



GX[®] Geogrid Technical Design Data

Carthage Mills' GX[®] Geogrids for soil and aggregate reinforcement are manufactured from high tenacity, high molecular weight, polyester (PET) yarns, woven into a stable interlocking grid, placed under tension and then PVC coated to provide damage protection during installation. They are manufactured for the reinforcement of steepened earth slopes and segmental retaining walls.

Design Properties

	GX [®] -150 ¹	GX [®] -300	GX [®] -500	GX [®] -800	GX [®] -1000
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Tensile Strength Properties

	ASTM D	lbs/ft (kN/m)					
Ultimate Tensile Strength ⁽²⁾	6637		1700 (24.8)	3250 (47.3)	4500 (65.6)	7315 (106.6)	9790 (142.7)
Creep Limited Strength	5262		1156 (16.9)	2211 (32.2)	3061 (44.6)	4976 (72.5)	6660 (97.1)

Reduction Factors

RF _{CR} 75 Year Design Life			1.47	1.47	1.47	1.47	1.47
RF _D			1.10	1.10	1.10	1.10	1.10
RF _{ID} Type 1 (Coarse Gravel) D ₁₀₀ <38mm, D ₅₀ <19mm			1.26	1.17	1.13	1.09	1.07
RF _{ID} Type 2 (Sandy Gravel) D ₁₀₀ <19mm, D ₅₀ <6mm			1.18	1.13	1.04	1.11	1.07
RF _{ID} Type 3 (Silty Sand) D ₁₀₀ <9.5mm, D ₅₀ <1.2mm			1.04	1.07	1.07	1.07	1.07
RF _{ID} Type 4 (Silty Clay) D ₁₀₀ <0.85mm, D ₅₀ <0.045mm			1.08	1.08	1.07	1.07	1.07

Long-Term Design Strength (LTDS or T_{al})

	lbs/ft (kN/m)					
Type 1 Soil (Coarse Gravel)		834 (12.2)	1718 (24.9)	2462 (35.7)	4150 (60.5)	5658 (82.5)
Type 2 Soil (Sandy Gravel)		891 (13.0)	1779 (25.8)	2676 (38.8)	4076 (59.4)	5658 (82.5)
Type 3 Soil (Silty Sand)		1011 (14.7)	1879 (27.2)	2601 (37.7)	4228 (61.6)	5658 (82.5)
Type 4 Soil (Silty Clay)		973 (14.2)	1861 (27.0)	2601 (37.7)	4228 (62.6)	5658 (82.5)

Soil Interaction Coefficients for Pull Out (C_i) & Direct Sliding (C_{ds})

Type 1 Soil (Coarse Gravel)	C _i	0.90	0.80	0.80	0.80	0.80
	C _{ds}	1.00	1.00	1.00	0.93	0.93
Type 2 Soil (Sandy Gravel)	C _i	0.90	0.80	0.80	0.80	0.80
	C _{ds}	1.00	1.00	1.00	0.93	0.93
Type 3 Soil (Silty Sand)	C _i	0.80	0.80	0.80	0.95	0.95
	C _{ds}	0.90	0.90	1.00	0.89	0.89
Type 4 Soil (Silty Clay)	C _i	1.00	1.00	1.00	1.00	1.00
	C _{ds}	0.83	0.90	1.00	0.65	0.65

Physical Properties

	ft m	6 x 300 1.83 x 91.46	6 x 300 1.83 x 91.46	6 x 300 1.83 x 91.46	6 x 300 1.83 x 91.46	6 x 300 1.83 x 91.46
Roll Dimensions ⁽³⁾ (Width x Length)						
Roll Area	sq yds	200	200	200	200	200
	sq m	167.36	167.36	167.36	167.36	167.36
Roll Handling Weight	lbs	75	91	113	148	174
	kg	34.06	41.33	51.32	67.21	79.02

¹ Tensile strength reported for GX-150 is the same in both the machine and cross-machine directions. It is a biaxial strength product.

⁽²⁾ Values reported are Minimum Average Roll Values (MARV).

⁽³⁾ GX-150 is also available in 12 ft. x 150 ft. standard roll size. Special order roll sizes are available for all grid styles.

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