



Global Synthetics
Australian Company – Global Expertise

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geonews

WELCOME

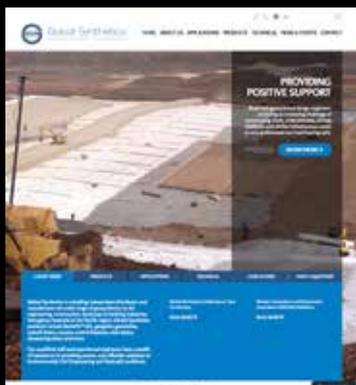
Global Synthetics is a 100% Australian owned company staffed by engineers with extensive experience in geosynthetics in Australian conditions. Large stock supplies are held throughout Australia to service your requirements efficiently.

This newsletter showcases some recent projects with which Global Synthetics has been proud to be associated.

“Global Synthetics Launches a New Website”

We are proud to announce the launch of our newly redesigned website. On behalf of all of us here at Global Synthetics, welcome! Our old website served us well, but technology continues to develop and with this redesign we will be able to take advantage of the most current tools to make our advocacy most effective and carry our message forward. The new site has a modern layout and design, it is optimised to view in multiple devices and using any level of internet connection. So whether you are on a PC, at the office, or mobile phone on site you will be able to source the latest information on our products and join our online community. Jump in!

www.globalsynthetics.com.au



For further information contact
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Reinforced Piling Platform – Northshore Stage 1, Hamilton- Brisbane

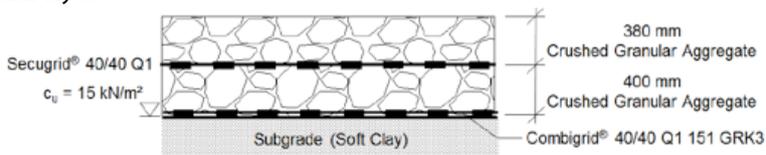
Northshore Hamilton is the largest waterfront urban renewal project in Queensland and is destined to become a true Brisbane icon. Over the next 20 years, this 304 hectare precinct will transform from an industrial area into a vibrant riverside precinct which stretches 2.5 kilometres along the Brisbane River.

During 2014, the first structures commenced and site conditions were found to be of low strength due to the site’s close proximity to the Brisbane River.

To enable construction on the site, working platforms and crane platforms were required to be built on the soft subgrades and a geosynthetics solution of Combigrid® and Secugrid® geocomposite/geogrid was adopted to overcome these site conditions.

The original design had specified a single layer of 100 kN/m ultimate strength biaxial geogrid with a 800mm thick granular platform. The high stiffness of Combigrid® geocomposite and Secugrid® geogrid enabled the design to be changed to a more efficient and economic alternative solution of 80kN/m geosynthetic strength and a thinner 780mm thick platform.

The geosynthetic material used in this solution included a layer of Combigrid® 40/40 Q1 geocomposite on top of the existing subgrade and a layer of Secugrid® 40/40 Q1 geogrid within the granular layer.



Combigrid® saves construction cost and time, through the benefits of two functions in one product. Combigrid® incorporates a geotextile that is integrated between the geogrid bars, reducing the risk of geotextile delamination. It makes the installation process easier and faster in a single operation, without the risk of recoil due to its flat structure.



Through using the high stiffness reinforcement and separation benefits of Combigrid® and the reinforcement of Secugrid®, the client achieved a considerable time and cost saving, using less granular material and a more efficient geosynthetic product than originally specified.



