STRATAGRID® SGU SERIES (UNIAXIAL)

Product Data Sheet: Commercial/Private Guidelines

STRATAGRID® is a geogrid reinforcement for soil. These high performance geogrids are constructed of high molecular weight and high tenacity polyester yarns utilizing a complex knitting process and polymeric coating to provide superior engineering properties. Yarns are precision knitted into a dimensionally stable, uniform network of apertures providing significant tensile reinforcement capacity. STRATAGRID is engineered to be mechanically and chemically durable, in both the harsh construction installation phase and in aggressive soil environments.

Design Properties

Ultimate and Creep Limited Tensile Strengths			StrataMesh[1, 2, 5, 6]	SGB 30[1, 5]	SGU 40	SGU 60	SGU 80	SGU 100	SGU 120	SGU 150	SGU 180	SGU 200	SGU 300	SGU 400
Ultimate Strength [3] (MD)	ASTM D 6637 Method B Wide-Width	lbs/ft	1,764 x 1,884	2,055	2,740	4,111	5,482	6,852	8,222	10,278	12,334	13,704	20,556	27,408
		(kN/m)	25.8 x 27.5	30.0	40.0	60.0	80.0	100.0	120.0	150.0	180.0	200.0	300.0	400.0
Tensile Strength at 5% Strain [3]	ASTM D 6637 Method B Wide-Width	lbs/ft	500 x 980	650 x 300	930	1,400	1,850	1,950	2,460	2,700	2,937	3,426	5,139	6,852
		(kN/m)	7.3 x 14.3	9.5 x 4.4	13.6	20.4	27.0	28.5	35.9	39.4	42.9	50.0	75.0	100.0
Creep Reduction Factor	ATSM D6692/D5262		3.00	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Creep Limited Strength	ASTM D5262/D6992	lbs/ft	588 x 628	1,427	1,903	2,855	3,807	4,758	5,710	7,138	8,565	9,517	14,275	19,033
		(kN/m)	8.58 x 9.17	20.8	27.8	41.7	55.6	69.4	83.3	104.2	125.0	138.9	208.3	258.1
Reduction Factors for Installation Damage (RF_{ID})														
Reinforced Fill Description														
RF_{ID} (Soil - 25mm minus, $D_{50} \leq 0.2$mm) (SM, SC, CL, ML) - Sand & Silt			1.05	1.07	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.07	1.07	1.06
RF_{ID} (Soil - 25mm minus, $D_{50} \leq 5$mm) (SW, SP, SM, SC) - Sand			1.50	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
RF_{ID} (Soil - 25mm (1") minus, $D_{50} \leq 10$mm) (GP, GW, GM, GC, SW, SP, SM, SC)			1.90	1.20	1.15	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
RF_{ID} (Soil - 50mm (2") minus, $D_{50} \leq 20$mm) (GP)			1.90	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
Reduction Factors for Durability (RF_D)														
RFD (4 ≤ pH ≤ 9) (PET - CEG<30, MW>25,000)			1.10[6]	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Long-Term Design Strength (LTDS or T_{al})[4] (RF_D (4 ≤ pH ≤ 9))														
USCS Soil Classification														
SM, SC, CL, ML		lbs/ft	382 x 408	1,212	1,573	2,359	3,146	3,933	4,719	5,899	7,079	8,086	12,128	16,324
		(kN/m)	5.58 x 5.95	17.7	23.0	34.4	45.9	57.4	68.9	86.1	103.3	118.0	177.0	238.2
SW, SP, SM, SC		lbs/ft	267 x 285	1,179	1,573	2,359	3,146	3,933	4,719	5,899	7,079	7,865	11,798	15,730
		(kN/m)	3.9 x 4.2	17.2	23.0	34.4	45.9	57.4	68.9	86.1	103.3	114.8	172.2	229.6
GP, GW, GM, GC, SW, SP, SM, SC		lbs/ft	211 x 225	1,081	1,504	2,163	2,884	3,605	4,326	5,407	6,489	7,210	10,814	14,419
		(kN/m)	3.1 x 3.3	15.8	22.0	31.6	42.1	52.6	63.1	78.9	94.7	105.2	157.8	210.4
GP		lbs/ft	211 x 225	961	1,281	1,922	2,564	3,204	3,845	4,806	5,768	6,409	9,613	12,817
		(kN/m)	3.1 x 3.3	14.0	18.7	28.1	37.4	46.8	56.1	70.1	84.2	93.5	140.3	187.1
Physical Properties														
Roll Weight (6.25' wide, 200 sy)	Pounds		92[7]	83	77	95	120	138	156	181	204	N/A	N/A	N/A
	Kilograms		42[7]	38	35	43	54	63	71	82	93	N/A	N/A	N/A
Roll Weight (12.5' wide, 400 sy)	Pounds			170	160	203	254	289	326	375	421	454	628	728
	Kilograms			77	73	92	115	131	148	170	191	206	285	330
Product Weight	Ounces / Square Yard		5.7	6	5.6	7	9	10.5	11.9	13.9	15.7	17	24	28
	Grams / Square Meter		193.2	203	189.84	237	305	356.0	403.4	471.2	532.2	576	814	949

