



Global Synthetics
Australian Company – Global Expertise

geonews

HEXHAM Multi Rail Lines – SECUGRID Geogrids & GEOFIRMA Geotextiles



Hexham Relief Roads Project involves the design & construction of additional train lines (known as Relief Roads) for the Hunter Coal industry in NSW.

In total five new train lines are being constructed, at a length of approximately two kilometres for each line. When completed these additional lines will help to manage and ease congestion for coal trains traveling to and from the Newcastle Port Coal terminal near the existing Up Coal line at Hexham. Major construction activities started in November 2013 and will be completed in 2015.

This project was an initiative of the Australian Rail Track Corporation (ARTC) and is being designed and constructed by an alliance named the Upper Hunter Valley Alliance. This alliance consists of ARTC,

Leighton Contractors, Parsons Brinkerhoff, Coffey Geotechnics and KMH Environmental.

Hexham Relief Roads is being constructed in challenging swamp/floodplain conditions.

Global Synthetics was awarded the supply of the geosynthetics for the use in constructing the Relief Roads. Prior to being awarded the supply of the geosynthetic materials Global Synthetics was required to demonstrate that the products offered will meet the design specifications. This was achieved with Global Synthetics providing comprehensive technical data, testing and real proven project performance case histories on each of the products.

The design of the rail platforms consisted of three geosynthetics at the base of the platform know

In this issue:

- Hexham Relief Roads
- Mt Morgan
- FMG Solomon

as the formation layer. First to be placed of the three was a non woven geotextile to act as a suitable separation layer between the subgrade and newly placed quality materials, above this was geogrid, followed by half a metre of rock fill, a secondary layer of Geogrid followed by further rock fill placed until design height was met.

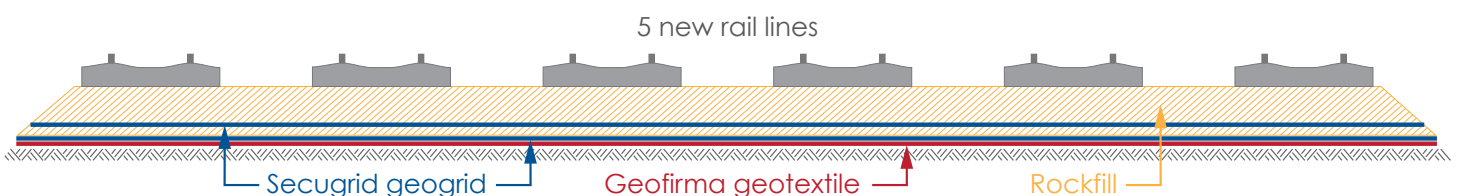
Global Synthetics supplied a unique geogrid called Secugrid® 30/30Q1 LA as the reinforcement geogrid.

Secugrid® 30/30Q1 LA has large aperture dimensions (71x71mm). This type of large aperture geogrid is generally used in rail platforms/embankment construction when large ballast can be required. Secugrid® 30/30Q1 LA is made from high strength polypropylene with high modulus. Secugrid® is supplied in wide width rolls to reduce wastage.

In total over 200,000m² of Secugrid® 30/30Q1 LA has been utilised in the construction process.

In conjunction with the Secugrid®, Global Synthetics also supplied Geofirma® nonwoven Geotextile for separation and filtration.

For further information please contact chris@globalsynthetics.com.au



Mount Morgan Road Stabilised with ACEGrid® / Terralink® Solution



Over the Australia Day weekend in 2013, persistent rain fuelled by Cyclone Oswald resulted in more than 20 individual road side slips along the Mount Morgan Range Road forcing the road to be closed until the road embankments could be safely reinstated.

The slip areas were stabilised through temporary soil nailing, rock bolting and shotcreting whilst a more permanent solution was finalised.

The Queensland TMR Department went about finding a fast and economical means of repair and a number of design solutions were developed for review. Consistent with the existing slope angles, a geogrid reinforced solution was proposed with a face angle set at 65 degrees from the horizontal.

In the second half of 2013, TMR called tenders for Design and Supply of the components required to reinforce the fill to be compacted back into place and to provide a suitable means of protecting the face against erosion and possible bushfire attack in the future.

Global Synthetics were successful in their bid to Design and Supply the structures and work commenced in late 2013.

Global Synthetics worked closely with TMR and the Roadtek construction team to deliver design drawings, materials and a successful completion of more than 10 individual slip areas over a few short months.

The solution incorporated the Terralink® steel mesh facing system from Global Synthetics, with ACEGrid® polyester geogrid used as the soil reinforcement element.



Erosion protection was provided by Landlok® 450 synthetic Turf Reinforcement Matting and Geofirma® geotextile was used for separation behind the structure and around subsoil drains.

