



Global Synthetics



[globalsynthetics.com.au](http://globalsynthetics.com.au)



# Global Synthetics

Global Synthetics is a leading distributor and manufacturer of a wide range of geosynthetics to service the engineering, construction and building sectors throughout New Zealand, Australia, Papua New Guinea and the South Pacific Territory.

Global Synthetics is staffed by personnel with a long history in engineering design and specifically, the use of appropriate geosynthetic products to provide value engineered, technically viable solutions to construction projects.

Global Synthetics has a commitment to quality in everything we do. We partner with the world's leading manufacturers of geosynthetic products, that are technically advanced and are meticulously controlled from raw material purchase, through production and eventually warehouse and delivery to you, our client.

Global Synthetics have offices throughout New Zealand and Australia and dedicated agents and distributors located in the South Pacific Islands.

## **Our areas of product expertise include:**

**Pavement Stabilisation and Reinforcement**

**Retaining Structures**

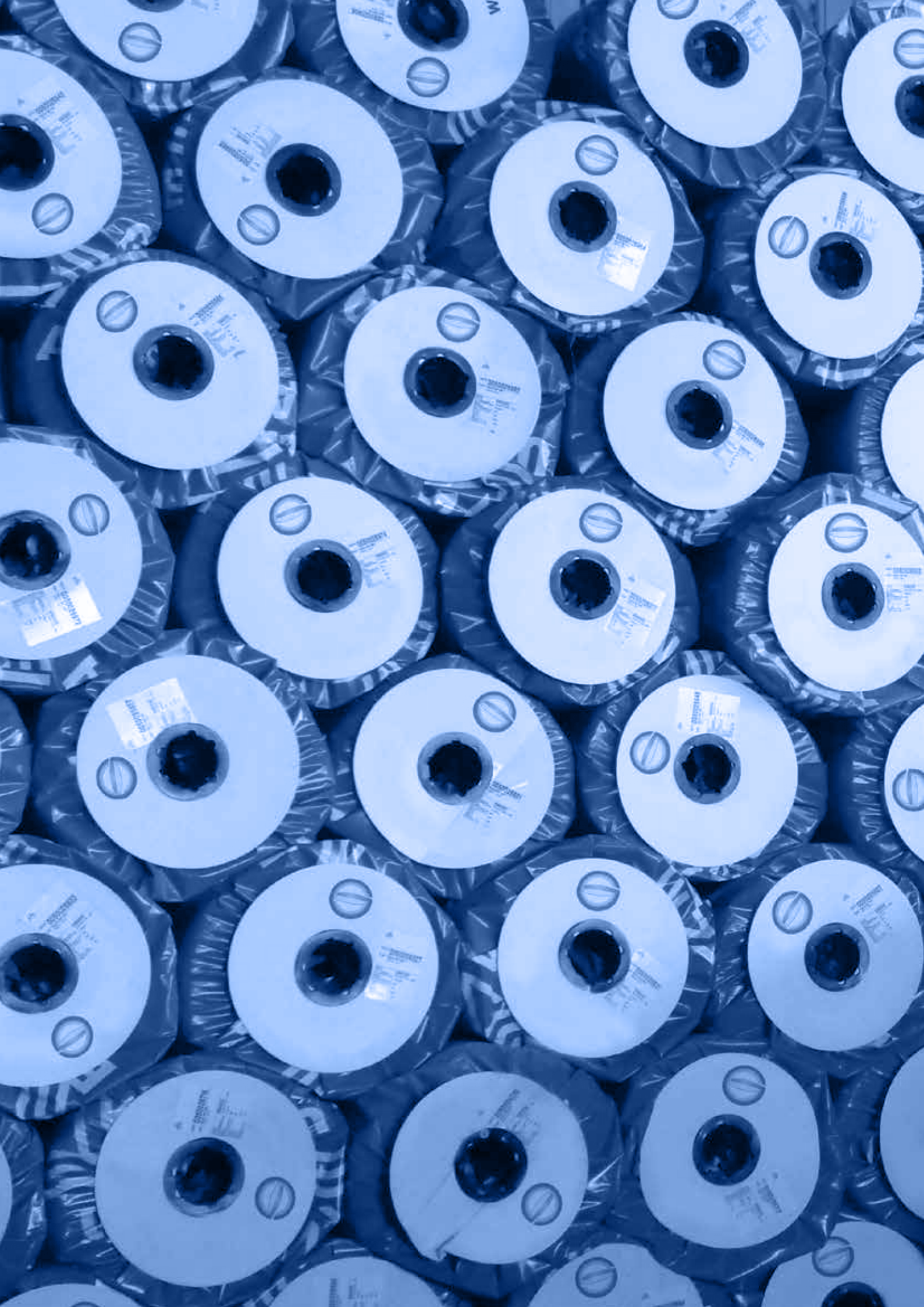
**Ground Improvement**

**Water Management**

**Secure Containment Facilities for Landfills**

**Erosion Control**

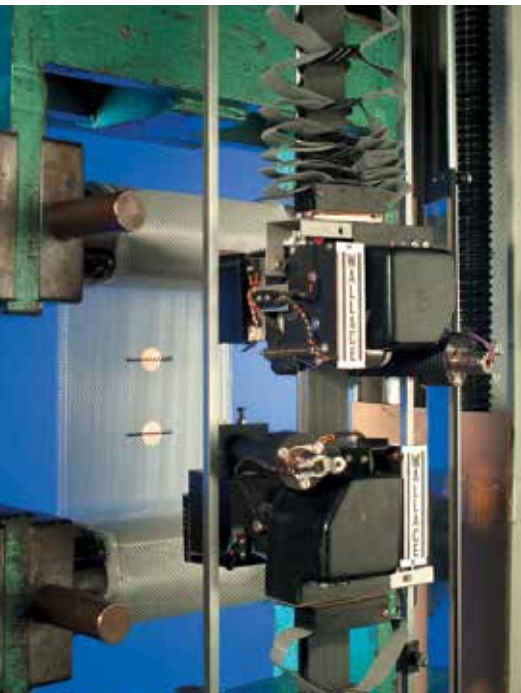
**Coastal Protection**



## Trusted Quality

Global Synthetics have partnerships with some of the largest world manufacturers of geosynthetics. Our partner commitments are to use the highest quality raw materials, the latest in manufacturing techniques and to consistently monitor all aspects of quality control through all product processes.

Our manufacturing partners are committed to formal accreditation of their production, management and testing processes.



Courtesy BTG - UK



## Materials

Global Synthetics use a range of polymers including polypropylene, polyester, polyethylene and aramid to ensure that the most durable polymer is used for performance in a range of environmental and service conditions. You are assured of the most advanced choice of materials when selecting a product supplied by us.

## Personnel

With experienced engineers and an excellent knowledge of the products, Global Synthetics staff can advise you on the best choice of product, construction advice, supporting literature and design assistance.

## Distribution

Strategic warehouse locations and an excellent stock holding across our product range ensures that your projects are serviced quickly and efficiently. Our internal sales staff have a passion in ensuring that all orders are processed quickly and efficiently.

