

Road works

Construction works

Ground systems

Drainage &
Filtration systems

Hydraulic works

Waste disposal

WINNING TOGETHER

Civil engineering **Fibertex Geotextiles**

Constructing with Fibertex Geotextiles

Fibertex offers a full range of nonwoven geotextiles designed for use in many different foundation structures within civil engineering works. The most common applications are:

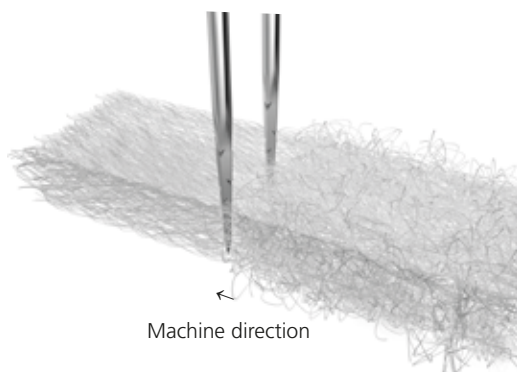
- Road works
- Construction works
- Ground systems
- Drainage and filtration systems
- Hydraulic works
- Waste disposals (landfills)

Fibertex technology

Fibertex manufactures nonwoven geotextiles using the drylaid needlepunch technology. Virgin polypropylene fibres are extruded, carded and finally needlepunched. Furthermore, many product types have thermal treatment added (e.g. IR bonding, hot air bonding or calendaring).

Superior 3-dimensional geotextile

Fibertex Geotextiles are unique due to a combination of intensive needling and various bonding processes. After being laid out horizontally the intensive needling ensures that the fibres are fixed vertically. The result is a strong and flexible 3-dimensional product which is advantageous in all parameters related to geotextiles.



More than 100 punches per cm²

High performance Fibertex Geotextiles

The drylaid needlepunch technology ensures high quality geotextiles with:

- High strength and high elongation
= high energy absorption
- Excellent resistance to installation damage
= high puncture resistance
- Long-term wearing properties
= more than 25 years of service life
- Unique hydraulic properties
= controlled high water flow
- Excellent abrasion properties
= no surface abrasion
- High uniformity
= ensured by production technique and quality control
- No delamination
= fibres interlocked in all 3 dimensions

All Fibertex Geotextiles are UV-stabilised, resistant to acids and alkalis, and cannot be attacked by fungi or rot. No chemical binders are used in the product or in the production process, and polypropylene is a polymer material which turns into carbon dioxide and water vapour when incinerated - both completely harmless substances.

Advantages of using Fibertex geotextiles

When using geotextiles between different construction layers, mixing of the layers is avoided, resulting in an increase of bearing capacity and thereby also time and material savings. High water flow and good filter properties combined with the necessary mechanical properties of the geotextile ensure that fine-grained particles are retained, while free movement of water is maintained. Consequently, stability is improved and life of the entire construction is prolonged.

Designing with Fibertex Geotextiles



Source: Palm Island, Dubai. Installation of Fibertex F-650M. The Fibertex Geotextile will be covered completely with gravel and sand.

The importance of quality

Fibertex's quality management system is certified in accordance with the most comprehensive standards set by the International Organisation for Standardisation EN ISO 9001:2008. This means that the quality management system has been implemented and verified at all levels within the organisation.

Fibertex Geotextiles are CE marked under the EU Construction Products Directive. CE marking certifies that Fibertex's quality management system (EN ISO 9001:2008) complies with the EN standards (level 2+). Fibertex Geotextiles are submitted to production control and external testing by accredited test institutes in accordance with the EN standards.

Fibertex was among the first in the nonwoven industry to obtain the ISO 14001 environmental management system certificate. Fibertex's environmental policy is to develop, produce and supply environmentally responsible products. To

reduce consumption of energy and raw materials and generation of waste are main focus areas.



Designing with Fibertex geotextiles

Fibertex offers design specifications according to function. The functions of geotextiles are divided into six categories: Separation, Filtration, Drainage, Protection, Reinforcement and Stress relieving. Regardless of type of construction, the geotextile performs at least one of these functions. For detailed design specifications, consult our Fibertex Design Guide. For design specifications for the function, Stress relieving (Paving fabric), see "Fibertex AM-2 for Stress relieving". The design specifications and technical data are available on www.fibertex.com or by contacting your local Fibertex representative.

