topocare®
simply innovative

topotube®

Applications for Geotextile Tubes

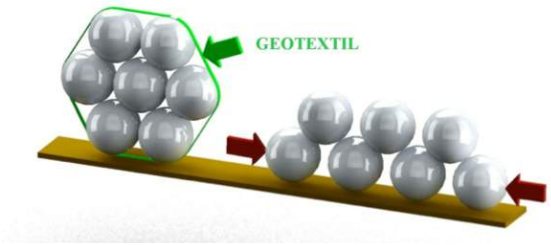
Structural Element topotube

topotubes is a novel device that allows innovative and economically optimized solutions that can be implemented in the construction industry.

topotubes are wrapped geotextile tubes that are filled with standard building materials. They can be manufactured in diameters from 0.6 m to 1.0 m directly at place of installation in a single step.

topotubes allow the encapsulation of the filler material for:

→ Accurate installation of soil layers



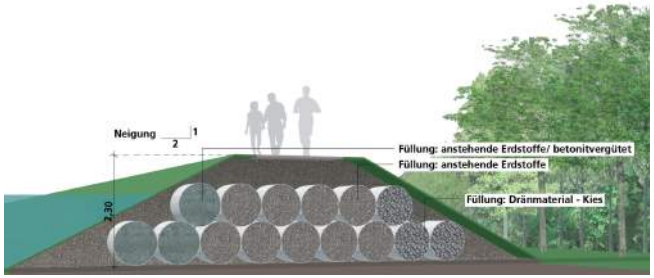
→ Advantages of composite construction

Through the combination of fabric (accommodating tensile forces) with soil (takes pressure forces on), a new element is created, that has higher properties than a normal soil installation.

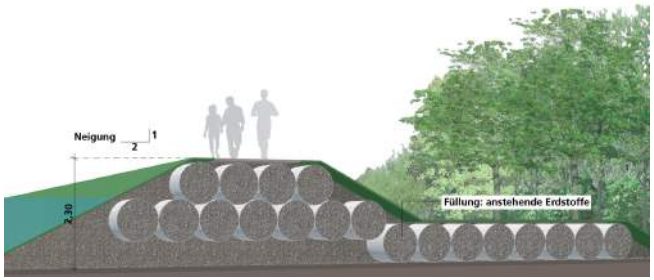
→ Stabilization of the structure
topotubes are a flexible element to stabilize the structure.

→ Erosion control
The tube structure provides protection against flushing of the filling material.

Dyke Construction



topotubes offers new construction methods for the design of dyke profiles. Through the use of geotextile tubes as a core element erosion safety is increased. By covering the outer layer with normal soil and applying a grass cover, the dyke also adds further harmony to the surrounding landscape.



The upgrading of existing dikes can be done by using topotubes.

Advantages of incorporate topotubes in the body of the dike offer the following properties.

Preventing external erosion processes :
→ Safe overtopping of the dyke
→ No damage due to wave erosion

Preventing internal erosion processes:
→ ***Stopping suffusion and scouring***

Also, the structure of modern three-zone dikes can be optimized by the erosion-proof core structure.

In general various dyke profile are conceivable. They must be designed and implemented depending on local requirements.

Disaster Control

topotubes can be used as a quick flood barrier during a flood event. They are seen as a supplement to conventional methods.

To secure that existing dykes will hold strong, the following possibilities are available:

→ ***temporary heightening***
→ ***load filters to reduce the seepage line***

Especially in the case of river dams it is better to secure dikes with appropriate equipment before water level reaches the critical tidal wave level.

With already occurring floods, topotubes can be used for quick backup of the hinterland:

→ ***Security of residential areas***
→ ***Security of industrial facilities***

In particular, the following table demonstrates the advantages of the installation:

100 meter dam, 75 centimetre height

	Sandbag dam THW *	topotube
Personnel requirements (number)	6	2
Construction period (h)	**70**	**1**
Total working time (h)	420	2

Bags or tubes (number)	**10.000**	**1**
Total Geotextile (sq. m)	2000	250

*Source : www.thw-muenchen-ost.de (July 2013)

Drainage System

When using topotubes as a drainage system coarse-grained soils, such as gravel, can be used as filler. Also a drainage tube can be inserted into the centre of the topotube.

Road Embankment

For the construction and stabilization of roadsides, topotubes can be incorporated into the dam. They are largely integrated as drainage or as erosion protection. Also they provide a support in areas with soft ground.

Defence Barrier

topotubes can be used to construct perimeter security for military bases. It is possible to build a variety of walls for military use: defence barriers, ammunition compounds, checkpoints etc.

topocare GmbH
Gartenstraße 4
33332 Gütersloh

Tel.: 05241-504970
Fax.:05241-5049799
Email: info@topocare.de
www.topocare.de