

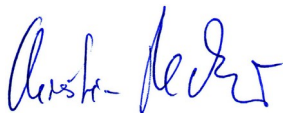
NorGeoSpec 2012 Product Certificate

Quality Product Certification Separation and Filtration

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

Certificate no.:	NGS-50417
Date:	13.12.2024
Valid until:	12.12.2026
Manufacturer:	THRACE Nonwovens & Geosynthetics S.A.
Product:	Thrace N4
Product Type:	GTX-N
Raw material:	PP
Function:	Separation and Filtration

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: 12.12.2024

Certificate no.: NGS-50417

Quality Product Certification Separation and Filtration

Quality Product Certification				DoP ¹⁾	NGS		
Characteristic	Test method	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	(-)	230.0	± 23.0	± 23.0	207.0 - 253.0
Tensile strength	MD	EN ISO 10319	kN/m	22.30	22.30	-2.23	≥ 20.07
	CMD	EN ISO 10319	kN/m	22.30	22.30	-2.23	
Tensile strain at tensile strength	MD	EN ISO 10319	%	38.0	38.0	-7.6	≥ 36.8
	CMD	EN ISO 10319	%	54.0	54.0	-10.8	
Static puncture test (CBR test)	EN ISO 12236	kN	3.250	3.250	-0.325	-0.325	≥ 2.925
Dynamic perforation test	EN ISO 13433	mm	16.0	16.0	+4.0	+4.0	≤ 20.0
Energy index	NorGeoSpec 2012	kN/m	(-)	4.5		0.0	≥ 4.5
Water permeability normal to the plane, without load	EN ISO 11058	m/s	0.0350	0.0350	-0.0105	-0.0105	≥ 0.0250
Characteristic opening size	EN ISO 12956	µm	75.0	75.0	± 22.5	± 22.0	53.0 - 97.0
Service life		years	100			100	

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

2) Manufacturer's declared values

3) Max. possible NorGeoSpec tolerance according to table 1 Part 1 and Part 2 of the guideline

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

Quality Product Certification: Separation and Filtration

Application profile: 4