Global Synthetics assisted TMR and the contractor with site supervision and training as necessary and the work progressed quickly and efficiently allowing the Mount Morgan Range Road to be again open to traffic in early 2014.

CONTACT US NOW FOR A COPY OF YOUR TERRALINK® SYSTEM BROCHURE FOR REINFORCED SLOPE CONSTRUCTION!

For further information please contact jason@globalsynthetics.com.au



Pyramat® Protects King Solomon's Wings

Fortescue Metals Group (FMG) Solomon Project ranks as a world class iron ore venture. It is located in the Pilbara Region of Western Australia, 200km south of Port Hedland, and approximately 60km north of Tom Price.

The wing walls of the Primary Ore Crushing Hub needed protecting from cyclonic rain & wind events which are increasingly prevalent in the Pilbara region.

Pyramat® was the product of choice to reduce erosion on the steep 60° batters due to its superior shear & tensile strength along with exceedingly high UV resistance. Test results demonstrate that after 10,000Hrs of accelerated UV exposure, Pyramat® retains 85% tensile strength (a common specification requirement for geosynthetics is some 50% strength retention after only 500 hours accelerated testing as being acceptable performance for UV exposure).

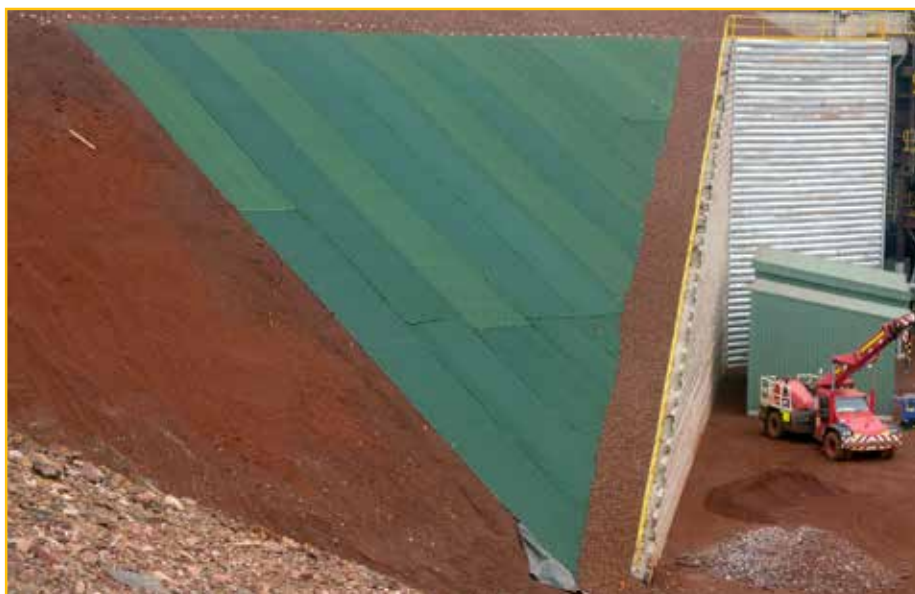
Pyramat® is becoming the 'go to' product for Soft Armour Erosion Control in the harsh arid climate of the Pilbara where searing heat during the dry seasons would normally preclude the use of polymer based soft armour solutions.

Pyramat® High Performance Turf Reinforcement Mats (HPTRMs) are equipped to handle the most demanding erosion control applications. The patented Pyramat® three-dimensional profile makes HPTRMs ten times stronger than traditional TRMs. The 'Tri-Lobal' filaments of Pyramat® are also purpose designed to trap mobilized sediment, ensuring optimal soil retention during flow events. The outstanding UV resistance of Pyramat® makes it the preferred TRM in arid and semi-arid environments or other applications where scour protection is required but full vegetation is not desired or easily established.

Specialized Tek screws were utilized to fasten the Pyramat® to the batter due to the extremely hard, cohesive nature of the Pindan fill material after compaction.

The contractor quoted that Pyramat® "...was relatively easy to install when following the installation guide. The product was easy to work with and produced the desired outcome."

For further information please contact sean@globalsynthetics.com.au



Global Synthetics Opens Adelaide Office

Luke Aberley has been appointed as State Manager for SA and continues the significant growth for Global Synthetics across Australia. Luke has extensive experience in the sales and distribution of geosynthetics in the South Australian market.

Global Synthetics has a commitment to warehousing in Adelaide, a wide range of geosynthetic products to meet the demands of the local engineering community.

Contact Luke for any additional information and advice that you require.

Phone: Adelaide 08 83848894 or mobile 0451 188707 or luke@globalsynthetics.com.au

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	PRONET®
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®



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