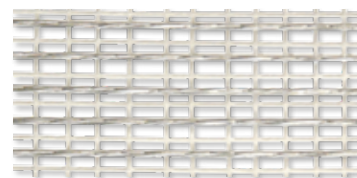


# Geosteel G600

Unidirectional, extra-high strength galvanized steel fibre sheets, made of steel micro-cords, fixed to a fibreglass micromesh. Geosteel G600 is specific for use in structural strengthening in combination with Geocalce and Geolite mineral matrices or Geolite Gel organic matrix according to project and site requirements.

Thanks to its characteristics Geosteel G600 is easy to shape and has excellent installation and durability properties. Geosteel G sheets guarantee superior properties than traditional carbon-glass-aramide fibre sheets, and are particularly effective in various structural strengthening and anti-seismic improvement or compliance operations, as well as in the creation of connection systems.



1. High durability thanks to the special steel wire galvanisation process
2. Certified for use in structural strengthening in combination with Geocalce F Antisismico and Geolite mineral matrices and Geolite Gel epoxy matrix
3. Can be tensioned for structural strengthening and active devices
4. Easy to shape using Geosteel benders

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## Areas of application

### → Intended use

- Static and seismic upgrade or retrofit of masonry in brick, natural stone and tuff, reinforced concrete, prestressed reinforced concrete, wood and steel
- Consolidation of brick masonry, natural stone and tuff arches, vaults and domes
- Confinement and wrapping of masonry and reinforced concrete structural elements
- Flexural, shear, and confinement strengthening of brick, natural stone, tuff, and masonry panels and reinforced concrete sections
- Flexural, shear, and confinement strengthening for timber elements
- Flexural strengthening for steel girders
- Execution of top ring beams in reinforced masonry
- Execution of special single- or double-fibre thread connectors for anchoring sheets and grids and executing reinforced injections
- Consolidation and strengthening of exposed stone walls using widespread insertion of mesh

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## Instructions for use

### → Preparation

The ultra-high strength galvanized steel fibre sheet, Geosteel G600, is ready-to-use.

The sheet can be cut at right angles to the cords with manual or electric shears, or parallel with the cords using a normal box cutter. The sheet, cut into strips even just a few cm wide and a number of metres long, ensures perfect stability without in any way compromising the workability of the material and its application.

### → Preparation of substrates

The substrate must be properly prepared and cleaned, always in accordance with the instructions dictated by the construction supervisor

In the case of substrates that are not degraded, prepare the surfaces as indicated in the technical data sheet for Geocalce F Antisismico, Geolite or Geolite Gel.

When the substrate is clearly degraded, uneven, or damaged by significant events, proceed as follows, always in accordance with the construction supervisor:

#### 1. For masonry, tuff and natural stone substrates:

- Completely remove residues from previous processes that could compromise adhesion, and any quantity of inconsistent rendering mortars from the stones;
- Application, if required, of Primer Uni consolidant, diluted with clean water at a ratio of 1:4;
- Reconstruction, if necessary, of material continuity according to design instructions and the construction supervisor
- Evening out previously consolidated surfaces with structural geo-mortar with a base of pure natural hydraulic lime NHL 3.5 and geo-binder such as Geocalce G Antisismico or Geocalce F Antisismico, depending on the thickness required;

- When applying the reinforcing system with an inorganic matrix, make sure that the substrate is adequately dampened and with a roughness of at least 5 mm, equal to level 8 of the Test Kit for preparation of reinforced concrete and masonry substrates (follow the instructions on the Geocalce F Antisismico or Geolite data sheet).