Our warehouse staff and transport team ensure that we deliver product to you in a timely and safe manner. Global Synthetics will co-ordinate large orders such that our customers are fully aware of all aspects of the delivery program and are able to ensure that site personnel can safely unload in the most efficient manner.



We are able to advise you on the most appropriate geotextile for a range of engineering functions such as:

- **Separation**
- **Drainage**
- **Protection**
- **Filtration**

# Non Woven Geotextiles

## Made to suit the widest range of applications

Global Synthetics provides an extensive range of non woven geotextiles in a range of widths from 0.6m to 6m. We manufacture our range of non woven geotextiles from either polyester fibre or polypropylene fibre.

The choice of polymer is important in certain applications of use to ensure long term functionality of the geotextile.

Global Synthetics non woven geotextiles are offered for use in a wide range of civil, hydraulic, environmental and coastal applications.

Profab<sup>®</sup> • ProFab<sup>®</sup> Ultra<sup>®</sup> • Geofirma<sup>®</sup>



# Geosynthetic Clay Liners and Geomembranes

## Geosynthetic Clay Liners

Global Synthetics provides the Bentofix® Geosynthetic Clay Liner (GCL) in a range of product offerings. Geosynthetic Clay Liners are a well accepted method of providing a clay/geotextile encapsulated product, therefore replacing the need for extraction and transportation for clay layers in landfills, dams, landfill capping closures and similar containment structures.

Recent developments in the Bentofix® range include the use of a polymer coating which is applied to the Bentofix® GCL to further improve the range of applications and performance.

Proliner® • Bentofix®







## Geomembranes

ProLiner® Geomembranes are extruded sheets of either polyethylene or polypropylene polymers that are produced in widths to 8m and can be used to provide a very secure method of containing harmful chemicals and leachates from entering ground water. The product is used extensively in water storage, irrigation channels and similar applications.

The choice of the most suitable polymer in geomembrane selection is a function of the intended application and environment. Global Synthetics are ready to assist you in making the most appropriate selection of product.



Global Synthetics provide the ACETex® structural geotextile, a product option that offers design engineers a cost effective and proven alternative to many traditional ground treatment options.

ACETex® is a speciality woven geotextile designed for applications of soil reinforcement. The product is manufactured across a range of tensile strengths up to 1500 kN/m. Having such strength allows its use across a broad range of application areas in all aspects of construction where ground support is required.

