Photograph courtesy Naue

# GEOGRIDS
## PRODUCT DATA

### FOR MORE INFORMATION

*Geosynthetics* magazine has provided information on the geogrid specification charts for comparative purposes only. Designers should contact manufacturers for additional details and to discuss site-specific considerations.

Information on the use and specification of geogrids is also available from the Geosynthetic Materials Association (GMA).

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### PUBLISHER'S NOTE

*Geosynthetics* magazine compiled all information included in the *2022 Geosynthetics Specifier's Guide* from information submitted by firms in the geosynthetics industry. Companies provided specifications voluntarily, and specification accuracy is the responsibility of the manufacturer. The appearance of a listing in this directory is not an endorsement of the company or product by *Geosynthetics* magazine or the Industrial Fabrics Association International (IFAI). The *2022 Geosynthetics Specifier's Guide* is intended as a guide, and *Geosynthetics* magazine and IFAI encourage readers to contact the companies listed for further information.

Manufacturers design geogrids for reinforcement and, characteristically, these products are integrally connected to elements separated by in-plane apertures.

Geogrids form a distinct category of geosynthetics designed for reinforcement. These products are characterized by a relatively high tensile strength and a uniformly distributed array of large apertures (openings between the longitudinal and transverse elements). The apertures allow soil particles on either side of the installed sheet to come into direct contact, thereby increasing the interaction between the geogrid and some soils. Also, the apertures ensure vertical drainage of a reinforced free-draining soil.

The geogrid elements vary in polymer type and cross-sectional dimensions. They can sometimes change shape and dimensions within their length. Geogrids are either integrally manufactured, ultrasonically or adhesive bonded, or joined in a knitting or weaving process and then coated.

Although engineers use geogrids primarily for reinforcement, geogrids are also used for asphalt overlay and waterproofing, and for separation and stabilization. In addition, geogrids are used as gabions and sheet anchors, inserted between geotextiles and geomembranes, and used to construct mattresses for fills or embankments over soft soils.

### The numbers

Companies that submitted product data chart lines were asked to provide data determined through industry-accepted testing methods. Companies were asked to sign a certificate of compliance verifying the accuracy of this data.

| Product Name | Manufacturing Process | Polymer Type [1] | Coating Type [1] | Dimensional Properties [2] | | | Tensile Strength/[Elongation] ASTM D 6637 [2] kN/m (lb/ft)/% | | | | Creep Limited Strength-MD [3] ASTM D 5262 kN/m (lb/ft) | LTDS GRI GG4-MD [4] kN/m (lb/ft) (in sand) | Manufacturer's Suggested Applications [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m² (oz/yd²) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **ACE Geosynthetics Inc.** \| www.geoace.com | | | | | | | | | | | | | |
| **ACEGrid GG1000-I** | woven | PET | PVC | NP | | | 250 (17109) | NP | 1000 (68440) | 100 (6845) | 709 (48522) | 689 (47153) | W, S, E |
| **ACEGrid GG400-II** | woven | PET | PVC | NP | | | 120 (8215) | NP | 400 (27375) | 400 (27375) | 284 (19436) | 275 (18820) | W, S, E |
| **ACEGrid GG200-II FR** | woven | PET | Flame-retardant polymer | NP | 30 (1.2) | 30 (1.2) | NP | NP | 200 (13687) | 200 (13687) | NA | NA | W, S, E (Flame-retardant) |
| **AFITEX-Texel Geosynthetics Inc.** \| www.draintube.net | | | | | | | | | | | | | |
| **NOTEX PVA C 400-30** | Warp-Knitting | PVA | Polymeric | 374 (11) | 25 (1) | 25 (1) | 90 (6167) | 10 (685) | 200 (13704) /10 | 30 (2056) /10 | NP | NP | B, E, S, SI |
| **NOTEX C 1000-30** | Warp-Knitting | PET | Polymeric | 1638 (48) | 25 (1) | 25 (1) | NP | 10 (685) | 1000 (68522) /10 | 30 (2056) /10 | NP | NP | B, E, S, SI |
| **NOTEX GLASS C 100-100/40 AN** | Warp-Knitting | FG | Polymeric | 414 (12) | 40 (1.6) | 40 (1.6) | NA | NA | 100 (6852) /3 | 100 (6852) /3 | NA | NA | A/O, PR |
| **Carthage Mills** \| www.gxgeogrids.com | | | | | | | | | | | | | |
| **GX-300** | Woven | PET | PVC | NA | 22 (0.87) | 25 (0.98) | 15.7 (1,080) | N.A. | 47.3 (3,250) | NA | 32.2 (2,211) | 27.4 (1,879) | E, S, SI, W |
| **GX-500** | Woven | PET | PVC | NA | 22 (0.87) | 25 (0.98) | 17.4 (1,202) | N.A. | 65.5 (4,500) | NA | 44.6 (3,061) | 37.9 (2,601) | E, S, SI, W |
| **GX-800** | Woven | PET | PVC | NA | 23 (0.91) | 23 (0.91) | 29.5 (2,023) | N.A. | 106.6 (7,315) | NA | 72.5 (4,976) | 61.6 (4,228) | E, S, SI, W |
| **Geosynthetic Solutions** \| www.geosyntheticsolutions.com | | | | | | | | | | | | | |
| **3D-LT Triplanar Grid** | Integrally formed | PP | N/A | N/A | 33 (1.30) | 33 (1.30) | N/A | N/A | N/A | N/A | N/A | N/A | SI, B |
| **3D-T Triplanar Grid** | Integrally formed | PP | N/A | N/A | 32 (1.26) | 32 (1.26) | N/A | N/A | N/A | N/A | N/A | N/A | SI, B |
| **3D-HT Triplanar Grid** | Integrally formed | PP | N/A | N/A | 32 (1.26) | 32 (1.26) | N/A | N/A | N/A | N/A | N/A | N/A | SI, B |
| **3D-XL Triplanar Grid** | Integrally formed | PP | N/A | N/A | 60 (2.40) | 60 (2.40) | N/A | N/A | N/A | N/A | N/A | N/A | SI, B |
| **MG 270 Mining Grid** | Integrally formed | PP | Flame-retardant polymer | N/A | 58 (2.30) | 60 (2.40) | N/A | N/A | 21.9 (1,500) | 21.9 (1,500) | N/A | N/A | SI, B, W, E, S |

