

Tensar 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	
UX1400MSE/HS (MD)	HDPE	17.5	4,800					2.19	2.68	2.73	1.1
Geogrid and Direction (MD, CD)	Borrow ($\phi = 30^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
UX1400MSE/HS (MD)	1.1	2.41	3.24	3.30	1,992	1,481	1,455	0.6	0.346	0.8	24.79
Geogrid and Direction (MD, CD)	Fine Aggregate ($\phi = 34^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
UX1400MSE/HS (MD)	1.18	2.58	3.48	3.54	1,860	1,379	1,356	0.75 0.6 ⁽¹⁾	0.506 0.405 ⁽¹⁾	0.8	28.35
(1) UX1400 geogrid greater than 2 ft below top of wall											
Geogrid and Direction (MD, CD)	Coarse Aggregate ($\phi = 38^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
UX1400MSE/HS (MD)	1.70	3.72	5.01	5.11	1,290	958	939	0.8	0.625	0.8	32.0

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