

# PERMATHENE NEWS

No 4

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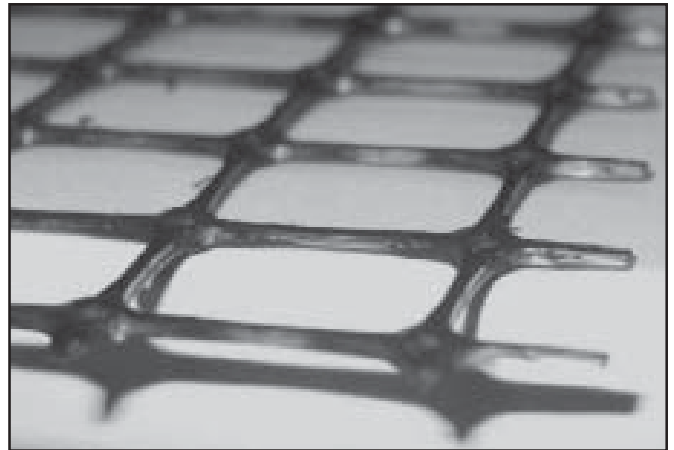
## New Product

### Etsong Geogrids

**P**ermathene Ltd is proud to announce the introduction of a brand new line of HDPE and PP geogrids. Based in Qingdao, China, the Etsong Geogrids Company specialises only in the manufacture of geogrids. The company is a national model for new technology projects and has a current capacity of 15 million m<sup>2</sup> per year.

The advantages of Etsong geogrids is its extremely high strength plus the built in nodes and ribs which offer maximum creep performance. This gives an advantage not found in other types of ground reinforcement solutions. A good creep performance under sustained loading is essential for the successful use of geogrids in critical structures such as walls, abutments and steep embankments. Etsong Geogrids is one of the few geotechnical product manufacturers in the world with the necessary creep testing facilities to ensure that its products meet this requirement. Results from tests are used to safely predict the product performance for design lifetimes of 120 years or more.

The technology behind the product is quite complex and took many years to perfect. The Etsong Geogrids are manufactured by stretching high quality punched sheets of engineering grade polymer under closely controlled conditions. The nodes and ribs have been optimised for its effect upon load in soils. The strong interlocking action between the even ribs and the mating material applies confinement to the lateral displacement of soil. With loading applied, the soil



particles settle and distribute in the mesh squares, which forms a tough platform spreading load evenly. In other words, Etsong Geogrids resist the lateral spreading of the fill layer, thereby improving the structural performance of the base course. This in turn means less base course is required to achieve the required load capacity. Both economy and performance can be achieved.

Etsong Geogrids are available in New Zealand, Australia, Pacific Islands, and India exclusively from Permathene and its appointed resellers.

### New Branch

Permathene Pty Ltd has just opened its Sydney office with stocks of Etsong biaxial geogrids. For pricing, designs, etc, please contact:

**Permathene Pty Ltd.**  
**Suite 143 / 272 Victoria Av, Chatswood,**  
**NSW 2067**

**Tel / Fax: 1-800 143-331**

PERMATHENE

ISO 9002 Certified

#### Permathene Ltd. Civil Engineering Division

404 Rosebank Rd, Avondale; PO Box 71-015, Auckland 7, New Zealand  
Ph. 64-9-820-7231 Fax. 64-9-820-7429  
www.permathene.com info@permathene.com



# Modular Welded Gabions, Innovative Application, New Zealand

**Project:** Gabion Wall, Pink Beach, Omaha

**Architect:** Murray Cockburn Partnership Ltd,  
Auckland

**Consultant:** Bruce Wallace & Partners Ltd,  
Auckland

**Contractor:** Good Brothers Construction  
Ltd, Auckland

**Date:** June 2002

**Product:** Modular Welded Gabions

For this project we supplied the Modular Welded Gabions featured in our June 2002 Newsletter. Manufactured in the US, these gabions are made for coastal environments with a three layer protection system. First the 3 mm steel wire is hot dipped galvanised, then a corrosion protection primer is applied, followed by a heavy fusion bonded PVC coating.

The client required black wire as the project used gabions in a less than traditional manner. The gabion baskets were constructed into a wall of 9 m high which was erected right around the front of the cliff top property it was designed to protect.

Large stones were carefully placed into each basket and the wall built completely using single modules of 900 mm x 450 mm x 450 mm. The mesh is 75 mm x 75 mm square.