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[2] MD = Machine direction
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[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m$^2$ (oz/yd$^2$) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Hanes Geo Components** \| www.hanesgeo.com | | | | | | | | | | | | | |
| **TerraGrid RX1100** | Integrally formed | PP | NA | NA | 25✧(1.0✧) | 33✧(1.3✧) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19.0 (1300) | NA | NA | B, SI |
| **TerraGrid RX1200** | Integrally formed | PP | NA | NA | 25✧(1.0✧) | 33✧(1.3✧) | 11.8 (810) | 19.6 (1340) | 19.2 (1310) | 28.8 (1970) | NA | NA | B, SI |
| **TerraGrid SX2020** | Integrally formed | PP | NA | NA | 35✧(1.4✧) | 35✧(1.4✧) | 13 (890) | 13 (890) | 20 (1370) | 20 (1370) | NA | NA | B, SI |
| **TerraGrid SX1515** | Integrally formed | PP | NA | NA | 33✧(1.3✧) | 33✧(1.3✧) | 10.2 (700) | 10.2 (700) | 15.0 (1030) | 15.0 (1030) | NA | NA | B, SI |
| ✧ nominal | | | | | | | | | | | | | |
| **HUESKER Inc.** \| www.huesker.com | | | | | | | | | | | | | |
| **Basetrac® Grid PP 20** | Knitted | PP | Polymeric | 190 (5.6) | 25 (1) | 25 (1) | 18 (1233) | 18 (1233) | 20/7 (1370) | 20/7 (1370) | NA | NA | B, SI |
| **Basetrac® Grid PP 30** | Knitted | PP | polymeric | 220 (6.5) | 25 (1) | 25 (1) | 24 (1640) | 24 (1640) | 30/6 (2055) | 30/6 (2055) | NA | NA | B, SI |
| **HaTelit® C 40/17** | Knitted | PET (grid) PP (textile) | Bituminous | 270 (10.5) | 40 (1.5) | 40 (1.5) | NA | NA | 50/10 (3425) | 50/10 (3425) | NA | NA | A/O,PR |
| **Fortrac® 35** | Knitted | PET | Polymeric | 185 (5.4) | 25 (1) | 25 (1) | 17 (1165) | NA | 35/10 (2400) | NA | 22.7 (1558) | 18.8 (1288) | W, E, S 4<pH<10 |
| **Fortrac® 55** | knitted | PET | Polymeric | 240 (7) | 25 (1) | 25 (1) | 27 (1850) | NA | 55/10 (3767) | NA | 35.7 (2446) | 29.5 (2022) | W, E, S 4<pH<10 |
| **Fortrac® 80** | Knitted | PET | Polymeric | 320 (9.4) | 25 (1) | 25 (1) | 40 (2740) | NA | 80/10 (5480) | NA | 52 (3558) | 43 (2941) | W, E, S 4<pH<10 |
| **Fortrac® 110** | Knitted | PET | Polymeric | 350 (10) | 25 (1) | 25 (1) | 52 (3562) | NA | 110/10 (7433) | NA | 71.4 (4891) | 59 (4043) | W, E, S 4<pH<10 |
| **Fortrac® 150** | Knitted | PET | Polymeric | 440 (13) | 25 (1) | 25 (1) | 72 (4932) | NA | 150/10 (10,275) | NA | 97.4 (6672) | 80.4 (5514) | W, E, S 4<pH<10 |
| **Fortrac® 200** | Knitted | PET | Polymeric | 530 (15.6) | 25 (1) | 25 (1) | 90 (6165) | NA | 200/10 (13,700) | NA | 129.9 (8896) | 107.3 (7352) | W, E, S 4<pH<10 |

