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 *2018 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 *2018 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, or for separation and stabilization. Geogrids also are used as gabions and sheet anchors, inserted between geotextiles and geomembranes, or 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 signed 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 GG200-I	woven	PET	PVC	NP	19 (0.7)	28 (1.1)	100 (6844)	NP	200 (13687)	NP	141 (9650)	119 (8143)	W, S, E
ACEGrid GG400-I	woven	PET	PVC	NP	23 (0.9)	26 (1.0)	160 (10950)	NP	400 (27375)	NP	284 (19436)	239 (16356)	W, S, E
ACEGrid GG200-II FR	woven	PET	Fire-Resistant Polymer	NP	30 (1.2)	30 (1.2)	NP	NP	200 (13687)	200 (13687)	NA	NA	Flame-retardant structure
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
Geostar Technologies | www.geostartechnologies.com													
HP200 GeoGrid	Knitted	PET	PVC	NA	21.59 (.85)	20.83 (.82)	NA	NA	49.2 (3373)	30.6 (2100)	31.8 (2176)	27.5 (1884)	E, S, SI, W
Geosynthetic Solutions | www.geosyntheticsolutions.com													
LBO 202 (Type 1)	Integrally formed	PP	N/A	N/A	27 (1.06)	37 (1.45)	8.5 (850)	13.4 (920)	12.4 (850)	19.0 (1,300)	N/A	N/A	SI, B
LBO 302 (Type 2)	Integrally formed	PP	N/A	N/A	28 (1.10)	38 (1.49)	11.8 (810)	19.6 (1,340)	19.2 (1,310)	28.8 (1,970)	N/A	N/A	SI, B
LBO 330	Integrally formed	PP	N/A	N/A	40 (1.57)	27 (1.06)	21.0 (1,438)	21.0 (1,438)	30.0 (2,055)	30.0 (2,055)	N/A	N/A	SI, B
3D-S Triplanar Grid	Integrally formed	PP	N/A	N/A	30 (1.18)	30 (1.18)	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	55 (2.17)	55 (2.17)	N/A	N/A	N/A	N/A	N/A	N/A	SI, B

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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.

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RF_{CR} = Reduction factor for creep
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NOTE: this equation does not include other reduction factors which 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
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GEOGRIDS

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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 U-200	precision knitted	PET	polymeric	NA	18.3 (0.72)	16.5 (0.65)	20.5 (1400)	NA	52.5 (3600)	NA	33.9 (2323)	28.0 (1919)	E, W, S
TerraGrid U-700	precision knitted	PET	polymeric	NA	62.2 (2.45)	24.1 (0.95)	42.9 (2937)	NA	172.2 (11800)	NA	111.1 (7613)	91.8 (6292)	E, W, S
✧ 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® 45	knitted	PET	polymeric	200 (5.9)	25 (1)	25 (1)	22.5 (1541)	NA	45/10 (3082)	NA	29.2 (2001)	24 (1654)	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® 65	knitted	PET	polymeric	280 (8)	25 (1)	25 (1)	32.5 (2226)	NA	65/10 (4452)	NA	42.2 (2891)	34.9 (2389)	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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				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 & M Supply | www.landmsupplyco.com													
BX Grid 11 Type 1A	Intergrally 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	Intergrally Formed Biaxial	PP			26 (1.0)	33 (1.3)	11.8 (810)	19.6 (1,340)	19.2 (1,310)	28.8 (1,970)			
SQ2020	Intergrally Formed Biaxial	PP			38 (1.5)	38 (1.5)	13 (890)	13 (890)	20 (1,370)	20 (1,370)			
Low & Bonar Inc. | www.lowandbonar.com													
Enkagrid PRO 90	laser-welded	PET	NA	NA	111 (4.4)	35 (1.4)	81 (5548)	NA	105 (7,192)/6	NA	70.4 (4822.4)	60.9 (4175)	E, S, W
Enkagrid PRO 180	laser-welded	PET	NA	NA	111 (4.4)	34 (1.3)	140 (9590)	NA	197 (13,498)/6	NA	135.9 (9313.9)	120 (8220.6)	E, S, W
Enkagrid G55	woven	PET	PVC	NA	35 (1.4)	35 (1.4)	NP	NP	55 (3,768)/NP	55 (3768)/ NP	NP	NP	E, S, W, SI
Enkagrid G300	woven	PET	PVC	NA	20 (0.8)	20 (0.8)	NP	NP	300 (20,556)/ NP	NP	NP	NP	E, S, W, SI

