



Civil Applications

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Geosynthetics and Civil Applications

The use of geosynthetic materials within civil construction is still relatively young, but is growing year upon year.

In the late 1960's, DuPont and ICI Chemicals were in a race against each other to launch the first ever nonwoven geotextile. The birth of nonwoven geotextiles not only changed the construction process, but also embraced the conventional methods of construction and provided completely new options to the industry. Above all, the creation of nonwoven geotextiles proved to be a valuable product increasing sustainability and profitability as opposed to alternatives.

DuPont and ICI's creation set the benchmark resulting in a wave of innovation within the industry, which is still happening today. It is now hard to find a construction site of any kind without some geosynthetics being used on the site.

Polyfabrics is an industry leader in innovation, finding new concepts and working with their partners to enhance, modify or adapt to the aggressive climatic conditions of Australia. As a result, they have become one of the leading suppliers of geosynthetic materials across a range of product categories.



Separation to maintain the integrity of adjacent soil types



Drainage to allow the free passage of water



Filtration to prevent leaching of soil particles



Reinforcement to provide additional strength



Barrier for the containment of liquids



Protection of the structure and barrier



Erosion Control to prevent soil movements from water flow



Tapex are a specialist manufacturer, distributor and supplier to the excavation safety, infrastructure, construction and mining sectors.

Tapex has manufacturing plants located in Sydney and Ho Chi Minh City in Vietnam, along with distribution centres throughout Australia and New Zealand.

Tapex's key partner "Dial Before You Dig", a referral service for information on locating underground utilities in Australia, has been integral to the safety on construction sites for over 10 years.

A recent partnership formed under the Polyfabrics brand, Tapex Joint Venture has now opened up a wide range of options enhancing the overall customer experience. As a Polyfabrics Australasia client, you will now have access to the complete range of Tapex products, from site set up equipment to site safety equipment and warning equipment.

For further information please see;
www.tapex.com.au

Major Product Families

Polyfabrics offers a range of geosynthetic materials that can be categorised into different family groups that all provide varying functions and benefits, while also being used within different applications.

The simplest way to understand the family of products is to understand the geosynthetic functions that fall within them. Below are the listed families starting from filtration through to erosion control.

Having a base understanding of what functions each product family can provide, allows project engineers to select products that are suitable and most effective for their application. Beyond just suitability, it is important to consider the benefits and value engineering the optimal solution can create on a project.

GEOTEXTILES

Geotextiles are created through the process of needling, weaving or heat bonding polymer materials. There are a range of geotextiles from nonwovens through to high strength wovens, and each provides the same basic functions but have different features.

All geotextiles provide filtration and separation; however, the nonwovens will also provide protection to another geosynthetic or a surface, while the wovens will provide reinforcement to the subgrade.

In deciding on the material, it is important to consider your polymer. Polypropylene is a stronger material and also more chemically resistant against hazardous materials, while polyester has a high resistance to temperatures.

DRAINAGE SOLUTIONS

Drainage solutions are a range of products capable of transporting liquid or gas from one location to another. When selecting from this range, there are many important factors to consider. The most critical factor is the environment and if the polymer will contaminate the liquid while it is being transported.

Another factor to consider is the compressive strength of the material as the majority of drainage applications are underground and will be subjected to compressive loadings. The geotextile used within drainage solutions are critical to this function.

LINING SYSTEMS

Lining systems are your barrier within the geosynthetic families. The lining family will contain any liquid that is placed there, and hold it in place until it is either removed or evaporated. With all lining applications, the installation is the critical path, and it will only work if professionally installed and welded together.

Equally, lining systems can be brittle and get damaged, therefore most often, a protection geotextile is required to ensure the safety and sustainability of your lining system.

GEOGRIDS

Geogrids are perhaps one of the most comprehensive geosynthetics produced. If manufactured correctly, these plastic structures will enhance the CBR of your soils, and enable reinforcement within the structure.

They are used to interlock the soils or stone in place, while providing load distribution, normally at a 45° angle. Additionally, some soils are so fine, a geotextile will be introduced to serve as the reinforcing function and provide filtration and separation within the structure.

LANDSCAPING

Landscaping covers a wide range of functions, from re-vegetating the land that has been used for another purpose in the past to shaping the existing landscape to a desired effect. Landscaping materials can also be used for erosion control to stop land movements, and enable stabilisation within an environment.

A key function of the landscaping product line is sediment control. This is to prevent the slipping or movement of sediment waste on a construction site from escaping the construction site through to preventing contamination of ground waters.

WIRE PRODUCTS

Wire has been used for a long time within the construction industry, but in recent years, has evolved as a crucial component of nearly all of the seven geosynthetic functions.

Wire products can be used for retaining walls while also keeping back the cut-face behind it. The wire family has traditionally been used to provide erosion control within a river or canal bed and has recently moved into landscaping and street furniture applications.

Learn more about how the Polyfabrics Australasia's range of geosynthetic materials can provide a cost effective and reliable solution to your civil applications. Contact us today.



GEOTEXTILES

TerraTex® PP Nonwoven

TerraTex® PP Nonwoven geotextile is manufactured according to ISO 9001 Quality Standards. The product is wrapped in a highly UV stable outer wrap and may be left outside, onsite or for later use (provided the wrapper is not removed prior to deployment and use). It is recommended installation occur within one month of delivery.

The product prevents the intermixture of granular materials and the soil, which is often a problem for the construction of a stable granular layer on soft foundation soils.

FEATURES

- The TerraTex® geotextile range is a 100% polypropylene staple filament geotextile.
- Highly needed for the use of a wide range of geotechnical applications including separation, filtration and reinforcement procedures.



