

NorGeoSpec 2012 Product Certificate



Certificate no.: No 0907-QC-1482 Manufacturer : TenCate Geosynthetics Raw material: PET
 Date: 01.08.2015 Product: MIRAGRID GX 110/30 Function: Reinforcement
 Valid until: 31.07.2017 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 ² | 422 | ± 46 | 376 - 468 | |
| Dimension | NorGeoSpec 2012 | | | | | |
| Grid openings production width | | | 209 | ± 0 | 209 | |
| Grid apertures | MD | mm | 19* | ± 2.9 | 16.1 – 21.9 | |
| | CMD | mm | 25* | ± 3.8 | 21.2 – 28.8 | |
| Mechanical tests | | | | | | |
| Tensile strength | MD | EN ISO 10319 | kN/m | 110.00 | - 0.00 | 110.00 |
| | CMD | EN ISO 10319 | KN/m | n/a | n/a | n/a |
| Strain at nominal strength | MD | EN ISO 10319 | % | 10.1 | ± 2.0 | 8.1 – 12.1 |
| | CMD | EN ISO 10319 | % | n/a | n/a | n/a |
| Strength at 2% extension | MD | EN ISO 10319 | kN/m | 20.00 | - 4.00 | 16.00 |
| | CMD | EN ISO 10319 | kN/m | n/a | n/a | n/a |
| Strength at 5% extension | MD | EN ISO 10319 | kN/m | 35.00 | - 7.00 | 28.00 |
| | CMD | EN ISO 10319 | kN/m | n/a | n/a | n/a |
| Strength at 10% extension | MD | EN ISO 10319 | kN/m | - | - | - |
| | CMD | EN ISO 10319 | kN/m | - | - | - |
| Durability (Declared value) | | | | | | |
| 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.

* Larger mesh sizes at each side of the roll

Issued by

Christian Recker, NorGeoSpec project manager

Approved by

Arnstein Watn, Head of the Technical committee



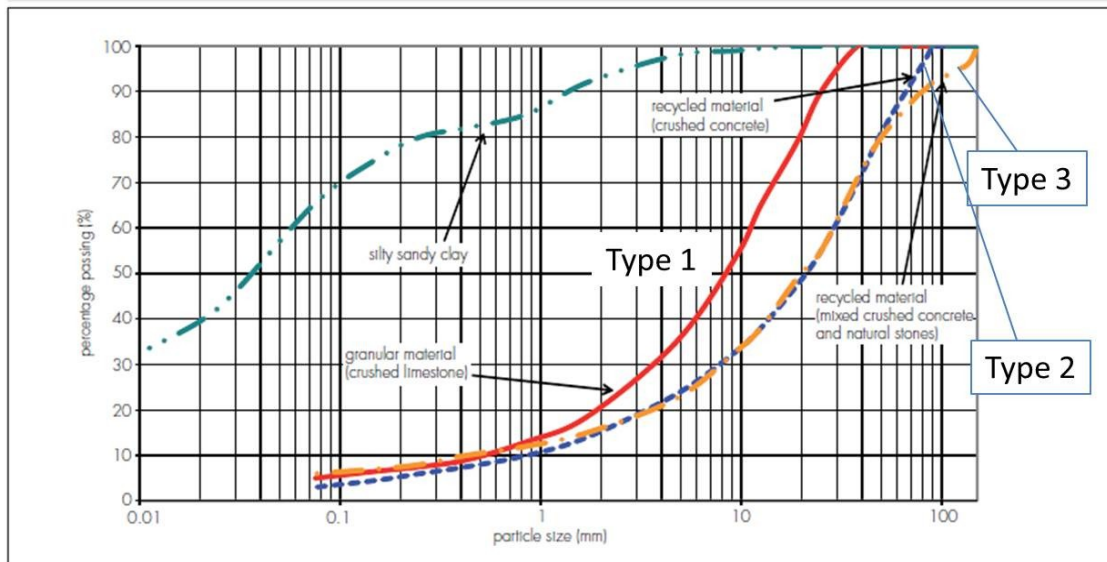
The products are regularly audited and tested to verify that the characteristics fulfil the NorGeoSpec requirements.
 Approved by the NorGeoSpec Technical committee: 01.08.2015

Quality Product Certification Reinforcement

| Declared values | | | | | | |
|--|--------------------------|---------------|---|---------------|--------------------------|---------------|
| Reduction factor for creep rupture ¹⁾²⁾ | RF _{CR} | 1.56 | Remarks: 114 years, tBU No. 1.6/22320/0910.0.1-2011e | | | |
| 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 | | 1.05 | Remarks: pH 4.0 to 9.0; 120 years, SKZ 89363/09-08.12.2010 | | | |
| Reduction factor for weathering | RF _W | | Remarks: | | | |
| Or max. exposure time | | | | | | |
| 1 month | | | | | | |
| 2 weeks | | x | | | | |
| 1 day | | | | | | |
| Reduction factor for installation damage | RF _{ID, fine} | 1.10 (Type 1) | RF _{ID, medium} | 1.14 (Type 2) | RF _{ID, coarse} | 1.11 (Type 3) |
| Used test method | Baugrund Wien 10-2022-01 | | | | | |

Compaction:
 Min. compaction depth above geogrid 320mm
 Ride-on steel-wheeled roller (12400 kg)
 Relative density >95%

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