



DECLARATION OF PERFORMANCE No. 0436

1. Unique identification code of the product-type: **GeoSteel SRP (GeoSteel G2000 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
GeoSteelG2000-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 G2000-Geolite Gel

Essential characteristics		Performance	
Tensile strength (σ_u)	1 layer	≥ 3040 MPa	
	3 layers	≥ 2800 MPa	
Strain (ϵ_u)	1 layer	$\geq 0,015$ mm/mm	
	3 layers	$\geq 0,015$ mm/mm	
Modulus of elasticity (E)	1 layer	≥ 214000 MPa	
	3 layers	≥ 206000 MPa	
Interlaminar shear strength (τ)	No interl shear failure	≥ 8 MPa	
Lap tensile strength (σ_{lap})	Tested Overlap $l_{lap}=200$ mm	≥ 1920 MPa	
Bond strength on substrate Concrete MC (0.40) : pull-off test	ambient	Pull off strength $f_h \geq 2$ MPa	
	water	(1000 h)	strength f_h NPA retained $f_{h,ret}$ 107%
		(3000 h)	strength f_h NPA retained $f_{h,ret}$ 96 %
	saltwater	(1000 h)	strength f_h NPA retained $f_{h,ret}$ 120 %
		(3000 h)	strength f_h NPA retained $f_{h,ret}$ 109 %
	alkali conditioning	(1000 h)	strength f_h NPA retained $f_{h,ret}$ 105 %
		(3000 h)	strength f_h NPA retained $f_{h,ret}$ 103%
	Bond strength on substrate Concrete MC (0.40) : single-lap shear test	ambient	$P_{max} \geq 11000$ N $P_{deb} \geq 10700$ N
water		(1000 h)	NPA
		(3000 h)	NPA
saltwater		(1000 h)	NPA
		(3000 h)	NPA
alkali conditioning		(1000 h)	NPA
		(3000 h)	NPA



Essential characteristics		Performance	
Pull out from substrate Concrete MC (0.40)	ambient	Pull out strength $\sigma_{\text{pull-out}} \geq 1870$ MPa Pull out displacement $\delta_{\text{pull-out}} \geq 8,4$ 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 $\tau_{FT} \geq 8,7$ MPa
Retained properties		Tensile strength $\sigma_{u,FT,ret} 101$ % Modulus of elasticity $E_{FT,ret} 101$ % 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 $E_w \geq 209$ 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 $E_w \geq 214$ GPa Interlaminar shear strength τ_w NPA Lap Tensile $\sigma_{lap,w}$ NPA	
	Retained properties (1000 h)	Tensile strength $\sigma_{u,w,ret} 102$ % Modulus of elasticity $E_{w,ret} 101$ % 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 $E_{w,ret} 104$ % 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 $\sigma_{lap,sw} \geq$ 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 $\sigma_{u,sw,ret}$ 100 % 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 $E_{alk,ret}$ 100 % 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 %

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Essential characteristics		Performance
Alkali soil resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,soil}$ NPA Strain $\epsilon_{u,soil}$ NPA Modulus of elasticity $E_{soil} \geq 231$ 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 $E_{heat} \geq 264$ 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 $E_{heat} \geq 228$ 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 $E_{fuel} \geq 208$ 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 $\sigma_{u,seism} \geq 2860$ MPa Strain $\epsilon_{u,seism} \geq 0,0137$ mm/mm Modulus of elasticity $E_{l,seism} \geq 212$ GPa
Tensile strength after high number of cycles (fatigue actions)		NPA
Tensile strength on bent fabric	Straight fabric	$\sigma_{u,f,straight} \geq 2800$ MPa $\sigma_{u,f,straight,sw1000} \geq 3030$ MPa $\sigma_{u,f,straight,sw3000} \geq 2680$ MPa
	Bent fabric	$\sigma_{u,f,bent} \geq 2440$ MPa $\sigma_{u,f,bent,sw1000} \geq 2570$ MPa $\sigma_{u,f,bent,sw3000} \geq 2540$ MPa
Creep rupture (creep deformation)		$t_u 10 \quad \epsilon_{u,creep} \leq 0,013$ mm/mm
		$t_u 100 \quad \epsilon_{u,creep} \leq 0,015$ mm/mm
		$t_u 1000 \quad \epsilon_{u,creep} \leq 0,022$ mm/mm
		$t_u 2000 \quad \epsilon_{u,creep} \leq 0,024$ mm/mm
		$t_u 3000 \quad \epsilon_{u,creep} \leq 0,026$ mm/mm
Void content (V)	1 layer	0.5 %
	3 layers	0.4 %
Glass Transition Temperature of resin		$T_g \geq 60^\circ\text{C}$