥ 30 %	Low Emission IAQ VOC Indoor Air Quality	SLV REDUCED Solvent ≤ 5 g/kg	Low Ecological Impact	Health Care
	✓	✓	✓		✓
	Natural mineral content 47%	Very low VOC emissions	Solvent-free		Non-toxic and non-hazardous

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Excellent adhesion to concrete, masonry, wood and steel
- Ideal for the impregnation of reinforcement systems made of GeoSteel G Hardwire, extra-high strength galvanized steel fibre textiles, or with GeoSteel Grid basalt fibre and stainless steel mesh
- Ideal for bonding to supports prepared in advance with GeoLite® or GeoCalce®
- Reaction to fire Euroclass C
- High glass-transition temperature Tg
- High workability time even at temperatures higher than +30 °C

ECO NOTES

- Formulated with locally-sourced minerals meaning lower greenhouse gas emission during transportation
- Improved on-site safety guaranteed
- With very low volatile organic compound emissions

AREAS OF USE

Use
Implementation of structural reinforcements and anchoring of reinforced concrete, prestressed reinforced concrete, steel and wood elements by means of the GeoSteel range of structural reinforcement products employing moist impregnation.

INSTRUCTIONS FOR USE

Preparation of substrates
Before applying GeoLite® Gel check that the supports have the necessary resistance, in the case of both concrete and masonry.
The supports must be dry so that they do not interfere with the adhesion of the support system.
Parts of the concrete, which may have deteriorated, will be repaired with GeoLite®. When repairing, it is also necessary to level any surface roughness greater than 10 mm using GeoLite®, after suitable preparation.
Should there be any cracks wider than 0.5 mm they must be sealed by filling them with Kerabuild® Epofill.

Preparation
GeoLite® Gel is prepared by mixing component A with component B (preset ratio 3:1 in the bags) until a soft paste of uniform light-grey colour is obtained. Mix using a low-rev, mechanical stirring device (< 500 r./min.).
Workability times may vary according to the quantity of the mixed paste and the temperature of the environment and substrate: the higher the temperature or the larger the mixture, the lower the workability time. To obtain a longer workability time, in case of high temperature on site, you are advised to cool the components individually before mixing them. Similarly, in case of low temperature work, you are advised to maintain both components at a temperature of not less than +10 °C, prior to application.

00750GeoLite® Gel Code: E864 2016/06 EN

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INSTRUCTIONS FOR USE

Application
Before applying GeoLite® Gel, the concrete substrate needs to roughened and cleaned, using either a brush to mechanically loosen it or by sandblasting it, eliminating any dust residue, fat, oils or other contaminating substances until a clean, highly cohesive substrate is obtained. When bonding metallic surfaces, first remove any rust and thoroughly clean away all oil and paint. The surfaces must then be prepared to St2 level if cleaning manually, and Sa2 if cleaning mechanically, in accordance with the ISO 8501-1 standard.
GeoLite® Gel is applied by means of a flat spreader or a roller so that a sufficient quantity of adhesive is distributed onto the support which absorbs the strengthening textile, taking care to ensure that the product penetrates into the micro-pores of the substrate and fills any micro-irregularities. After applying initial manual pressure, you are advised to use the flat spreader or roller, pressing down hard enough to ensure the correct impregnation of the strengthening textile and to eliminate air bubbles, working in a parallel direction to the fibres and to the centre of the section towards the edge. Then apply the final layer of GeoLite® Gel, to completely cover the textile.
In the case of structural anchoring by grouting, after mixing the product in a suitable manner, a manual extruder can be used to insert GeoLite® Gel into the hole, making sure that the hole is filled and no gaps are left between the connection element and the support.

Cleaning
Residual traces of GeoLite® Gel can be removed from tools with solvents (ethyl alcohol, toluol, xylene) before the product hardens. Once hardened, the product can only be removed mechanically.

ABSTRACT

Structural reinforcement with materials like reinforced concrete and prestressed reinforced concrete, steel and wood elements by means of bonded textiles impregnated with a epoxy mineral matrix such as GeoLite® Gel by Kerakoll Spa, GreenBuilding Rating® Eco 4, awarded the CE mark and complying with the performance requirements of EN standard 1504-4 for bonding structural parts and following the guidelines of CNR–DT 200 R1/2013, Euroclass reaction to fire C (EN 13501-1).