#### 2. For substrates in reinforced concrete or prestressed reinforced concrete:

- Thorough removal of weakened concrete if necessary, through mechanical scarification or hydro-demolition, making sure to roughen the substrate to a depth of:
  - at least 5 mm, equal to level 8 of the "Test kit for preparation of reinforced concrete and masonry substrates", if the strengthening system is applied with Geolite inorganic matrix;
  - at least 0.5 mm, equal to level 5 of the "Test kit for preparation of reinforced concrete and masonry substrates", if the strengthening system is applied with Geolite Gel epoxy mineral matrix.
- Removal of rust, if any, from reinforcing bars, which must be cleaned by brushing (manual or mechanical) or sandblasting;
- Monolithic reconstruction or smoothing of the section, if needed, using geo-mortar based on a mineral geo-binder such as Geolite.

### → Application

Execution of the structural strengthening Steel Reinforced Grout (a combination of Geosteel G sheets and Geocalce F Antisismico or Geolite) or Steel Reinforced Polymer (a combination of Geosteel sheets and Geolite Gel epoxy mineral matrix) must be carried out, in case of mineral matrix, by applying a first coat of geo-mortar.

# Instructions for use

Make sure there is sufficient material for the substrate (average thickness approx. 3-5 mm) to even it out and to lay and embed the reinforcement sheet. When using an epoxy mineral adhesive matrix on substrates in reinforced concrete, the substrate may be evened out using Geolite, taking care to allow the geo-mortar to cure for long enough to ensure that the humidity of the substrate is appropriate for the application of Geolite Gel. Before applying the first layer of Geolite Gel, the substrate must be clean, dry, free from damp and roughened by sanding or mechanical scarification to a depth of at least 0.5 mm, equal to level 5 of the "Test Kit for preparation of reinforced concrete and masonry substrates". The first layer of adhesive must have an average thickness of approx. 2-3 mm. Then apply the ultra-high strength, galvanised steel fibre Geosteel G600 sheet to the still wet matrix. Take care that the mesh is perfectly embedded in the matrix layer, applying firm pressure with a steel spreader or roller. Make sure that the netting protrudes from the cords, in order to ensure excellent adhesion between the first and second matrix layers. At longitudinal join points, overlap two layers of galvanised steel fibre sheet by at least 20 cm for epoxy matrices and 30 cm for inorganic matrices. For organic and inorganic matrix, working fresh on fresh, perform the final protective smoothing (overall thickness of the reinforcement for organic matrix  $\approx$  3-4 mm, overall thickness of the reinforcement for mineral matrix  $\approx$  5-8 mm), in order to fully incorporate the reinforcement and fill in any underlying voids. If there are additional layers after the first, proceed with laying of the second layer of steel fibre over the matrix while it is still wet, repeating the steps described above. In the event that the system installed with epoxy matrix must be plastered or concealed by smoothing, we recommend that, while the resin is still wet, you apply a spray of mineral quartz to provide better adhesion for subsequent layers.

If the reinforcing system is installed in especially aggressive environments, or you otherwise wish to ensure additional protection beyond that already provided by the matrix, we recommend applying:

- Geolite MicroSilicato on reinforcement systems with Geolite or Geocalce F Antisismico matrix;
- Kerakover Acrilex Flex on strengthening systems with Geolite Gel matrix.

If the works are in permanent or occasional contact with liquids, it is recommended to get in touch with the Kerakoll technical department to arrange the most suitable protection system. For technical specifications, application, and preparation of the matrix, as well as protective systems adequate for the matrix type, consult the relevant data sheets.

## → Creating a Geosteel Connector

Create the steel-fibre thread connector system by inserting a strip of sheet of appropriate width from the Geosteel G range to provide the minimum number of cords in the connector according to the design, in order to achieve the required tensile strength; make sure to create "threads" in the terminal part of the strip of sheet by cutting the supportive mesh, making the cut parallel to the cords themselves for a length equal to the "thread" you want to create on the masonry and the subsequent bending with a certified bender. In the event of a connector with "threads" on both sides, this operation must be performed on both ends of the duly arranged fibre strip. Once the sheet is cut and bent, roll the strip onto itself, taking care to create a cylinder of an appropriate diameter according to the bore.

