Geolite Gel

Adhesive for SRP monolithic strengthening of reinforced concrete. Thixotropic, for structural bonding and grouting.

Geolite Gel is a two-component, epoxy thixotropic gel system for anchoring and fixing metal elements. Organic mineral matrix in combination with steel sheets in certified Geosteel SRP structural strengthening systems.

Rating 4

GREENBUILDING RATING
REF. GBR DATA REPORT 05.22
APPROVED

- ✓ Regional Mineral ≥ 30%
- ✓ VOC Low Emission
- ✓ Solvent ≤ 5 g/kg
- × Low Ecological Impact
- ✓ Health Care

1. Thixotropic
2. High workability even at high temperatures
3. Excellent adhesion to any substrate
4. Reaction to fire Euroclass C-s2, d0
5. High glass-transition temperature Tg
6. Certified for moist impregnation of Geosteel G sheets

kerakoll

Areas of application

→ Use
Structural bonding of steel plates (beton plaqué) and grouting of bars with elements in reinforced concrete.
Surface filling of cracks before injecting Kerabuild Epofill.

Inorganic mineral matrix in certified Geosteel SRG systems for the strengthening of reinforced concrete elements.
Fastening and anchoring of connections on reinforced concrete in certified Geosteel SRP strengthening systems.

Instructions for use

→ Preparation of substrates
Before applying Geolite Gel it is necessary to:
- repair any weakened parts of concrete and level surface irregularities greater than 10 mm with geo-mortars from the Geolite range, in accordance with the correct application techniques;
- roughen the concrete substrate by mechanical scarification or hydro-demolition to a depth of approx. 5 mm, equivalent to level 5 of the Test kit for preparation of reinforced concrete and masonry substrates;
- seal any cracks larger than 0.5 mm by injecting Kerabuild Epofill;
- clean the treated substrate removing any remaining dust, grease, oil and other contaminants using compressed air or a high pressure washer;
- the support must be dry in order not to compromise the adhesion of the system.

Check that the resistance class of the supporting concrete is suitable.
Prior to bonding on metal surfaces, remove any oxidation and thoroughly clean them of oil and paint; preparation to grade St2 is required in the case of manual cleaning, and Sa2 in the case of mechanical cleaning, according to Standard ISO 8501-1;

→ Preparation
Geolite Gel is prepared by mixing component A with component B (preset ratio 3:1 in the packagings) with a low-rev, mechanical stirring device (< 500 r./min.), until a soft paste of uniform light-grey colour is obtained. 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 temperatures, it is advisable to cool the components individually before mixing them. Similarly, in case of low temperatures, it is advisable to maintain both components at a temperature of not less than +10 °C, prior to application.

→ Application
- To bond metal elements, apply Geolite Gel by hand using a smooth spreader and a trowel, double coating if necessary.
- For grouting of bars, fill the hole previously made with Geolite Gel by extruding the material with a special gun and insert the bar with a rotating movement.

→ Application of Geosteel SRP systems: apply the first layer of Geolite Gel by hand using a flat spreader and trowel, ensuring that enough material is applied to the adequately prepared substrate in order to incorporate the strengthening sheet; take care to allow the product to penetrate into the micro-pores of the substrate and to level any micro-irregularities; apply the steel sheet using a flat spreader and press down hard enough to ensure the correct impregnation and eliminate any air bubbles, working in a direction parallel to the fibres and from the centre of the section towards the edge; apply the second layer until the sheet is completely covered.

→ Application of Geosteel SRP systems connections: insert the steel fabric connections into the previously made hole and then fill with Geolite Gel by extruding the material with a special gun.

→ 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.

Certificates and marks

CE mark in combination with GeoSteel G meshes for concrete structures

** 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

Geolite Gel & Geosteel G: certified structural strengthening of reinforced concrete by bonding and grouting ultra-high strength galvanised steel fibre sheets such as Geosteel G by Kerakoll Spa, impregnated with an epoxy mineral matrix such 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 D-s2, d0 composite reaction to fire (EN 13501).

Structural grouting of steel bars with improved adhesion on reinforced concrete by application of an epoxy adhesive such as 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 C-s2, d0 reaction to fire (EN 13501).

Structural bonding of concrete/concrete, concrete/steel, by application with a spreader of an epoxy adhesive such as 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 C-s2, d0 reaction to fire (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/m³ – part B 1.410 kg/m³
Shelf life	≈ 12 months from production in the original sealed packaging
Warning	Protect from frost. Avoid direct exposure to sunlight and sources of heat
Pack	part A 5 kg bucket, part B 1,66 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 +35 °C	≥ 30 min.
Temperature range for application	substrate and ambient temperature from +5 °C to +35 °C
Working range	< +60 °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.

Performance				
VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions				
Conformity	EC 1 plus GEV-Emicode			GEV certified 5061/11.01.02
HIGH-Tech				
Performance characteristic	**Test Method**	**Requirements of standard EN 1504-4**		**Geolite Gel Performance**
Adhesion / bond strength	EN 12188	Tensile strength	≥ 14 MPa	> 14 MPa
		slant shear strength	50° ≥ 50 MPa	> 60 MPa
			60° ≥ 60 MPa	> 70 MPa
			70° ≥ 70 MPa	> 80 MPa
Shear strength	EN 12188	> 12 MPa		> 20 MPa
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 MPa		> 5300 MPa
Flexural modulus of elasticity	EN ISO 178	≥ 2000 MPa		> 2500 MPa
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
Reaction to fire	EN 13501-1			Euroclass C-s2, d0
	Test Method	**Requirements of EN 1504-6**		**Geolite Gel Performance**
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

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

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