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					MD	XD	MD	XD	MD	XD			
Maccaferri Inc. | www.maccaferri.com/us													
MacGrid EG 12.19	Extrusion	PP	----	----	0.94 (24)	1.38 (35)	8.5 (580)	13.4 (920)	12.4 (850)	19 (1300)	----	----	Stabilization/ Base reinforcement
MacGrid EG 19.29	Extrusion	PP	----	----	0.94 (24)	1.38 (35)	11.8 (810)	19.6 (1340)	19.2 (1310)	28.8 (1970)	----	----	Stabilization/ Base reinforcement
MacGrid WG5	Woven	PET	PVC	NP	28 (1.1)	24 (0.9)	28 (1916)	----	55 (3770)	20 (1370)	36.6 (2513)	29 (1986)	Soil reinforcement
MacGrid WG20	Woven	PET	PVC	NP	28 (1.1)	19 (0.7)	100 (6843)	----	200 (13700)	20 (1370)	133.3 (9133)	110.5 (7570)	Soil reinforcement
ParaGrid 50/5	Aligned and Co-extruded	PET	LLDPE	240 (7.1)	426 (16.8)	51 (2.0)	----	----	50 (3426)	5 (342.6)	36.5 (2501)	33.3 (2284)	Soil reinforcement
ParaGrid 200/5	Aligned and Co-extruded	PET	LLDPE	705 (20.8)	426 (16.8)	42 (1.65)	----	----	200 (13704)	5 (342.6)	146 (10003)	137.9 (9451)	Soil reinforcement
ParaLink 500	Aligned and Co-extruded	PET	LLDPE	1220 (36)	940 (37)	90 (3.6)	----	----	503 (34445)	----	367 (25142)	342 (23432)	Soil reinforcement
ParaLink 1500	Aligned and Co-extruded	PET	LLDPE	4012 (118)	940 (37)	9 (0.3)	----	----	1500 (102780)	----	1095 (75022)	1035 (70883)	Soil reinforcement
ParaDrain 50/15	Aligned and Co-extruded	PET	LLDPE	365 (10.8)	201 (7.9)	51 (2.0)	----	----	50 (3426)	1027.8	36.5 (2501)	33.3 (2284)	Reinforcement of Cohesive Soil/ Drainage
ParaDrain 200/15	Aligned and Co-extruded	PET	LLDPE	780 (23.0)	201 (7.9)	42 (1.65)	----	----	200 (13704)	1027.8	146 (10003)	137.9 (9451)	Reinforcement of Cohesive Soil/ Drainage
MacGrid AR 10.7	Knitted	Glassfiber		530 (15.6)	12.7 (0.5)	12.7 (0.5)	----	----	100 (6850)	100 (6850)	----	----	Asphalt reinforcement
MacGrid AR 10G.7	Knitted	Glassfiber		560 (16.5)	12.7 (0.5)	12.7 (0.5)	----	----	100 (6850)	100 (6850)	----	----	Asphalt reinforcement

