

Synten Geogrid											
Geogrid and Direction (MD, CD)	Polymer (PET, HDPE, PP)	Aperture Size (inches)	T _{ult} (lb/ft)	T _{2%} (lb/ft)	T _{5%} (lb/ft)	J _{ave} (lb)	J (m-N/deg)	RF _{CR}			RF _D
								3-yr	75-yr	100-yr	
SF180 (MD)	PET	0.51 x 1.00	14500					1.43	1.51	1.51	1.30
Geogrid and Direction (MD, CD)	Borrow ($\phi = 30^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	P (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
SF180 (MD)	1.05	1.50	2.06	2.06	9657	7035	7035	0.67	0.39	0.67	21.15
Geogrid and Direction (MD, CD)	Fine Aggregate ($\phi = 34^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	P (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
SF180 (MD)	1.05	1.50	2.06	2.06	9657	7035	7035	0.67	0.45	0.67	24.32
Geogrid and Direction (MD, CD)	Coarse Aggregate ($\phi = 38^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	P (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
SF180 (MD)	1.40	2.00	2.75	2.75	7243	5276	5276	0.67	0.52	0.67	27.63

Where,

T_{ult} = wide width tensile strength @ ultimate (lb/ft),

T_{2%} = wide width tensile strength @ 2% strain (lb/ft),

T_{5%} = wide width tensile strength @ 5% strain (lb/ft),

J_{ave} = average junction strength per rib (lb),

J = aperture stability modulus (m-N/deg),

RF_{CR} = creep reduction factor for 3, 75 and 100-yr design life,

RF_D = durability (degradation) reduction factor,

RF_{ID} = installation damage reduction factor,

RF = (RF_{CR} × RF_{ID}) for 3-yr design life or (RF_{CR} × RF_D × RF_{ID}) for 75 and 100-yr design life,

T_{al} = short-term design strength for 3-yr design life or LTDS for 75 and 100-yr design life (lb/ft) = T_{ult} / RF,

C_i = coefficient of interaction,

F* = pullout resistance factor = C_i tan ϕ ,

C_{ds} = coefficient of direct sliding and

tan P = soil-geogrid friction angle (deg) = C_{ds} tan ϕ .