

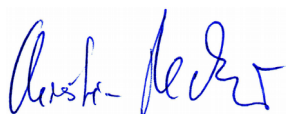
NorGeoSpec 2012 Product Certificate

Quality Product Certification Reinforcement

This product has been found to be fit for use in accordance with NorGeoSpec 2012 System for the above given function.

Certificate no.:	NGS-50175
Date:	09.05.2019
Valid until:	08.05.2021
Manufacturer:	HUESKER Synthetic GmbH
Product:	Stabilenka® 1000/100
Product Type:	GTX-K
Raw material:	PET
Function:	Reinforcement (Main function), Separation and Filtration (Additional functions)

Issued by



Christian Recker, SINTEF project manager

Approved by



Arnstein Watn, Head of the Technical committee



The products are regularly audited and tested to verify that the characteristics fulfil the NorGeoSpec 2012 Rev.: 01/14.12.2016 requirements.
Approved by the NorGeoSpec Technical committee: 09.05.20179

Quality Product Certification Reinforcement

Characteristic		Standard	Unit	Declared value	Max. tolerance	Certification value
Mass per unit		EN ISO 9864	g/m ²	1800	± 180	1620 – 1980
Dimension		NorGeoSpec 2012				
Tensile elements	MD	Annex	Production width ¹			
	CMD	Annex F	Elements/m			
Grid apertures	MD	Annex F	mm			
	CMD	Annex F	mm			
Mechanical tests						
Nominal tensile strength	MD	EN ISO 10319	kN/m	1000.00	- 0.00	1000.00
	CMD	EN ISO 10319	kN/m			
Tensile strain at nominal strength	MD	EN ISO 10319	%	8.3	± 1.7	6.6 – 10
	CMD	EN ISO 10319	%			
Tensile stiffness at 2% tensile strain	MD	EN ISO 10319	kN/m	7500	- 0	7500
	CMD	EN ISO 10319	kN/m			
Tensile stiffness at 5% tensile strain	MD	EN ISO 10319	kN/m	10000	- 0	10000
	CMD	EN ISO 10319	kN/m			
Tensile stiffness at 10% tensile strain	MD	EN ISO 10319	kN/m			
	CMD	EN ISO 10319	kN/m			
Static puncture test		EN ISO 12236	KN	15.000	- 0.000	15.000
Dynamic perforation resistance		EN ISO 13433	mm	15	+ 5	20
Hydraulic tests						
Permeability normal to the plane without load		EN ISO 11058	m/s	0.010	- 0.005	0.005
Characteristic opening size		EN ISO 12956	µm	110	± 50	60 – 160
Durability (Declared value)						
Service life			years	<input type="checkbox"/> 25	<input type="checkbox"/> 50	<input type="checkbox"/> 100
Information about reduction factors are given on page 3 of this certificate.						

¹ Production width= 5m

Declared values

Reinforcement

Declared values						
Reduction factor for creep rupture ^{1) 2)}	RF _{CR}	1.52	BAA assessment, Certificate 13/4979, Product sheet 1; for 120 years and application temperature of 20 °C			
Reduction factor for environmental effects	RF _{CH}					
Chemical			Application in natural soils with 4 < pH < 9 and soil temperature < 25 °C			
Oxidation		n. r.				
Hydrolysis		1.03	BBA assessment, Certificate 13/4979, Product sheet 1, 120 years, 4 < pH < 9 and soil temperature of 20 °C			
Reduction factor for weathering	RF _W					
Or max. exposure time						
1 month						
2 weeks						
1 day		x				
Reduction factor for installation damage	RF _{ID,fine}	1.12	RF _{ID,medium}	1.09	RF _{ID,coarse}	1.06
Used test method	Test report EMPA No. 201666-E25					
Compaction	Ride-on steel-wheeled roller (9500 kg) + vibratory capability M _{E1} -value ground level 90 MN/m ² ; 1st layer 12 cm - geosynthetic - 2nd layer 23 cm					
Particle size	RF _{ID fine} = sand with D ₉₀ ≤ 2,6 mm RF _{ID medium} = rounded gravel D ₉₀ ≤ 32 mm RF _{ID coarse} = crushed stone D ₉₀ ≤ 19 mm					

¹⁾ product range²⁾ not required if used as base course layers

n.r. = not required

n/a = not applicable