ACETex® is manufactured from polyester yarn. This choice of polymer makes its long term load carrying ability outstanding. The influence of temperature on creep effects is minimised with polyester unlike other polymers such as HDPE and Polypropylene.

# High Strength Reinforcement Geotextiles

## Providing positive support

Road and geotechnical design engineers are facing an increasing challenge of constructing roads, embankments, mining platforms and similar infrastructure works on very problematic low load bearing soils.

Previous ground treatments often involved the use of very expensive excavation and replacement techniques, surcharging the site and waiting long periods of time for consolidation to occur, prior to commencement of construction. Such ground treatments involved significant costs and in some instances has led to the abandonment of the project.

ACETex<sup>®</sup>



## Pavement Reinforcement

In the application of base reinforcement in pavements there is the design intention of improving the bearing capacity of an existing sub-grade by including one or more geogrid layers above.

The inclusion of a biaxial geogrid generally permits a reduction in granular base course thickness. In some situations, there may be a requirement to increase the service life of the pavement by the inclusion of a geogrid for a fixed pavement depth.

Global Synthetics offer Secugrid<sup>®</sup> biaxial geogrids in a range of strengths between 20kN/m to 80kN/m and Combigrid<sup>®</sup> geogrid/geotextile composite in the same strength grades.



Secugrid<sup>®</sup> • Combigrid<sup>®</sup> • Acegrid<sup>®</sup>





## Slope and Wall Reinforcement

Global Synthetics is able to offer ACEGrid® polyester geogrid in a range of strengths appropriate for walls and slopes of any dimension. The design strength of the geogrid may be maintained over very long periods of time, as it is common for design lives of the geogrid to exceed 120 years.

ACEGrid® has been used in a significant number of structures throughout Asia Pacific.



## Turf Reinforcement Mats

Turf reinforcement mats are designed to improve the shear capacity of natural vegetation in applications of channel and swale restoration. Turf reinforcement mats when selected, designed and installed correctly have the ability to replace many hard armour solutions such as rip-rap and concrete. In slope applications they have a positive improvement in minimising soil loss off the slope.

## Anchored High Performance Turf Reinforcement Mats

For applications of shallow slope instability, Global Synthetics have engineered a system marketed as Armormax<sup>®</sup>. This is a combination of a high performance turf reinforcement mat used in combination with earth percussion anchors. Global Synthetics can provide engineering assistance and advice in these applications.

# Erosion Permanent solutions

## Miracell® Geocell Stabilisation Systems

Miracell® is a system of welded polyethylene panels. When the cells are expanded on-site, 'honeycombed' cell shapes are formed. These cells may be either soil filled (landscaping treatments) or granular filled (channel and road support systems).

The unique shape provides positive containment of soil on steep slopes and in channel applications. Miracell® provides additional confinement against water imposed shear forces.

Pyramat® • Landlok® • Armormax® • Miracell®











Global Synthetics offer a complete range of prefabricated drainage products for:

- **subsoil drainage**
- **vertical drainage systems**
- **high strength pavement edge drains**
- **landscaping drainage**
- **water harvesting systems**

# Drainage

## Efficient solutions

The complete product offering ensures that whatever the application, Global Synthetics can supply a product to suit the specific design requirements and ensure that drainage issues are dealt with in an efficient manner.

Prefabricated drainage systems have the advantage of being lightweight and can replace traditional granular drainage treatments. Global Synthetics drainage systems offer very competitive options against granular treatments and are now well accepted as a preferred method of providing efficient and long lasting solutions.

Generally the products will be supplied with an appropriate filtration geotextile attached. When necessary, there are a range of connection pieces, allowing products to be joined, terminated and connected to outlet pipes.

Prodrain<sup>®</sup> • Protank<sup>®</sup> • Hyrdocell<sup>™</sup> • Pronet<sup>®</sup>



# Gambions and Rock Mattresses

## A versatile architectural solution

Link™ Gabions and Mattresses provide a highly versatile solution of earth retention and erosion protection for designers and contractors in a wide variety of applications. Link™ gabions are typically used for earth retention structures. Link™ Mattresses are used in a wide variety of hydraulic structures.

Mesh products also include Linkweld® welded gabions that look very attractive in landscape applications. These gabions are able to be constructed with very defined shapes and

make a dramatic architectural statement as well as providing an engineering benefit.

Cost competitive retaining structures use Terralink® mesh panels in conjunction with geogrids to form a soil reinforced wall in applications of road widening and slope stabilisation.

There are a multitude of hydraulic, retaining and architectural treatments that can benefit from a mesh solution provided by Global Synthetics.