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NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m² (oz/yd²) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Industrial Fabrics Inc.** \| www.ind-fab.com | | | | | | | | | | | | | |
| **BaseLok GeoGrid BX1100** | Integrally Formed | PP | NA | NP | 25 (1) | 33 (1.3) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19 (1300) | NA | NA | SI, B |
| **BaseLok GeoGrid BX1200** | Integrally Formed | PP | NA | NP | 25 (1) | 33 (1.3) | 11.8 (810) | 19.6 (1340) | 19.2 (1310) | 28.8 (1970) | NA | NA | SI, B |
| **BaseLok GeoGrid BX2020** | Integrally Formed | PP | NA | NP | 33 (1.3) | 33 (1.3) | 13 (890) | 13 (890) | 20 (1370) | 20 (1370) | NA | NA | SI, B |
| **BaseLok GeoGrid BX3030** | Integrally Formed | PP | NA | NP | 33 (1.3) | 33 (1.3) | 21 (1440) | 21 (1440) | 30 (2055) | 30 (2055) | NA | NA | SI, B |
| **BaseLok GeoGrid BX3030L** | Integrally Formed | PP | NA | NP | 57 (2.2) | 57 (2.2) | 21 (1440) | 21 (1440) | 30 (2055) | 30 (2055) | NA | NA | SI, B |
| **BaseLok FabGrid FG1100** | Integrally Formed and Bonded | PP | NA | NP | 25 (1) | 33 (1.3) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19 (1300) | NA | NA | SI, B |
| **BaseLok FabGrid FG1200** | Integrally Formed and Bonded | PP | NA | NP | 25 (1) | 33 (1.3) | 11.8 (810) | 19.6 (1340) | 19.2 (1310) | 28.8 (1970) | NA | NA | SI, B |
| **BaseLok FabGrid FG2020** | Integrally Formed and Bonded | PP | NA | NP | 33 (1.3) | 33 (1.3) | 13 (890) | 13 (890) | 20 (1370) | 20 (1370) | NA | NA | SI, B |
| **BaseLok FabGrid FG3030** | Integrally Formed and Bonded | PP | NA | NP | 33 (1.3) | 33 (1.3) | 21 (1440) | 21 (1440) | 30 (2055) | 30 (2055) | NA | NA | SI, B |
| **BaseLok FabGrid FG3030L** | Integrally Formed and Bonded | PP | NA | NP | 57 (2.2) | 57 (2.2) | 21 (1440) | 21 (1440) | 30 (2055) | 30 (2055) | NA | NA | SI, B |
| **L & M Supply** \| www.landmsupplyco.com | | | | | | | | | | | | | |
| **BX Grid 11 Type 1A** | Integrally formed biaxial | PP | | | 26 (1.0) | 33 (1.3) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19.0 (1,300) | | | |
| **BX Grid 12 Type 2A** | Integrally formed biaxial | PP | | | 26 (1.0) | 33 (1.3) | 11.8 (810) | 19.6 (1,340) | 19.2 (1,310) | 28.8 (1,970) | | | |
| **BX1500** | Integrally formed biaxial | PP | | | 25 (1.0) | 31 (1.2) | 17.5 (1,200) | 20.0 (1,370) | 27 (1,850) | 20 (1,370) | | | |
| **SQ2020** | Integrally formed biaxial | PP | | | 38 (1.5) | 38 (1.5) | 13 (890) | 13 (890) | 20 (1,370) | 20 (1,370) | | | |
| **SQ3030** | Integrally formed biaxial | PP | | | 38 (1.5) | 38 (1.5) | 21 (1,440) | 21 (1,440) | 30 (2,055) | 30 (2,055) | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m² (oz/yd²) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **L.E. Geosolutions, LLC** \| www.legeosolutions.com | | | | | | | | | | | | | |
| **LEgeo BX Type 1** | Integrally formed | PP | NA | NA | 25 (1.0) | 36 (1.4) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19.0 (1,300) | NA | NA | SI, B |
| **LEgeo BX Type 2** | Integrally formed | PP | NA | NA | 25 (1.0) | 36 (1.4) | 11.8 (810) | 19.6 (1,340) | 19.2 (1,310) | 28.8 (1,970) | NA | NA | SI, B |
| **LEgeo BX1515** | Integrally formed | PP | NA | NA | 40 (1.6) | 40 (1.6) | 7.0 (480) | 7.0 (480) | 15.0 (1,030) | 15.0 (1,030) | NA | NA | SI, B |
| **LEgeo BX2020** | Integrally formed | PP | NA | NA | 40 (1.6) | 40 (1.6) | 13.8 (950) | 13.8 (950) | 20.0 (1,370) | 20.0 (1,370) | NA | NA | SI, B |
| **LEgeo BX2525** | Integrally formed | PP | NA | NA | 40 (1.6) | 40 (1.6) | 16.9 (1,160) | 16.9 (1,160) | 25.0 (1,710) | 25.0 (1,710) | NA | NA | SI, B |
| **LEgeo BX3030** | Integrally formed | PP | NA | NA | 40 (1.6) | 40 (1.6) | 21.0 (1,439) | 21.0 (1,439) | 30.0 (2,050) | 30.0 (2,050) | NA | NA | SI, B |
| **LEgeo BX3030L** | Integrally formed | PP | NA | NA | 66 (2.6) | 66 (2.6) | 21.0 (1,439) | 21.0 (1,439) | 30.0 (2,050) | 30.0 (2,050) | NA | NA | SI, B |
| **LEgeo RG1010** | Woven | Glass-fiber | Modified polymer | NA | 12.5 (0.5) | 12.5 (0.5) | NA | NA | 100 (6,860) | 100 (6,860) | NA | NA | A/O, PR |
| **LEgeo RG2010** | Woven | Glass-fiber | Modified polymer | NA | 12.5 (0.5) | 12.5 (0.5) | NA | NA | 100 (6,860) | 200 (13,720) | NA | NA | A/O, PR |
| **Low & Bonar Inc.** \| www.lowandbonar.com | | | | | | | | | | | | | |
| **Enkagrid PRO 90** | Laser-welded | PET | NA | NA | 111 (4.4) | 35 (1.4) | 81 (55480) | NA | 105 (7192)/6 | NA | 70.4 (4822.4) | 60.9 (4175) | E, S, W |
| **Maccaferri Inc.** \| www.maccaferri.com/us | | | | | | | | | | | | | |
| **MacGrid EG 12.19** | Extrusion | PP | | | 0.26 (1.02) | 34 (1.34) | 8.5 (582) | 13.4 (918) | 12.4 (850) | 19 (1302) | | | Stabilization/ Base Reinforcement |
| **MacGrid EG 19.29** | Extrusion | PP | | | 0.26 (1.02) | 34 (1.34) | 11.8 (809) | 19.6 (1343) | 19.2 (1315) | 28.8 (1973) | | | Stabilization/ Base Reinforcement |
| **MacGrid WG5** | Woven | Polyester | PVC or SBR | NP | varies | varies | 32.5 (2227) | 12.5 (856.5) | 65 (4453.9) | 25 (1713) | | 33.68 (2307.7) | Soil Reinforcement |
| **MacGrid WG20** | Woven | Polyester | PVC or SBR | NP | varies | varies | 98.7 (6763.1) | 16.45 (1127.2) | 210 (14389.6) | 35 (2398.3) | | 108.81 (7455.7) | Soil Reinforcement |
| **ParaGrid 120/5** | Aligned and Co-extruded | Polyester | LLDPE | 480 (14.2) | 426 (16.8) | 42 (1.65) | | | 120 (8223) | 5 (342.6) | 87.6 (6002) | 81.6 (5591) | Soil Reinforcement |
| **ParaLink 500** | Aligned and Co-extruded | Polyester | LLDPE | 1220 (36) | 940 (37) | 90 (3.6) | | | 503 (34467) | | 367 (25147) | 342 (23435) | Soil Reinforcement |
| **MacGrid AR 10.7** | Knitted | Glassfiber | | 530 (15.6) | 12.7 (0.5) | 12.7 (0.5) | | | 100 (6850) | 100 (6850) | | | Asphalt Reinforcement |