Creation of structural anchoring for elements in reinforced concrete, prestressed reinforced concrete and masonry by grouting connectors made from bundles of GeoSteel textile or improved adhesion steel bars, using epoxy adhesive such as GeoLite® Gel by Kerakoll Spa, GreenBuilding Rating® Eco 4, CE-marked and compliant with the performance requirements indicated in Standard EN 1504-6, Euroclass C reaction to fire (EN 13501-1).

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A grey paste / part B beige paste	
Volumetric mass	part A 1420 kg/m³ – part B 1500 kg/m³	
Shelf life	≈ 12 months in the original packaging	
Warning	Protect from frost. Avoid direct exposure to sunlight and sources of heat	
Pack	part A 6 kg bucket, part B 2 kg bucket	
Mixing ratio	Part A : Part B = 3:1	
Viscosity of the mixture	≈ 360000/65000 mPas (rotor 7 RPM 5/50)	Brookfield method
Density of the mixture	≈ 1600 kg/m³	
Pot life (1 kg):		
- at +5 °C	≥ 100 min.	
- at +21 °C	≥ 90 min.	
- at +30 °C	≥ 40 min.	
Temperature range for application	substrate and ambient temperature from +5 °C to +30 °C	
Coverage	≈ 1.6 kg/m² per mm of thickness	

Values taken at +23 °C, 50% 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 EN 1504-4			GeoLite® Gel Performance
Adhesion / bond strength	EN 12188	Tensile strength		≥ 14 N/mm²	> 14 N/mm²
		slant shear strength	50°	≥ 50 N/mm²	> 60 N/mm²
			60°	≥ 60 N/mm²	> 70 N/mm²
			70°	≥ 70 N/mm²	> 80 N/mm²
Shear strength	EN 12188	> 12 N/mm²			> 20 N/mm²
Linear shrinkage	EN 12617-1	≤ 0,1%			< 0,005%
Workability at +20 °C	EN ISO 9514	measured with ≈ 0.5 kg of product		–	90 min.
Glass transition temperature	EN 12614	> +40 °C			> +60 °C
Secant elastic modulus under compression	EN 13412	≥ 2000 N/mm²			> 5300 N/mm²
Flexural modulus of elasticity	EN ISO 178	≥ 2000 N/mm²			> 2500 N/mm²
Coefficient of thermal expansion	EN 1770	measured between -25 °C and +60 °C		≤ 100x10^{-6} K^{-1}	< 100x10^{-6} K^{-1}
Durability (resistance to freeze/thaw cycles)	UNI EN 13733	compression shear strength > tensile strength of the concrete		no collapse in steel/ adhesive/steel test specimens	value exceeded
Adhesive tensile strength on concrete with GeoSteel G600-2000-3300 single and double layer reinforcement textiles	EN 24624	not required			> 4 MPa
Reaction to fire	EN 13501-1	not required			Euroclasse C-s2, d0
Performance characteristic	**Test Method**	**Requirements of EN 1504-6**			**GeoLite® Gel Performance**
Pull-out	EN1881	resistance to the withdrawal of the steel bar (movement in mm in relation to a 75 kN load)		≤ 0,6 mm	0,06 mm
Glass transition temperature	EN 12614	> +45 °C			> +60 °C
Creep	EN1881	creep under load (movement in mm under a continuous load of 50 kN after 3 months)		≤ 0,6 mm	0,12 mm
VOC INDOOR AIR QUALITY (IAQ) - VOLATILE ORGANIC COMPOUND EMISSIONS					
Conformity		EC 1 plus GEV-Emicode			Cert. GEV 5061/11.01.02

WARNING

- Product for professional use
- abide by any standards and national regulations
- use at temperatures between +5 °C and +30 °C
- apply on dry substrates
- do not apply on dirty or loose surfaces
- adjacent surfaces must be protected so as to avoid smears and marks
- clean tools immediately after use with solvents (ethyl alcohol, toluene, xylene)
- always use protective gloves and eyewear both during mixing and during application
- avoid any contact with the skin
- 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

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