The object of this particular gabion wall is to allow light and air to penetrate at a controlled rate. This is exactly what the welded steel gabion is designed to do, that is to function as a building block to form a monolithic, permeable structure of any size or shape.

The finished gabion wall has immensely improved the aesthetics of the house, and has provided the owner with a unique environment offering complete privacy



Modular Steel Gabion wall

and protection from the elements.

There are many advantages in using modular welded gabions. Besides the quality, strength and speed, we can supply gabions in roll stock form allowing tremendous flexibility in terms of size and assembly, thus eliminating double paneling.

The welded steel modular gabion is widely used in river and highway engineering as retaining structures.

We stock standard rolls in both grey and black as well as all required binders, lacing wire, etc.

Modular Steel Gabions and Mattresses are available in New Zealand exclusively from Permathene and its appointed resellers.

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[info@permathene.com](mailto:info@permathene.com)



# Akarana Golf Course, Auckland, New Zealand

The Akarana Golf Club in Auckland built a series of three ponds. The design included a small pond in the foreground with a waterfall, made using large boulders. The total pond area is approximately 6,000 m<sup>2</sup> which we mostly welded on-site using our 1 mm Permaliner polypropylene pond lining membrane.

For the middle pond we manufactured the liner in our factory due to this pond being an old swamp. The knee deep in mud conditions made on-site welding impossible. As this middle liner was 1800 m<sup>2</sup> (over 1.5 tonnes of material) deploying it over the extremely boggy site conditions proved to be quite

**Client:** Akarana Golf Club, Auckland

**Consultant:** Wood & Partners Consultants Ltd

**Date:** April 2002

**Product:** Permaliner Geomembrane

a challenge. However, the Permathene installation crew worked around all problems encountered and completed the job ahead of schedule.



## Nice 2002, 7th International Conference on Geosynthetics

Permathene exhibited at the recent 7th International Conference on Geosynthetics. This event is staged every four years and is the world's premier conference for the geosynthetics industry. We shared a booth with Etsong Geogrid Company Ltd, which we represent for New Zealand, Australia, Pacific Islands and India. Etsong Geogrids used this conference to introduce the Etsong brand to the world.

Pictured on the right is Mr Moninder (Witty) Bindra, General Manager of Permathene, presenting an erosion control paper as part of the technical program.



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# VersiCell Interlocking Drainage System, New Zealand

The Viaduct Harbour in Auckland is being developed with numerous prestige apartment blocks. This high profile part of the Auckland CBD attracts buyers who demand only highest quality fittings and finishes. VersiCell was selected for this project because of its high compressive strength. This system is relatively new but has been proven to be more effective than traditional methods using only

**Project:** Viaduct Point Apartments, Auckland

**Architect:** Craig Craig & Moller Ltd, Auckland

**Contractor:** Mace Contractors Ltd, Auckland

**Date:** October 2002

**Products:** VersiCell Interlocking Drainage System, Syntex Nonwoven Geotextile

sand and basecourse. The advantage of VersiCell is that it provides a completely flat, high strength platform for paving stones. This means a parking area can be quickly made which is both highly functional and perfectly flat.

This 1100 m<sup>2</sup> project was designed for the purpose of resident parking. VersiCell modules were placed and locked together. Syntex nonwoven geotextile was laid over the VersiCell to act as a separation layer. Coarse washed sand to a depth of 20 mm was then placed over the entire geotextile to allow for even placement of the paving stones. The area was made



using 50 mm precast pavers, 200 mm growing media, and 80 mm coloured concrete.

VersiCell is light weight. Weighing only 2.7 kg /m<sup>2</sup> savings are made in handling and installation, as well as reducing the static load on the overall structure. Typically 150 mm to 200 mm of aggregate (scoria) can be replaced by a 30 mm thick VersiCell resulting in increased soil depth for the landscaped area.

VersiCell is available in New Zealand exclusively from Permathene and its appointed resellers.

- **Geomembranes:** pond liners, floating covers, water containment, landfill, gas membranes
- **Geotextiles:** reinforcement, stabilisation, filtration, erosion control
- **Geogrids:** reinforcement, stabilisation
- **Turf Reinforcement Mat (TRM):** erosion control, ground stabilisation, weed control
- **Gabions, mattresses:** retaining walls, river works, revetments, coastal defense systems
- **Subsurface drainage:** modular drainage for basements and underground construction

For any further information on these products and projects, please contact us.

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