Installation Guidelines for Tensar H-Series™ Geogrid for stabilisation of granular fill over weak subgrades

This Installation Guideline provides a step by step guide for Contractors installing Tensar H-Series™ geogrid supplied by Tensar International or any of its appointed distributors. The guideline applies to both the permanent and temporary mechanical stabilisation of areas over which vehicular access is to be provided.

Specifications for Tensar geogrids are available on request from Tensar International or a local Tensar Distributor.

Installation

Subgrade Preparation

For a subgrade over which construction plant cannot safely traverse:

Tensar H-Series geogrid 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 in accordance with UK Highway Agency, Manual of Contract Documents for Highway Works (MCDHW), Specification for Highway Works, Clause 616, or as specified in the Contract Documents

Placing Tensar H-Series Geogrid

Heavy duty gloves should be worn when handling Tensar H-Series geogrid.

Tensar H-Series geogrid may be placed on the subgrade either parallel to the road centre line or in the transverse direction. If a geotextile separator has also been specified to accompany the H-Series geogrid, then the H-Series geogrid must be placed above the geotextile (so that the placed fill can interlock with the apertures of the H-Series geogrid).

Overlaps

The width of overlap between adjacent H-Series geogrid lengths is dependent upon the grading and thickness of fill 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 secured and maintained during the filling operation. This is generally achieved by placing small heaps of granular fill locally over the overlaps ahead of the main filling operation.

Granular Fill

A graded aggregate fill is suitable for the unbound granular fill. Type 1 or 2 is recommended, as described in UK Manual of Contract Documents for Highway Works (MCDHW) Volume 1 Specification for Highway Works, Series 800, clauses 803 and 804 respectively, or as specified in the Contract Documents.

Specifiers are requested to contact Tensar International or a local Tensar Distributor for specific advice when fill other than the above is to be used.

BS sieve size mm	Percentage by mass passing	
	Sub-base Type 1	Sub-base Type 2
75	100	100
31.5	75-99	75-99
16	43-81	50-90
8	23-66	30-75
4	12-53	15-60
2	6-42	
1	3-32	0-35
0.063	0-9	0-9
	The size fraction of the unbound mixture passing the 0.425 mm size test sieve shall be non-plastic as defined by BS 1377-2 and tested in compliance therewith	The size fraction of the unbound mixture passing the 0.425 mm size test sieve when tested in compliance with BS 1377-2 shall have a plasticity index of less than 6

Table 1 Subbase Type 1 and Type 2

UK Manual of Contract Documents for Highway Works (MCDHW) Volume1 Series 800

Placing Granular Fill

Lorry loads of granular fill material shall be tipped into stockpiles on placed fill and not tipped directly onto the H-Series geogrid. The fill stockpiles shall be spread by mechanical plant which causes the aggregate to cascade onto the H-Series geogrid, such as an excavator bucket or dozer with an opening bucket.

Fill shall be spread in layers of not less than 150mm thickness. The initial layer thickness to be placed on the H-Series geogrid shall be specified in the contract documents along with the maximum layer thickness. In the stabilisation of wide and broad areas, fill 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 H-Series geogrid. No traffic or site plant shall be permitted to travel on the H-Series geogrid prior to covering them with a minimum 150mm layer of granular fill.

Compaction

Compaction of granular sub-base shall normally be carried out in accordance with UK Manual of Contract Documents for Highway Works (MCDHW) Volume 1 Specification for Highway works, Series 800, or as specified in the Contract Documents. Compaction of other fills shall be carried out in accordance with (MCDHW) Volume 1 Specification for Highway works, Series 600, or as specified in the Contract Documents.

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

Contact Tensar International for specific advice.

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