TerraStop® PP Woven

TerraStop® PP Woven Geotextiles are perfect for use in separation, reinforcement and stabilisation in the construction of pavements. The separation action prevents the mixing of dissimilar soils allowing each soil layer in the pavement structure to function as intended.

The high tensile strength and low elongation properties of TerraStop® PP provides reinforcement and stability into the pavement section, reducing rutting and extending pavement life.

FEATURES

- TerraStop® PP provides outstanding separation that ensures superb filtration and drainage due to their woven structures.
- Stability and superior damage resistance.
- Cross-roll direction strength when panels are sewn together for suited application purposes.





TerraStop® Nonwoven

TerraStop® F Range is a nonwoven needle punched geotextile made from polyester and is used in different types of applications. It provides filtration, separation, protection or reinforcement functions in engineering projects, enhancing the performance and design life of granular layers.

It often provides the most cost effective solution to engineering problems including: cracked roads, weak soil, as well as liquid and gas leaks from landfill sites.

BENEFITS

- Designed for a high level of technical support for designers, engineers and contractors which ensures a smooth run for the project.



Ultimatex® HS Woven

Ultimatex® HS Woven are high strength polyester fabrics ranging in strength from 100-2000kN/m suitable for solving complex engineering problems. The geotextiles are manufactured from high tenacity polyester (PET) yarns, knitted to form a structured matting. It is designed for civil engineering applications such as: reinforcement of granular soils, embankment reinforcement, retaining structures or subgrade improvement.

FEATURES

- Product strength and stiffness are affected both by temperature and by rate or duration of loading.
- Quality control tensile testing is carried out using the method given in international standard BS EN ISO 10319:1996.





GEOTEXTILES

TERRAM & TerraStop® Handy Rolls

TERRAM Handy Rolls & Minipaks are produced from Bi-component technology using PP/PE blended polymers making them very robust geotextiles. They provide an effective solution to the problem of constructing a stable granular layer over soft foundation soils.

When stone is placed directly on a soft subgrade, the imposed load often causes intermixing of two layers, resulting in contamination of the stone layer. Handy Rolls and Minipaks provide assistance in avoiding a decrease in bearing strength and surface rutting, while also providing support at the sub-base/subgrade interface.

BENEFITS

- Suitable for wide range of applications, ranging from regular DIY to pipe and trench lining.
- Aids drainage and is ideal for play areas.



TerraStop® Paving Fabrics

TerraStop® Paving Fabrics are designed for the maintenance and repair of road surfaces such as spray sealing and asphalt resurfacing. They have been designed to deliver superior results in harsh Australian conditions and are made from polyester spun fibers, mechanically bonded by needle punching. This product is ideally used for road crack prevention, low volume roads or crack prevention in asphalt pavement overlays.

BENEFITS

- Flexibility to conform to the surface.
- Have isotropic properties to resist forces in all directions.
- Offer positive absorption properties to form a bituminous waterproof barrier when saturated.



TerraStop® Hi Visibility Nonwoven

TerraStop® HVL is designed to separate contaminated and non-contaminated soils with its inherent robust mechanical properties and its high visibility factor. These geotextiles provide the same performance and functions as our TerraStop® F Range with an additional added benefit; they become a warning and marker layer for years to come, enabling the user to leave contaminated soils in place.

If TerraStop® HVL is placed on top before filling an area with clean fill, it will separate the mediums ensuring they do not intermix, while providing confidence that if future excavations are done, they are warned about the hazardous material below.

Whatever the application – a geotextile correctly specified according to its hydraulic properties will generate a filter zone preventing small particles from passing through and resulting in issues such as siltation and mixing of contaminated fill.



BENEFITS

- High visibility, quick and easy installation.
- Prevents intermixing of adjacent soil layer.
- Allows the free flow of water





GEOGRIDS

StrataGrid®

StrataGrid® is a geogrid reinforcement for soil. It is a high performance soil reinforcement product that is made with polyester yarns that have a high molecular weight and extraordinary tensile strength. The geometric grid shape offers tensile reinforcement to the soil in both the vertical and horizontal directions.

StrataGrid® is coated with a black saturation coating to provide further chemical and mechanical benefits that preserve its durability in any environment.

IDEAL USAGE

- Segmental retaining walls and landslide repairs.
- Reinforcing steep slopes and foundations.
- Reinforced embankments over soft soil.



E'GRID®

E'GRID® is a rigid biaxial geogrid commonly used for subgrade reinforcement, rock stabilisation and erosion control. It's available in a range of strengths, while maintaining isotropic tensile values.

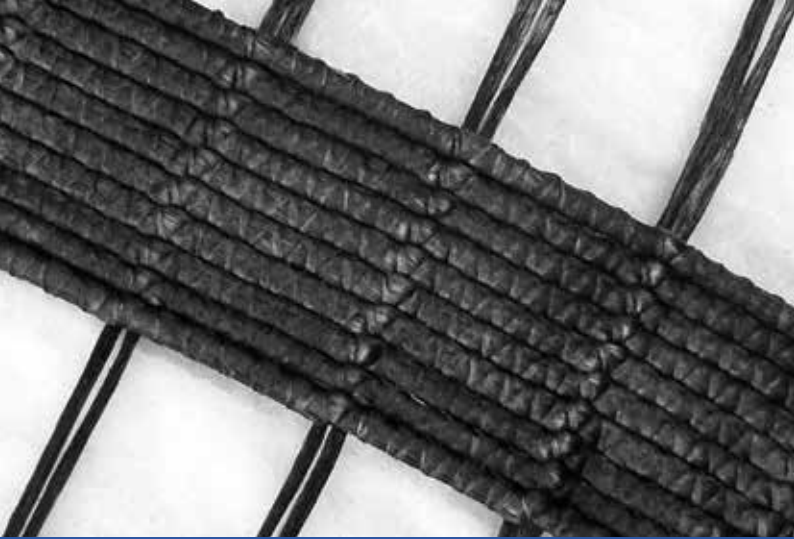
These geogrids are used to interlock aggregates to provide reinforcement to the sub-grade of materials.