Soil Interaction Coefficients for Pullout (C_i) and Direct Sliding (C_{ds}) for SGU Series	
Silts/Clay (ML, CL)	0.6 - 0.7
Sandy silts & clay (SC, GC)	0.7 - 0.8
Poorly-Graded Sand and Gravel, Silty Sand (GP, GM, SP, SM)	0.8 - 0.9
Well-Graded Gravel, Sand Gravel Mix, Well-Graded Sand (SW, GW)	0.9 - 1.0

1. Denotes both machine and cross-machine direction strength (Biaxial Strength)
2. StrataMesh ultimate tensile strength determined in accordance with ASTM D 4595
3. Values shown are based on Minimum Average Roll Values (Lot Avg minus 2 x Standard Deviation)
4. LTDS or $T_{al} = T_{ULT} / (RF_{CR} \times RF_{ID} \times RF_D)$
5. Machine Direction (MD) x Cross Machine Direction (CMD)
6. This product is made from polypropylene yarn
7. Roll size is 8' wide, 240 sy

NOTES:
Special order roll sizes may be available for SGU/SGB product styles.
StrataGrid soil and segmental retaining wall unit interface properties are available upon request.

STRATA
1831 North Park Avenue
Burlington, NC 27217
1-800-680-7750
geogrid.com

STRATAGRID®

Product Data Sheet

STRATAGRID® is a geogrid reinforcement for soil. These high performance geogrids are constructed of high molecular weight and high tenacity polyester yarns utilizing a complex knitting process and polymeric coating to provide superior engineering properties. STRATAGRID is engineered to be mechanically and chemically durable, in both the harsh construction installation phase and in aggressive soil environments (pH range from 3 - 9).

Design Properties			Microgrid[1,2]	SG150[1]	SG200	SG350	SG500	SG550	SG650	SG700	SG1200	SG1300	SG1400
Ultimate and Creep Limited Tensile Strengths													
Ultimate Strength[3] (MD)	ASTM D 6637 Method A Single-Rib	**Pounds / Foot** (kilonewtons / meter)	**2,000** (29.2)	**1,875** (27.4)	**3,600** (52.5)	**5,000** (73.0)	**6,400** (93.4)	**8,150** (118.9)	**10,000** (145.9)	**11,800** (172.2)	**13,704** (200.0)	**20,556** (300.0)	**27,408** (400.0)
Creep Limited Strength	ASTM D 5262 D 6992	**Pounds / Foot** (kilonewtons / meter)	**1,149** (16.8)	**1,136** (16.6)	**2,323** (33.9)	**3,226** (47.1)	**4,129** (60.3)	**5,258** (76.7)	**6,452** (94.0)	**7,613** (111.1)	**8,841** (129.0)	**13,262** (193.5)	**17,683** (258.0)

Long-term Design Strength (LTDS or T_{al})[4]													
Sands, Silt & Clay		**Pounds / Foot** (kilonewtons / meter)	**871** (12.7)	**939** (13.7)	**1,919** (28.0)	**2,666** (38.9)	**3,412** (49.8)	**4,346** (63.4)	**5,332** (77.8)	**6,292** (91.8)	**7,307** (106.6)	**10,960** (159.9)	**14,614** (213.2)