Next, install the connector thus created into the bore, then insert the glass fibre-reinforced polypropylene Iniettore&Connettore Geosteel (Injector&Connector), so as to bend the terminal part of the "thread" to the substrate. Finally, using the special bore located on the head of the piece, inject the pourable mortar to grout the fibre-thread connector system. When this phase is complete, the Geosteel Injector&Connector must be duly sealed with the cap provided. Depending on the type of substrate (concrete or masonry), the designer may opt for the connector to be grouted using Geolite Magma pourable geo-mortar or Epofix epoxy anchoring agent or Geolite Gel epoxy mineral matrix. Alternatively, Geocalce FL Antisismico, pourable mortar based on pure natural hydraulic lime, may be used.

→ Below is a table listing the tensile strengths of a connector, depending on the type of Geosteel G sheet and the corresponding widths of the strip adopted:

→ Strip width equal to 10 cm of Geosteel G600 sheet:

- number of cords\*: 16
- tensile breaking load: > 24 kN

→ Strip width equal to 15 cm of Geosteel G600 sheet:

- number of cords\*: 23
- tensile breaking load: > 35 kN

\*n° cords/cm = 1.57; tensile breaking load of a cord > 1500 N.

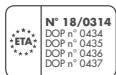
# Instructions for use

In the event that a connector with another strength or a different number of cords from those listed is required, simply calculate the appropriate length of the strip by dividing the required strength by the strength of one cord and

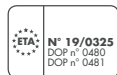
then by the number of cords present per unit of width in the type of the selected sheet.

Test reports are available upon request to determine the calculation parameters.

# Certificates and marks



CE-marked in combination with Geolite Gel and Epoxif for concrete structures



CE-marked in combination with:  
- Geolite and Geolite Magma for concrete structures  
- Geocalce F Antisismico and Geocalce FL Antisismico for masonry structures

# Abstract

## SRG-Geocalce F Antisismico & Geosteel G600

Execution of repair, structural strengthening, improvement or seismic upgrade of masonry, tuff or natural stone elements and structures using an inorganic matrix composite system, SRG (Steel Reinforced Grout), CE-marked, with European Technical Assessment (ETA) pursuant to art. 26 of EU Regulation No. 305/2011 and international certificate of proven validity. SRG composed of unidirectional, extra-high strength galvanized steel-fibre sheet, made of steel micro-cords compliant with standard ISO 16120-1/4 2017 fixed to a glass-fibre micromesh, net fibre weight of approx. 670 g/m<sup>2</sup> – such as Geosteel G600 by Kerakoll Spa – with the sheet featuring the following certified technical characteristics: tensile strength, typical value > 3000 MPa; elastic modulus > 190 GPa; ultimate break warp > 1.5%; actual area of a cord 3x2 (5 wires) = 0.538 mm<sup>2</sup>; no. cords per cm = 1.57, with wire winding at high angle of torsion, compliant with standard ISO/DIS 17832; equivalent thickness of the sheet = 0.084 mm. Geosteel G600 impregnated with Geocalce F Antisismico by Kerakoll Spa, highly breathable and hygroscopic geo-mortar made of pure NHL 3.5 natural hydraulic lime and mineral geo-binder, inert siliceous sand and Dolomitic limestone materials with a granulometric curve of 0-1.4 mm. To be applied directly to the structure requiring strengthening.

The procedure is conducted as follows:

1. Any restoration of degraded, weakened, non-cohesive, or non-planar surfaces, using Geocalce G Antisismico or Geocalce F Antisismico by Kerakoll Spa and in any case as prescribed and approved by the construction supervisor;
2. Preparation of the substrate for application of the first layer of Geocalce F Antisismico, the substrate must be adequately roughened by sanding or mechanical scarification, taking care to guarantee a roughness of at least 5 mm (equal to level 8 of the Test Kit for preparation of reinforced concrete and masonry), clean and dampened;
3. Lay a first layer, an average of  $\approx 3\text{--}5$  mm thick of fine-grain, structural, geo-mortar with pure natural hydraulic lime NHL 3.5 and geo-binder base, such as Geocalce F Antisismico by Kerakoll Spa;
4. While the mortar is still wet, lay the ultra-high strength galvanized steel fibre sheet Geosteel G600 by Kerakoll Spa, and by pressing firmly with a smooth spreader or metal roller, make sure that the sheet is completely impregnated and avoid allowing any gaps or air bubbles to form, because these can compromise the adhesion of the sheet to the matrix or to the substrate;
5. Working fresh on fresh, apply the second layer of structural geo-mortar, such as Geocalce F Antisismico by Kerakoll Spa, until the reinforcing textile is fully incorporated and any underlying voids are filled, giving an overall reinforcement thickness of  $\approx 5\text{--}8$  mm;
6. Repeat steps (4) and (5) if necessary for all subsequent reinforcing layers called for by the design;
7. Any insertion of thread connectors made from unidirectional, extra-high strength galvanized steel fibre sheets is to be carried out after: preparation of the entrance hole, with a size suited to the nature of the connector to be fitted, preparation of the steel connector by cutting, "teasing" and final rolling of the steel fibre sheet, locking it in place with a plastic tie, insertion of the pre-formed connector into the hole with final, low pressure injection of highly breathable and hygroscopic geo-mortar with excellent water retention and a hyperfluid consistency, based on pure NHL 3.5 natural lime and mineral geo-binder, grading 0-100  $\mu\text{m}$ , CE-marked – such as Geocalce FL Antisismico by Kerakoll Spa.

Delivery and installation of all the materials described above as well as everything else required to finish the job is included. The following are excluded: removal of any existing plaster/render, restoration of degraded areas and repair of the substrate; connectors, their injection and all the costs and charges required to create them; material acceptance tests; pre- and post-procedure testing, all aids required to perform the work.

The price is by unit of reinforcing surfaces actually laid, including overlaps.



# Abstract

## SRG-Geolite & Geosteel G600

Execution of repair, structural strengthening, improvement or seismic upgrade of reinforced concrete and prestressed reinforced concrete elements and structures using an inorganic matrix composite system, SRG (Steel Reinforced Grout), CE-marked, with European Technical Assessment (ETA) pursuant to art. 26 of EU Regulation No. 305/2011 and international certificate of proven validity. SRG composed of unidirectional, extra-high strength galvanized steel-fibre sheets, made of steel micro-cords compliant with standard ISO 16120-1/4 2017 fixed to a fibre-glass micromesh, net fibre weight of  $\approx 670 \text{ g/m}^2$  – such as Geosteel G600 by Kerakoll Spa – with the sheet featuring the following certified technical characteristics: tensile strength, typical value  $> 3000 \text{ MPa}$ ; elastic modulus  $> 190 \text{ GPa}$ ; ultimate break warp  $> 1.5\%$ ; actual area of a cord  $3 \times 2$  (5 wires) =  $0.538 \text{ mm}^2$ ; no. cords per cm = 1.57, with wire winding at high angle of torsion, compliant with standard ISO/DIS 17832; equivalent thickness of the sheet =  $0.084 \text{ mm}$ . The sheet is impregnated with Geolite by Kerakoll Spa, thixotropic, normal-setting certified mineral geo-mortar, based on geo-binder and crystalline reaction zirconium, with very low petrochemical polymer content and free of organic fibres, specific for passivation, repair, smoothing, and guaranteed, long-lasting monolithic protection of structures in concrete, CE-marked. To be applied directly to the structure requiring strengthening.