BENEFITS

E'GRID® geogrids are manufactured from polypropylene in a unique process to produce an integral extruded structure possessing exceptional junction strengths.

- Distribution of loads and reduction in stress concentration over the soil.
- The geogrids structural junctions, rigid ribs and thick walls help lock aggregate, increasing its shear resistance.
- As a result, when a vertical load is applied, the aggregate is restrained by the ribs reducing deformation.





E'GRID® GT

E'GRID® GT is a geocomposite comprising of a biaxial geogrid laminated to a nonwoven geotextile. The biaxial geogrid provides reinforcement to the aggregate and sub-base ensuring a stable platform is created.

The functionality of this product allows the aggregate to push down into the open grid structure, becoming locked in place and preventing aggregate movement. E'GRID® GT prevents the aggregate from breaking down over time, ensuring the subgrade remains intact and supported as required.

These composites are used in applications where separation, filtration and reinforcement are required.

ADDITIONAL USAGE

- Reinforcement of granular soils
- Embankment reinforcement
- Retaining structures



TerraGrid® HSG

TerraGrid® HSG is a high strength coated geogrid which is manufactured from high tenacity polyester (PET) yarns, and knitted to form a structured grid. It is used to reinforce soils where extremely high tensile strength with low elongation is required. It can withstand extreme loadings and can even enable vertical walls to be constructed.

TerraGrid® 6060C

TerraGrid® 6060C asphalt reinforcement geogrid provides the best solution to prevent reflective cracking in asphalt overlays. It combines a high modulus polyester geogrid with a lightweight nonwoven. It is coated with bitumen to strengthen the bond with the asphalt layers. This increases the tensile strength, thereby reducing tensile stress peaks.



LINING SYSTEMS

Bentoliner® GCL

Bentoliner® is a reinforced Geosynthetic Clay Liner (GCL) composite, consisting of a layer of sodium bentonite granules encapsulated by layers of durable geotextiles and shear reinforced by needle punching together all components.

Bentoliner® GCL is typically anchored in a trench around the perimeter of the containment basin to provide the required pullout resistance. It should be placed in the trench extending down the inside wall face and along the entire trench floor, secured by the controlled placement and compaction of backfill into the trench prior to placing cover soil on the slopes.

The Bentoliner® GCL is ideal for containment applications and provides a cost effective engineered solution to clients and consultants. It is well proven to save money against Natural Clay Liner options.

BENEFITS

- Have been used all over the world for more than 20 years.
- When the sodium bentonite is hydrated under confinement, it swells to form a low permeability layer.
- Ideal usage for Landfill (floor, wall and cap liner).





LDPE Film

LDPE Film provides an ideal solution for containment of liquids and a barrier to leakage, eliminating reservoir and dam water loss. It works perfectly for ornamental ponds, dams, channel liners, sheeting covers and damp proofing.

It is supplied in rolls 8m to 12m wide, this low density polyethylene acts as a resistant membrane, for both domestic and heavy engineering use. These liners are made from the best-graded materials that can be customised to suit your specific needs and requirements.

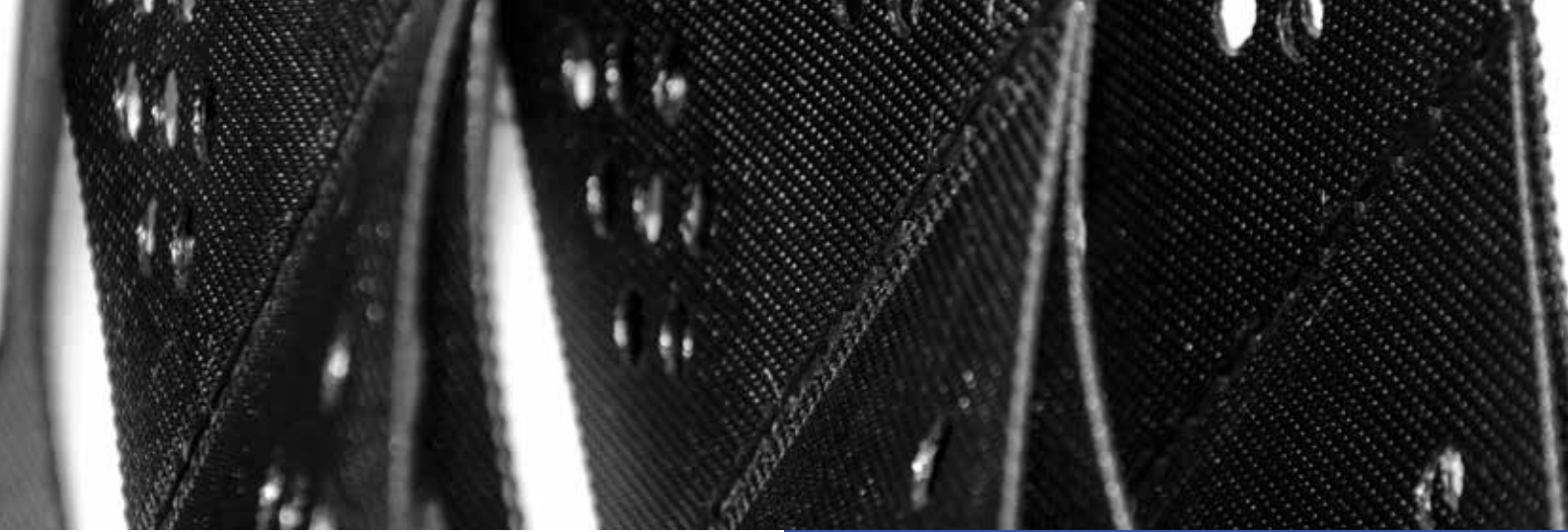
It is not only a high quality low density Polyethylene Liner but it is also easy to install, makes the product appropriate across a large range of applications. The ground must be smooth and free of debris prior to installation, however, when this is not possible a cushion of geotextile can be placed down prior to the installation.