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| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Naue GmbH & Co. KG** \| www.naue.com | | | | | | | | | | | | | |
| **Secugrid 30/30 Q6** | Laid and welded | PET | N/A | 320 (9.44) | 34 (1.34) | 34 (1.34) | 24 (1,645) | 24 (1,645) | 30 (2,055) | 30 (2,055) | 22.1 (1,511) | 19.7 (1,348) | B, SI, W, E, S |
| **Secugrid 40/40 Q6** | Laid and welded | PET | N/A | 360 (10.62) | 34 (1.34) | 33 (1.30) | 32 (2,195) | 32 (2,195) | 40 (2,740) | 40 (2,740) | 29.4 (2,015) | 26.1 (1,793) | B, SI, W, E, S |
| **Secugrid 60/60 Q6** | Laid and welded | PET | N/A | 620 (18.29) | 32 (1.26) | 31 (1.22) | 48 (3,289) | 48 (3,289) | 60 (4,111) | 60 (4,111) | 44.1 (3,023) | 39.2 (2,689) | B, SI, W, E, S |
| **Secugrid 80/80 Q6** | Laid and welded | PET | N/A | 675 (19.91) | 30 (1.18) | 30 (1.18) | 64 (4,385) | 64 (4,385) | 80 (5,482) | 80 (5,482) | 58.8 (4,031) | 52.1 (3,567) | B, SI, W, E, S |
| **Secugrid 20/20 Q1** | Laid and welded | PP | N/A | 155 (4.57) | 33 (1.30) | 33 (1.30) | 16 (1,096) | 16 (1,096) | 20 (1,370) | 20 (1,370) | N/A | N/A | B, SI |
| **Secugrid 30/30 Q1** | Laid and welded | PP | N/A | 200 (5.90) | 32 (1.26) | 32 (1.26) | 24 (1,645) | 24 (1,645) | 30 (2,055) | 30 (2,055) | N/A | N/A | B, SI |
| **Secugrid 40/40 Q1** | Laid and welded | PP | N/A | 240 (7.08) | 31 (1.22) | 31 (1.22) | 32 (2,193) | 32 (2,193) | 40 (2,740) | 40 (2,740) | N/A | N/A | B, SI |
| **Secugrid 60/60 Q1** | Laid and welded | PP | N/A | 360 (10.62) | 31 (1.22) | 31 (1.22) | 48 (3289) | 48 (3289) | 60 (4,110) | 60 (4,110) | N/A | N/A | B, SI |
| **Secugrid 80/80 Q1** | Laid and welded | PP | N/A | 440 (12.98) | 31 (1.22) | 30 (1.18) | 50 (3,426) | 50 (3,426) | 80 (5,482) | 80 (5,482) | N/A | N/A | B, SI |
| **Combigrid 20/20 Q1 GRK 4 C** | Laid and welded/ nonwoven | PP | N/A | 155 (4.57) | 33 (1.30) | 33 (1.30) | 16 (1,096) | 16 (1,096) | 20 (1,370) | 20 (1,370) | N/A | N/A | B, SI |
| **Combigrid 30/30 Q1 GRK 4 C** | Laid and welded/ nonwoven | PP | N/A | 200 (5.90) | 32 (1.34) | 32 (1.34) | 24 (1,645) | 24 (1,645) | 30 (2,055) | 30 (2,055) | N/A | N/A | B, SI |
| **Combigrid 40/40 Q1 GRK 4 C** | Laid and welded/ nonwoven | PP | N/A | 240 (7.08) | 31 (1.22) | 31 (1.22) | 32 (2,193) | 32 (2,193) | 40 (2,740) | 40 (2,740) | N/A | N/A | B, SI |
| **Combigrid 60/60 Q1 GRK 4 C** | Laid and welded/ nonwoven | PP | N/A | 360 (10.62) | 31 (1.22) | 31 (1.22) | 48 (3289) | 48 (3289) | 60 (4,110) | 60 (4,110) | N/A | N/A | B, SI |

[1] PET = Polyester, HDPE = High density polyethylene
PVC = Polyvinyl chloride
EP = Elastomeric Polymer
PVA = Polyvinyl alcohol
FG = Fiberglass
PP = Polypropylene

[2] MD = Machine direction
XD = Cross-machine direction

[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

[5] A/O = Asphalt overlay
B = Base reinforcement
E = Embankments
PR = Pavement reinforcement
S = Slopes
SI = Subgrade improvement
W = Walls

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
* = Not for sale in U.S.