Link™ • Linkweld® • Terralink® • Linklok®





## A range of products to suit each application

- Gravity retaining walls
- Reinforced soil retaining walls
- Channel protection
- Bridge abutment and pier protection
- Weirs and low level creek and river crossings
- Architectural treatments
- Dam spillways
- Hydraulic drop structures for abrupt changes in hydraulic grade
- Culvert structures
- Foreshore protection

# Dewatering

## Simple systems

The use of geotextiles fabricated into large bags or tubes for the containment of materials (generally sand) to form engineering structures in marine environments was largely developed in the USA in the late 1980's. The technology has developed such that these systems are a well accepted engineering methodology that provides a unique and cost effective solution to engineering problems in a marine environment.

In more recent times the use of such products has been extended to include the effective dewatering of sludge from a range of industrial processes. The use of such products provides a very innovative, efficient and economical alternative to the dewatering of sludge over more traditional methods.



Protube®





## Protube<sup>®</sup>

The Global Synthetics Protube<sup>®</sup> is made from a specially constructed geotextile that has excellent tensile strengths and filtration characteristics suitable for the manufacture of dewatering tubes and for the dewatering of a range of sludge materials.

Protube<sup>®</sup> allows for effective high volume containment with efficient dewatering and volume reduction. The Protube<sup>®</sup> product offers users cost savings in disposal costs and the ability to on-site manage waste generated with no special equipment.



## Geotextile Tubes

Geotextile tubes can be made up to 32m in circumference and can be manufactured in long lengths that will offer a very good defensive option against major scour events. Ideally these tubes will be covered with sand and then vegetated with sand grasses. Exposure will only occur during storm activity. Simple remedial measures can be taken to again restore sand cover and revegetate. The geotextile tubes are marketed as ProTube®.

## Geotextile Bags

Geotextile bags are made in two sizes ( 1m<sup>3</sup> and 2.5m<sup>3</sup>) and can be laid in a regular stacked pattern as emergency works when a major erosion issue has been identified. The use of such bags should be considered as a semi temporary measure until more permanent solutions are implemented.



## When nature has to be helped

Global Synthetics has a number of products that can be successfully used in the stabilisation of coastal foreshores. Due to the unpredictability of the physical environment along all coastal locations and the increasing incidence of urban encroachment into this environment, there are increasing consequences of major damage to infrastructure. Global Synthetics has a number of products that include geotextile tubes (sand filled on site) and smaller geotextile bags (sand filled on site) that can significantly reduce the economic costs of damage from wave attack.



Protube® • Secutex® Soft Rock



# Wick Drains

## Speeding up consolidation

The use of Global Synthetics Ceteau® wick drains can significantly assist in increasing the rate of consolidation of very soft soils and ultimately increase the shear strength of the soil such that engineering structures can be constructed.

Global Synthetics wick drains consist of a specially designed polypropylene core extruded into a unique configuration to transmit maximum water flow on both sides of the core. The core is fully wrapped in a non woven geotextile filter that is ultrasonically welded to maintain effective filtration.

Global Synthetics wick drains are inserted into the soil by pushing the product to a predetermined depth and spacing, to increase the drainage paths within the soil to be consolidated. After wick drains have been installed there is a surcharge load applied over the area to be consolidated such that the speed of consolidation is increased.



Ceteau®





Global Synthetics wick drains have been engineered to withstand the significant initial installation stresses that are imposed upon the drain.



## Site Management

The unregulated discharge of sediment laden water from construction activities into adjoining stormwater channels and waterways is having a significant environmental impact. As there becomes a growing awareness of these environmental and economic costs, there has been greater legislation to regulate construction practices. Global Synthetics has an extensive range of products that can, when installed correctly, significantly reduce site erosion issues and contribute to a better local environment.

# Site Management

## Defensive treatment of site problems

Products that are available from Global Synthetics include silt fences, silt booms for waterways, coir logs for temporary stabilisation treatments and a very complete range of turf reinforcement blankets.

Silt booms can be made to order for a specific site condition or we can supply standard units from our stock holdings.

Additionally there are a myriad of other products that include geocells, various staking pin options for erosion products, silt bags to protect the inlets structures of gully pits and biodegradable erosion blankets.

Profab<sup>®</sup> Silt Curtain • Profab<sup>®</sup> Silt Fence •  
Profab<sup>®</sup> Silt Sock • Turfpro<sup>™</sup>



# Training and Industry Association

Global Synthetics is committed to advancing the knowledge of our clients by offering training and support.

Our dedication to this is evident through our goal of offering readily accessible product information and technical support.

Global Synthetics provides additional educational opportunities to the industry with specific technical seminars on geosynthetic applications to contractors and designers on a regular basis.

Our Industry Seminars feature international geosynthetic experts, latest design and construction details with relevant case studies applicable to our industry.

**We support our industry by being members of a range of industry associations such as:**

- International Erosion Control Association (IECA)
- International Geosynthetics Society (IGS)





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