

DRAINAGE SOLUTIONS  
**EMEA**

# GEOSYNTHETIC DRAINAGE SOLUTIONS

Geosynthetic drainage products have been used successfully in environmental and civil engineering applications for several decades. Applications once dominated by natural drainage materials have been replaced with geosynthetic drainage products such as geonets and geocomposites.

Geonets and geocomposites are used in environmental applications such as leak detection, leachate collection and removal systems under high loads, collection and discharge of rain water and landfill gas in landfill capping systems, as well as in a broad range of applications in the civil engineering and building construction sectors.





## PRINCIPAL FEATURES OF OUR DRAINAGE PRODUCTS

- Economical replacement of natural drainage materials
- Reliable and consistent performance
- Outstanding durability and robustness
- Excellent chemical and microbiological resistance
- Easy installation
- Manufactured with highest quality raw materials
- Proven history of success

# DRAINAGE PRODUCT RANGE

## BasisProtect



Geomembranes must be protected against damage by coarse objects. BasisProtect is a three-dimensional, multicomponent, load resistant high-quality geocomposite for use as a geosynthetic protection layer in landfill base seals and other applications where a high protection efficiency is required.

The geonet, an extruded regular X-shaped high density polyethylene (HDPE) structure as the core, is mechanically bonded on one or both sides with a nonwoven geotextile. The product is available with different geotextile weights and thicknesses of the geonet core.

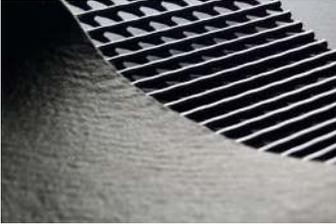
## HyperNet



HyperNet is a synthetic drainage material manufactured from a premium grade high density polyethylene (HDPE) resin. The open structure of HyperNet biplanar geonet is designed to transmit liquid and/or gases effectively under a variety of field conditions. The geonet is formulated to be durable, chemically stable and resistant to ultraviolet light.

