

# Case Study

# Geofabrics

Project: QR National Reinforcement Trials  
 Date: 20/06/11  
 Client: QR National  
 Location: 4km West of Hughenden



## Geoweb®

Following an extended, La Niña affected, monsoonal wet season, QR National were experiencing more frequent track misalignments and increased maintenance costs with sections of track near Hughenden in North Queensland.

This region is synonymous for its poor, weak, "Black" soils, which once saturated become very unstable. Due to recent involvement with subgrade stabilisation on local Highway projects, Geofabrics® were approached for suggestions with the potential to assist QR engineers.

QR decided on a series of three trials using the **Geoweb®** cellular confinement system to strengthen the track structure through the most severely affected sections.

The three-dimensional **Geoweb®** honeycomb structure, works in load support applications, by generating powerful confinement forces through ballast / cell wall friction, creating a load dispersion structure with high flexible strength.



Each trial section comprised of short lengths of **Megaflo®** subsoil panel drain spaced at 20m centres, **bidim® A24** nonwoven geotextile, to maintain separation between the subgrade and ballast layers and then the 200mm deep **Geoweb®** was installed.

Each of the 2.5m x 8.4m panels were held expanded in place with evenly spaced steel stakes, which were later removed. The cells were overfilled by 150-200mm of standard rail ballast before levelling with large "Grader" type machinery.

A single layer of **Tensar® SSLA30** geogrid was then installed, which will serve to maintain the ballast profile and further reduce maintenance costs.

The ease of installation allowed for the entire construction to be completed within short permissible track downtimes. QR National, despite being extremely pleased with the progress to date, intend to monitor and assess the performance of the **Geoweb®** sections through the next wet season before recommending its use more widely across its rail network.



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