



kerakoll

DECLARATION OF PERFORMANCE No. 0436

1. Unique identification code of the product-type: **GeoSteel SRP**
(GeoSteel G2000 and Geolite Gel/Epofix)
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 07/10/2024**
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/Epofix	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 20/12/2024

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Cap. soc. € 2.000.000,00 i.v.



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Annex A – GeoSteel G2000-Geolite Gel/Epofix

Essential characteristics		Performance		
Tensile strength (σ)	1 layer	≥ 3040 MPa		
	3 layers	≥ 2800 MPa		
Strain (ϵ)	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	

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Essential characteristics		Performance		
Pull out from substrate Concrete MC (0.40)	ambient (Geolite2000/Geolite Gel)	Pull out strength $\sigma_{\text{pull-out}} \geq 1870$ MPa Pull out displacement $\delta_{\text{pull-out}} \geq 8,4$ mm		
	ambient (Geolite2000/Epofix)	Pull out strength $\sigma_{\text{pull-out}} \geq 2200$ MPa Pull out displacement $\delta_{\text{pull-out}} \geq 3,5$ mm		
	water (Geolite2000/Geolite Gel)	(1000 h)	NPA	
		(3000 h)	NPA	
	saltwater (Geolite2000/Geolite Gel)	(1000 h)	NPA	
		(3000 h)	NPA	
	alkali conditioning (Geolite2000/Geolite Gel)	(1000 h)	NPA	
		(3000 h)	NPA	
Freezing and Thawing	Direct tension	Tensile strength $\sigma_{u,FT} \geq 3000$ MPa Strain $\epsilon_{u,FT} \geq 0,018$ 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 $\epsilon_{u,w} \geq 0,018$ 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 $\epsilon_{u,w} \geq 0,017$ 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 $\sigma_{lap,w,ret} 103$ %		

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Saltwater resistance	Direct tension (1000 h)	Tensile strength $\sigma_{u,sw} \geq 2960$ MPa Strain $\epsilon_{u,sw} \geq 0,016$ 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 $\epsilon_{u,sw} \geq 0,017$ 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 $\epsilon_{u,alk} \geq 0,017$ 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 $\epsilon_{u,alk} \geq 0,016$ 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 $E_{1,seism} \geq 212$ 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)		$t_u 10$ $\epsilon_{u,creep} \leq 0,013$ mm/mm
		$t_u 100$ $\epsilon_{u,creep} \leq 0,015$ mm/mm
		$t_u 1000$ $\epsilon_{u,creep} \leq 0,022$ mm/mm
		$t_u 2000$ $\epsilon_{u,creep} \leq 0,024$ mm/mm
		$t_u 3000$ $\epsilon_{u,creep} \leq 0,026$ mm/mm
Void content (V)	1 layer	0.5 %
	3 layers	0.4 %
Glass Transition Temperature of resin		$T_g \geq 60^\circ\text{C}$

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