IDEAL USAGE

- Frac-water ponds
- Coal seam gas water storage
- Rainwater harvesting
- Aquaculture and aquaponics storage
- Ground water protection
- And many more





GEOCELLS

StrataWeb®

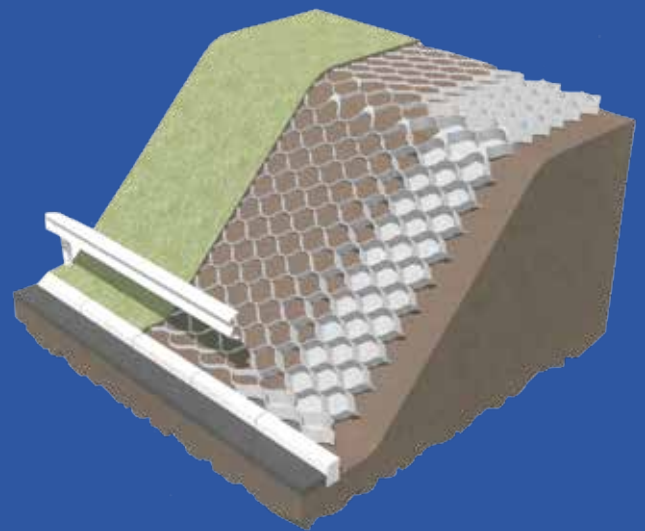
StrataWeb® Geocell is a 3-dimensional expandable cellular confinement system of various depths made from HDPE. It is used to confine various infills and provide stability on slopes and channels, and offers unique solutions for various civil engineering challenges.

It is perfect for construction and saving money, as it can be filled with locally sourced material, which is especially helpful in remote locations where aggregates require importation.

StrataWeb® Geocell can be used for erosion control; enabling vegetation to regenerate in difficult areas, preventing wash out zones. It is also perfect for unpaved roads, which means an access road can be built in most locations, during construction zones and be more economical than building a permanent road structure. This makes it ideal for reinforcing foundations or as a retaining wall.

IDEAL USES

- To reinforce structures.
- Building up the foundation.
- Self sustaining retaining wall.



Erosion control in practice





INSTALLATION GUIDE:

The procedure for the installation of Strataweb® Geocell on slopes is as follows:

- 1. Site preparation:** Shape and compact subgrade to the required profile.
- 2. Placement of the geocell panels:** Expand Geocell panels to the full open dimension, parallel to the slope direction. Each panel shall be first anchored at the top of the slope in a pre-determined trench. Along the slope the geocell shall be fixed with pins. The spacing between the pins, the diameter and length will depend on the slope angle, soil characteristics and loading. Pins placed in a staggered pattern.
- 3. Joining panels:** Panels joined by pins, one pin every 2-4 cells. Alternatively, cells can be stapled.
- 4. Infill:** Infill in the geocell is influenced by hydraulics, soil conditions, and aesthetics. The Strataweb® Geocell can accommodate a variety of infills and finishes such as soil, gravel, concrete etc. To prevent possible damage to the Geocell, limit the drop height of infills to less than one metre.

- 5. Finishing:** Soil infills can be pre-seeded or spray mulched. Pre-seeded areas can be protected with synthetic or natural fibre products such as TecMat® Jute or Coir.





DRAINAGE SOLUTIONS

FreDrain®

FreDrain® Strip Filter is a composite drain and collection system of a three dimensional, high-flow drainage core which is wrapped with a non-woven filtration geotextile. It is designed to replace conventional sand or gravel covered pipe drains by providing a far greater surface for water to pass, resulting in faster and more efficient drainage.

The most important characteristic of any sub-surface drainage system is its ability to collect water from the surrounding soil. Pipe and stone systems have major limitations when compared to FreDrain®. The open area in FreDrain® Strip Filters (60%) far exceeded that of a perforated pipe (1.1%) and rigid strip filters (2.5%).

BENEFITS

- Easy to install and handle, as it is lightweight.
- Reduces space requirements for drainage systems.
- Lower costs (installation and material cost is usually less than half of that for aggregate drains).
- Strong and durable - crush strength of core resist damage during installation.
- High flow capacity - structure of core provides multiple channels for vertical and horizontal water flow.





TerraDrain®

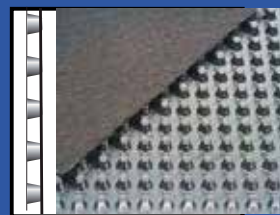
TerraDrain® is a dimpled plastic sheet that provides effective drainage and waterproof membrane protection on foundation walls and other underground structures. The integrated non-woven geotextile covering the dimples prevent soil particles blocking the drainage sheet, and creates an air gap for reliable ventilation. This allows inflow, due to its dimple structure, and effectively captures and transports high water volumes while resisting high loads from earth and formwork.