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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 120/120 Q6	Laid and welded	PET	N/A	830 (24.48)	28 (1.10)	28 (1.10)	96 (6,578)	96 (6,578)	120 (8,222)	120 (8,222)	88.2 (6,046)	78.5 (5,379)	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
Secugrid 40/20 R6	Laid and welded	PET	N/A	285 (8.41)	73 (2.87)	31 (1.22)	28 (1,919)	N/A	40 (2,740)	20 (1,370)	29.4 (2,015)	26.1 (1,793)	W, E, S
Secugrid 80/20 R6	Laid and welded	PET	N/A	380 (11.21)	73 (2.87)	30 (1.18)	56 (3,837)	N/A	80 (5,482)	20 (1,370)	58.8 (4,031)	52.1 (3,567)	W, E, S
Secugrid 120/40 R6	Laid and welded	PET	N/A	580 (17.11)	71 (2.80)	28 (2.80)	84 (5,756)	N/A	120 (8,222)	40 (2,740)	88.2 (6,046)	78.5 (5,379)	W, E, S
Secugrid 150/40 R6	Laid and welded	PET	N/A	680 (20.06)	71 (2.80)	27 (1.06)	110 (7,537)	N/A	150 (10,278)	40 (2,740)	110.3 (7,557)	98.2 (6,726)	W, E, S
Secugrid 200/40 R6	Laid and welded	PET	N/A	810 (23.89)	71 (2.80)	25 (0.98)	140 (9,593)	N/A	200 (13,704)	40 (2,740)	147.1 (10,076)	130.9 (8,971)	W, E, S
Secugrid 400/40 R6	Laid and welded	PET	N/A	1420 (41.89)	70 (2.76)	14 (0.55)	280 (19,186)	N/A	400 (27,408)	40 (2,740)	294.1 (20,153)	261.7 (17,935)	W, E, S
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

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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 which 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
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W = Walls

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GEOGRIDS

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			
Olbo & Mehler Tex | www.mehler-ep.com													
STARGrid G+PF	woven grid + nonwoven fabric	FG grid & nonwoven fabric composite	polymeric	350 (10.3)	30 (1.2)	30 (1.2)	NA	NA	50.0 (3740)	50.0 (3740)	NA	NA	A/O, PR
STARGrid G+PF 100	woven grid + nonwoven fabric	FG grid & nonwoven fabric composite	polymeric	550 (16.0)	20 (0.8)	20 (0.8)	NA	NA	100.0 (6800)	100.0 (6800)	NA	NA	A/O, PR
STARGrid G-PS 100	woven grid + interlaid filling yarn	FG	polymeric	470 (13.8)	30 (1.2)	30 (1.2)	NA	NA	100.0 (6800)	100.0 (6800)	NA	NA	A/O, PR
GBC	woven grid + interlaid nonwoven composite	FG	polymeric	570 (16.5)	30 (1.2)	25 (1.0)	NA	NA	100.0/6800	100.0/6800	NA	NA	A/O, PR
Propex GeoSolutions | www.propexglobal.com													
GRIDPRO® BXP11	Integrally Formed	PP	NA	NA	25 (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 (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	405 (12.0)	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	405 (12.0)	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	432 (12.7)	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 TF	Knitted	FG	EP	432 (12.7)	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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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			
Strata Systems Inc. | www.geogrid.com													
Strata Microgrid	precision knitted	PET	polymeric	NP	6.35 (0.25)	2.54 (0.10)	7.3 (500)	4.4 (300)	29.2 (2000)	29.2 (2000)	16.8 (1149)	12.7 (871)	E, W, S, SI
Stratagrid SG150	precision knitted	PET	polymeric	NP	25.4 (1.0)	24.1 (0.95)	9.5 (650)	4.4 (300)	27.4 (1875)	27.4 (1875)	16.6 (1136)	12.6 (861)	E, W, S, SI
Stratagrid SG200	precision knitted	PET	polymeric	NP	18.3 (0.72)	16.5 (0.65)	20.5 (1400)	NA	52.5 (3600)	NA	33.9 (2323)	28.0 (1919)	E, W, S
Stratagrid SG350	precision knitted	PET	polymeric	NP	21.6, 15.2 (0.85, 0.60)	14.0 (0.55)	27.0 (1850)	NA	73.0 (5000)	NA	47.1 (3226)	38.9 (2666)	E, W, S
Stratagrid SG500	precision knitted	PET	polymeric	NP	62.2 (2.45)	25.4 (1.0)	28.5 (1950)	NA	93.4 (6400)	NA	60.3 (4129)	49.8 (3412)	E, W, S
Stratagrid SG550	precision knitted	PET	polymeric	NP	21.6, 8.9 (0.85, 0.35)	24.1 (0.95)	36.0 (2460)	NA	118.9 (8150)	NA	76.7 (5258)	63.4 (4346)	E, W, S
Stratagrid SG600	precision knitted	PET	polymeric	NP	62.2 (2.45)	24.1 (0.95)	37.2 (2548)	NA	132.8 (9100)	NA	85.7 (5871)	70.8 (4852)	E, W, S
Stratagrid SG650	precision knitted	PET	polymeric	NP	65 (2.60)	62.5 (2.45)	39.4 (2700)	NA	146 (10000)	NA	94.2 (6452)	78 (5332)	E, W, S
Stratagrid SG700	precision knitted	PET	polymeric	NP	62.2 (2.45)	24.1 (0.95)	42.9 (2937)	NA	172.2 (11800)	NA	111.1 (7613)	91.8 (6292)	E, W, S
Stratagrid SG1200	precision knitted	PET	polymeric	NP	48, 8, 8 (1.9, 0.3, 0.3)	24 (0.95)	50.0 (3426)	NA	200 (13704)	NA	129.0 (8841)	106.6 (7307)	E, W, S
Stratagrid SG1300	precision knitted	PET	polymeric	NP	60 (2.36)	22 (0.87)	75.0 (5139)	NA	300 (20556)	NA	193.5 (13262)	159.9 (10960)	E, W, S
Stratagrid SG1400	precision knitted	PET	polymeric	NP	42, 12, 12 (1.65, 0.5, 0.5)	16 (0.63)	100 (6852)	NA	400 (27408)	NA	258.0 (17683)	213.2 (14614)	E, W, S
StrataBase SB10	integrally formed	PP	NA	NA	36 (1.4)	38 (1.5)	7 (479)	7 (479)	15 (1027)	15 (1027)	NA	NA	SI, B
StrataBase SB11	integrally formed	PP	NA	NA	26 (1.02)	35 (1.38)	8.5 (580)	13.4 (920)	12.4 (850)	19.0 (1300)	NA	NA	SI, B
StrataBase SB12	integrally formed	PP	NA	NA	26 (1.02)	35 (1.38)	11.8 (810)	19.6 (1340)	19.2 (1310)	28.8 (1970)	NA	NA	SI, B
StrataBase SB30	integrally formed	PP	NA	NA	36 (1.42)	34 (1.34)	20 (1370)	20 (1370)	30 (2055)	30 (2055)	NA	NA	SI, B