The procedure is conducted as follows:

1. Any restoration of degraded, weakened, non-cohesive, or non-planar surfaces, using Geolite by Kerakoll Spa and in any case as prescribed and approved by the construction supervisor;
2. Preparation of the substrate for application of the first layer of Geolite, the substrate must be adequately roughened by sanding or mechanical scarification, taking care to guarantee a roughness of at least  $5 \text{ mm}$  (equal to level 8 of the Test Kit for preparation of reinforced concrete and masonry), clean and dampened;
3. Spread a first layer of average thickness of  $\approx 3\text{--}5 \text{ mm}$  of geo-mortar with mineral geo-binder base, such as Geolite by Kerakoll Spa;
4. While the mortar is still wet, lay the ultra-high strength galvanized steel fibre sheet Geosteel G600 by Kerakoll Spa, and by pressing firmly with a smooth spreader or metal roller, make sure that the sheet is completely impregnated and avoid allowing any gaps or air bubbles to form, because these can compromise the adhesion of the sheet to the matrix or to the substrate;
5. Working fresh on fresh, apply the second layer of geo-mortar, such as Geolite by Kerakoll Spa, until the reinforcing textile is fully incorporated and any underlying voids are filled, giving an overall reinforcement thickness of  $\approx 5\text{--}8 \text{ mm}$ ;
6. Repeat steps (4) and (5) if necessary for all subsequent reinforcing layers called for by the design;
7. Any insertion of thread connectors made from unidirectional, extra-high strength galvanized steel-fibre sheets, after preparation of the entrance bore, with a size suited to the nature of the connector to be fitted; after preparation of the steel connector by cutting, creating “threads” and final rolling of the steel-fibre sheet, locking it in place with a plastic tie; after insertion of the pre-formed connector into the bore with final, low pressure injection of pourable Geolite Magma or Epofix epoxy anchoring agent or Geolite Gel epoxy mineral matrix.

Delivery and installation of all the materials described above as well as everything else required to finish the job is included. The following are excluded: removal of any existing plaster/render, restoration of degraded areas and repair of the substrate; connectors, their injection and all the costs and charges required to create them; material acceptance tests; pre- and post-procedure testing, all aids required to perform the work.

The price is by unit of reinforcing surfaces actually laid, including overlaps.

## SRP-Geolite Gel & Geosteel G600

Execution of repair, structural strengthening, improvement or seismic upgrade of reinforced concrete and prestressed reinforced concrete elements and structures using an organic matrix composite system, SRP (Steel Reinforced Polymer), CE-marked. SRP composed of unidirectional, extra-high strength galvanized steel fibre sheets, made of steel micro-cords compliant with standard ISO 16120-1/4 2017 fixed to a fibreglass micromesh, net weight of  $\approx 670 \text{ g/m}^2$  – such as Geosteel G600 by Kerakoll Spa – with the sheet featuring the following certified technical characteristics: tensile strength, characteristic value  $> 3000 \text{ MPa}$ ; modulus of elasticity  $> 190 \text{ GPa}$ ; ultimate break warp  $> 1.5\%$ ; actual area of a cord  $3 \times 2$  (5 wires) =  $0.538 \text{ mm}^2$ ; no. cords per cm = 1.57, with wire winding at high torque angle, compliant with standard ISO/DIS 17832; equivalent thickness of the sheet =  $0.084 \text{ mm}$ . Geosteel G600 impregnated with Geolite Gel by Kerakoll Spa, epoxy mineral adhesive in gel form, for structural bonding of galvanised steel fibre sheets or other types of composite materials in general, CE-marked and compliant with the performance requirements indicated in Standards EN 1504-4 and EN 1504-6 for bonding structural elements and following the guidelines of CNR-DT 200 R1/2013, without the need for an adhesion primer, solvent-free, with very low volatile organic compound emissions. To be applied directly to the structure requiring strengthening.

