

NorGeoSpec Product Certificate

Quality Product Certification

This product has been found to be fit for use in accordance with the NorGeoSpec System for the function as stated below.

Certificate no.:	NGS-50471
Manufacturer:	HUESKER Synthetic GmbH
Product:	Fortrac® 110 T
Product Type:	GGR
Raw material:	PET
Function:	Reinforcement

This certificate was issued on 05.03.2026 and will remain valid as long as the product fulfils the NorGeoSpec requirements, the product and the manufacturing conditions in the plant are not modified significantly. The validity of the certificate shall be checked on www.norgeospec.org or by using the QR code shown. Only certificates listed on www.norgeospec.org are valid.

The hash value of this certificate is:
db13cb525284c545222181c414312ed9891078d934924a2c37967528ca986



The products are regularly audited and tested to verify that the characteristics fulfil the NorGeoSpec, Rev. 02 / 01.09.2025 requirements.

Issued by

Approved by

Christoph Hessing, SINTEF Community

Christian Recker, SINTEF Community



Certificate no.: NGS-50471

Quality Product Certification

Quality Product Certification				DoP ¹⁾	NGS			
Characteristic		Standard	Unit	DoP declared mean value	NGS declared mean value ²⁾	NGS max. tolerance ³⁾	NGS declared tolerance ⁴⁾	NGS control limits ⁵⁾
Mass per unit area		EN ISO 9864	g/m ²	(-)	350.0	± 35.0	± 35.0	315.0 - 385.0
Dimensions								
Tensile elements	MD	NGS, Annex F	Elements/m	(-)	33.9	± 1.0	± 1.0	32.9 - 34.9
	CMD	NGS, Annex F	Elements/m	(-)	33.4	± 1.0	± 1.0	32.4 - 34.4
Grid apertures	MD	NGS, Annex F	mm	(-)	25.0	± 3.8	± 3.8	21.2 - 28.8
	CMD	NGS, Annex F	mm	(-)	25.0	± 3.8	± 3.8	21.2 - 28.8
Mechanical tests								
Tensile strength	MD	EN ISO 10319	kN/m	110.00	(-)	(-)	(-)	(-)
	CMD	EN ISO 10319	kN/m	20.00	(-)	(-)	(-)	(-)
Elongation at max. tensile strength	MD	EN ISO 10319	%	9.5	(-)	(-)	(-)	(-)
	CMD	EN ISO 10319	%	9.0	(-)	(-)	(-)	(-)
Nominal tensile strength	MD	EN ISO 10319	kN/m	(-)	110.00	- 11.00	- 0.00	≥ 110.00
	CMD	EN ISO 10319	kN/m	(-)	20.00	- 2.00	- 0.00	≥ 20.00
Tensile strain at nominal tensile strength	MD	EN ISO 10319	%	(-)	8.5	± 1.7	± 1.5	6.0 - 10.0
	CMD	EN ISO 10319	%	(-)	8.5	± 1.7	± 1.5	6.0 - 10.0
Tensile stiffness at 2 % tensile strain	MD	EN ISO 10319	%	(-)	1,100	- 220	- 0	≥ 1,100
	CMD	EN ISO 10319	%	(-)	(-)	(-)	(-)	(-)
Tensile stiffness at 5 % tensile strain	MD	EN ISO 10319	%	(-)	1,040	- 208	- 0	≥ 1,040
	CMD	EN ISO 10319	%	(-)	(-)	(-)	(-)	(-)
Tensile stiffness at 10 % tensile strain	MD	EN ISO 10319	%	(-)	(-)	(-)	(-)	(-)
	CMD	EN ISO 10319	%	(-)	(-)	(-)	(-)	(-)
Durability								
Service life			years	100	100			
Proven for installation under low temperatures		NGS, Annex G.2	(-)	(-)	down to 0°C	☒ yes	☒ yes / ☐ no	
					down to -10°C	☒ yes / ☐ no		

¹⁾ Manufacturer's Declaration of Performance acc. hEN standards

²⁾ Manufacturer's declared values

³⁾ Max. possible NorGeoSpec tolerance according to NGS, Table 1

⁴⁾ Manufacturer's declared tolerance; the tolerance for the NorGeoSpec certificate shall be equal or less than the "NGS max. tolerance" (see Table 1 Part 1 and Part 2 of the guideline)

⁵⁾ NorGeoSpec control limit values regarding fitness for use; these "NGS control limits" are calculated based on the "NGS declared mean values" and the "NGS declared tolerances"; the product has to satisfy these "NGS control limits" during the NorGeoSpec certification process and random product testing

(-) = no performance declared; N/R = not required; N/A = not applicable

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Declared values

Reinforcement

Declared values			
Reduction factor for creep rupture	RF _{CR}	1.52	Design life: 120 years, design soil temperature: ≤ 20 °C; BBA assessment - HAPAS Certificate 13/H197, Product sheet 3
Reduction factor for environmental effects	RF _{CH}		Remarks:
Chemical		(-)	(-)
Oxidation		N/A	
Hydrolysis		1.03	Design life: 120 years, design soil temperature: ≤ 20 °C, soil environment: 4 ≤ pH ≤ 9; Test report No. 160501 - ISO/TR 20432
Reduction factor for environmental effects	RF _W		
or max. exposure time			
1 month		X	
2 weeks			
1 day			
Reduction factor for installation damage	RF _{ID, fine}	(-)	
	RF _{ID, medium}	1.10	
	RF _{ID, coarse}	1.10	
Used test method	BBA assessment		
Compaction	Compacted soil thickness: 200 mm, weight of vibrating roll: 4,550 kg		
Particle size	RF _{ID, fine}	(-)	
	RF _{ID, medium}	sandy gravel D90 ≤ 10 mm	
	RF _{ID, coarse}	coarse gravel D90 ≤ 35 mm	