TerraDrain® TD10 & TD18 perform a multi-faceted role by providing protection for waterproofing systems and managing sub-surface water around building foundations. Soil backfill is retained by a filter fabric while allowing water to pass into the drainage core providing hydrostatic relief. Collected water is then conveyed to a proper collection system.

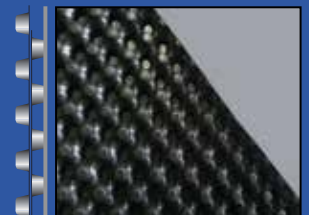


BENEFITS

- Can be installed either vertically or horizontally.
- Used in climates where short period of heavy rain occurs, as a substitute to TenDrain®.
- Full wall coverage helps protect the waterproofing and forms a barrier between the soil and foundation wall.



TerraDrain® TD10



TerraDrain® TD18



DRAINAGE SOLUTIONS

DrainCel®

Drain-Cel® provides a perfect solution for sub-soil drainage application for creating a successful Roof Garden, without any traditional problems associated with cracking or leakage. It provides a uniform surface as well as an internal void space for effective draining of excess water.

It is made from recycled Polypropylene and is inert to soil borne chemicals and bacteria. The unique design and void properties helps the summer heat to escape and thereby reduce the risk of cracking, enhancing building life.

BENEFITS

- Easy to install and environmentally friendly.
- Very high compressive load carrying capacity of up to 225 tonnes/m².
- Holds and creates a perch water table, providing ideal moist conditions for plant growth.



Drainage Tanks

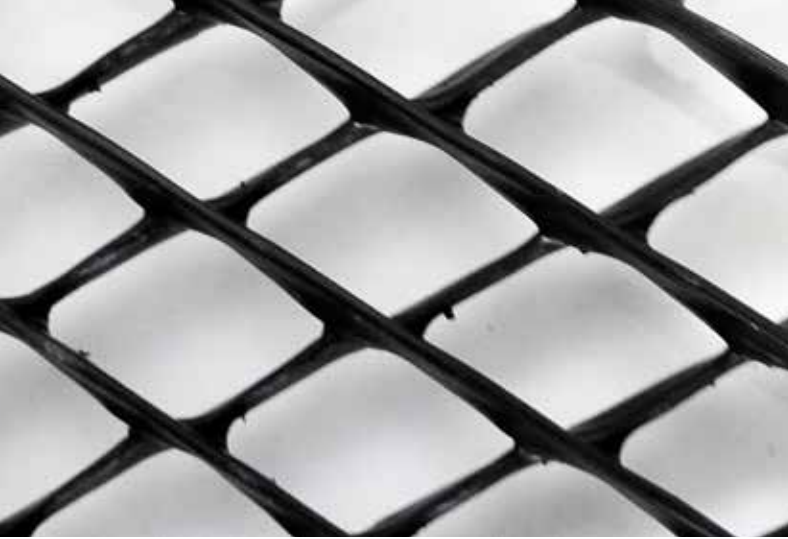
Drainage Tank Modules are the perfect sub-surface drainage system made from lightweight recycled polymers. It can be used in any subsurface stormwater applications that need infiltration, retention or detention.

It is an alternative to the traditional gravel and pipeline system offering flexibility in design and is a clog free drainage solution when used with Geotextiles filters.

BENEFITS

- Has a drainage void space ratio of over 95% compared to traditional systems of 35%.
- Made from recycled polymers, and is lightweight.
- Gives flexibility in design and construction.





TenDrain®

TenDrain® Bi-Planar and Tri-Planar Geonet are used in drainage systems in conjunction with a geotextile to replace traditional materials such as sand and gravel. The materials are composed of extruded HDPE high profile polymeric ribs crossing at an angle to create an integral net structure.

They can be used in conjunction with geotextiles to replace traditional materials such as sand and gravel to provide drainage. The TenDrain® Range is manufactured in accordance to ISO 9001:2008.

IDEAL USAGE

- Tunnels.
- Landfills leachate collection and leak detection.
- Roadway and pavement drainage.
- Underground concrete structures.
- Underground pipeline protection.

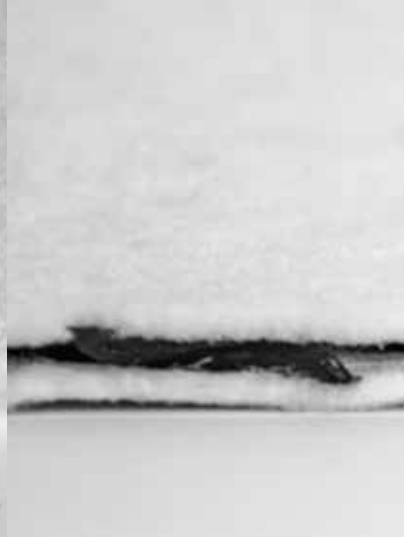
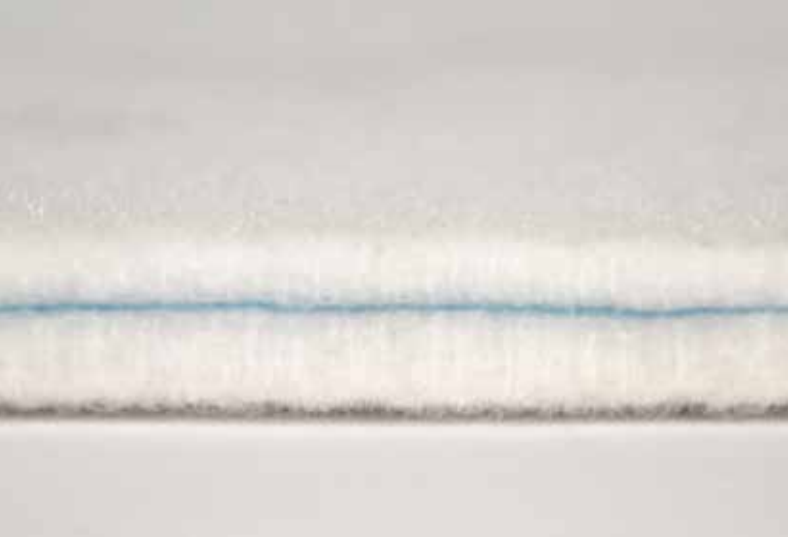


