



Installation guideline for Tensor Geogrids at the Subgrade: Sub-Base Interface

CS/SB1/05/02/02

This installation guideline applies to **Tensor biaxial geogrids** supplied by Geofabrics Australasia Pty Ltd or any of its appointed distributors. It provides a basis for Specifiers in the compilation of Specification Clauses particular to their own projects and it applies to both the permanent and temporary stabilisation of areas over which vehicular access is required.

Specifications for the grids are available on request from Tensor International or a local Tensor Distributor.

Subgrade Preparation

For subgrades over which construction plant cannot safely traverse:

Tensor geogrids shall be laid directly on the site, having removed major protrusions such as rocks and tree and bush stumps and also having filled local hollows and depressions with the approved fill but otherwise retaining the vegetation and topsoil covering the site.

or where site conditions permit : The subgrade shall be levelled and prepared to the contract drawings and specifications.

Placing Tensor Geogrids

Tensor geogrids may be placed on the subgrade either parallel to the road centre line or in the transverse direction. If a Bidim geotextile separator has also been specified with the geogrid, then the geogrid should be placed above the geotextile (so that the placed fill can interlock with the apertures of the grid).

Jointing Techniques

Simple Overlaps

This is the normal method employed on site as it generally presents the quickest and most economic means of making an effective joint.

The width of overlap between adjacent rolls is dependent upon the grading and thickness of sub-base and the stiffness of the subgrade. The minimum overlap shall be 300mm and the maximum normally required shall be 600mm or as directed within the Contract Documents.

Overlaps must be maintained during the filling operation. This is generally achieved by placing small heaps of fill locally over the overlaps ahead of the main filling operation.

Sewn Joints (where specifically required within the Contract Documents)

Adjacent rolls are secured by providing a simple overlap of three grid apertures and either warping braid through a pair of coincident apertures or spiralling braid around each pair of coincident ribs or as directed within the Contract Documents. In each case the braid shall be tied and knotted at 1m intervals.

Braid shall be black high density polyethylene three ply twisted monofilament, with an index tensile strength of 2kN, as supplied by Geofabrics Australasia Pty Ltd.

Sub-Base

A graded aggregate is suitable for the sub-base. Type 1 or 2 is recommended, as described in the following table, or to the local DoT Specification for Highway Works.

sieve size	Percentage by mass passing	
	Sub-base Type 1	Sub-base Type 2
75mm	100	100
37.5mm	85-100	85-100
20mm	60-100	60-100
10mm	40-70	40-100
5mm	25-45	25-85
600 µm	8-22	8-45
75 µm	0-10	0-10
The particle size shall be determined by the washing and sieving method.		

Table 1 – Sub-base Type 1 & 2 Range of Grading

Specifiers are requested to contact Tensar International or a local Tensar Distributor for specific advice when fill other than Type 1 or 2 sub-base is to be used.

Placing Sub-Base

Truck loads of sub-base material shall be tipped into stockpiles on sub-base and not tipped directly onto the grids. The sub-base stockpiles shall be spread by mechanical plant which causes the aggregate to cascade onto the grids, such as an excavator bucket or dozer with an opening bucket.

Sub-base shall be spread in layers of not less than 150mm thickness. The maximum layer thickness shall be as specified within the Contract Documents.

In the stabilisation of wide and broad areas, sub-base aggregate shall be spread such that the first layer advances across roll widths rather than along roll lengths.

Care shall be taken to avoid damage to the grids. No traffic or site plant shall be permitted to travel on the grids prior to placing sub-base aggregate.

Compaction

Compaction of unbound materials for sub-bases and road bases shall normally be carried out in accordance with DoT Specification for Highway Works.

Over exceptionally soft subgrade the degree of compaction applied to the lowest layer of fill may have to be reduced from the above DoT Clauses. Details shall be specified within the Contract Documents.

Contact Tensar International for specific advice.

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