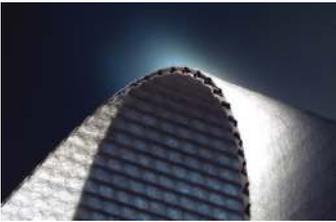


## FabriNet®

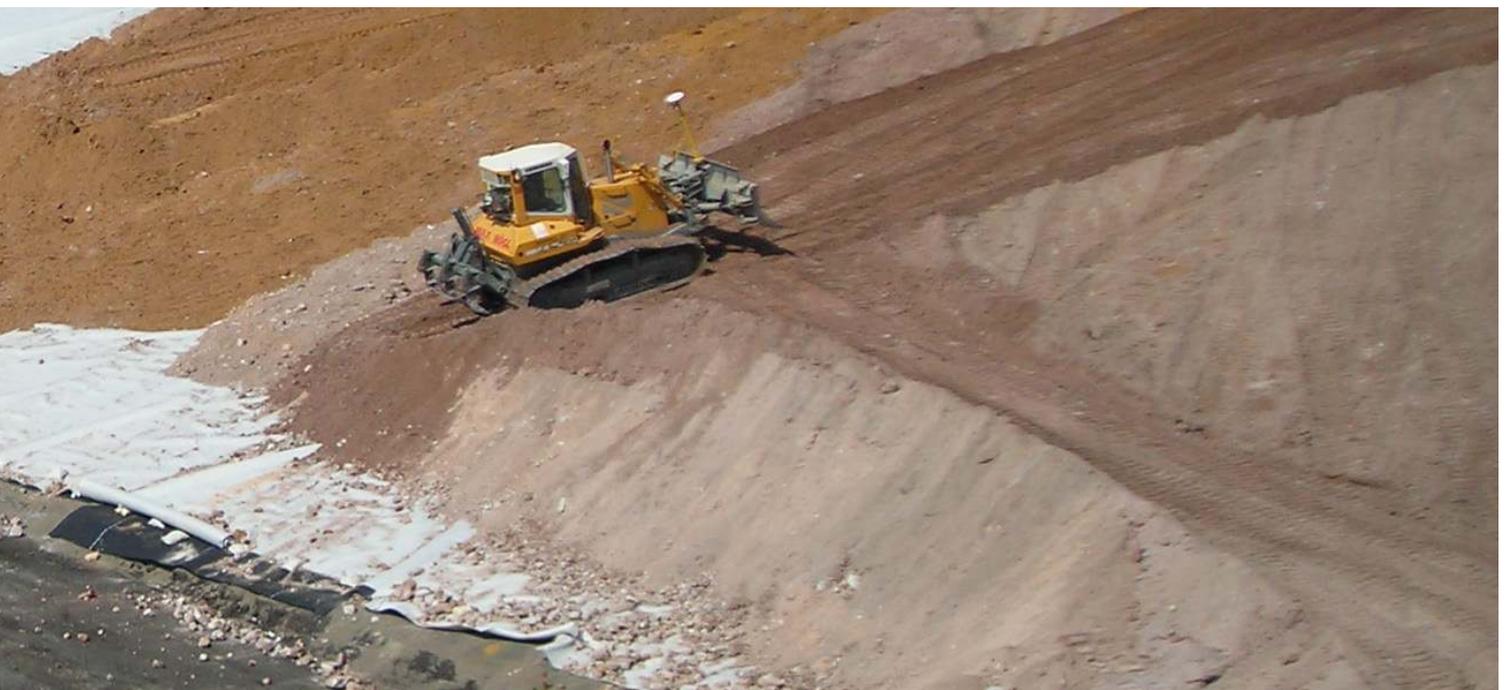


The three-dimensional FabriNet® drainage geocomposite consists of a HyperNet geonet core that is heat laminated on one or both sides with a nonwoven geotextile. The geonet core is designed to transmit fluid and gases. The primary function of the geotextile is to provide drainage filtration to keep soil particles from clogging the flow and to improve the interface shear strength to adjacent layers. The geocomposite is designed and formulated to perform drainage function under a range of anticipated site loads, gradients and boundary conditions. The range of products includes types which are suitable for low to high overburden stress.

## FabriNet® BAM



The FabriNet® BAM drainage composite is a certified three-dimensional drainage geocomposite. This drainage geocomposite is tested specifically for its long-term performance in landfill capping applications. The geonet core is produced from a highly stress crack resistant polyethylene type. The geonet core is heat laminated to specifically designed geotextiles. Thus, the product offers a drainage function throughout the service life of a landfill cap. It is applicable for further applications that require outstanding long-term performance.



# FabriNet®

## GEOCOMPOSITES

FabriNet is a two- or three-layer, three-dimensional drainage geocomposite - providing long-lasting drainage, filtration and protection functions - even at high normal loads. The drainage core, an x-shaped geonet, is produced from premium grade high density polyethylene (HDPE).

This geonet has excellent chemical and microbiological resistance and provides outstanding durability. The core is covered on one or both sides with high quality polypropylene (PP) geotextiles. The layers are heat-bonded by thermal lamination leading to high internal shear strength of the geocomposite.

Due to its very high resistance to creep it can be used under permanent compressive shear stress, thus ensuring long-term drainage capacity.



### BENEFITS



- Efficient flow path for liquids and gases - in-plane flow is equivalent or superior to conventional gravel drains
- In addition to drainage FabriNet® provides filtration and protection against puncturing of adjacent geomembranes
- The HDPE core and PP geotextiles provide excellent durability properties
- Resistance to all naturally occurring chemical and biological conditions
- Robust construction ensures long-term compressive strength and creep resistance - thus providing long-lasting drainage function even under high normal loads and on steep slopes
- Geonets and geotextiles are UV-stabilised
- Increased usable landfill volume through replacement of thick gravel drainage layers
- High internal shear strength and external frictional characteristics - allowing design of projects with steeper slopes
- Environmentally friendly - replacement of conventional drainage materials saves natural resources and transport emissions
- Simple and fast site handling and installation due to optimised roll width and length and edge detail for easy lapping, saving installation costs



# HyperNet GEONETS

HyperNet biplanar HDPE geonets have been developed to provide drainage function over a broad range of anticipated site loads and gradients, to replace thick mineral drainage layers.

The x-shaped structure is ideal for the multidirectional in-plane conveyance of liquids and gases. Fluids are transmitted uniformly under a variety of field conditions.

The strand profile and the junction strength of the geonet structure are optimised to maintain maximum flow under compressive loads over the service life of the works. Designers can be confident that reduction in drainage performance over time is minimized.

