



GEOFABRICS CASE STUDY



HIGH-STRENGTH GEOTEXTILE STABILISES BRISBANE AIRPORT'S RUNWAY

PRODUCTS USED

Mirafi® PET High Strength Woven Geotextile

- A high strength woven geotextile made from high tenacity polyester yarns with high long-term strength properties
- High long term design strength with low creep effects
- Enables optimum embankment height over a minimum area and steeper side slopes
- Increase in construction speed with no loss of stability
- Custom roll lengths can be manufactured to facilitate ease of installation and reduce wastage on site
- Complies with all ANZ road authority requirements including certificate of conformance requirements

MIRAFI® is a registered trademark of Solmax.

PROJECT DESCRIPTION

Brisbane Airport had been experiencing rapid growth, handling around 20 million passengers in 2009, with numbers expected to reach 45 million by 2029. To accommodate this increase, Brisbane Airport Corporation (BAC) constructed a new \$1.3 billion New Parallel Runway. The 3.3 kilometre long runway, located 2 kilometres west and parallel to the existing main runway, was built at sea level over the Brisbane River delta.

The site consisted of very soft, waterlogged mud and silt, which required a stable foundation for construction. Over 11 million cubic metres of sand were dredged from Moreton Bay and placed on the site by the dredging specialists to consolidate and strengthen the underlying soft soils. Certain sections of the site were expected to settle by up to two metres, and it was estimated that the foundation would take up to four years to reach the required stability before runway construction could commence.

OUR SOLUTION

Geofabrics supplied over 370,000 m² of Mirafi PET high-strength woven geotextiles to stabilise and limit differential settlement of the dredged sand platform. Basal reinforcement layers provided short-term stability, allowing the sand platform to be constructed to design height and remain stable until the soft foundation had consolidated enough to support the runway.

Mirafi PET geotextiles with strengths of 100 kN/m, 200 kN/m, 300 kN/m, 400 kN/m, and 800 kN/m were selected based on the platform height and underlying soil conditions. Beneath the main runway section, over 45,000 m² of Mirafi PET 800 were supplied in custom roll lengths (60 metres x 680 metres), which allowed installation without cutting and minimised material waste, providing cost savings in both supply and installation.

Geofabrics also provided technical and construction support to assist the client in installing the permanent sub-surface drainage system in soft soil areas. Nearly 9,000 lineal metres of Megafllo® Green socked slotted drain pipe was supplied to overcome challenges where traditional trenching methods were not possible, ensuring reliable drainage performance for the runway platform.



Custom
geotextiles
100–800
kN/m

370,000 m²
of **Mirafi PET**
supplied



Visit **geofabrics.co** or call 1300 60 60 20 (AU)
or **geofabrics.co.nz** or call 0800 60 60 20 (NZ)

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Sustainable solutions

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