Companies were requested to provide minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

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| Product Name | Manufacturing Process | Polymer Type [1] | Coating Type [1] | Dimensional Properties [2] | | | Tensile Strength/[Elongation] ASTM D 6637 [2] kN/m (lb/ft)/% | | | | Creep Limited Strength-MD [3] ASTM D 5262 kN/m (lb/ft) | LTDS GRI GG4-MD [4] kN/m (lb/ft) (in sand) | Manufacturer's Suggested Applications [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m² (oz/yd²) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Propex GeoSolutions** \| www.propexglobal.com | | | | | | | | | | | | | |
| **GRIDPRO® BXP11** | Integrally formed | PP | NA | NA | 25.4 (1.0) | 33 (1.3) | 8.5 (580) | 13.4 (920) | 12.4 (850) | 19.0 (1,300) | NA | NA | SI, B |
| **GRIDPRO® BXP12** | Integrally formed | PP | NA | NA | 25.4 (1.0) | 33 (1.3) | 11.8 (810) | 19.6 (1,340) | 19.1 (1,310) | 28.7 (1,970) | NA | NA | SI, B |
| **Saint-Gobain ADFORS America** \| www.adfors.com | | | | | | | | | | | | | |
| **GlasGrid 8501** | Knitted | FG | EP | 397 (11.7) | 12.5 (0.5) | 12.5 (0.5) | N/A | N/A | 100 (6852)/ 3% | 100 (6852)/ 3% | N/A | N/P | A/O, PR |
| **GlasGrid 8511** | Knitted | FG | EP | 397 (11.7) | 25 (1.0) | 25 (1.0) | N/A | N/A | 100 (6852)/ 3% | 100 (6852)/ 3% | N/A | N/P | A/O, PR |
| **GlasGrid 8502** | Knitted | FG | EP | 610 (18.0) | 12.5 (0.5) | 12.5 (0.5) | N/A | N/A | 100 (6852)/ 3% | 200 (13,704)/ 3% | N/A | N/P | A/O, PR |
| **GlasGrid 8512** | Knitted | FG | EP | 610 (18.0) | 25 (1.0) | 19 (0.75) | N/A | N/A | 100 (6852)/ 3% | 200 (13,704)/ 3% | N/A | N/P | A/O, PR |
| **GlasGrid 8501 TF** | Knitted | FG | EP | 400 (11.8) | 12.5 (0.5) | 12.5 (0.5) | N/A | N/A | 100 (6852)/ 3% | 100 (6852)/ 3% | N/A | N/P | A/O, PR |
| **GlasGrid 8511 TF** | Knitted | FG | EP | 400 (11.8) | 25 (1.0) | 25 (1.0) | N/A | N/A | 100 (6852)/ 3% | 100 (6852)/ 3% | N/A | N/P | A/O, PR |

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PVC = Polyvinyl chloride
EP = Elastomeric Polymer
PVA = Polyvinyl alcohol
FG = Fiberglass
PP = Polypropylene

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XD = Cross-machine direction

[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

[5] A/O = Asphalt overlay
B = Base reinforcement
E = Embankments
PR = Pavement reinforcement
S = Slopes
SI = Subgrade improvement
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NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
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Companies were requested to provide minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

