

# GeoLite® Gel

**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 EN 1504-6 standard for grouting of anchor bars. Suitable for use as an inorganic mineral matrix to be used with GeoSteel galvanized steel sheets in certified structural strengthening, improvement and seismic adaptation systems.



CE mark in combination with GeoSteel G meshes for concrete structures



## GREENBUILDING RATING®

### GeoLite® Gel

- Category: Organic Mineral products
- Repair and reinforcement of reinforced concrete and masonry



RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

## PRODUCT STRENGTHS

- Excellent adhesion to concrete, masonry, wood and steel
- Ideal for moist impregnation, bonding and grouting of GeoSteel G ultra-high strength galvanised steel fibre sheets in certified strengthening systems
- Ideal for bonding to supports prepared in advance with GeoLite®, GeoCalce® G Antisismico or GeoCalce® F Antisismico
- Reaction to fire Euroclass C-s2, d0
- High glass-transition temperature Tg
- High workability time even at temperatures higher than +35 °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, masonry, steel and wood elements by means of the GeoSteel range of structural reinforcement products employing moist impregnation. Bonding of structural elements, steel plates (beton plaqué) and grouting of bars with elements in reinforced concrete and prestressed reinforced concrete. Surface filling of cracks before injecting Kerabuild Epofill.

## INSTRUCTIONS FOR USE

### Preparation of substrates

Verify the suitability of the substrate before applying GeoLite® Gel.

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.

\* 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).

## INSTRUCTIONS FOR USE

### Application

Before applying GeoLite® Gel, the concrete substrate needs to be 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. In order to facilitate preparation of the substrate it is recommended that a surface roughness equal to level 5 of the concrete and masonry substrate preparation test kit be created.

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

*Certified structural strengthening of reinforced concrete and prestressed reinforced concrete elements by bonding and grouting GeoSteel G ultra-high strength galvanised steel fibre sheets, impregnated with an epoxy mineral matrix such as GeoLite® Gel by Kerakoll Spa, GreenBuilding Rating® 4, CE-marked and compliant with the performance requirements indicated in Standard EN 1504-4 and EN 1504-6, Euroclass D-s2, d0 composite reaction to fire (EN 13501).*

*Structural grouting of steel bars with improved adhesion on reinforced concrete and prestressed reinforced concrete elements with an epoxy-based adhesive such as GeoLite® Gel by Kerakoll Spa, GreenBuilding Rating® 4, CE-marked and compliant with the performance requirements indicated in Standard EN 1504-4 and EN 1504-6, Euroclass C-s2, d0 reaction to fire (EN 13501).*

*Structural bonding of concrete/concrete, concrete/steel, by application with a spreader of an epoxy-based adhesive type GeoLite® Gel by Kerakoll Spa, GreenBuilding Rating® 4, CE-marked and compliant with the performance requirements of Standard EN 1504-4 and EN 1504-6, Euroclass reaction to fire C-s2, d0 (EN 13501).*

## TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A grey paste / part B beige paste	
Volumetric mass	part A 1,460 kg/m <sup>3</sup> – part B 1,410 kg/m <sup>3</sup>	
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	≈ 36000/65000 mPas (rotor 7 RPM 5/50)	Brookfield method
Density of the mixture	≈ 1600 kg/m <sup>3</sup>	
Pot life (1 kg):		
- at +5 °C	≥ 100 min.	
- at +21 °C	≥ 90 min.	
- at +35 °C	≥ 30 min.	
Temperature range for application	substrate and ambient temperature from +5 °C to +35 °C	
Application temperature range	< +60 °C	
Coverage	≈ 1.6 kg/m <sup>2</sup> 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.*

## PERFORMANCE

### HIGH-TECH

Performance characteristic	Test Method	Requirements of EN 1504-4		Performance GeoLite® Gel	
Adhesion / bond strength	EN 12188	Tensile strength	≥ 14 N/mm <sup>2</sup>	> 14 N/mm <sup>2</sup>	
		slant shear strength	50°	≥ 50 N/mm <sup>2</sup>	> 60 N/mm <sup>2</sup>
			60°	≥ 60 N/mm <sup>2</sup>	> 70 N/mm <sup>2</sup>
			70°	≥ 70 N/mm <sup>2</sup>	> 80 N/mm <sup>2</sup>
Shear strength	EN 12188	> 12 N/mm <sup>2</sup>		> 20 N/mm <sup>2</sup>	
Linear shrinkage	EN 12617-1	≤ 0.1%		< 0.005%	
Workability at +20 °C	EN ISO 9514	measured with ≈ 0.5 kg of product	–	75 min.	
Glass transition temperature	EN 12614	> +40 °C		+60 °C	
Secant elastic modulus under compression	EN 13412	≥ 2000 N/mm <sup>2</sup>		> 5300 N/mm <sup>2</sup>	
Flexural modulus of elasticity	EN ISO 178	≥ 2000 N/mm <sup>2</sup>		> 2500 N/mm <sup>2</sup>	
Coefficient of thermal expansion	EN 1770	measured between -25 °C and +60 °C	≤ 100x10 <sup>-6</sup> K <sup>-1</sup>	< 100x10 <sup>-6</sup> K <sup>-1</sup>	
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	
Reaction to fire	EN 13501-1	not required		Euroclass C-s2, d0	
Performance characteristic	Test Method	Requirements of EN 1504-6		Performance GeoLite® Gel	
Pull-out	EN1881	pull-out strength of steel rebars (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		GEV certified 5061/11.01.02		

## WARNING

- **Product for professional use**
- abide by any standards and national regulations
- 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](mailto:globalservice@kerakoll.com)

The Rating classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in November 2019 (ref. GBR Data Report - 12.19); please note that additions and/or amendments may be made over time by KERAKOLL SpA, for the latest version, see [www.kerakoll.com](http://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.



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