

Secugrid® Combigrid®

Base course reinforcement of runway

Project name
Hervey Bay Airport, Queensland, Australia

Construction time
May - August 2019

Planner / Supplier geosynthetics
Global Synthetics Pty. Ltd., Queensland, Australia

Client
Fraser Coast Regional Council, Queensland, Australia

Contractor
Shadforth Civil Pty. Ltd., Queensland, Australia

Installer
Shadforth Civil Pty. Ltd., Queensland, Australia

Products
Combigrid® 40/40 Q1 GRK 4 C
Secugrid® 30/30 Q1





Fig. 1: Installation on site

Fraser Coast Regional Council (FCRC) undertook a runway assessment of its Hervey Bay Airport facility in November 2014, as part of its airport master planning initiative. The investigation and report were compiled by GHD and presented to Council in December 2014. Conclusions from the report indicated that the runway was approaching its useful life expectancy and deterioration was as per the predicted wear rate. However, increased traffic from medium passenger jets could increase the rate of wear and decrease the predicted life span.

Challenge

The areas where the taxiways and aircraft parking extension areas were to be constructed were situated in a low-lying, low CBR area of the airport confines. The initial design was to dig out these areas up to a depth of 1m plus in some cases, compact the subgrade and infill the voided area with a geotextile and rock infill. This meant a huge amount of rockfill would be required, the nearest rock supply was some 30kms from the site. This would add a very large cost to the project transporting rock this distance and not to mention the wear and tear on local access roads and traffic congestion from numerous deliveries of rock required each day.

Solution

Global Synthetics was contacted by the contractor to offer any solutions to bring the costs down for the client and remove some of the traffic from local streets. Together with its design team, Global Synthetics was able to provide a solution that included a layer of Combigrid® geocomposite on top of the existing subgrade and a layer of Secugrid® geogrid within the rock layer.

Combigrid® saves construction costs 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 considerable time and cost savings overall. More than 50,000m² of both Combigrid® and Secugrid® had been installed at the site.

Benefits and features of Combigrid® and Secugrid® are:

- Quick and easy to install
- Very high strength at low strains
- Reinforcement, filtration, separation and drainage in just one product, reducing aggregate thickness
- Quality German manufactured product
- Wide width rolls
- ISO9001 certified

The project was constructed successfully, delivered on time and within budget to the client. Construction was completed in 2019.

We would like to thank our distributor in Australia, Global Synthetics Pty. Ltd., for their support in selecting the right products for this project.