TenDrain® Bi-Planar

TenDrain® Bi-Planar is made from high performance HDPE resin to resist compression and carbon black to give a protection from UV degradation. The material is made from high density polyethylene which is unaffected by all chemicals, including acids, alkalis and salts normally found in soils. In addition, it is not a nutrient and therefore is not affected by micro-organisms in soil.

TenDrain® Tri-Planar

TenDrain® Tri-Planar Geonet can be used in conjunction with geotextiles to replace traditional materials such as sand and gravel to provide drainage, for example in landfill, subgrade or tunnel walls projects. The chemical and biological resistance has similar properties to the TerraDrain® Bi-Planar.



RAIL SOLUTIONS

TERRAM Hydrotex®

With its robust geotextile filter layers, Hydrotex® acts as a filter/separator for fine soils, but also removes the requirement for a sand blanket or filter medium. The strong but flexible product allows the composite to conform to the excavated formation and therefore keep the voids away.

Hydrotex® is a high-speed solution for track bed stability and also a permanent one, with the installation time being 4 times quicker than the standard practice. A fast installation period and reduction of materials ensures both the client and the contractor will save time and money.



TERRAM PW1

Suitable where subgrade soils are good, the PW1 has strength and particles of even size. The product prevents upward movement of fine subgrade particles and is designed to maintain separation between the adjacent sand/ballast layers within the trackbed.

TERRAM PW2

The PW2 is a robust separator/filter that integrates a stiff geonet between two textile filter layers and is manufactured to work alongside PW1. TERRAM PW2 will save you plenty of time and also extend the life of the track.





TERRAM PW4

TERRAM PW4 is a combination between the PW1 and the E'GRID geogrid, which improves track life and performance by stiffening ballast laid over weak ground. Made by large aperture biaxial orientated geogrids, the product is customised for railway applications and use under ballast.

PW4 provides the ideal dimensional characteristics for the effective interlocking of ballast within the geogrid apertures. This cost-effective product can be in use for more than 25 years in soils with a pH ranging from 2 and with a temperature of less than 250°C.

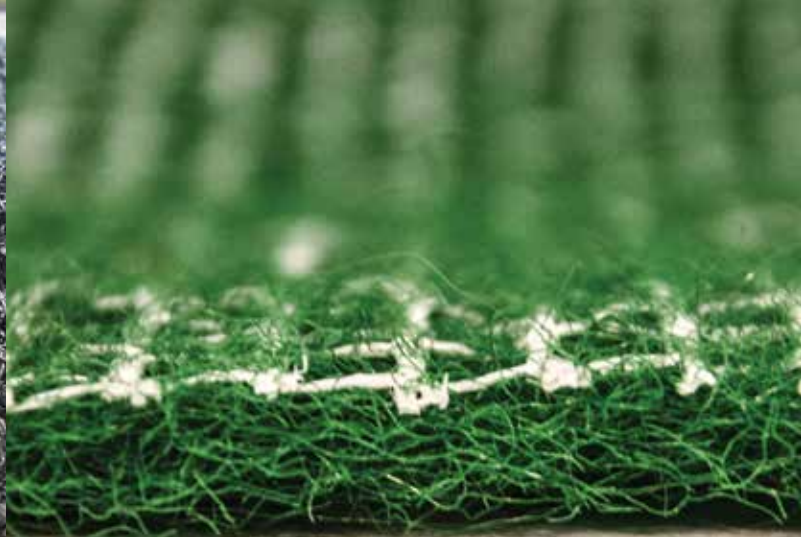


TERRAM PW9

TERRAM PW9 is a robust separator for trackbed, made for areas where the sub-grade soils are good but contain angular stones. A standard geotextile can be damaged by the angular stones and therefore it is essential to use a more robust geotextile, that is engineered to provide additional strength and resist damage.

Manufactured from high tenacity UV stabilised virgin polypropylene fibres, PW9 provides a longer lifetime in all different soils. It does not only reinforce and strengthen the soil, but also maintains the integrity of adjacent soil types and prevents the risk of intermixing.





EROSION CONTROL

TerraMat®

TerraMat® is a three-dimensional anti-erosion mat consisting of entangled polypropylene monofilament fibres that are heat bonded to provide a dimensionally stable matrix to control soil erosion.

A lightweight, three-dimensional erosion mat with a similar appearance on both sides, TerraMat® is designed to provide permanent erosion control of soil and reinforce the root system of grasses and vegetation for areas such as embankment slopes, river banks, channels, coastal and other erosion prone areas. It can be installed within the soil just below surface or can be placed at the surface and hydro-mulched to act as a protection layer.