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GEOGRIDS

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			
Synteen | www.synteen.com													
SF20	woven	PET	PVC	NA	25 (1.00)	25 (1.00)	NA	NA	39.4 (2700)	NA	26.1 (1788)	18. (1250)	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		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 (9602)	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	PVC	NP	30 (1.18)	20 (0.79)	NA	NA	400 (27410)	30 (2056)	281.6 (19296)	239.4 (16402)	W,S,E
Techgrid B-200/200	Knitted	PET	PVC	NP	23 (0.9)	23 (0.9)	70 (4796)	50 (3425)	200 (13705)	200 (13705)	NP	NP	B,SI
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 Gird PP 20/20	Extruded	PP	NA	310 (9.14)	38 (1.49)	38 (1.49)	7.5 (513)	7.5 (513)	20 (1370)	20 (1370)	NP	NP	R,E
TenCate Geosynthetics | www.mirafi.com													
Mirafi Miramesh	woven	PP	N/A	N/A	NP	NP	NA	NA	21.0 (1440)	25.3 (1733)	N/A	N/A	W
Miragrid 2XT	woven	PET	PVC	NP	NP	NP	NA	NA	29.2 (2000)	29.2 (2000)	20.0 (1379)[1]	17.0 (1142)[2]	W, S, E
Miragrid 3XT	woven	PET	PVC	NP	NP	NP	15.4 (1056)	NA	51.1 (3500)	NA	35.2 (2414)[1]	1999 (29.2)[2]	W, S, E
Miragrid 5XT	woven	PET	PVC	NP	NP	NP	25.4 (1740)	NA	68.6 (4700)	NA	47.3 (3241)[1]	39.2 (2684)[2]	W, S, E
Miragrid 7XT	woven	PET	PVC	NP	NP	NP	31.5 (2160)	NA	86.1 (5900)	NA	59.4 (4069)[1]	49.2 (3370)[2]	W, S, E
Miragrid 8XT	woven	PET	PVC	NP	NP	NP	36.8 (2520)	NA	108.0 (7400)	NA	74.5 (5103)[1]	57.3 (3927)[2]	W, S, E
Miragrid 10XT	woven	PET	PVC	NP	NP	NP	45.5 (3120)	NA	138.6 (9500)	NA	95.6 (6552)[1]	73.6 (5042)[2]	W, S, E
Miragrid 20XT	woven	PET	PVC	NP	NP	NP	77.9 (5340)	NA	200.0 (13705)	NA	137.9 (9452)[1]	110 .0 (7540)[2]	W, S, E
Miragrid 22XT	woven	PET	PVC	NP	NP	NP	97.8 (6700)	NA	300.0 (20559)	NA	206.9 (14179)[1]	165.0 (11311)[2]	W, S, E
Miragrid 24XT	woven	PET	PVC	NP	NP	NP	102.1 (7000)	NA	400.0 (27415)	NA	275.9 (18907)[1]	220.1 (15083)[2]	W, S, E