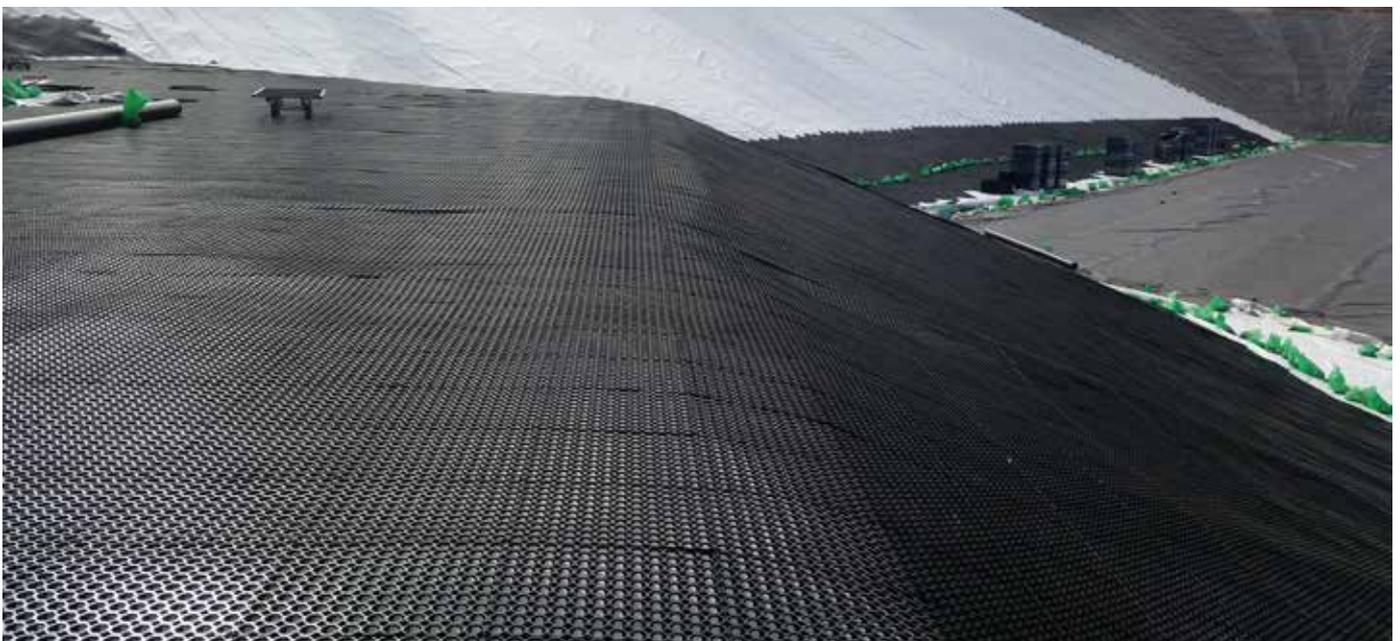
The project was constructed successfully and the construction on the site was completed in 2014. For further information please contact amir@globalsynthetics.com.au

Red Hill Advances with Best Practice Materials

The Red Hill Waste Management Facility owned by the Eastern Metropolitan Regional Council (EMRC) will ensure that local government authorities can continue providing landfill airspace into the future with the construction of a new cell, "Farm Stage 15". This new cell, located south-east of the site's main landfill, has an initial airspace capacity of 224,000m³ and was constructed using the latest technology in lining and drainage to best practice standard (see EMRC e-newsletter).

Global Synthetics was appointed by the main contractor WBHO Infrastructure as the preferred supplier for state-of-the-art technology in geosynthetic materials:

- Bentofix® NSP 4300 Geosynthetic Clay Liner (GCL) : +50,000m²
- Geofirma® AS540E Cushion Geotextile : +85,000m²
- Hydrocell™ 30mm Leachate Drainage Cell: +35,000m²



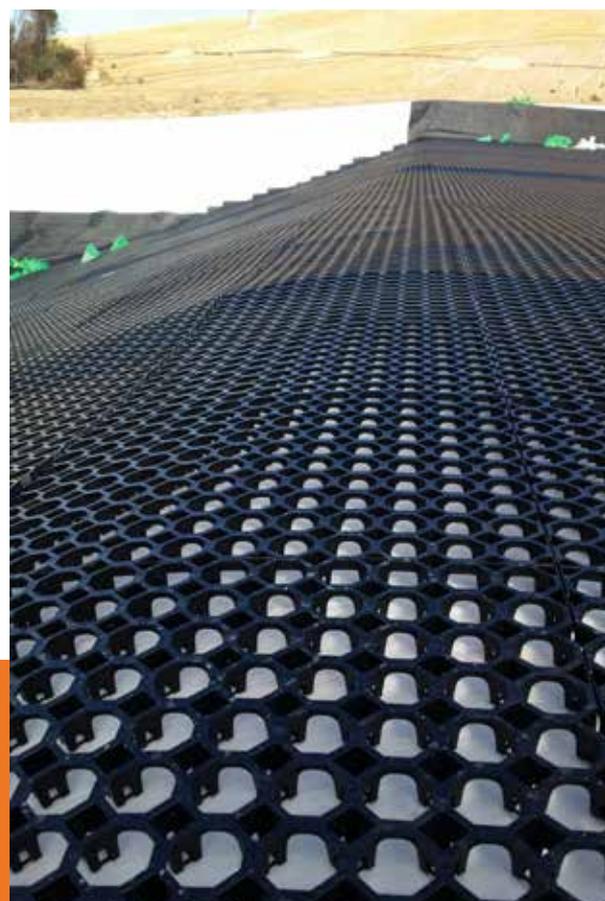
Global Synthetics Advances in Landfill Lining and Drainage



This revolution in landfill design included the Global Synthetics Hydrocell™ as the main component of the drainage layer. Hydrocell™ is a unique flexible modular sub-surface drainage cell designed to distribute and support heavy loads, whilst maintaining a positive high flow drainage path for the collection and discharge of water and leachate. The Hydrocell™ outperforms other rigid moulded materials due to its ability to follow all the contours of the cell floor, making life easier for the installer and ensuring a uniform drainage profile. Rigid drainage cells have the potential to snap at the toe and crest areas, which increases risk of puncturing the underlying liner materials.

