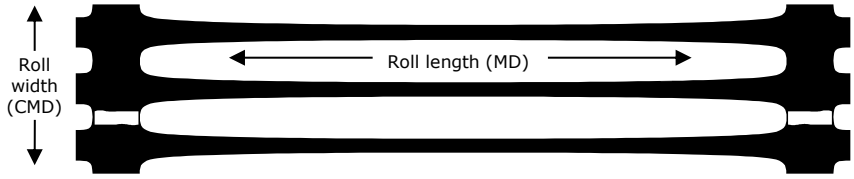
Tensar RE500 series geogrids
Product specifications design temperature 10°C

Tensar RE500 geogrids are used for the reinforcement of soils in the construction of structures such as retaining walls, load bearing bridge abutments, steep slopes, slip repairs and TensarTech®Stratum® mattresses.



Properties	Units	Tensar RE500 geogrids (1), (2), (3)					
		RE510	**RE520**	**RE540**	**RE560**	**RE570**	**RE580**
Polymer		High density polyethylene					
Minimum carbon black **(4)**	%	2	2	2	2	2	2
Roll width	m	1.3	1.3	1.3	1.3	1.3	1.3
Roll length	m	75	75	50	50	50	50
Unit weight	kg/m²	0.29	0.36	0.45	0.65	0.87	0.98
Roll weight	kg	30.0	37.0	31.0	45.0	59.0	67.0
Junction strength (5)	%	95	95	95	95	95	95
Long term strength at 10°C (6)							
ULS T_{CR} for 120 yrs **(7)**	kN/m	20.71	27.34	33.40	45.93	61.31	71.09
SLS T_{CS} for 1 month to 120 yrs **(8)**	kN/m	8.99	11.87	14.50	19.94	26.61	30.86
Partial factors of safety to calculate safe ultimate limit state (ULS) design strength (T_D) (9)							
Extrapolation of chemical and creep rupture data		$f_s = 1 + \sqrt{((1-R_1)^2 + (1-R_2)^2)} = 1.0$					
Installation damage D_{100} < 2mm, D_{85} < 0.65mm		RF_{ID} =1.01	RF_{ID} =1.00	RF_{ID} =1.00	RF_{ID} =1.00	RF_{ID} =1.00	RF_{ID} =1.00
Installation damage D_{100} < 37.5mm, D_{85} < 28mm		RF_{ID} =1.18	RF_{ID} =1.07	RF_{ID} =1.07	RF_{ID} =1.07	RF_{ID} =1.07	RF_{ID} =1.00
Installation damage D_{100} < 75mm, D_{85} < 69mm		RF_{ID} =1.30	RF_{ID} =1.25	RF_{ID} =1.20	RF_{ID} =1.15	RF_{ID} =1.12	RF_{ID} =1.06
Installation damage D_{100} < 125mm, D_{85} < 110mm		RF_{ID} =1.60	RF_{ID} =1.48	RF_{ID} =1.36	RF_{ID} =1.25	RF_{ID} =1.19	RF_{ID} =1.12
Weathering (including exposure to UV light)		RF_W = 1.00					
Chemical/environmental effects **(10)**		RF_{CH} = 1.05 for pH = 2 to 4, RF_{CH} = 1.00 for pH = 4 to 12.5					

(1) **Tensar RE500 geogrids** are stiff monolithic geogrids with integral junctions and are manufactured in accordance with Quality and Environmental Management Systems which comply with the requirements of BS EN ISO 9001:2015 and BS EN ISO 14001:2015 respectively.

(2) All quoted dimensions and values are typical unless stated otherwise.

(3) **Tensar RE500 geogrids** accreditation includes:
- The British Board of Agrément (BBA) has awarded HAPAS Certificates: No 13/H201 and No 13/H202
- The Geotechnical Engineering Office of the Civil Engineering & Development Department of the Government of Hong Kong SAR has awarded Certificate RF 2/2017

(4) Carbon black inhibits attack by UV light. Determined in accordance with ASTM D1603-14. Any section of grid fully exposed to sunlight can be expected to retain 90% of its quality control strength for periods in excess of 40 years in temperature climates and 20 years in tropical climates.

(5) Determined in accordance with GRI Test Method GG2-87, and expressed as a % of the quality control strength.

(6) In-soil temperature.

(7) ULS determined as a lower bound using standard extrapolation techniques to creep rupture data (real time test duration > 100,000 hours) obtained following the test procedure in BS EN ISO 13431:1999 for 120 year design life.

(8) SLS determined as the lower bound load which limits post-construction strain to 1% over the period from 1 month until design life, based on isochronous curves derived from creep tests carried out to BS EN ISO 13431:1999.

(9) Partial factors are determined following the requirements of BS EN 13251:2016 and guidelines given in PD ISO/TR 20432:2007, and are used to derive the ULS design strength which is given as: $T_D = T_{CR} / (f_s \times RF_{ID} \times RF_W \times RF_{CH})$

(10) **Tensar RE500 geogrids** are inert to all chemicals naturally found in soils and have no solvents at ambient temperature. They are not susceptible to hydrolysis and are resistant to aqueous solutions of salts, acids and alkalis (pH 2.0 to 12.5) and are non-biodegradable.

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