TerraMat® Grass

TerraMat® Grass is a lightweight, three-dimensional erosion mat with a similar appearance on both sides. It is designed to provide permanent erosion control of soil and to reinforce the root system of grasses and vegetation for areas such as slopes, river banks, channels and other erosion prone areas.

It is made from uniformly distributed 100% polypropylene synthetic UV stabilised fibres needle punched together onto a reinforcing scrim. It can be installed within the soil just below the surface or can be placed at the surface and hydromulched.





TEC Mat® Coir

TEC Mat® Coir is a natural coconut fibre matting, manufactured to form an open natural structure. They are spun and woven to an open weave geotextile that is fully biodegradable adding organic matter to the soil. When vegetated, it has the mechanical strength necessary to hold soil in place and prevent erosion.

TEC Mat® Coir has double the life of TEC Mat Jute and higher tensile strength than organic geotextiles with longevity around 3-5 years. It allows ample time for natural vegetation to establish and stabilise the area. It's suited for preventing and controlling erosion, even on steep slopes.



EcoLogs®

EcoLogs® are coir logs made from 100% natural coconut fibre compacted into an outer mesh of bristle coir twine. Biological, ecological and engineering aspects of erosion control are incorporated into the design, producing a structure when vegetated controls shoreline and streambank erosion.

They are fully biodegradable within 5-10 years, and as plant root develops, they can become the stabilising element, with the coir logs finally decomposing into a natural medium that promotes growth.





EROSION CONTROL

TEC Mat® Jute

TEC Mat® Jute is 100% organic and used to protect soils in areas exposed to wind or high rainfall or prevent soil losses due to run off on newly constructed cuttings or embankments. As it moulds to the ground, it allows the product to reduce moisture loss from the soil that aids the growth of plants.

It can be found in several different grades, where heavier grades are used as weed suppressants. Lighter grades provide an ideal option for seed germination, as it protects the soil from erosion while still allowing the seeds to grow through the matting.

TEC Mat® Jute Mesh

TEC Mat® Jute Mesh is a biodegradable open weave erosion control mesh suitable for short term erosion protection to batters and open drains. It helps retain moisture and allows water and light infiltration to encourage vegetation growth.



TERRAM GrassProtecta®

TERRAM GrassProtecta® is a heavy duty, thick, slip resistant polyethylene grid. It is used to reinforce and protect grassed surfaces prone to wear, rutting and smearing which would otherwise result in a muddy surface incapable of withstanding vehicular or pedestrian applications.

The reinforcement mesh has been developed with an oscillated mesh structure which is designed to increase traction and improve slip resistance by up to 97% compared to standard straight oriented meshes. Available in standard heavy grades, GrassProtecta® is suitable for varying needs.





TERRAM TurfProtecta®

TERRAM TurfProtecta® is an extruded polyethylene mesh which is tough, flexible and long lasting. Supplied in two grades (standard and heavy) depending on the application. It can be effectively employed over stable ground by simply unrolling and fixing adjacent and successive lengths.

The sward grows through the mesh apertures and knits with the filaments to create a strong discretely reinforced surface which is capable of withstanding vehicle loads. The grass can be mown, rolled and fertilised as usual during this period and the mesh soon becomes unobtrusive.




TERRAM Bodpave 85

TERRAM Bodpave 85 resists lateral movement, improves traction and allows expansion and contraction whilst promoting optimum grass growth, root protection and surface stabilisation. The open cell structure provides high surface water infiltration and is suitable for source control.

It is perfect for reinforcing grassed surfaces that are prone to rutting and becoming muddy in wet weather. The paving grids act as a perfect gravel retention system, which allows a free-draining reinforced road or driveway, and a surface which keeps the angular stones within it.





Tubex Shelterguard

LANDSCAPING AND REVEGETATION

Tubex® Tree Guards

Tubex® have been at the forefront of shelter development since the first research into tree shelters came into fruition in the early 1980's. The products are known for quality, and are produced with a specific knowledge of each sector.

Tree Guards protect the plants from browsing animals and are specially designed to provide the right solution to the plant's needs with intent to improve the establishment of young plants.

Polyfabrics offers three specialised tubes:

SHELTERGUARD

Shelterguard is the most popular shelter and is designed to blend subtly into the natural environment. It gives the benefits of enhanced growth through the microclimate and allows the plant to acclimatise to the outside environment. Welded to 12mm square mesh is a very fine Polyethylene film which starts to degrade after roughly 3 growing seasons, to gradually expose the plant to the outside environment.



COMBIETUBE

Combietube is suitable for more exposed sites. It combines the benefits of a solid base for improved establishment and reliable protection. A ventilated upper section allows the tree to acclimatise before emerging from the shelter.

VINEWRAP

Vinewrap is developed to the effective establishment of vines and fruit trees, and allows access to the vine for maintenance. It is a twin-walled tube that has been split vertically, enabling it to wrap around a vine and expand as the plant grows.



Root Barrier

Root Barrier is designed for the protection of sub surfaces including paved areas, water features and the foundations of buildings and roads. They are made from UV stabilised black medium density polyethylene and are specially engineered to be an impermeable barrier that deflects roots away from the protected area.

Root Barrier is a cost-effective way to prevent root and moisture problems. It is also a solution to prevent what could be potentially very costly tree root damage to pavements and other infrastructure.



Plant Weed Mats

WeedStop® is made from both nonwoven geotextile and woven geotextile depending on the weeds you are trying to control. It is a well proven technology to help keep weeds suppressed in both domestic and commercial use, allowing plant life to thrive.





