



DECLARATION OF PERFORMANCE No. 0435

1. Unique identification code of the product-type: **GeoSteel SRP (GeoSteel G1200 and Geolite Gel)**
2. Intended use/es: **The SRP kit is suitable for strengthening and seismic upgrade of clay and natural stone masonry, reinforced and prestressed concrete elements and structures**
3. Manufacturer: **Kerakoll S.p.A Via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italia**
4. System/s of AVCP:
System 2+
System 3 for reaction to fire
5. European Assessment Document: **EAD 340210-00-0104, November 2017**
European Technical Assessment : **ETA-18/0314 of 10/06/2020**
Technical Assessment Body: **ITC CNR**
Notified body/ies: **ITC n°0970**
6. Declared performance/s:
 - Characteristic value for tensile strength and tensile strain
 - Average value for modulus of elasticity

Essential characteristics	Performance
Reaction to fire	Class D-s2,d0
GeoSteelG1200-Geolite gel	See Annex A

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by: **Romano Sghedoni (legal representative)**

At Sassuolo, on 12/06/2020



Annex A – GeoSteel G1200-Geolite Gel

Essential characteristics		Performance	
Tensile strength (σ_u)	1 layer	≥ 2800 MPa	
	3 layers	≥ 2880 MPa	
Strain (ϵ_u)	1 layer	$\geq 0,013$ mm/mm	
	3 layers	$\geq 0,014$ mm/mm	
Modulus of elasticity (E)	1 layer	≥ 226000 MPa	
	3 layers	≥ 207000 MPa	
Interlaminar shear strength (τ)	No interlaminar shear failure	≥ 9 MPa	
Lap tensile strength (σ_{lap})	Tested Overlap $l_{lap} = 200$ mm	≥ 2960 MPa	
Bond strength on substrate Concrete MC (0.40) : pull-off test	ambient	Pull off strength $f_{th} \geq 2$ MPa	
	water	(1000 h)	strength f_{th} NPA retained $f_{th,ret}$ 107%
		(3000 h)	strength f_{th} NPA retained $f_{th,ret}$ 96%
	saltwater	(1000 h)	strength f_{th} NPA retained $f_{th,ret}$ 120%
		(3000 h)	strength f_{th} NPA retained $f_{th,ret}$ 109%
	alkali conditioning	(1000 h)	strength f_{th} NPA retained $f_{th,ret}$ 105%
		(3000 h)	strength f_{th} NPA retained $f_{th,ret}$ 103%
	Bond strength on substrate Concrete MC (0.40) : single-lap shear test	ambient	$P_{max} \geq 10000$ N $P_{deb} \geq 9700$ N
water		(1000 h)	NPA
		(3000 h)	NPA
saltwater		(1000 h)	NPA
		(3000 h)	NPA
alkali conditioning		(1000 h)	NPA
		(3000 h)	NPA

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Essential characteristics		Performance	
Pull out from substrate Concrete MC (0.40)	ambient	Pull out strength $\sigma_{\text{pull-out}} \geq 2490$ MPa Pull out displacement $\delta_{\text{pull-out}} \geq 10$ mm	
	water	(1000 h)	NPA
		(3000 h)	NPA
	saltwater	(1000 h)	NPA
		(3000 h)	NPA
	alkali conditioning	(1000 h)	NPA
		(3000 h)	NPA
	Freezing and Thawing	Direct tension	Tensile strength $\sigma_{u,FT} \geq 3000$ MPa Strain $\varepsilon_{u,FT} \geq 0,018$ mm/mm Modulus of elasticity $E_{FT} \geq 207$ GPa Interlaminar shear strength $\tau_{FT} \geq 9,5$ MPa
Retained properties		Tensile strength $\sigma_{u,FT,ret} 101$ % Modulus of elasticity $E_{FT,ret} 100$ % Interlaminar shear strength $\tau_{FT} 87$ %	
Water resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,w} \geq 3030$ MPa Strain $\varepsilon_{u,w} \geq 0,018$ mm/mm Modulus of elasticity $E_w \geq 202$ GPa Interlaminar shear strength τ_w NPA Lap Tensile $\sigma_{lap,w}$ NPA	
	Direct tension (3000 h)	Tensile strength $\sigma_{u,w} \geq 3050$ MPa Strain $\varepsilon_{u,w} \geq 0,017$ mm/mm Modulus of elasticity $E_w \geq 208$ GPa Interlaminar shear strength τ_w NPA Lap Tensile $\sigma_{lap,w}$ NPA	
	Retained properties (1000 h)	Tensile strength $\sigma_{u,w,ret} 103$ % Modulus of elasticity $E_{w,ret} 98$ % Interlaminar shear strength $\tau_{w,ret} 95$ % Lap Tensile $\sigma_{lap,w,ret} 104$ %	
	Retained properties (3000 h)	Tensile strength $\sigma_{u,w,ret} 103$ % Modulus of elasticity $E_{w,ret} 100$ % Interlaminar shear strength $\tau_{w,ret} 90$ % Lap Tensile $\sigma_{lap,w,ret} 103$ %	