The procedure is conducted as follows:

1. Any restoration of degraded, weakened, non-cohesive, or non-planar surfaces, using Geolite by Kerakoll Spa and in any case as prescribed and approved by the construction supervisor;
2. Preparation of the substrate for application of the first layer of Geolite Gel, the substrate must be adequately roughened by sanding or mechanical scarification, taking care to guarantee a roughness of at least  $0.5 \text{ mm}$  (equal to level 5 of the Test Kit for preparation of reinforced concrete and masonry), clean and free from damp;
3. Application of a first layer with an average thickness of  $\approx 2\text{--}3 \text{ mm}$  of epoxy mineral matrix Geolite Gel by Kerakoll Spa;

Abstract

4. While the epoxy mineral adhesive is still wet, lay the ultra-high strength galvanized steel fibre sheet Geosteel G600 by Kerakoll Spa. By pressing firmly with a smooth spreader or metal roller, make sure that the sheet is completely impregnated and avoid allowing any gaps or air bubbles to form, because these can compromise the adhesion of the sheet to the matrix or the substrate;

5. Working fresh on fresh, apply the second layer of epoxy mineral matrix Geolite Gel by Kerakoll Spa, until the reinforcing sheet is fully incorporated and any underlying voids are filled, giving an overall reinforcement thickness of  $\approx 3\text{--}4\text{ mm}$ ;

6. Repeat steps (4) and (5) if necessary for all subsequent reinforcing layers called for by the design;

7. Any insertion of thread connectors made from unidirectional, extra-high strength galvanized steel fibre sheets, after preparation of the entrance bore, with a size suited to the nature of the connector to be fitted; after preparation of the steel connector by cutting, creating “threads” and final rolling of the steel-fibre sheet, locking it in place with a plastic tie; after insertion of the pre-formed connector into the bore with final, low pressure injection of Epofix epoxy anchoring agent or Geolite Gel epoxy mineral matrix.

Delivery and installation of all the materials described above as well as everything else required to finish the job is included. The following are excluded: removal of any existing plaster/render, restoration of degraded areas and repair of the substrate; connectors, their injection and all the costs and charges required to create them; material acceptance tests; pre- and post-procedure testing, all aids required to perform the work.

The price is by unit of reinforcing surfaces actually laid, including overlaps.

Technical Data compliant with Kerakoll Quality Standard		
Cord 3x2 obtained by joining 5 filaments, of which 3 straight and 2 wrapped with a high torque angle:		
- actual area of a cord 3x2 (5 wires)	$A_{\text{cord}}$	0.538 mm <sup>2</sup>
- n° cords/cm		1.57 cords/cm
- mass (inclusive of thermal welding)		$\approx 670\text{ g/m}^2$
- tensile breaking load of a cord		$> 1500\text{ N}$
- tensile strength of the sheet, characteristic value	$\sigma_{\text{sheet}}$	$> 3000\text{ MPa}$
- tensile strength by unit of width		$> 2.35\text{ kN/cm}$
- normal elastic modulus of sheet, average value	$E_{\text{sheet}}$	$> 190\text{ GPa}$
- break warp of the sheet, characteristic value	$\epsilon_{\text{sheet}}$	$> 1.5\%$
- equivalent thickness	$t_i$	$\approx 0.084\text{ mm}$
Pack	50 m rolls (h 30 cm)	
Weight of 1 roll	$\approx 24\text{ kg}$ including packaging	

