

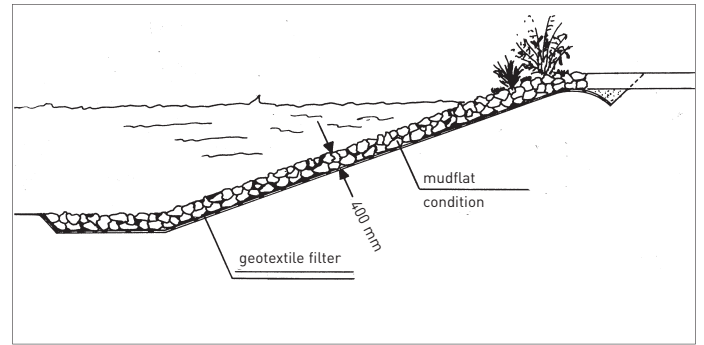
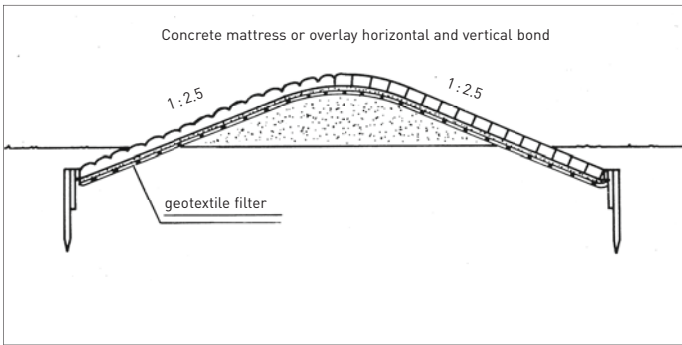
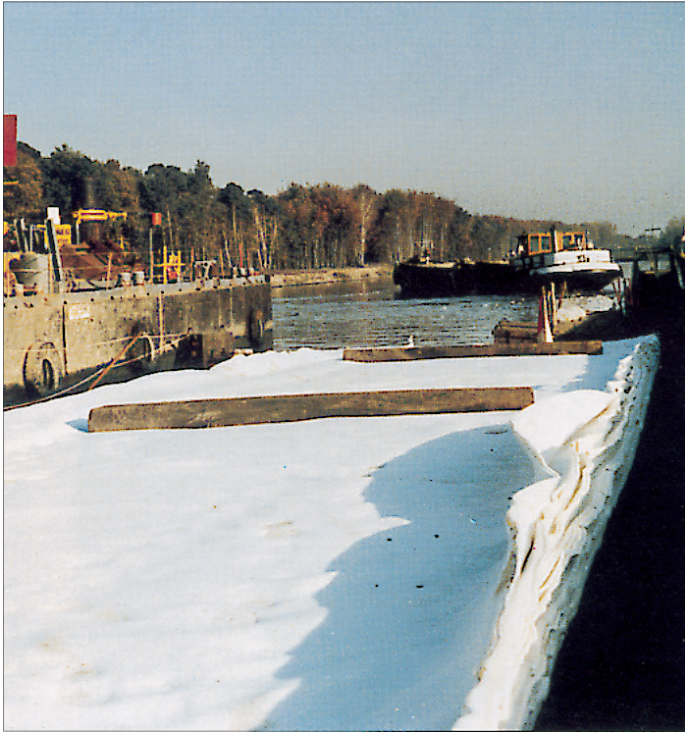
HaTe[®]-nonwovens: a wide range for project-specific solutions

HaTe[®]-nonwovens are manufactured from various raw materials using different methods, which are dependent on the particular requirements.

◁ All technical product data presented in data sheets are based on ISO or/and EN standards.

For example, for many years mechanically bonded nonwovens with thicknesses greater than 4.5 mm have been used in the erosion protection of navigable waterways and coastal areas. Such materials have been well demonstrated by the test results from the Federal Institute of Hydraulic Engineering.

Nonwovens are manufactured or made-up in lengths / widths to meet specific contract requirements.



◁ Extremely accommodating with excellent mechanical properties - the primary factors behind the quality of HaTe[®]-nonwovens for tunnelling applications. By using a special fibre blend the conditions required by DIN 4102 (flammability behaviour) are achieved.

The nonwoven safely protects the synthetic liner controlling water seepage.

Embankments can be highly exposed to water erosion. ▷ Here HaTe[®] composite drainage filters can assist.





△ **HaTe**®-nonwovens and composites in landfill construction not only offer excellent protection to the liner, but can meet the demands of other applications such as drainage, gas venting and separation.

Special demands are required to meet the harsh conditions within the landfill zone. High-density polyethylene (HDPE) has proved particularly successful.

The use of **HaTe**®-nonwoven pipe protection offers the contractor a chance of re-using aggressive backfill material. Considerable cost-savings can be achieved.

HaTe® rock protection materials offer high tear resistance, extreme robustness and are available up to 3,000g/m² in weight and 25mm thickness.



◁ **HaTe**®-nonwovens used in separation reduce the need for subbase, increase the bearing capacity of the subgrade and can be installed without difficulty.

Their excellent properties avoid localised subgrade disturbance and ensure the long-term performance of access roads, forest tracks, storage areas, etc.

HaTe®-nonwovens meet the requirements of the German robustness specifications, classes 1-5, as outlined in the 'Guidelines for the use of geotextiles and geogrids in earthwork construction', FGSV, 2005.

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