[1] 75-year design life based on NTPEP Report REGEO-2011-01-001 and REGEO-2015-01-002.
[2] Long Term Design Strength for Type 3 Backfill (Silty Sand), 6-inch lift / 25,000-lb roller.

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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			
Tensar International Corp. | www.tensar-international.com													
BX1100 (BX Type 1)	integrally formed	PP	NA	NA	25 [A] (1.0) [A]	33 [A] (1.3) [A]	8.5 (580)	13.4 (920)	NA	NA	NA	NA	SI, B
BX1200 (BX Type 2)	integrally formed	PP	NA	NA	25 [A] (1.0) [A]	33 [A] (1.3) [A]	11.8 (810)	19.6 (1340)	NA	NA	NA	NA	SI, B
BX1500	integrally formed	PP	NA	NA	25 [A] (1.0) [A]	31 [A] (1.2) [A]	17.5 (1200)	20.0 (1370)	NA	NA	NA	NA	SI, B
TX130s	integrally formed	PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SI, B
TX140	integrally formed	PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SI, B
TX160	integrally formed	PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	SI, B
TX5	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
TX150L	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
CompoGrid CG 50	knitted (FG) w nonwoven (PP)	FG PP	EP	340 (10)	NA	NA	NA	NA	50 @ 3% (3360)	50 @ 3% (3360)	NA	NP	A/O, PR
CompoGrid CG 100	knitted (FG) w nonwoven (PP)	FG PP	EP	475 (14)	NA	NA	NA	NA	100 @ 3% (6720)	100 @ 3% (6720)	NA	NP	A/O, PR
GlasGrid 8501	knitted	FG	EP	405 (12)	12.5 (0.5)	12.5 (0.5)	NA	NA	100 @ 3% (6720)	100 @ 3% (6720)	NA	NP	A/O, PR
GlasGrid 8501TF	knitted w tackfilm (TF)	FG TF	EP	432 (12.7)	12.5 (0.5)	12.5 (0.5)	NA	NA	100 @ 3% (6720)	100 @ 3% (6720)	NA	NP	A/O, PR
GlasGrid 8502	knitted	FG	EP	560 (16)	12.5 (0.5)	12.5 (0.5)	NA	NA	100 @ 3% (6720)	200 @ 3% (13,440)	NA	NP	A/O, PR
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
GlasGrid 8512	knitted	FG	EP	610 (18)	19 (0.75)	25 (1.0)	NA	NA	100 @ 3% (6720)	200 @ 3% (13,440)	NA	NP	A/O, PR
GlasGrid 8512TF	knitted w tackfilm (TF)	FG TF	EP	637 (18.8)	19 (0.75)	25 (1.0)	NA	NA	100 @ 3% (6720)	200 @ 3% (13,440)	NA	NP	A/O, PR
GlasGrid 8520	knitted	FG	EP	610 (18)	25 (1.0)	19 (0.75)	NA	NA	200 @ 3% (13,440)	100 @ 3% (6720)	NA	NP	A/O, PR
LH800	integrally formed	HDPE	NA	NA	NA	104 (4.1)	NA	14 (960)	NA	38 (2600)	12.8 (880)◇	12.5 (850)◇	W, E, S
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
UX1800HS	integrally formed	HDPE	NA	NA	370 (14.5)	NA	95 (6510)	NA	210 (14,390)	NA	77.8 (5330)◇	74.1 (5080)◇	W, E, S
UX1900HS	integrally formed	HDPE	NA	NA	420 (16.5)	NA	110 (7535)	NA	230 (15,760)	NA	92.7 (6354)◇	88.3 (6050)◇	W, E, S

