

THERMALLY BONDED GEOCOMPOSITE MATERIAL

GEOFABRICS
Smarter Infrastructure

Geofabrics Australasia is the country's largest textile manufacturer and the only local manufacturer of geosynthetics, a widely used category of civil engineering products. The project links Geofabrics with two engineering firms and RMIT University to design and install an automated production cell for thermally-bonded drainage geocomposites. This type of geosynthetic is currently imported, and local production represents a major opportunity for the regional manufacturer.



How the Growth Centre helped?

The Advanced Manufacturing Growth Centre has contributed \$322,000 in co-funding to the project, and assisted Geofabrics in finding the right collaborative partners.

What's changed?

The thermal bonding lamination line offers a potential \$6.5 million increase in Australian sales, as well as the chance for Geofabrics to build on its success as an exporter. There is the potential to add further jobs as production volumes build.

Project overview

Geofabrics Australasia is the country's only manufacturer of geosynthetics, and opened its Albury, NSW factory in 1987.

Geosynthetics have been used since the 1960s and are employed by civil engineers to stabilise terrain. Geosynthetics provide a range of functions to a project including separation, drainage, filtration and protection. Applications include roads, rail, coastal protection, waste management, Oil, Gas & Mining and Slopes & Walls as well as use in residential, plumbing and landscaping applications. They were the only construction material invented in the 20th century.

Geocomposites combine two or more different types of geosynthetics. Geocomposites combining geonets and geotextiles have become highly attractive in sloped ground applications. Geonets have excellent drainage, while geotextiles provide filtration and separation, keeping the surrounding soil out of the geonets so they can maintain their drainage levels¹.

This kind of geocomposite, offered as a thermally-bonded laminated solution, is being increasingly specified by civil engineering firms both in Australia and overseas.

¹ <https://www.sciencedirect.com/topics/engineering/geocomposite>

There is currently no production capability for this in Australia, which presents a major opportunity for Geofabrics. The company produces a glued drainage geocomposite version, but a thermally bonded solution provides the customer with enhanced performance characteristics in specific applications, including steep slopes.

“We see a thermal solution as being a more complete, more robust solution for our customers,” explains Dennis Grech, Director, Geofabrics Australasia.

“There is a higher bond strength, and a laminated solution has improved drainage performance and higher flow rate properties.”

Geofabrics is developing automated production capabilities for drainage geocomposites in collaboration with RMIT University, RMR Engineering and QEDS. The project is budgeted at \$754,000 and will install and integrate a robotic cell with the ability to create custom lengths and widths of product.

“This solution not only develops a more robust product for use in difficult applications but reduces the need for some of our production consumables such as glue which is central to the existing lamination process,” adds Grech.

RMR Engineering will be paid \$223,000 to develop and provide the necessary equipment. A second Wodonga-based engineering business, QEDS, will be paid \$74,000 to contribute a software program for safety testing.

RMIT is contributing \$25,000 worth of services for test and analysis of the new product.

AMGC is supporting this project through \$322,000 in co-funding.

The project continues the Geofabrics' focus on innovation, which sharpened following the end of the mining, oil and gas infrastructure boom. In recent years the new products and services introduced by Geofabrics have included the world's first graphene-enhanced geotextile².

A successfully completed project would see Geofabrics provide import substitution and earn an estimated \$6.5 million increase in Australian sales. There would be the opportunity for Geofabrics, a category winner in the Australian Exporter of the Year competition, to increase revenues by a further \$4.5 million through New Zealand and Asia Pacific sales.

Importantly, it has the potential to add further jobs as production on the new line ramps up and creates increased demand for other production units, particularly the Bidim geotextile range, within the Albury plant which further cements Geofabrics' manufacturing footprint in Australia.

Grech says AMGC's support in shaping and supporting the project has been invaluable, and is the culmination of years-long relationship.

“AMGC has been a tremendous ally and confident to our business in pulling together the application,” he explains.

“As well as this, they have critiqued and challenged Geofabrics in understanding not only the market opportunities for us in regards to this solution, but in challenging our business to find the right partners and the right capital solution to ensuring that our application is successful.”

2 <https://www.austeng.net.au/project/pioneer-commercial-graphene-plant/>

3 <https://www.exportawards.gov.au/winners/2018/geofabrics-australasia-vic>

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