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| Product Name | Manufacturing Process | Polymer Type [1] | Coating Type [1] | Dimensional Properties [2] | | | Tensile Strength/[Elongation] ASTM D 6637 [2] kN/m (lb/ft)/% | | | | Creep Limited Strength-MD [3] ASTM D 5262 kN/m (lb/ft) | LTDS GRI GG4-MD [4] kN/m (lb/ft) (in sand) | Manufacturer's Suggested Applications [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m$^2$ (oz/yd$^2$) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Strata Systems Inc.** \| www.geogrid.com | | | | | | | | | | | | | |
| **Microgrid** | Precision knitted | PET | Polymeric | NP | 6.4 (0.3) | 2.5 (0.1) | 7 (500) | 4 (300) | 29 (2,000) | 29 (2,000) | 17 (1,149) | 13 (871) | E, W, S, SI |
| **SB10** | Integrally formed | PP | NA | NA | 36.0 (1.4) | 38.0 (1.5) | 7 (479) | 7 (479) | 15 (1,027) | 15 (1,027) | NA | NA | SI, B |
| **SB11** | Integrally formed | PP | NA | NA | 26.0 (1.0) | 35.0 (1.4) | 9 (580) | 13 (920) | 12 (850) | 19 (1,300) | NA | NA | SI, B |
| **SB12** | Integrally formed | PP | NA | NA | 26.0 (1.0) | 35.0 (1.4) | 12 (810) | 10 (1340) | 19 (1,310) | 29 (1,970) | NA | NA | SI, B |
| **SB30** | Integrally formed | PP | NA | NA | 36.0 (1.4) | 34.0 (1.3) | 20 (1370) | 20 (1370) | 30 (2,055) | 30 (2,055) | NA | NA | SI, B |
| **SG150** | Precision knitted | PET | Polymeric | NP | 25.4 (1.0) | 24.1 (1.0) | 10 (650) | 4 (300) | 27 (1,875) | 27 (1,875) | 18 (1311) | 15 (1083) | E, W, S, SI |
| **SG200** | Precision knitted | PET | Polymeric | NP | 18.3 (0.7) | 16.5 (0.7) | 21 (1,400) | NA | 53 (3,600) | NA | 37 (2517) | 30 (2080) | E, W, S |
| **SG350** | Precision knitted | PET | Polymeric | NP | 21.6, 15.2 (0.9, 0.6) | 14.0 (0.6) | 27 (1,850) | NA | 73 (5,000) | NA | 51 (3496) | 42 (2889) | E, W, S |
| **SG500** | Precision knitted | PET | Polymeric | NP | 62.2 (2.5) | 25.4 (1.0) | 29 (1,950) | NA | 93 (6,400) | NA | 65 (4475) | 53 (3698) | E, W, S |
| **SG550** | Precision knitted | PET | Polymeric | NP | 21.6, 8.9 (0.9, 0.4) | 24.1 (1.0) | 36 (2,460) | NA | 119 (8,150) | NA | 83 (5699) | 68 (4710) | E, W, S |
| **SG650** | Precision knitted | PET | Polymeric | NP | 65.0 (2.6) | 62.5 (2.5) | 39 (2,700) | NA | 146 (10,000) | NA | 102 (6993) | 84 (5779) | E, W, S |
| **SG700** | Precision knitted | PET | Polymeric | NP | 62.2 (2.5) | 24.1 (1.0) | 43 (2,937) | NA | 172 (11,800) | NA | 120 (8251) | 99 (6819) | E, W, S |
| **SG1200** | Precision knitted | PET | Polymeric | NP | 63.3 (2.5) | 24.5 (1.0) | 50 (3,426) | NA | 200 (13,704) | NA | 139 (9583) | 115 (7920) | E, W, S |
| **SG1300** | Precision knitted | PET | Polymeric | NP | 63.0 (2.5) | 23.5 (0.9) | 75 (5,139) | NA | 300 (20,556) | NA | 209 (14374) | 173 (11880) | E, W, S |
| **SG1400** | Precision knitted | PET | Polymeric | NP | 42.0, 12.0, 12.0 (1.7, 0.5, 0.5) | 16.0 (0.6) | 100 (6,852) | NA | 400 (27,408) | NA | 279 (19166) | 231 (15840) | E, W, S |
| **SGB 30** | Precision knitted | PET | Polymeric | NP | NP | NP | 14 (926) | (9) 617 | 30 (2,055) | 30 (2,055) | 20 (1437) | 17 (1187) | E, W, S, SI, B |
| **SGB 80** | Precision knitted | PET | Polymeric | NP | NP | NP | 36 (2,467) | 23 (1576) | 80 (5,482) | 80 (5,482) | 55 (3833) | 46 (3168) | E, W, S, SI, B |
| **SGB 100** | Precision knitted | PET | Polymeric | NP | NP | NP | 45 (3,084) | 26 (1781) | 100 (6,852) | 100 (6,852) | 69 (4792) | 57 (3960) | E, W, S, SI, B |
| **SGU 40** | Precision knitted | PET | Polymeric | NP | 23.2 (0.9) | 21.3 (0.9) | 24 (1,644) | NA | 40 (2,740) | NA | 27 (1916) | 23 (1583) | E, W, S |
| **SGU 60** | Precision knitted | PET | Polymeric | NP | 17.9 (0.7) | 21.1 (0.9) | 36 (2,466) | NA | 60 (4,111) | NA | 41 (2874) | 34 (2375) | E, W, S |
| **SGU 80** | Precision knitted | PET | Polymeric | NP | 21.1 (0.8) | 21.2 (0.9) | 42 (2,877) | NA | 80 (5,482) | NA | 55 (3833) | 46 (3168) | E, W, S |
| **SGU 100** | Precision knitted | PET | Polymeric | NP | 62.2 (2.5) | 28.4 (1.1) | 46 (3,151) | NA | 100 (6,852) | NA | 69 (4791) | 57 (3960) | E, W, S |
| **SGU 120** | Precision knitted | PET | Polymeric | NP | 22.2 (0.9) | 25.8 (1.0) | 56 (3,837) | NA | 120 (8,222) | NA | 83 (5749) | 69 (4751) | E, W, S |
| **SGU 150** | Precision knitted | PET | Polymeric | NP | 62.6 (2.5) | 25.1 (1.0) | 69 (4,727) | NA | 150 (10,278) | NA | 104 (7187) | 86 (5940) | E, W, S |
| **SGU 180** | Precision knitted | PET | Polymeric | NP | 53.4 (2.1) | 26.3 (1.0) | 81 (5,551) | NA | 180 (12,334) | NA | 125 (8625) | 104 (7128) | E, W, S |
| **SGU 200** | Precision knitted | PET | Polymeric | NP | 63.3 (2.5) | 24.5 (1.0) | 90 (6,168) | NA | 200 (13,704) | NA | 139 (9583) | 115 (7920) | E, W, S |
| **SGU 300** | Precision knitted | PET | Polymeric | NP | 63.0 (2.5) | 23.5 (0.9) | 135 (9,251) | NA | 300 (20,556) | NA | 209 (14374) | 173 (11880) | E, W, S |
| **SGU 400** | Precision knitted | PET | Polymeric | NP | 42.0, 12.0, 12.0 (1.7, 0.5, 0.5) | 16.0 (0.6) | 180 (12,335) | NA | 400 (27,408) | NA | 279 (19166) | 231 (15840) | E, W, S |

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PVA = Polyvinyl alcohol
FG = Fiberglass
PP = Polypropylene

[2] MD = Machine direction
XD = Cross-machine direction

[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

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B = Base reinforcement
E = Embankments
PR = Pavement reinforcement
S = Slopes
SI = Subgrade improvement
W = Walls