◇Creep rupture extrapolated to a 120-year time period per ASTM D 5262
◇◇UXxx00HS geogrids use for non-connected system only

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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 which 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

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GEOGRIDS

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			
Terrafix Geosynthetics Inc./Terrafix Environmental Technology Inc. | www.terrafixgeo.com													
TBX1500	extruded and integrally formed	PP	NA	NA	39 (1.54)	39 (1.54)	11.5 (788)	12.5 (856)	16.0 (1,096)	16.0 (1,096)	NA	NA	B, E, S, SI
TBX2000	extruded and integrally formed	PP	NA	NA	39 (1.54)	39 (1.54)	14.0 (959)	14.0 (959)	19.0 (1,302)	19.0 (1,302)	NA	NA	B, E, S, SI
TBX2500	extruded and integrally formed	PP	NA	NA	39 (1.54)	39 (1.54)	18.0 (1,233)	20.0 (1,370)	25.0 (1,713)	25.0 (1,713)	NA	NA	B, E, S, SI
TBX3000	extruded and integrally formed	PP	NA	NA	39 (1.54)	39 (1.54)	21.6 (1,480)	22.0 (1,507)	30.0 (2,056)	30.0 (2,056)	NA	NA	B, E, S, SI
TBX11	extruded and integrally formed	PP	NA	NA	24 (1.0)	33 (1.3)	8.5 (580)	13.5 (920)	12.5 (850)	19.0 (1300)	NA	NA	B, E, S, SI
TBX12	extruded and integrally formed	PP	NA	NA	24 (1.0)	33 (1.3)	12.0 (810)	19.5 (1340)	19.0 (1310)	29.0 (1970)	NA	NA	B, E, S, SI
TBX2000L	extruded and integrally formed	PP	NA	NA	66 (2.6)	66 (2.6)	14.0 (959)	14.0 (959)	20.0 (1370)	20.0 (1370)	NA	NA	B, W, SI
TBX3000L	extruded and integrally formed	PP	NA	NA	66 (2.6)	66 (2.6)	21.0 (1439)	21.0 (1439)	30.0 (2056)	30.0 (2056)	NA	NA	B, W, SI
Thrace-LINQ Inc. | www.thraceliq.com													
TLG-11 (type 1)	integrally formed	PP	NA	NA	25 (1.0)	33 (1.3)	9.5 (651)	14.0 (960)	12.6 (863)	19.2 (1316)	NA	NA	SI, B
TLG-12 (type 2)	integrally formed	PP	NA	NA	25 (1.0)	33 (1.3)	13.0 (891)	21.0 (1439)	19.5 (1336)	30.0 (2056)	NA	NA	SI, B
Titan Environmental Containment Ltd. | www.titanenviro.com													
TE-FGP51 Fiberlass Grid	Woven	FG	Polymeric	208 (6.2)	25.4 (1.0)	25.4 (1.0)	NA	NA	50 (3427)	50 (3427)	NA	NA	A/O, PR
TE-FGP10 Fiberglass Grid	Woven	FG	Polymeric	437 (13.0)	12.7 (0.5)	12.7 (0.5)	NA	NA	100 (6854)	100 (6854)	NA	NA	A/O, PR
TE-FGP11 Fiberglass Grid	Woven	FG	Polymeric	437 (13.0)	25.4 (1.0)	25.4 (1.0)	NA	NA	100 (6854)	100 (6854)	NA	NA	A/O, PR
TE-FGP20 Fiberglass Grid	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
TE-FGC10 Composite Grid	Woven	FG PP	Polymeric	585 (17.4)	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
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PP = Polypropylene

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