

# NorGeoSpec 2012 Product Certificate



Certificate no.: No 2301-QC-1451

Manufacturer : HUESKER Synthetic GmbH

Raw material: PET

Date: 09.02.2015

Product: Fortrac R 800/100-30T

Function: Reinforcement

Valid until: 08.02.2017

Product Type: GGR

## Quality Product Certification Reinforcement

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Characteristic		Standard	Unit	Declared value	Max. tolerance	Certification value
Mass per unit area		EN ISO 9864	g/m <sup>2</sup>	2200	± 220	<b>1980 - 2420</b>
<b>Dimension</b>		NorGeoSpec 2012				
Grid openings production width			-	99	± 0	<b>99</b>
Grid apertures	MD		mm	25	± 3.8	<b>21.2 – 28.8</b>
	CMD		mm	30	± 4.5	<b>25.5 – 34.5</b>
<b>Mechanical tests</b>						
Tensile strength	MD	EN ISO 10319	kN/m	800.00	- 0.00	<b>800.00</b>
	CMD	EN ISO 10319	KN/m	n/a		
Strain at nominal strength	MD	EN ISO 10319	%	8.0	± 1.6	<b>6.4 – 9.6</b>
	CMD	EN ISO 10319	%	n/a		
Strength at 2% extension	MD	EN ISO 10319	kN/m	150.00	- 0.00	<b>150.00</b>
	CMD	EN ISO 10319	kN/m	n/a		
Strength at 5% extension	MD	EN ISO 10319	kN/m	350.00	- 0.00	<b>350.00</b>
	CMD	EN ISO 10319	kN/m	n/a		
Strength at 10% extension	MD	EN ISO 10319	kN/m	-	-	-
	CMD	EN ISO 10319	kN/m	-	-	-
<b>Durability (Declared value)</b>						
Service life			years	<input type="checkbox"/> 25	<input type="checkbox"/> 50	<input type="checkbox"/> 100

Information about reduction factors are given on page 2 of this certificate.

Issued by

Christian Recker, NorGeoSpec 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 requirements.  
Approved by the NorGeoSpec Technical committee: 09.02.2015

# Quality Product Certification Reinforcement

Declared values						
Reduction factor for creep rupture <sup>1) 2)</sup>	RF <sub>CR</sub>	1.52	Remarks: 120 years, BBA Certificate 13/H197 Product sheet 3			
Reduction factor for enviromental effects	RF <sub>CH</sub>					
Chemical		-	Remarks: Application in natural soils at a pH-value between 4 and 9 and a soil temperature of <25°C			
Oxidation		n.r.	Remarks: -			
Hydrolysis		1.03	Remarks: Expertice Dr. Retzlaff; GSY001-14g01 120 years, pH-value 4<pH<9 and a soil temperature of 20°C			
Reduction factor for weathering	RF <sub>W</sub>		Remarks:			
Or max. exposure time						
1 month		X				
2 weeks						
1 day						
Reduction factor for installation damage	RF <sub>ID, fine</sub>	1.06 (Type 3)	RF <sub>ID, medium</sub>	1.03 (Type 2)	RF <sub>ID, coarse</sub>	1.03 (Type 1)
Used test method	Procedure for installation damage test for BBA Assessments modified to conform with ASTM D5818 requirements					

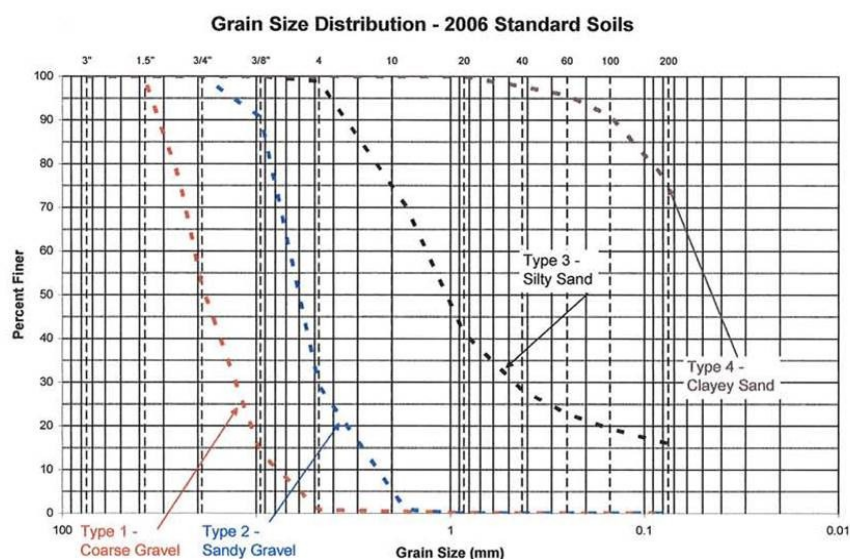
## Compaction:

Ride-on steel-wheeled roller (4550 kg) + vibratory capability

4 passes soil type 1 + 2 and 6 passes soil type 3

1st soil layer 20 cm – geosynthetic - 2nd soil layer 20 cm; compaction ~90 % modified proctor (not performed on type 1 and 2)

## Particle size distribution of fills used in installation damage testing



<sup>1)</sup> producte range,

<sup>2)</sup> not required if used as base course layers

n.r. = not required

n/a = not applicable