WIRE PRODUCTS

TerraStop® Gabions

TerraStop® Gabions are heavily galvanised, hexagonally woven, steel-wire mesh cages. They are Aluzinc-galvanised or additionally, a PVC coating is applied on top to ensure extra durability within the surrounding environment. The steel-wire cage creates a flexible, durable and permanent structure that resists erosive forces.

Welded Mesh Gabions

TerraStop® Welded Mesh Gabions are zinc-galvanised to provide a superior coating that is rigid, heavy duty and long lasting. It is most appropriate in severe corrosive conditions such as in marine environments.

TerraStop® Mattresses

TerraStop® Mattresses are supplied folded and compressed, and can be installed to cover larger scale areas with minimal slopes. This is achieved by utilising multiple panels, first connecting the corners and then edges to create a square finish.



TerraStop® Gabions Installation

- Gabions are supplied in panels such as wall, floor, lid and dividers or internal diaphragms. Internal diaphragms are also nominally attached to the base at 1m³.
- Connect the corners first and then the edges to achieve a square finish. Lace each aperture independently.
- All panels are joined using a pneumatic lacing tool available for hire, in conjunction with hog rings.
- Each unit is separately assembled, then hog ringed again to adjacent units to form a monolithic structure.
- All internal diaphragms must be laced completely to the base, sides and lid for stability.
- Complete the installation by tying the lid to the sides and internal diaphragms.



TerraStop® Mattresses Installation

- Mattresses are supplied folded and compressed. To begin installation, unfold the units. Internal diaphragm panels are also nominally attached to the base however lids are sometimes supplied separately.
- Connect the corners first and then the edges to achieve a square finish. Lace each aperture independently.
- Internal diaphragms must also be laced together to the external frame.
- Each unit is separately assembled, then laced again to adjacent units to form a monolithic structure.
- All internal diaphragms must be laced completely to the base, sides and lid for stability.
- Complete the installation by tying the lid to the sides and internal diaphragms.
- The structure is now complete.

Design Consideration

There are a range of critical aspects that must be adhered to throughout the installation to ensure the durability of the structure. The following are for the use of a qualified engineer familiar with traditional procedures for retaining wall design.

1. The design stage begins with the selection of trial dimensions for a typical vertical cross section through the wall.
2. Determine the forces acting on the wall.
3. Check that resisting moment exceeds the overturning moment by a suitable safety factor.
4. Ensure the sliding resistance exceeds the active horizontal force by a suitable safety factor.
5. Confirm that the resultant force falls within the middle third of the wall's base, and that the maximum bearing pressure is within the allowable limit.

These steps are repeated until a suitable design that meets all criteria is achieved. The wall stability must be checked at the base and at each course. When required, flat layers of welded wire mesh (Anchor Mesh) or geogrids are used as soil reinforcements to secure the gabion wall into the backfill.



ACCESSORIES

Hardwood Stakes for Advanced Trees

All hardwood wooden stakes are produced locally within each state of Australia. We have a range of size options available along with painted stakes upon request. Suitable for all plantations for both domestic and commercial use.



Hessian Sand Bags and Cloths

A great budget option for sediment control. While doing quick construction works on your site, they are light and durable, and easy to move around. Hessian Cloth also available.

Bamboo

All Bamboo Stakes are made from natural treated bamboo. They are a strong and durable option to Hardwood stakes, and suitable for all plant and tree plantations.

Shade Cloths

Shade Cloths are used for a number of applications. Originally designed for privacy and providing additional shade to areas of work or domestic use. They can also be used in dust control improving day to day conditions.





Timbered Edging

Timber is commonly used for the edging of gardens or paths. It provides a transition between the soft and hard elements.

Edge boards are typically fixed to driven timber pegs. Timber edging may be run in straight lengths or curved to suit the design.

Tree Ties and Clips

Hessian Tree Ties are natural made tree ties that, when finished, will breakdown into the natural environment they came from. Suitable for a 12-month period to hold and support your trees and plants to their given stakes.



Site Fence and Wind Fence

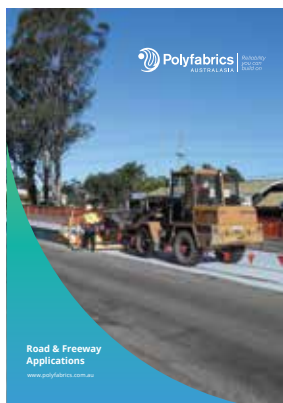
A construction fencing option used from temporary fencing works. It would work in partnership with star post and pegs systems, ensuring safety in the work place. Wind Fencing also available.

Additional Products

Polyfabrics offers additional accessories to support installation requirements.

- Landscaping Tools
- Treeguard Stakes
- Survey Pegs
- Star Pickets

Contact Polyfabrics for more information on accessories and installation requirements that can be customised to fit your needs and applications.



HEAD OFFICE

200 Kingsgrove Road,
Kingsgrove, NSW, 2208, Australia
T +61 (0)2 9577 1800
F +61 (0)2 9577 1899

SOUTHERN OFFICE

144 Northbourne Road,
Campbellfield, VIC, 3061, Australia
T +61 (0)3 9305 0300
F +61 (0)3 9305 9288

WESTERN OFFICE

74-76 Sheffield Road,
Welshpool, WA, 6106, Australia
T +61 (0)8 9367 2666

NORTHERN OFFICE

Unit 13, 63 Burnside Road,
Stapylton, QLD, 4207, Australia
T +61 (0)7 3451 0500
F +61 (0)7 3804 6511

SA OFFICE

126 Churchill Road North,
Dry Creek, SA, 5094, Australia
M +61 (0)432 161 180
F +61 (0)3 9305 9288

www.polyfabrics.com.au