Tensar RE570 Geogrid Model Specification In Soil Temperature 25°C

1. The reinforcing element shall be a geogrid manufactured in accordance with a Quality Management System which complies with the requirements of BS EN ISO 9001:2000. If required by the Engineer, the Contractor shall provide evidence that the manufacturer's Quality Assurance System has been certified to conform with BS EN ISO 9001:2000 by an external authenticating authority approved by the Department of Trade and Industry.

2. The reinforcing element shall be a geogrid manufactured from high density polyethylene sheet, oriented in one direction so that the resulting ribs shall have a high degree of molecular orientation which is continued through the integral transverse bar.

3. The long term creep rupture strength P_C (Ultimate Limit State), for a design life of 120 years, shall be 53.59kN/m and 54.59kN/m for 60 years at a mean temperature of 25°C. This shall be determined by application of standard extrapolation techniques to creep data obtained in accordance with BS EN ISO 13431:1999 and shall be a lower bound value. Values shall be based on a geogrid family lineage of a minimum 100,000 hour of continuous creep testing.

4. The geogrid shall have an appropriate partial factor for site installation and construction damage, determined by the particle size distribution of the reinforced fill and in accordance with the values used in the design. This factor shall be based on full scale tests carried out in accordance with BS 8006:1995 Annex D on fill types similar in grading to those used in the design and witnessed by an independent approval authority. If required by the Engineer, the Contractor shall provide supporting documented evidence of testing for this and any other partial factors assumed in the design. Partial factors for site installation and construction damage based on limited laboratory based testing are not acceptable.

5. The strength of the junctions between the longitudinal ribs and transverse bars, as determined by the Geosynthetics Research Institute, Drexel University, USA, Test Method GG2-87, and expressed as a percentage of Quality Control Strength shall be not less than 95%.

6. The minimum geogrid roll width shall be 1.3m.

7. Any site joints in the reinforcement roll length shall be capable of carrying in the full long term creep rupture strength when tested in soil and have evidence of testing from a reputable independent test body.. If required by the Engineer the Contractor shall provide evidence of this, or carry out testing to demonstrate geogrid to geogrid joint performance.

8. The reinforcing element shall be the subject of a current and relevant Reinforced Fill Product Certificate as issued by The Geotechnical Engineering Office of the Civil Engineering Department of the Government of Hong Kong SAR.

9. The geogrid shall be inert to all chemicals naturally found in soils and shall have no solvents at ambient temperature. It shall not be susceptible to hydrolysis, shall be resistant to aqueous solutions of salts, acids and alkalis (pH = 2.0 to 12.5), shall be non-biodegradable and shall have a minimum of 2% finely divided carbon black, as determined by BS 2782:Part 4:Method 452B:1993, well dispersed in the polymer matrix to inhibit attack by ultraviolet light.

10. Any geogrid offered for approval to the Engineer shall be accompanied by the relevant supporting documentation including details of the supplier, calculations demonstrating derivation of the appropriate long term safe design strength and the relevant and independently assessed partial factors of safety applied and product samples and specifications.

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