This ensures that the works remain stable and operate efficiently thus minimizing operational and maintenance costs.

## BENEFITS



- Geonet from prime quality HDPE raw material providing outstanding durability and robustness
- Proven long-term resistance to UV radiation and oxidation
- Product performance can be modified to meet project-specific conditions
- High in-plane flow capacity over a broad range of normal loads
- Stable biplanar geonet structure providing high compressive creep performance under overburden loads
- Quality assured consistent performance characteristics enabling confident design
- Enables confident leak detection in double lining systems in landfill, mining and industrial applications
- Outstanding performance against aggressive chemicals and microbiological resistance

# DRAINAGE APPLICATIONS

## LANDFILLS

- Leachate collection and removal
- Leak detection
- Surface water collection & removal above geomembrane layer
- Gas collection below geomembrane layer

FabriNet® typically provides three functions in landfill applications - drainage, filtration and protection - if installed directly on top of the geomembrane.

FabriNet® is resistant to most aggressive liquids and gases. Due to its high shear strength our FabriNet® can be used on steep side slopes and in capping systems.

## MINING

- Collection of pregnant leachate solutions
- Leak detection

Today's mining practices require optimal performance from any component of the containment lining system. HyperNet installed between two geomembranes of a double-lining system provides a long-term stable and efficient leak detection layer for solution ponds.

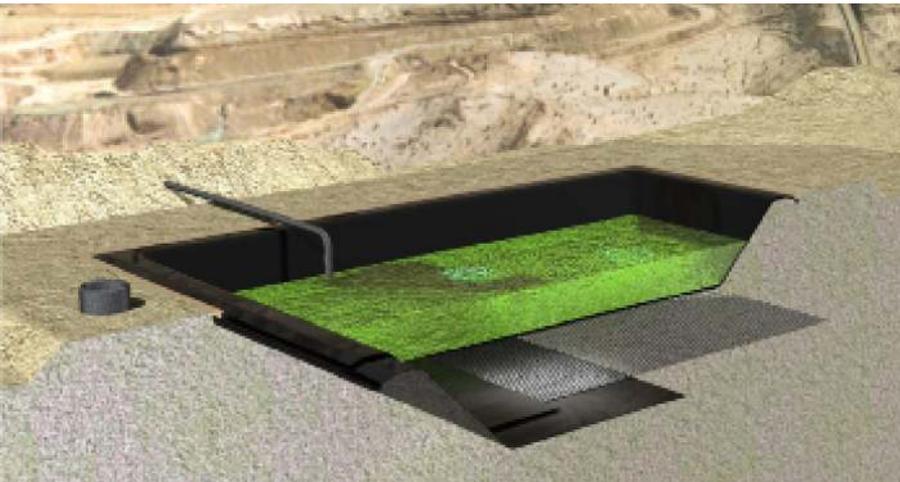
## WATER CONTAINMENT SYSTEMS AND RESERVOIRS

- Ground water drainage
- Biogas drainage/subsurface gas drainage
- Leachate drainage

FabriNet® installed below the geomembrane directs subsurface gas towards drainage pipes in the perimeter, thus avoiding a gas buildup and the floating of the geomembrane. In case of high groundwater levels, FabriNet® can help to reduce the hydrostatic pressure below the geomembrane. In addition, FabriNet® protects geomembrane against puncturing caused by angular subsoil.



**LANDFILLS**



**MINING**



**WATER CONTAINMENT SYSTEMS AND RESERVOIRS**

# DRAINAGE APPLICATIONS

## TUNNELS

- Drainage of rain water and ground water in cut & cover and rock tunnels

Robust and efficient drainage systems are necessary to overcome water seepage problems in tunnel applications.

FabriNet® intercepts groundwater seepage between the rock face and the inner concrete shell. In cut and cover tunnels FabriNet® provides external drainage, relieving hydraulic pressure acting upon the tunnel structure.

## ROADS AND RAILWAYS

- Drainage of embankments
- Vertical road edge drains
- Drainage of foundations
- Drainage of railway track beds

One of the principal reasons for premature failure of road or railway foundations is the damage of the bedding caused by water. FabriNet® installed within the foundation is used for fast collection and conveyance of the water to the edge drain trenches. In this way FabriNet® helps to achieve a longer service life of the construction.

