

Tensor AR-GN Geocomposite Model Specification

1. The reinforcing grid/fabric geocomposite shall be manufactured in accordance with a Quality Management System which complies with the requirements of BS EN ISO 9001:2008. 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 9001:2008 by an external authenticating authority approved by the Department of Trade and Industry.
2. The reinforcing grid/fabric geocomposite shall consist of a reinforcing grid thermally bonded to a paving fabric at the grid nodes.
3. The paving fabric shall be a non-woven needle punched geotextile manufactured from polypropylene which shall weigh 0.130 kg/m².
4. The paving fabric shall have residual bitumen retention of 1.1 kg/m² mean value (+/- 0.20 kg/m²), when tested in accordance with ASTM D6140. Note - BS EN 15381 : 2008 stipulates that:-
 - Stress relief is a function which is provided by a bitumen saturated paving fabric, which when properly installed between the road surface and a new asphalt overlay, allows for slight differential movements between the two layers and thus provides stress relief, which delays or arrests crack propagation in the asphalt overlay.
 - An interlayer barrier is a function which is provided by using a paving fabric in conjunction with a bitumen layer, as a barrier to the ingress of water and thus prevent or delay the deterioration of the pavement.
 - Table 1 of BS EN 15381 : 2008 refers to Annex C of the same document in relation to the bitumen retention characteristic required for the functions of stress relief and an interlayer barrier. As stated, the bitumen retention required to assure installation integrity, has been formalised by industry experts in the AASHTO M288 specifications for geotextiles as 0.9l/m² minimum (approx. 0.9kg/m² bitumen @ 20°C).
5. The reinforcing grid shall be manufactured from polypropylene sheet, oriented in two directions so that the resulting ribs shall have a high degree of molecular orientation which continues through the area of the integral node.
6. The ribs of the reinforcing grid shall be of rectangular cross section in both the longitudinal and transverse directions.
7. The Quality Control Strength of the reinforcing grid [expressed as the lower 95% confidence limit in accordance with ISO 2602:1980 (BS 2846:Part 2:1981)] shall be 20.0 kN/m with peak strain of approximate 12.0% in the longitudinal and transverse directions respectively at that load, when tested in accordance with BS EN ISO 10319:2008.
8. The typical strength of the nodes between the longitudinal and transverse ribs of the reinforcing grid, shall be not less than 90% of the Quality Control Strength in both longitudinal and transverse directions, as determined in accordance with the principle outlined in ETA Technical Report TR041 and expressed as a % of the quality control strength.
9. The reinforcing element shall be non-biodegradable, 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.
10. The reinforcing element shall have a minimum of 2% finely divided carbon black, as determined in accordance with ASTM D1603-06, well dispersed in the polymer matrix to inhibit attack by ultra violet light.

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