Essential characteristics		Performance
Saltwater resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,sw} \geq 2960$ MPa Strain $\varepsilon_{u,sw} \geq 0,016$ mm/mm Modulus of elasticity $E_{sw} \geq 215$ GPa Interlaminar shear strength τ_{sw} NPA Lap Tensile $\sigma_{lap,sw}$ NPA
	Direct tension (3000 h)	Tensile strength $\sigma_{u,sw} \geq 2930$ MPa Strain $\varepsilon_{u,sw} \geq 0,017$ mm/mm Modulus of elasticity $E_{sw} \geq 209$ GPa Interlaminar shear strength τ_{sw} NPA Lap Tensile $\sigma_{lap,sw}$ NPA
	Retained properties (1000 h)	Tensile strength $\sigma_{u,sw,ret} 101$ % Modulus of elasticity $E_{sw,ret} 104$ % Interlaminar shear strength $\tau_{sw,ret} 87$ % Lap Tensile $\sigma_{lap,sw,ret} 102$ %
	Retained properties (3000 h)	Tensile strength $\sigma_{u,sw,ret} 100$ % Modulus of elasticity $E_{sw,ret} 101$ % Interlaminar shear strength $\tau_{sw,ret} 78$ % Lap Tensile $\sigma_{lap,sw,ret} 102$ %
Alkali resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,alk} \geq 2900$ MPa Strain $\varepsilon_{u,alk} \geq 0,017$ mm/mm Modulus of elasticity $E_{alk} \geq 206$ GPa Interlaminar shear strength τ_{alk} NPA Lap Tensile $\sigma_{lap,alk}$ NPA
	Direct tension (3000 h)	Tensile strength $\sigma_{u,alk} \geq 2950$ MPa Strain $\varepsilon_{u,alk} \geq 0,016$ mm/mm Modulus of elasticity $E_{alk} \geq 211$ GPa Interlaminar shear strength τ_{alk} NPA Lap Tensile $\sigma_{lap,alk}$ NPA
	Retained properties (1000 h)	Tensile strength $\sigma_{u,alk,ret} 100$ % Modulus of elasticity $E_{alk,ret} 99$ % Interlaminar shear strength $\tau_{alk,ret} 95$ % Lap Tensile $\sigma_{lap,alk,ret} 103$ %
	Retained properties (3000 h)	Tensile strength $\sigma_{u,alk,ret} 100$ % Modulus of elasticity $E_{alk,ret} 102$ % Interlaminar shear strength $\tau_{alk,ret} 91$ % Lap Tensile $\sigma_{lap,alk,ret} 102$ %



Essential characteristics		Performance
Alkali soil resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,soil}$ NPA Strain $\epsilon_{u,soil}$ NPA Modulus of elasticity $E_{soil} \geq 244$ GPa
	Retained properties (1000 h)	Tensile strength $\sigma_{u,soil,ret}$ 101 % Modulus of elasticity $E_{soil,ret}$ 108 %
Dry heat resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,heat}$ NPA Strain $\epsilon_{u,heat}$ NPA Modulus of elasticity $E_{heat} \geq 279$ GPa
	Retained properties (1000 h)	Tensile strength $\sigma_{u,heat,ret}$ 100 % Modulus of elasticity $E_{heat,ret}$ 123 %
	Direct tension (3000 h)	Tensile strength $\sigma_{u,heat}$ NPA Strain $\epsilon_{u,heat}$ NPA Modulus of elasticity $E_{heat} \geq 241$ GPa
	Retained properties (3000 h)	Tensile strength $\sigma_{u,heat,ret}$ 100 % Modulus of elasticity $E_{heat,ret}$ 107 %
Fuel resistance	Direct tension	Tensile strength $\sigma_{u,fuel}$ NPA Strain $\epsilon_{u,fuel}$ NPA Modulus of elasticity $E_{fuel} \geq 220$ GPa
	Retained properties	Tensile strength $\sigma_{u,fuel,ret}$ 100 % Modulus of elasticity $E_{fuel,ret}$ 97 %
Creep behaviour related to the adhesion on substrate Concrete MC (0.40)		Displacement vs time (tabular) Maximum load $P_{max,creep}$ NPA Bond capacity $P_{deb,creep}$ NPA
Tensile strength after low number of cycles (seismic behaviour)		Tensile strength $\sigma_{u,seism} \geq 3031$ MPa Strain $\epsilon_{u,seism} \geq 0,0135$ mm/mm Modulus of elasticity $E_{l,seism} \geq 216$ GPa
Tensile strength after high number of cycles (fatigue actions)		NPA
Tensile strength on bent fabric	Straight fabric	$\sigma_{u,f,straight} \geq 3000$ MPa $\sigma_{u,f,straight+sw1000} \geq 2600$ MPa $\sigma_{u,f,straight+sw3000} \geq 2500$ MPa
	Bent fabric	$\sigma_{u,f,bent} \geq 2400$ MPa $\sigma_{u,f,bent+sw1000} \geq 2340$ MPa $\sigma_{u,f,bent+sw3000} \geq 1940$ MPa
Creep rupture (creep deformation)		$t_u 10$ $\epsilon_{u,creep} \leq 0,009$ mm/mm
		$t_u 100$ $\epsilon_{u,creep} \leq 0,012$ mm/mm
		$t_u 1000$ $\epsilon_{u,creep} \leq 0,018$ mm/mm
		$t_u 2000$ $\epsilon_{u,creep} \leq 0,020$ mm/mm
		$t_u 3000$ $\epsilon_{u,creep} \leq 0,022$ mm/mm
Void content (V)	1 layer	0.8 %
	3 layers	0.3 %
Glass Transition Temperature of resin		$T_g \geq 60^\circ\text{C}$