Its excellent compressive strength makes it the ideal product for these applications.

## CIVIL WORKS AND BUILDING CONSTRUCTION

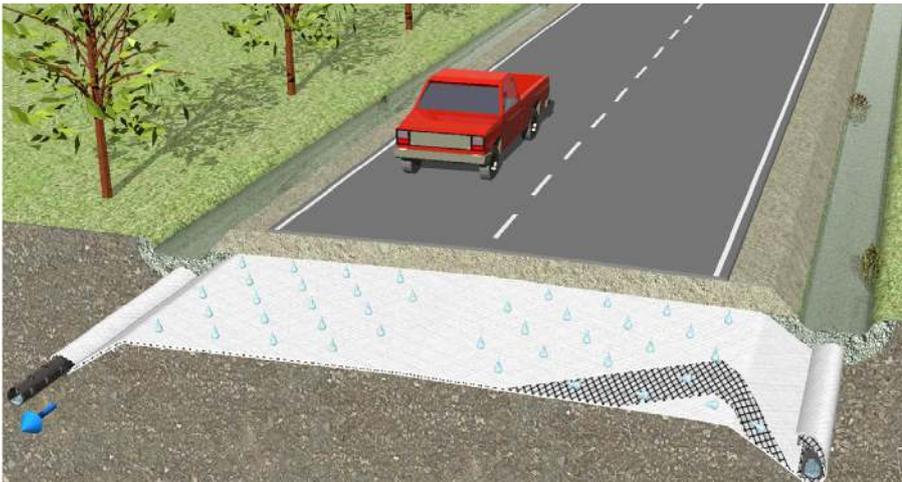
- Foundations / basements
- Parking decks
- Basement walls
- Retaining walls
- Flat roofs
- Sport fields
- Runways

FabriNet® installed vertically on walls or horizontally under foundations provides an excellent system for the continuous and uniform collection of underground water and rain water and eliminates the hydrostatic pressure thereby increasing the service life of the building.

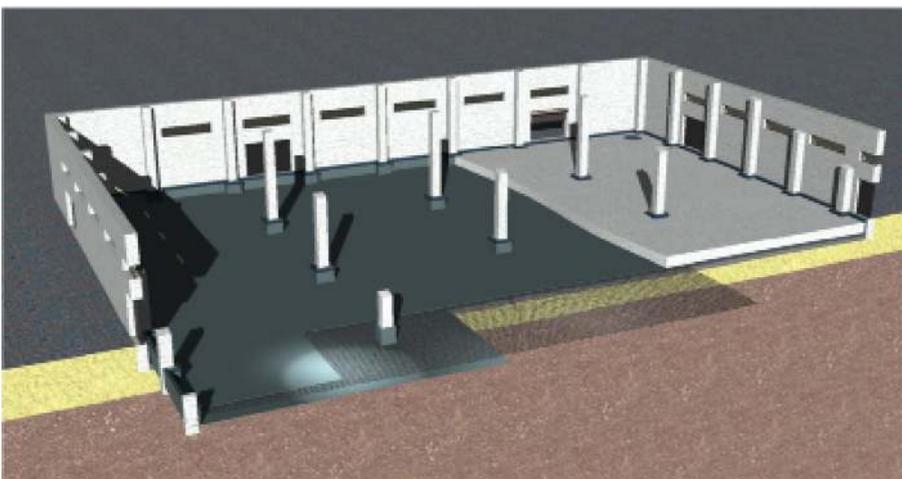
HyperNet is also used for leak detection and gas venting around and beneath basements and underground structures.



**TUNNELS**



**ROADS AND RAILWAYS**



**CIVIL WORKS AND BUILDING CONSTRUCTION**

# OUR LOCATIONS



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Solmax is the world's largest geosynthetics manufacturer with plants in North America, Europe, Asia, and the Middle East. Used in critical applications in more than 60 countries by the biggest names in mining, petroleum, waste management, water, and civil engineering, our products contain and drain - creating a layer of protection between our most precious resource, the earth, and the waste and contaminants that result from human activity, industry, mining, and the use of fossil fuels. Our mission is to enable progress with minimal damage to the environment.

**AIM FOR THE SKY.**  
**WE'VE GOT THE GROUND COVERED.**

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