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
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| Product Name | Manufacturing Process | Polymer Type [1] | Coating Type [1] | Dimensional Properties [2] | | | Tensile Strength/[Elongation] ASTM D 6637 [2] kN/m (lb/ft)/% | | | | Creep Limited Strength-MD [3] ASTM D 5262 kN/m (lb/ft) | LTDS GRI GG4-MD [4] kN/m (lb/ft) (in sand) | Manufacturer's Suggested Applications [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m² (oz/yd²) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Synteen Technical Fabrics** \| www.synteen.com | | | | | | | | | | | | | |
| **SF20** | Woven | PET | PVC | NA | 25 (1.00) | 20 (0.8) | NA | NA | 39.4 (2700) | NA | 26.1 (1788) | 22.6 (1548) | S, W, B, E, PR |
| **SF35** | Woven | PET | PVC | NA | 20 (0.79) | 25 (1.00) | NA | NA | 52.5 (3600) | NA | 34.8 (2384) | 30.1 (2064) | S, W, B, E, PR |
| **SF55** | Woven | PET | PVC | NA | 20 (0.79) | 25 (1.00) | NA | NA | 73.0 (5000) | NA | 48.3 (3311) | 41.8 (2867) | S, W, B, E, PR |
| **SF65** | Woven | PET | PVC | NA | 20 (0.79) | 25 (1.00) | NA | NA | 90.5 (6200) | NA | 59.9 (4106) | 51.9 (3555) | S, W, B, E, PR |
| **SF80** | Woven | PET | PVC | NA | 20 (0.79) | 25 (1.00) | NA | NA | 110.2 (7550) | NA | 73.0 (5000) | 63.2 (4329) | S, W, B, E, PR |
| **SF90** | Woven | PET | PVC | NA | 16 (0.63) | 25 (1.00) | NA | NA | 131.3 (9000) | NA | 87.0 (5960) | 75.3 (5160) | S, W, B, E, PR |
| **SF110** | Woven | PET | PVC | NA | 16 (0.63) | 25 (1.00) | NA | NA | 150.3 (10,300) | NA | 99.6 (6821) | 86.2 (5906) | S, W, B, E, PR |
| **SF180** | Woven | PET | PVC | NA | 13 (0.51) | 25 (1.00) | NA | NA | 211.6 (14,500) | NA | 140.1 (9603) | 121.3 (8314) | S, W, B, E, PR |
| **SF190** | Woven | PET | PVC | NA | 10 (0.39) | 25 (1.00) | NA | NA | 300.1 (20560) | NA | 198.7 (13616) | 172.0 (11789) | S, W, B, E, PR |
| **SF350** | Woven | PET | PVC | NA | 10 (0.39) | 25 (1.00) | NA | NA | 402.8 (27,600) | NA | 266.8 (18278) | 231.0 (15825) | S, W, B, E, PR |
| **TechFab India** \| www.techfabindia.com | | | | | | | | | | | | | |
| **Techgrid U-400/30** | Knitted | PET | Proprietary | NP | 30 (1.18) | 18 (0.71) | NA | NA | 400 (27410) | 30 (2056) | 275.8 (18903) | 212.1 (14531) | W, S, E |
| **Nonwoven Geocomposite TGC-200/200** | Knitted | PET/PP NW | NA | NP | NP | NP | 90 (6166) | 90 (6166) | 200 (13705) | 200 (13705) | 130.7 (8955) | 85.1 (5830) | SI |
| **Tech Grid PP 1100** | Extruded Biaxial | PP | NA | NA | 25 (1.0) | 33 (1.3) | 8.5 (580) | 13.4(920) | 12.4 (850) | 19 (1300) | NP | NP | R, E |
| **TECHSTRAP 100** | Extrusion Coating | PET + LLDPE | Extrusion | NP | NP | NP | 35 (7868) | NP | 100 (22481) | NP | NP | 55.94 (12576) | reinforcement for retaining wall |
| **TenCate Geosynthetics** \| www.mirafi.com | | | | | | | | | | | | | |
| **Mirafi Miramesh** | Woven | PP | NA | NA | NP | NP | NA | NA | 21.0 (1440) | 25.3 (1733) | NA | NA | W |
| **Miragrid 2XT** | Woven | PET | PVC | NP | NP | NP | NA | NA | 29.2 (2000) | 29.2 (2000) | 20.3 (1389) | 17.5 (1202) | W, S, E |
| **Miragrid 3XT** | Woven | PET | PVC | NP | NP | NP | 15.4 (1056) | NA | 51.1 (3500) | NA | 35.5 (2431) | 30.7 (2104) | W, S, E |
| **Miragrid 5XT** | Woven | PET | PVC | NP | NP | NP | 25.4 (1740) | NA | 68.6 (4700) | NA | 47.6 (3264) | 41.2 (2826.0) | W, S, E |
| **Miragrid 7XT** | Woven | PET | PVC | NP | NP | NP | 31.5 (2160) | NA | 86.1 (5900) | NA | 59.7 (4097) | 51.7 (3547) | W, S, E |
| **Miragrid 8XT** | Woven | PET | PVC | NP | NP | NP | 36.8 (2520) | NA | 108.0 (7400) | NA | 75.1 (5139) | 64.9 (4449) | W, S, E |
| **Miragrid 10XT** | Woven | PET | PVC | NP | NP | NP | 45.5 (3120) | NA | 138.6 (9500) | NA | 96.1 (6597) | 83.3 (5712.0) | W, S, E |
| **Miragrid 20XT** | Woven | PET | PVC | NP | NP | NP | 77.9 (5340) | NA | 200.0 (13705) | NA | 138.8 (9517) | 120.2 (8240.0) | W, S, E |
| **Miragrid 22XT** | Woven | PET | PVC | NP | NP | NP | 97.8 (6700) | NA | 300.0 (20559) | NA | 208.3 (14277) | 180.4 (12361.0) | W, S, E |
| **Miragrid 24XT** | Woven | PET | PVC | NP | NP | NP | 102.1 (7000) | NA | 400.0 (27415) | NA | 277.8 (19038) | 240.5 (16483.0) | W, S, E |

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FG = Fiberglass
PP = Polypropylene

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XD = Cross-machine direction

[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $$LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

