TERRAINTEX™

WOVEN & NON WOVEN GEOTEXTILE MADE FROM PET & PP FIBRE

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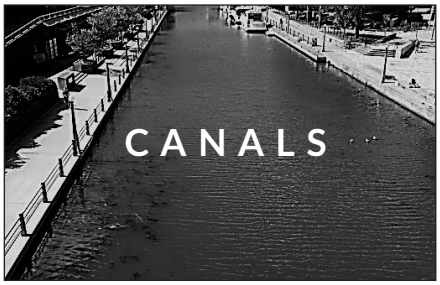
WOVEN & NON WOVEN GEOTEXTILE

Terraintex is woven & non woven geotextile made from high quality pet & pp fibre & it's main purpose is filtration & separation. It's made in 2m & 4m wide rolls of customizable lengths

APPLICATIONS OF TERRAINTEX



WHY TERRAINTEX

- *Machine made product* • *High durability* • *Fast installation*
- *Competitive prices*

CODAL PROVISIONS

Guidelines For Blanket Layer Provision On Track Formation With Emphasis On Heavy axle Load Train Operation

4.8 Specification of Blanket Material :

Blanket material should generally confirm to following specifications :

a) It should be coarse, granular and well graded.

b) Skip graded material is not permitted.

c) Non-plastic fines (particles of size less than 75 micron) are limited maximum to 12%, whereas plastic fines are limited maximum to 5%.

d) The blanket material should have particle size distribution corresponding more or less within the envelopping curves shown in Sketch-II of RDSO document 'GE:O-1, July 2000'. The material should be well graded with Cu and Cc as under :

- Uniformity Coefficient $C_u = D_{60}/D_{10} > 4$ (preferably > 7)
- Coefficient of Curvature $C_c = (D_{30})^2 / D_{60} \times D_{10}$ should be within 1 and 3.

e) The material for upper blanket layer, required for heavier axle load, shall be well-graded sandy gravel or crushed rock within the envelopping curves for upper blanket layer as shown in Sketch-II of RDSO document 'GE:O-1, July 2000'.

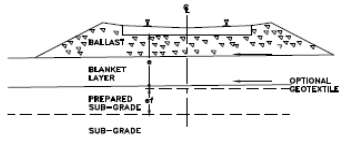
6.0 BENCHMARKING - PROVISIONS OF BLANKET IN OTHER RAILWAY SYSTEMS

6.1 European Railways (UIC) -

6.1.1 Provisions :

As per UIC code 719 R, 1994 minimum thickness (e) of track bed layers is given by the formula –

$e = E + a + b + c + d + f + g$ as per figure below :



Where,

e = Total depth of ballast & blanket

E = Factor depending upon quality class of soil used in prepared subgrade

a = Factor depending on UIC groups based on GMT

b = Factor depending on type & length of sleeper

c = Factor depending on different working conditions on existing lines

d = Factor depending on axle load of hauled vehicle

f = Factor depending on speed of train

g = Factor depending on inclusion of geo-textile based on quality class of prepared sub-grade.

RDSO Guidelines

IRC: 37-2012

The permeable sub-base when placed on the erodible subgrade soil should be underlain by a layer of filter material to prevent the intrusion of soil fines into the drainage layer (Fig. 11.2). Non-woven geosynthetic also can be provided to act as a filter/separation layer. Some typical drainage system is illustrated in Figs. 11.1, 11.2 and 11.3.

11.5 When large inflows are to be taken care of, an adequately designed sub-surface drainage system consisting of an open graded drainage layer with collection and outlet pipes should be provided. The system should be designed on a rational basis using seepage principles to estimate the inflow quantities and the outflow conductivity of the drainage system. It should be ensured that the outflow capabilities of the system are at least equal to the total inflows so that no free water accumulates in the pavement structural section. If granular sub-base is not required because of strong subgrade, commercially available geocomposite can be used for drainage and separation. A design example is given in Appendix V.

11.6 Very often, water enters the base, sub-base or the subgrade at the junction of the verges and the bituminous surfacing. To counteract the harmful effects of this water, it is recommended that the shoulders should be well-shaped and if possible, constructed of impermeable material. Major highways should have paved shoulder to keep away water from the subgrade and for other roads also with design traffic of 20 msa or less; the base should be constructed 300-450 mm wider than the required bituminous surfacing so that the run-off water disperses harmlessly well clear off the main carriageway.

11.7 Shoulders should be accorded special attention during subsequent maintenance operation too. They should be dressed periodically so that they always conform to the requisite cross-fall and are not higher than the level of carriageway at any time.

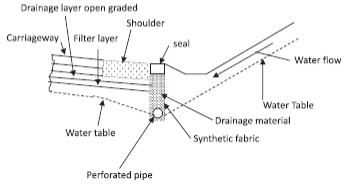


Fig. 11.1 Pavement along a Slope

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IRC SP - 37

IRC:SP:102-2014

2) The plan of the structure shall be marked on ground as per approved drawings.

3) Excavate and compact the base the ground to the embedment depth and required width, to a dry density of 95 percent of the Modified Proctor Density.

4) The trench shall be backfilled using reinforced fill, levelled and well compacted to achieve 95 percent Modified Proctor Maximum Dry Density.

5) An initial levelling pad of 150 mm thick using (minimum) M15 plain cement concrete having suitable width to be placed below the first row of fascia layer.

6) The first layer of face block or element on the base and level envisaged in the drawing.

7) The alignment of the block/facing element must be checked regularly to make sure the wall is straight or curve as per drawing.

8) The required thickness of drainage material shall be placed at the back facing block/panel and in the hollows of facing block. The drainage material shall be compacted with vibratory plate compactor and within the block cavities. No heavy compaction equipment should be allowed to operate within 1.5 m of the back of face panel.

9) Placing the reinforced soil backfill behind the drainage zone and compacting to a minimum of 95 percent Modified Proctor density/80 percent Relative Density. The backfill should be placed and compacted in layers. The compacted thickness of each layer shall not exceed 200 mm. At no stage of construction the compaction or any other equipment shall be allowed to operate directly on the reinforcement.

10) When in direct contact, the backfill material and the drainage material shall be separated using permeable non-woven geotextile.

11) The successive face element shall be placed as per required line and level. In several cases outward movement has been observed due to poor connection of reinforcement with face element. Provisions given in Section 3.4 should be followed for details of connections. The same procedure shall be repeated until the final layer of reinforcement is reached.

12) Before placing the drainage material and backfill, the reinforcement should be cut to length and placed on top of the face block. The reinforcement should be stretched to ensure that there are no wrinkles and the reinforcement is taut.

13) Care should be taken to ensure that geogrid is slightly away from the external junction of outside face of fascia block. This will ensure that the geogrid does not protrude out of the wall and is prevented from UV ray exposure.

14) Second layer of facia block is laid over the geogrid, so that geogrid is completely interlocked between the blocks. The above procedure is repeated for subsequent geogrid layers.

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IRC SP - 102