Performance					
Geosteel SRP system – ETA n° 18/0314					
SRP – Geolite Gel & Geosteel G600					
Performance characteristic	Test Method		Geosteel SRP G600 (1 layer) system performance	Geosteel SRP G600 (3 layers) system performance	Project data according to CNR-DT 200 R1/2013
Tensile strength (characteristic value)	EN 2561	$\sigma_{\text{SRP}}$	3073 MPa	3013 MPa	3000 MPa
Modulus of elasticity (average value)	EN 2561	$E_{\text{SRP}}$	212 GPa	204 GPa	200 GPa
Ultimate elongation (average value)	EN 2561	$\varepsilon_{\text{SRP}}$	1.90%	1.89%	1.90%
Lap tensile strength <sup>1</sup> (characteristic value)	EN 2561	$\sigma_{\text{lap}}$	2888 MPa	NPD	-
Tensile strength on bent fabric (characteristic value)	EN 2561	$\sigma_{\text{u,f,bent}}$	2416 MPa	NPD	-
Glass transition temperature	EN 12614	$T_g$	+60 °C	+60 °C	-
Substrate adhesion <sup>2</sup>					
Pull-off strength (characteristic value)	EN 1542	$f_h$	2.3 MPa	NPD	-
Single-lap shear test (characteristic value)	Annex B EAD 340210-00-0104	$\sigma_{\text{deb}}$	rupture of fiber was observed outside the bonded length	NPD	-
Pull-out from substrate (Geolite Gel, average value)	Annex C EAD 340210-00-0104	$\sigma_{\text{pull-out}}$	2726 MPa	NPD	-
Pull-out from substrate (Epofix, average value)	Annex C EAD 340210-00-0104	$\sigma_{\text{pull-out}}$	2644 MPa	NPD	-
Installation conditions					
Maximum temperature (air and substrate)	-	-	< +35 °C		
Minimum temperature (air and substrate)	-	-	> +5 °C		
Relative air humidity	-	-	20 – 90%		
Moisture of the substrate (gluing surface) <sup>3</sup>	-	-	< 5%		
Service conditions					
Maximum temperature (air and substrate)	-	-	< +45 °C		
Minimum temperature (air and substrate)	-	-	> -25 °C		
Relative air humidity	-	-	irrelevant		
Contact with water <sup>4</sup>	-	-	occasional		
Reaction to fire <sup>5</sup>	EN 13501-1	-	Class D-s2, d0		

In the presence of installation and working temperatures outside the limits indicated above, contact the Kerakoll technical department to provide for suitable protective systems for application and operation of the Geosteel SRP reinforcement system.

<sup>1</sup> Overlap length lap = 200 mm.

<sup>2</sup> Tests carried out on concrete prisms with compressive strength  $f_b=57.5$  MPa.

<sup>3</sup> In the presence of a wet support, wait for it to completely dry or facilitate its drying before applying the product.

<sup>4</sup> In the event of permanent contact with liquids, contact the Kerakoll technical department to provide for the most suitable protective system.

<sup>5</sup> In case of exposure to fire load, or fire resistance, protect the Geosteel SRP reinforcement system by means of an appropriate REI certified system. The Geosteel SRP system has no fire resistance.

<b>Performance</b>			
<b>Geosteel SRG system – ETA n° 19/0325</b>			
SRG – Geolite & Geosteel G600			
Performance characteristic <sup>1</sup>	Test Method		Geosteel SRG system performance on concrete substrates
Conventional tension limit	LG FRCM (§§ 2.1 – 7.2)	$\sigma_{lim,conv}$	1827 MPa
Conventional deformation limit	LG FRCM (§§ 2.1 – 7.1)	$\epsilon_{lim,conv}$	0.94%
Elastic modulus of the sheet	LG FRCM (§§ 2.1 – 7.1.1)	$E_t$	195 GPa
Mortar compressive resistance class (typical value)	EN 12190	$f_{c,mat}$	> 50 MPa (28 gg)
Percentage of organic components by weight			< 1%
Permeability to water vapour	EN ISO 7783-2		class I: SD < 5 m
<b>Installation conditions</b>			
Maximum temperature (air and substrate)	-	-	< +40 °C
Minimum temperature (air and substrate)	-	-	> +5 °C
Relative air humidity	-	-	irrelevant
Moisture of the substrate (gluing surface)	-	-	saturated substrate with no excess water on the surface
<b>Service conditions</b>			
Maximum temperature (air and substrate)	-	-	< +80 °C
Minimum temperature (air and substrate)	-	-	> -40 °C
Relative air humidity	-	-	irrelevant
Contact with water <sup>2</sup>	-	-	occasional
Fire reaction <sup>3</sup>	Decision 2000/605/EC	-	class A1

In the presence of installation and working temperatures outside the limits indicated above, contact the Kerakoll technical department to provide for suitable protective systems for application and operation of the Geosteel SRG reinforcement system.

