

Quality Product CertificationSeparation 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-50337 |
|------------------|---------------------------------------|
| Date: | 03.02.2023 |
| Valid until: | 02.02.2025 |
| Manufacturer: | THRACE Nonwovens & Geosynthetics S.A. |
| Product: | 270NW |
| 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

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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: 01.03.2023



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| 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/m² | (-) | 255 | ± 25.5 | ± 25.0 | 230.0 - 280.0 |
| Tensile strength | MD | EN ISO 10319 | kN/m | 22.0 | 22.0 | -2.20 | -2.00 | > 20.00 |
| | CMD | EN ISO 10319 | kN/m | 22.0 | 22.0 | -2.20 | -2.00 | ≥ 20.00 |
| Tensile strain at tensile strength | MD | EN ISO 10319 | % | 45.0 | 45.0 | -9.0 | -9.0 | ≥ 36.0 |
| | CMD | EN ISO 10319 | % | 45.0 | 45.0 | -9.0 | -9.0 | |
| Static puncture test (CBR test) | | EN ISO 12236 | kN | 2.800 | 2.800 | -0.280 | -0.280 | ≥ 2.520 |
| Dynamic perforation test | | EN ISO 13433 | mm | 18 | 18 | +4.5 | +3.0 | ≤ 21.0 |
| 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 | 0.035 | 0.035 | -0.011 | -0.010 | ≥ 0.025 |
| Characteristic opening size | | EN ISO 12956 | μm | 70 | 70 | ± 21.0 | ± 21.0 | 49.0 - 91.0 |
| Service life | | | years | 100 | 100 | | | |

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

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Application profile: 4

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 quideline)

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