Fibertex Geotextiles Functions

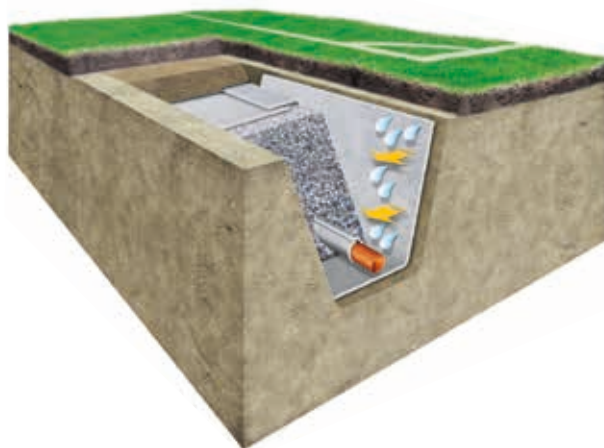


Separation



The durability and mechanical properties of Fibertex Geotextiles make them ideal for separating layers in construction works.

A strong and flexible Fibertex Geotextile is placed between the different layers in the construction preventing migration and mingling of materials, yet allowing free movement of water. This increases the bearing capacity and provides long-term stability of the foundation layers.



Filtration



The pore structure of Fibertex Geotextiles is designed to retain particles while allowing free movement of water, making it possible to separate two layers during intense

hydraulic activity. Migration of layers, which would reduce the load-bearing capacity of the system, is thereby avoided and at the same time water flow is maintained with minimum pressure loss.

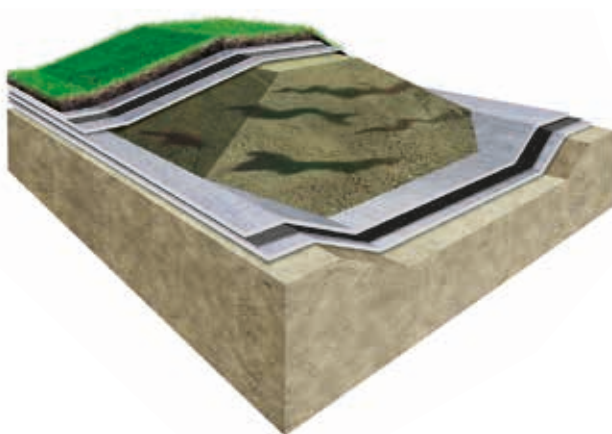


Drainage

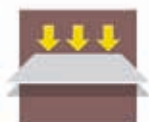


The hydraulic properties of Fibertex Geotextiles is designed to drain excess water off the construction - not by passing through the fabric - but by flowing in the plane of the

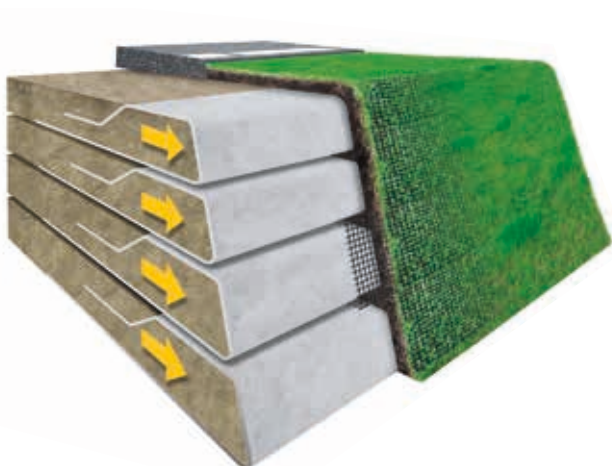
fabric away from the construction. The use of a drainage geotextile ensures an ongoing drainage of fluids with minimum pressure loss.



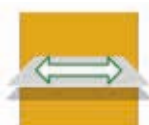
Protection



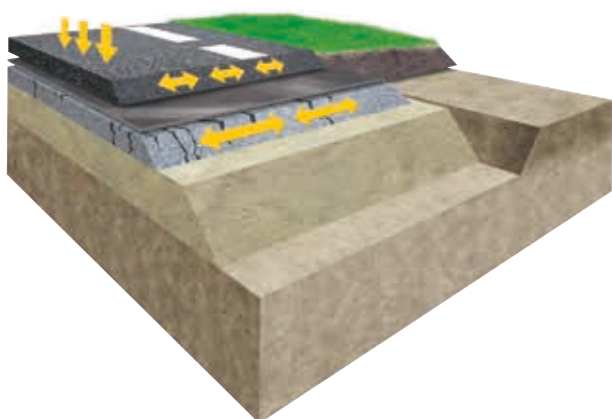
The excellent static puncture resistance of Fibertex Geotextiles makes them ideal for protecting waterproof membranes and other sealing materials from puncture when fill material and/or loads are applied. When placed between sealing material and other layers, the geotextile withstands and distributes any local pressure from the layer above, ensuring that the protected material is not stressed to failure.