<sup>1</sup> The performance characteristics of the GeoSteel SRG system are compliant with and calculated as foreseen by the Guideline for the identification, qualification and acceptance testing of fibre reinforced composite materials with an inorganic matrix (FRCM) , for use in the structural consolidation of existing buildings, published by the "Consiglio Superiore dei Lavori Pubblici" (Italian authority responsible for overseeing public works) in December 2018.

<sup>2</sup> In the event of permanent contact with liquids, contact the Kerakoll technical department to provide for the most suitable protective system.

<sup>3</sup> In case of exposure to fire load, or fire resistance, protect the Geosteel SRG reinforcement system by means of an appropriate REI certified system.



Performance					
Geosteel SRG system – ETA n° 19/0325					
SRG – Geocalce F Antisismico & Geosteel G600					
Performance characteristic 1	Test Method		Geosteel SRG system performance on brick substrates	Geosteel SRG system performance on tuff substrates	Geosteel SRG system performance on stone substrates
Conventional tension limit	LG FRCM (§§ 2.1 – 7.2)	$\sigma_{lim,conv}$	1767 MPa	1593 MPa	2471 MPa
Conventional deformation limit	LG FRCM (§§ 2.1 – 7.1)	$\varepsilon_{lim,conv}$	0.91 %	0.82 %	1.27 %
Elastic modulus of the sheet	LG FRCM (§§ 2.1 – 7.1.1)	$E_f$	195 GPa		
Mortar compressive resistance class (typical value)	EN 12190	$f_{c,mat}$	> 15 MPa (28 gg)		
Percentage of organic components by weight			< 1%		
Permeability to water vapour	EN 1745	$\mu$	from 15 to 35 (table value)		
Installation conditions					
Maximum temperature (air and substrate)	-	-	< +35 °C		
Minimum temperature (air and substrate)	-	-	> +5 °C		
Relative air humidity	-	-	irrelevant		
Moisture of the substrate (gluing surface)	-	-	saturated substrate with no excess water on the surface		
Service conditions					
Maximum temperature (air and substrate)	-	-	< +80 °C		
Minimum temperature (air and substrate)	-	-	> -40 °C		
Relative air humidity	-	-	irrelevant		
Contact with water <sup>2</sup>	-	-	occasional		
Fire reaction 3	Decision 2000/605/EC	-	class A1		

In the presence of installation and working temperatures outside the limits indicated above, contact the Kerakoll technical department to provide for suitable protective systems for application and operation of the Geosteel SRG reinforcement system.

1 The performance characteristics of the Geosteel SRG system are compliant with and calculated as foreseen by the Guideline for the identification, qualification and acceptance testing of fibre reinforced composite materials with an inorganic matrix (FRCM), for use in the structural consolidation of existing buildings, published by the "Consiglio Superiore dei Lavori Pubblici" (Italian authority responsible for overseeing public works) in December 2018.

2 In the event of permanent contact with liquids, contact the Kerakoll technical department to provide for the most suitable protective system.

3 In case of exposure to fire load, or fire resistance, protect the Geosteel SRG reinforcement system by means of an appropriate REI certified system.

# Warning

- Abide by any standards and national regulations

→ when handling the sheet wear protective clothing and goggles, and follow the instructions regarding methods for applying the material

→ contact with the skin: no special measures required

→ storage on the work site: store under cover in a dry place, well away from substances that might damage it or its ability to adhere to the chosen matrix
- the product is an item according to the definitions of the EC Regulation No. 1907/2006 and therefore does not require a Safety Data Sheet

→ for any other issues, contact Kerakoll Technical Customer Service: + 39 0536.811.516 [www.kerakoll.com/contatti](http://www.kerakoll.com/contatti)



This information was last updated in April 2026; 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 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.