



## GEOFABRICS CASE STUDY



# GEOSYNTHETICS STRENGTHEN NINGI ACCESS TRACK IN QUEENSLAND

## PRODUCTS USED

### Geoweb® Cellular Confinement Geocell System

- Made from robust UV resistant high-density polyethylene (HDPE), the system contains a network of interconnected cells that confine and compact soil
- Quick installation using the patented ATRA clip connection system or high strength tendons, reducing installation time and costs
- Eco-friendly soil stabilisation solution that blends into the natural environment
- Reduces the thickness of structural support elements by 50% or more

### MIRAFI® H2Rx Multifunctional Woven Geotextile

- Made from high tenacity polypropylene yarn, providing superior separation, mechanical stabilisation, and moisture management for road pavements and railway structures
- Separates and prevents the intermixing of subgrade soil and structural gravel layers
- Advanced wicking technology quickens moisture removal and drains moisture to prevent cracks, potholes and frost boils
- Equalises moisture content in expansive clay subgrades, preventing differential heaving and shrinkage that cause pavement stress
- High tensile modulus mechanically strengthens road pavement for longer design life

MIRAFI® is a registered trademark of Solmax.

## PROJECT DESCRIPTION

In 2025, an access track was proposed in Ningi, Queensland, adjacent to a creek and bordered by several residential properties and areas of native vegetation. The design needed to accommodate overland water flow at two locations, allow the pavement to be trafficked by a 6,000-litre commercial dual-axle truck, and maintain a vegetated finish that blended with the surrounding environment.

The site presented additional challenges, including a low subgrade California Bearing Ratio (CBR) of 1.5%. Meeting these requirements with minimal pavement thickness required an engineered solution that provided both structural stability and environmental sensitivity.

## OUR SOLUTION

A 200 millimetre thick pavement was proposed, comprising a 150 millimetre Geoweb cellular confinement geocell system and a 50 millimetre aggregate cover. MIRAFI H2Rx multifunctional woven geotextile was placed beneath the Geoweb panel for reinforcement and moisture management.

The construction process began with subgrade preparation, followed by placement of the MIRAFI H2Rx geotextile directly on the subgrade. The Geoweb system was then installed over the geotextile and infilled with aggregate to the required cover depth. After compaction, the pavement surface was vegetated.

In total, 450 m<sup>2</sup> of geosynthetics was installed. By combining the Geoweb system with MIRAFI H2Rx geotextile, the client received the most economical solution with minimal pavement thickness. This approach allowed overland water flow at multiple locations, supported truck traffic and enabled vegetation to establish.

A site visit undertaken one year after construction confirmed the section is performing well, with no signs of rutting.



Pavement supports  
**6,000 L**  
trucks

**450 m<sup>2</sup>**  
geosynthetics  
installed



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