

Flownet® & Trinet®

Geocomposite Drainage Systems

General Brochure



Photo courtesy of Fabtech



QUALITY - SUPPORT - EXPERTISE

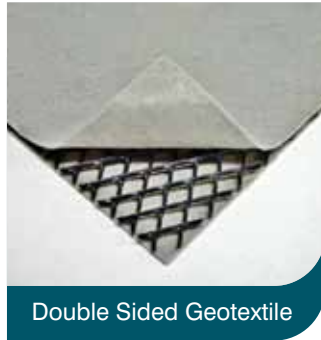
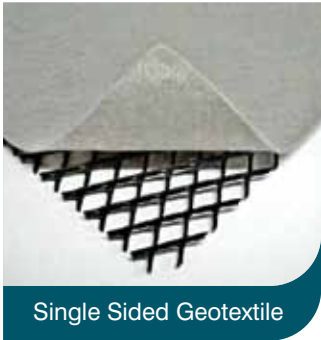


Geocomposite drainage nets are an economical and effective drainage system for use in very steep slopes or behind vertical structures. They offer engineers a proven alternative to traditional thick gravel drainage layers.

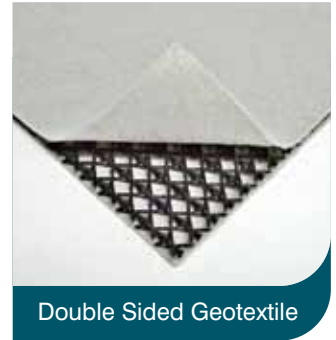
Geocomposite drainage nets have a high drainage capacity, are highly durable and can withstand high loads. They offer a number of installation benefits when compared to traditional aggregate drainage layers.

Geocomposite drainage nets are available in roll form, with a minimum width of 3.7m and a minimum length of 50m. A range of geocomposite drainage nets are available:

FLOWNET® BIAIXIAL DRAINAGE NET

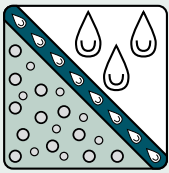


TRINET® TRIAXIAL DRAINAGE NET



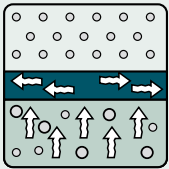
A geocomposite drainage net bonded to a nonwoven geotextile provides the optimum combination of high through-flow capacity for rapid drainage whilst simultaneously preventing fine soil particles from migrating into the drainage core. Note that the standard option is for a lighter grade of nonwoven geotextile to be attached to the geocomposite drainage net, however heavier grades of nonwoven geotextile can be attached for specialist applications.

FUNCTIONS



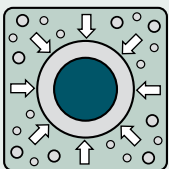
Liquid Collection and Drainage

The high flow rate of geocomposite drainage nets allow rapid drainage and reduces the hydraulic head on the liner systems.



Gas Collection and Discharge

The open structure of the geocomposite drainage nets encourages gas flow, allowing effective, controlled discharge of the gases.



Protection

The thick, tough matrix of the geocomposite drainage nets provide a light-weight and durable protective layer around the outside of landfill drainage systems or pipelines.



APPLICATIONS

LANDFILL CAPS

Flownet[®] biaxial geocomposite drainage nets are used to replace thick gravel drainage layers when capping landfills or waste containment structures. The light-weight drainage net can be easily and quickly installed and allows rapid drainage of liquids and gases associated with waste containment structures.



LANDFILL BASES

The **Trinet**[®] triaxial geocomposite drainage net is ideally suited to the bases and side slopes of deep waste structures where high vertical loads are experienced and the construction of thick gravel drainage layers is difficult and expensive.

The light-weight drainage net is rolled out easily, allowing a volume saving, high flow drainage layer with a large surface area to be created quickly and efficiently.



RETAINING WALLS

The **Flownet**[®] biaxial drainage net is used behind retaining walls to replace traditional vertical gravel drains. The drainage net dramatically reduces the hydrostatic pressure on the wall.

The option of incorporating the plastic geomembrane prevents water from reaching the retaining wall, which ultimately extends the life of the structure and prevents the appearance of a damp face on the retaining wall.



PIPE PROTECTION

The **Flownet**[®] biaxial drainage net provides a thick protective layer around the outside of the pipes, reducing the need for fine grained soil backfill as the protective layer (which can be expensive and difficult to source). The geonet core limits impact damage or puncturing forces from the coarse aggregate backfill.



TUNNEL DRAINAGE

The **Flownet**[®] and **Trinet**[®] composite drainage systems are used during the construction of underground concrete lined structures (tunnels) to intercept and divert water from ingressing into the concrete structure.

The main function of this drainage system is to reduce the hydrostatic pressure and the weight of conventional aggregate materials that place high pressures on the structure.

The **Flownet**[®] and **Trinet**[®] drainage system has excellent compression performance, high drainage capacity and economic, fast and easy installation, making it the most suitable technical and economical solution for tunnel drainage applications.



ADVANTAGES OF GEOCOMPOSITE DRAINAGE NETS

<p>Reduced Risk</p>	<p>Compared to traditional aggregate drainage layers, geocomposite drainage systems reduce the risk on a landfill or waste containment project through several means, including:</p> <ul style="list-style-type: none"> • Reduced safety risks as the drainage nets are light weight and simple to install, as well as minimising the damage to adjacent structures or materials (such as plastic liners). • Complex designs can be simulated in the Geosynthetic Centre of Excellence to prove the design prior to release for construction. • Compatibility testing at the Geosynthetic Centre of Excellence ensuring the site specific liquor or waste drains quickly within the drainage system. • Strict Manufacturing Quality Assurance provides a higher level of consistency in the drainage layer.
<p>Enhanced Performance and Reliability</p>	<p>Geocomposite drainage nets have a number of performance benefits over aggregate drainage layers, including:</p> <ul style="list-style-type: none"> • Proven durability in a wide range of chemical environments. • Higher drainage capacities are achieved through design of the drainage system. Preliminary or complex designs can be proven prior to final design through testing of the drainage system in the Geosynthetic Centre of Excellence to ensure an economic and efficient design. • The high interface shear strength with the adjacent materials (such as plastic liners or soil) resists the applied sliding forces. • Being manufactured in a controlled environment permits a consistent drainage system being installed throughout your project. <p>Geocomposite drainage systems have a proven track record in many landfill and mining projects around Australia.</p>
<p>Cost Benefits</p>	<p>Geocomposite drainage nets offer engineers a number of economic benefits over traditional aggregate drainage layers, including:</p> <ul style="list-style-type: none"> • Simpler installation processes, reducing the time required to construct the drainage system. • Savings on freight and materials, as well as increasing the air space inside the waste containment structure.

Design and Installation

The use of **Flownet®** and **Trinet®** geocomposite drainage nets is well accepted, however the replacement of aggregate drainage systems with drainage nets should be carried out in accordance with well defined design parameters. Geofabrics offers technical support and information for detailed evaluation and design of geocomposite drainage nets, including the testing of the drainage net with your site specific materials at our Geosynthetic Centre of Excellence.

For information or a tour of the Geosynthetic Centre of Excellence, please contact the Technical Department at the Geosynthetic Centre of Excellence on (07) 5594 8600 or email technicalsupport@geofabrics.com.au

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Main photo is a project constructed by Fabtech (www.fabtech.com.au) which included extensive design compatibility testing of the materials. This testing was undertaken by Geofabrics at the Geosynthetic Centre of Excellence.

FLOWNET®



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