NorGeoSpec 2012 Product Certificate

SINTEF

Certificate no.:	No 2301-QC-1450	Manufacturer :	HUESKER Synthetic GmbH	Raw material:	PET
Date:	09.02.2015	Product:	Fortrac 35 T	Function:	Reinforcement
Valid until:	08.02.2017	Product Type:	GGR		

Quality Product Certification Reinforcement

Characteristic		Standard	Unit	Declared value	Max. tolerance	Certification value
Mass per unit area		EN ISO 9864	g/m²	185	± 19	**166 - 204**
Dimension		NorGeoSpec 2012				
Grid openings production width				171	± 0	**171**
Grid apertures	MD		mm	26	± 3.9	**22.1 – 29.9**
	CMD		mm	24	± 3.6	**20.4 – 27.6**
Mechanical tests						
Tensile strength	MD	EN ISO 10319	kN/m	35.00	- 0.00	**35.00**
	CMD	EN ISO 10319	KN/m	n/a		
Strain at nominal strength	MD	EN ISO 10319	%	9.0	± 1.8	**7.2 – 10.8**
	CMD	EN ISO 10319	%	n/a		
Strength at 2% extension	MD	EN ISO 10319	kN/m	8.00	- 0.00	**8.00**
	CMD	EN ISO 10319	kN/m	n/a		
Strength at 5% extension	MD	EN ISO 10319	kN/m	17.00	- 0.00	**17.00**
	CMD	EN ISO 10319	kN/m	n/a		
Strength at 10% extension	MD	EN ISO 10319	kN/m	-	-	**-**
	CMD	EN ISO 10319	kN/m	-	-	**-**
Durability (Declared value)						
Service life			years	☐25	☐50	☒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 regulary audited and tested to verify that the characteristics fulfil the NorGeoSpec requirements.
Approved by the NorGeoSpec Technical committee: 09.02.2015

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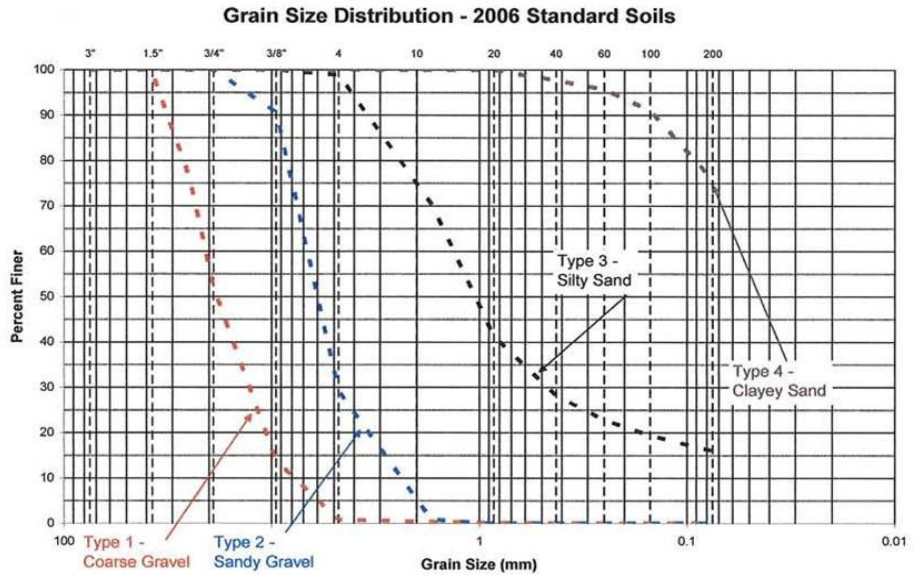
Quality Product Certification Reinforcement

Declared values						
Reduction factor for creep rupture[1) 2)]	RF_{CR}	1.52	Remarks:	120 years, BBA Certificate 13/H197 Product sheet 3		
Reduction factor for enviromental effects	RF_{CH}					
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_{W}		Remarks:			
Or max. exposure time						
1 month		x				
2 weeks						
1 day						
Reduction factor for installation damage	$RF_{ID, fine}$	1.16 (Type 3)	$RF_{ID, medium}$	1.05 (Type 2)	$RF_{ID, coarse}$	1.14 (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



[1)] producte range,
[2)] not required if used as base course layers
n.r. = not required
n/a = not applicable