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B = Base reinforcement
E = Embankments
PR = Pavement reinforcement
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| Product Name | Manufacturing Process | Polymer Type [1] | Coating Type [1] | Dimensional Properties [2] | | | Tensile Strength/[Elongation] ASTM D 6637 [2] kN/m (lb/ft)/% | | | | Creep Limited Strength-MD [3] ASTM D 5262 kN/m (lb/ft) | LTDS GRI GG4-MD [4] kN/m (lb/ft) (in sand) | Manufacturer's Suggested Applications [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mass/Unit Area ASTM D 5261 g/m$^2$ (oz/yd$^2$) | Aperture Size mm (in) | | Strength @ 5% Strain | | Ultimate Strength/% (Tult) | | | | |
| | | | | | MD | XD | MD | XD | MD | XD | | | |
| **Tensar International Corp.** \| www.tensar-international.com | | | | | | | | | | | | | |
| **BX1200 (BX Class 2)** | Integrally formed | PP | NA | NA | 25 [A] (1.0) [A] | 33 [A] (1.3) [A] | 11.8 (810) | 19.6 (1340) | 19.2 (1310) | 28.8 (1970) | NA | NA | SI, B |
| **TX160** | Integrally formed | PP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **TX7** | Integrally formed | PP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **TX190L** | Integrally formed | PP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **InterAx NX750 Geogrid** | multilayer integrally formed | PP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **InterAx NX850 Geogrid** | multilayer integrally formed | PP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **TriAx FilterGrid FG60** | Integrally formed and laminated | PP | NA | 413 (12.2) | NA | NA | NA | NA | NA | NA | NA | NA | SI, B |
| **GlasGrid 8511** | Knitted | FG | EP | 405 (12) | 25 (1.0) | 25 (1.0) | NA | NA | 100 @ 3% (6720) | 100 @ 3% (6720) | NA | NP | A/O, PR |
| **GlasGrid 8511TF** | Knitted w/ tackfilm (TF) | FG TF | EP | 432 (12.7) | 25 (1.0) | 25 (1.0) | NA | NA | 100 @ 3% (6720) | 100 @ 3% (6720) | NA | NP | A/O, PR |
| **UX1100HS/MSE**◇◇ | Integrally formed | HDPE | NA | NA | 430 (17.0) | NA | 27 (1850) | NA | 58 (3970) | NA | 22.3 (1530)◇ | 21.2 (1450)◇ | W, E, S |
| **UX1400HS/MSE**◇◇ | Integrally formed | HDPE | NA | NA | 460 (18.0) | NA | 31 (2130) | NA | 70 (4800) | NA | 26.9 (1850)◇ | 25.6 (1760)◇ | W, E, S |
| **UX1500HS/MSE**◇◇ | Integrally formed | HDPE | NA | NA | 460 (18.0) | NA | 52 (3560) | NA | 114 (7810) | NA | 43.8 (3000)◇ | 41.8 (2860)◇ | W, E, S |
| **UX1600HS/MSE**◇◇ | Integrally formed | HDPE | NA | NA | 460 (18.0) | NA | 58 (3980) | NA | 144 (9870) | NA | 55.4 (3800)◇ | 52.7 (3620)◇ | W, E, S |
| **UX1700HS/MSE**◇◇ | Integrally formed | HDPE | NA | NA | 460 (18.0) | NA | 75 (5140) | NA | 175 (11,990) | NA | 67.3 (4610)◇ | 64.1 (4390)◇ | W, E, S |
| ◇Creep rupture extrapolated to a 120-year time period per ASTM D 5262<br>◇◇UXxx00HS geogrids use for non-connected system only | | | | | | | | | | | | | |
| **Titan Environmental Containment Ltd.** \| www.titanenviro.com | | | | | | | | | | | | | |
| **Spartan Road Grid™ 21 Fiberglass Geogrid** | Woven | FG | Polymeric | 610 (18.1) | 25.4 (1.0) | 19.0 (0.75) | NA | NA | 100 (6854) | 200 (13,708) | NA | NA | A/O, PR |
| **Spartan Road Grid™ 10 Fiberglass Geogrid** | Woven | FG | Polymeric | 420 (12.5) | 12.7 (0.5) | 12.7 (0.5) | NA | NA | 100 (6854) | 100 (6854) | NA | NA | A/O, PR |
| **Spartan Road Grid™ 11 Fiberglass Geogrid** | Woven | FG | Polymeric | 420 (12.5) | 25.4 (1.0) | 25.4 (1.0) | NA | NA | 100 (6854) | 100 (6854) | NA | NA | A/O, PR |
| **Spartan Road Grid™ 20 Fiberglass Geogrid** | Woven | FG | Polymeric | 610 (18.1) | 12.7 (0.5) | 12.7 (0.5) | NA | NA | 100 ( 6854) | 200 (13,708) | NA | NA | A/O, PR |
| **Spartan Road Grid™ 10C Composite Geogrid** | Woven | FG PP | Polymeric | 570 (16.9) | 12.7 (0.5) | 12.7 (0.5) | NA | NA | 100 (6854) | 100 (6854) | NA | NA | A/O, PR |

[1] PET = Polyester, HDPE = High density polyethylene
PVC = Polyvinyl chloride
EP = Elastomeric Polymer
PVA = Polyvinyl alcohol
FG = Fiberglass
PP = Polypropylene

[2] MD = Machine direction
XD = Cross-machine direction

[3] Test per ASTM D 5262, for a minimum of 10,000 hours and extrapolate to a 75-year time period.

[4] $LTDS = \frac{T_{ult}}{RF_{CR} \times RF_{ID} \times RF_{D}}$

$RF_{CR}$ = Reduction factor for creep
$RF_{ID}$ = Reduction factor for installation damage
$RF_{D}$ = Reduction factor for durability

NOTE: this equation does not include other reduction factors that may apply to design. Reduction factors are site specific and should be reviewed on a per project basis. Contact the manufacturer for recommendations.

[5] A/O = Asphalt overlay
B = Base reinforcement
E = Embankments
PR = Pavement reinforcement
S = Slopes
SI = Subgrade improvement
W = Walls

NP = Not provided by manufacturer
NA = Not applicable, per manufacturer
* = Not for sale in U.S.

Companies were requested to provide minimum average roll values (MARV). All claims are the responsibility of the manufacturer.

« *Geosynthetics* recommends you contact the manufacturers before making any specifying/purchasing decisions »