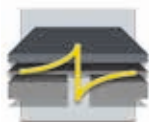
Reinforcement



Together with woven and geogrid, the mechanical and hydraulic properties of Fibertex Geotextiles make the product ideal for reinforcing slopes and other earthworks. Reinforcement which incorporates the correct type of Fibertex Geotextile will prevent the collapse of vertical earthworks and steep slopes.



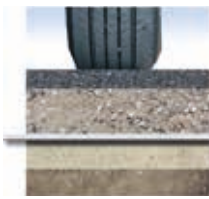
Stress relieving



Fibertex offers a flexible precompressed nonwoven designed especially for stress relieving. The stress relieving paving fabric is ideal in both new road constructions and in road maintenance, as it absorbs differential movements in the road layers, preventing reflective cracking. The bitumen-saturated paving fabric also forms a waterproof interlayer, protecting the subsoil from water intrusion and thereby loss of bearing capacity.

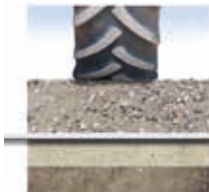
Road works

Permanent Roads



By separating the different layers of materials, Fibertex Geotextiles stabilise road constructions that are designed to resist dynamic and static stresses.

Temporary roads



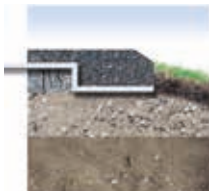
Fibertex Geotextiles placed below the top gravel layer increase the bearing capacity of the road to withstand continuous heavy traffic loads. No cars, tractors or other vehicles will become stuck in the gravel.

Parking Areas



Areas subject to considerable static loads require a stable bearing course. Fibertex Geotextiles provide this by separating the different layers of materials, which is essential to maintain the bearing capacity.

Road Widening



Fibertex Geotextiles ensure separation and stability between subsoil and added road building materials.

Asphalt Maintenance



Bitumen-saturated Fibertex AM-2 prevents surface water from penetrating the bearing course, preventing washing out of fines and reducing the occurrence of fissures and cracks considerably.

Airports



In constructions with heavy demands on the surface, Fibertex Geotextiles stabilise the foundations enabling them to withstand dynamic loads.

Railways



The rapidly increasing speed and weight of trains place heavy demands on the bearing course. Fibertex Geotextiles stabilise the foundation, enabling it to withstand dynamic loads.

Construction

Foundations



When placed under foundations, Fibertex Geotextiles replace the blinding layer. It is simple, effective and economical.

Concrete Floors



Below concrete floors, the permeable Fibertex Geotextile protects the drainage layer from contamination from the concrete and the subsoil.

Impact Sound Suppression



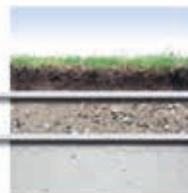
In apartment buildings, Fibertex Geotextiles are used for sound suppression purposes.

Roofs



Fibertex Geotextiles are used as sliding layer, mechanical protection of roof membranes and as filter protection of any drainage layers.

Roof Gardens



Fibertex Geotextiles are used as separation layer, mechanical protection of roof membranes and as filter protection of any drainage layer.

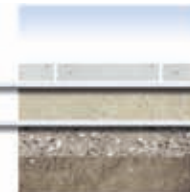
Ground systems

Pipes and Trenches



Placing a Fibertex Geotextile on the bottom of the trench increases the bearing capacity considerably.

Storage Areas



Using Fibertex Geotextiles prevents mingling or loss of fines in the bearing courses as well as clogging of the drainage layer.

Storage Areas with AM-2



Bitumen-saturated Fibertex AM-2 absorbs the stresses from cracks or joints in the old surface, preventing reflection through Densiphalt composite wearing courses.

Sport Grounds



Grass fields, cinders and gravel courts/grounds are stabilised with Fibertex Geotextiles due to the effective drainage, ensuring an even surface.

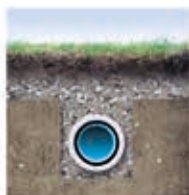
Slopes



With Fibertex Geotextiles under the top layer, the slope will withstand subsoil water, rainwater and water from melted snow which would, otherwise, wash out the fines.

Drainage/Filtration

Drainage Pipes



With permeable Fibertex Geotextiles wrapped around the pipes, an effective and long lasting drainage system is ensured, without any risk of clogging.

Drainage Trenches



Fibertex Geotextiles protect the drain system by preventing mingling of fines.

Surface Drains



Surface drains are likely to become silted up from the surrounding soil. Fibertex Geotextiles keep the fines separated from the drainage layer ensuring the effectiveness of the drain system.