Physical Properties													
Roll Dimensions[5]	**Roll Size A** (Width x Length)	**Feet** (meters)	**8 x 225** (2.44 x 68.6)	**6 x 150** (1.83 x 45.7)	**6 x 300** (1.83 x 91.4)	**6 x 300** (1.83 x 91.4)	**6 x 300** (1.83 x 91.4)	**6 x 300** (1.83 x 91.4)	**6 x 300** (1.83 x 91.4)	**6 x 300** (1.83 x 91.4)	**12.5 x 300** (3.8 x 91.4)	**12.5 x 300** (3.8 x 91.4)	**12.5 x 300** (3.8 x 91.4)
	Roll Size B (Width x Length)	**Feet** (meters)	– –	**12 x 150** (3.66 x 45.7)	**12 x 225** (3.66 x 68.6)	**12 x 225** (3.66 x 68.6)	**12 x 225** (3.66 x 68.6)	**12 x 225** (3.66 x 68.6)	**12 x 225** (3.66 x 68.6)	**12 x 225** (3.66 x 68.6)	**12.5 x 200** (3.8 x 61)	**12.5 x 200** (3.8 x 61)	**12.5 x 200** (3.8 x 61)
Area	**Square Yards** (square meters)		**200** (167.2)	**100/200** (83.6/167.2)	**200/300** (167.2/250.8)	**200/300** (167.2/250.8)	**200/300** (167.2/250.8)	**200/300** (167.2/250.8)	**200/300** (167.2/250.8)	**200/300** (167.2/250.8)	**416.6/277.7** (347.3/231.8)	**416.6/277.7** (347.3/231.8)	**416.6/277.7** (347.3/231.8)
Product Weight[6]	**Ounces / Square Yard** (grams / square meter)		**5.0** (169.5)	**5.3** (179.7)	**6.7** (227.2)	**7.1** (240.7)	**9.2** (311.9)	**10.5** (356.0)	**12.0** (406.9)	**12.7** (430.6)	**18.0** (610.3)	**25.6** (868.0)	**33.6** (1139.2)
Weight per Roll[6]	**Roll Size A** (Width x Length)	**Pounds** (kilograms)	**65** (29.5)	**45** (20.4)	**90** (40.9)	**100** (45.4)	**125** (56.7)	**140** (63.6)	**155** (70.3)	**175** (81.6)	**480** (218.2)	**682** (310.0)	**900** (409.1)
	Roll Size B (Width x Length)	**Pounds** (kilograms)	– –	**95** (43.2)	**140** (63.6)	**155** (70.4)	**192** (87.3)	**215** (97.7)	**237** (107.7)	**267** (121.4)	**315** (142.9)	**450** (204.1)	**630** (285.8)

Molecular Properties			
Item	**Test Method**	**Unit**	**Spec**
Molecular Weight (min)	GRI GG8	grams / mole	25,000
Caboxyl End Group (CEG) Count (max)	GRI GG7	millequivalent / kilogram	30

1. Denotes both machine and cross-machine direction strength (Biaxial Strength
2. Microgrid ultimate tensile strength determined in accordance with ASTM D 4595
3. Based on Minimum Average Roll Values for machine direction unless otherwise noted.
4. LTDS or $T_{al} = T_{ULT}$/ (RFcreep x RFinstallation damage x RFdurability) for sand, silt and clay soil Dmax ≤ 25mm, D_{50} < 0.2mm. Installation damage factor for other soils available upon request.
5. Special order roll sizes are available for SG product styles, 12-ft widths and/or custom roll lengths.
6. Roll Weights are average values including shipping cores. Actual roll weights may vary.

This product specification supersedes all prior specifications for the products described and is not applicable to any products shipped prior to January 1, 2014. This information has been carefully compiled by Strata Systems, Inc., and to the best of our knowledge is accurate. Final determination of the suitability of any information or material is the sole responsibility of the user. Structural design shall be performed by a licensed design professional.

Revised 06/2020

1831 North Park Avenue
Burlington, NC 27217
1-800-680-7750
strata@geogrid.com
www.geogrid.com