Hydrocell™ replaces traditional drainage aggregate stone in these landfill applications. Considering the comparative supply, transport & deployment costs, Hydrocell™ saved WBHO and EMRC a significant sum of money over the 35,000 m2 of surface area.

For further information contact sean@globalsynthetics.com.au

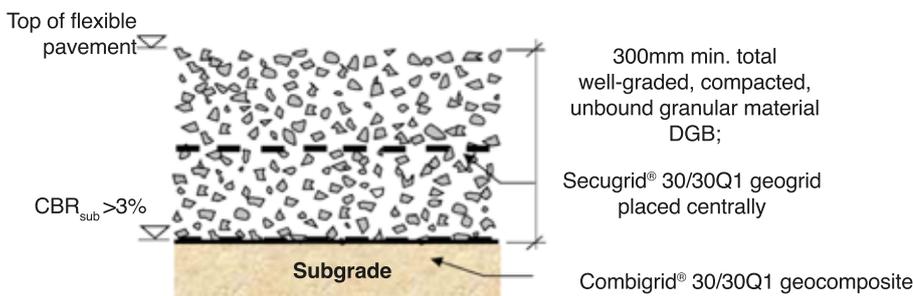


Council uses geocomposite geogrid for rehabilitation of cracked carpark pavements and roads – Combigrid® case study

Rehabilitation of existing Council roads or private roads and carparks is a common problem facing metropolitan Sydney. A local Sydney Council requested a geosynthetic solution for an existing road and carpark repair. A typical problem, called “crocodile cracking” is a fatigue related stress cracking for flexible pavements as shown in Photo 1. This problem relates to poor subgrade issues coupled with cyclic loading from garbage trucks and general vehicular traffic that propagates cracking.

Combigrid® 30/30 Q1 (30kN/m ultimate biaxial tensile strength) a multi-functional product that could be quickly and easily installed, provides soil reinforcement and separation between the subgrade and the road sub-base material. The separation function is essential in subgrades with low CBR values equal to or below 3 percent. This minimises the mixing of dissimilar materials, typically clay particles from the granular sub-base material such as DGB40. The integral non woven geotextile is embedded in between the reinforcing polymer bars to form a structural geocomposite geogrid.

Excavating and replacing approximately 300mm of sub-base and using Combigrid® &/or Secugrid® provides a cost-effective and easy method for repair without the need for expensive specialist asphaltting crews (as required for deep lift asphaltting methods). Refer to Figure 1 below.



◀ Figure 1 – Typical cross-section for a rehabilitated flexible pavement using Combigrid® 30/30Q1 and Secugrid® 30/30Q1.

The Council undertook a cost comparison for the various available construction methods for flexible pavement rehabilitation works, and found that using geosynthetic sub-base soil reinforcement would be most effective. This design approach is commonly applied to flexible road pavements, adopted by Councils. Even in situations where reducing the structural pavement thickness is not desirable, the use of geosynthetics will increase its service life, or reduce the frequency for maintenance repairs.

Global Synthetics are able to provide preliminary design assistance using empirical design charts or use an AUSTRROADS based flexible design pavement approach. For complimentary design software or further information please contact ray@globalsynthetics.com.au



Photo 1 - Typical flexible asphalt pavement “crocodile cracking”



Photo 2 - Use of Combigrid 30/30Q1 to provide reinforcement and separation in one product!

Product Listing

PRODUCT TYPE	PRODUCT
Geotextiles - Nonwoven	ProFab®
Geotextiles - Nonwoven	Geofirma®
Geotextiles - Woven	ProFab®
Geotextiles - Reinforcement	ACETex®
Geogrids - Pavement	Secugrid®
Geogrids - Reinforcement	ACEGrid®
Rock Mattress	Link Mattress
Gabions	Link Gabions
Geosynthetic Clay Liners	Bentofix®
Geocells	Miracell®
Geomembranes	Carbofol® & ProLiner®
Geonet	Transnet®
Sheet Drains	ProDrain®
Drainage Cells	Hydrocell™
Water Tanks Modular	ProTank®
Erosion Blankets - TRM	Landlok®
Erosion Blankets - TRM High Performance	Pyramat®
Erosion Blankets - Biodegradable	JuteLok™
Silt Fences	Global
Floating Silt Curtains	Global
Dewatering Tubes	ProTube®
Wick Drains	CeTeau®

www.globalsynthetics.com.au

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