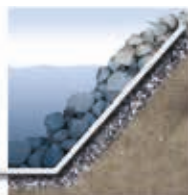
Building Drains



In the construction of foundations and basement walls, Fibertex Geotextiles ensure a clean and effective circumferential drain, which e.g. prevents damage caused by dampness.

Hydraulic works

Coastal Protection



Fibertex Geotextiles protect the coast line as their flexibility and permeability ensure withstanding of the impact of waves and currents, preventing erosion and washing out of fines.

Dams



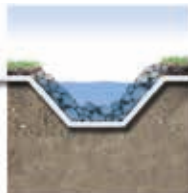
Artificial dams and embankments need to be fortified with strong materials to resist the forces of nature. Fibertex Geotextiles stabilise and prevent washing out of fines.

Harbour Constructions



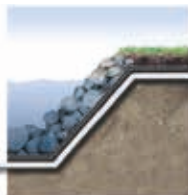
Fibertex Geotextiles placed behind the retaining wall keep the drainage layer clean which relieves the hydraulic pressure on the wall. When placed in front of the retaining wall, Fibertex Geotextiles prevent washing out of the sea bed.

River Banks and Canals



Fibertex Geotextiles protect river banks and canals in an effective and environmentally friendly way.

Artificial Lakes



The waterproof membrane is protected against perforation with Fibertex Geotextiles.

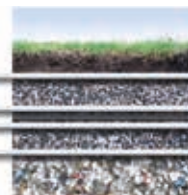
Water Reservoirs



Fibertex Geotextiles protect the waterproof membrane against perforation.

Waste disposal

Waste Disposal (Top Layers)



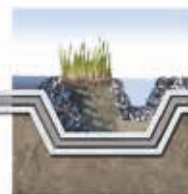
In supervised waste disposal sites, Fibertex Geotextiles on both sides of the membranes protect them from perforation. Furthermore, Fibertex Geotextiles are used as filter protection of the drainage layers.

Waste Disposal (Bottom Layers)

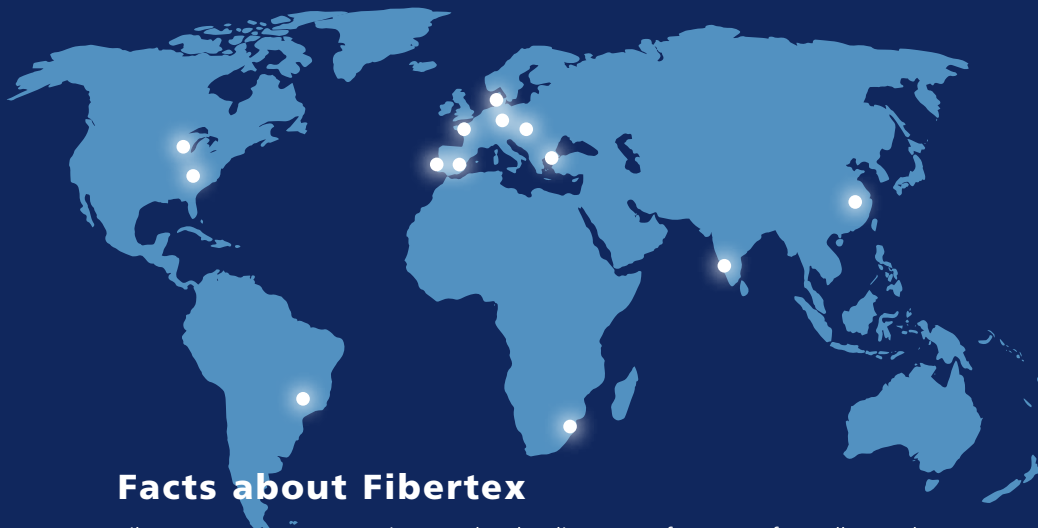


As described above, Fibertex Geotextiles on both sides of membranes protect them from perforation. Fibertex Geotextiles also help to detect leaks.

Water Purification Systems



Fibertex Geotextiles on both sides of the waterproof membrane protect the system against perforation.



Facts about Fibertex

Fibertex Nonwovens A/S is a market leading manufacturer of needlepunch nonwovens for industrial and technical applications. With corporate office in Aalborg, Denmark, and manufacturing sites in Denmark, the Czech Republic, France, the USA, Turkey, South Africa and Brazil, Fibertex is globally represented. Since its foundation in 1968, Fibertex has continuously expanded and today manufactures nonwovens for customers all over the world for many different applications.

Close to our customers

Our goal is to be local on the global market. Sales staff, subsidiaries and distribution network play a decisive role in helping us to achieve this. Worldwide technical service is offered close to you.

Find inspiration on www.fibertex.com

Visit our website for more information. Under the business area "Geosynthetics" you will find detailed information about our products, data sheets and brochures for download as well as contact information.

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