



GEOFABRICS CASE STUDY



MULTIFUNCTIONAL WOVEN GEOXTEXTILE STABILISES FIRE TRACK IN QUEENSLAND

PRODUCTS USED

Mirafi® RSi Multifunctional Woven Geotextile

- Superior separation and filtration capability with effective prevention of aggregate mixing and loss of sub-base material into soft subgrade
- Material cost savings of up to 33% by reducing the amount of base material required
- Double layer construction made from high-tenacity polypropylene filament, provides superior reinforcement strength and soil interaction capabilities by allowing high water flow and soil retention within a roadway system
- High permeability with efficient release of pore water pressure which makes it suitable for installation over soft wet soils

MIRAFI® is a registered trademark of Solmax.



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PROJECT DESCRIPTION

A 5km fire track was required in central Queensland to enable access to 10 tonne fire trucks.

The initial design required the weak black soil to be excavated 30cm below the natural surface and backfilled with a locally sourced TMR type 2.5 material back to grade height. Due to the area being a flood plain, the track needed to be level with the existing surface at the completion of the backfill and compaction.

During construction, the sub-contractor was unable to achieve specification requirements of load testing with no movement along with 97% compaction standard at pavement level. The design scope failed the specification requirements due to a lack of treatment of the underlying black soil which was extremely moist despite the area experiencing a dry spell during construction.

OUR SOLUTION

After consultation with the Geofabrics Technical team, Mirafi RS380i was proposed as a solution based on several factors. The product is capable of working effectively with non-manufactured materials over weak subgrades. Additionally, Geofabrics has prior experience using Mirafi RS380i under similar conditions and design parameters on a Sunshine Coast project. The solution also aligned with the initial design and construction requirements of the fire track.

Three rolls of Mirafi RS380i were sent to site for testing and a trial over 300m of the road was sanctioned. The sub-grade section was excavated and the Mirafi RS380i was laid on the existing and untreated sub-grade. Pavement was laid and compacted but not trimmed to level. Proof rolling occurred immediately after placement with fully laden moxi's.

The client was satisfied with the outcome of the project trial and instructed the contractor to continue using Mirafi RS380i under the pavement for the rest of the project.



The Mirafi RS380i has provided us with an excellent result on site. Taking into consideration the original design scope and the existing heavy black soil site conditions with DCP CBR's of 0mm @ 30cm below the subgrade. We have been able to maintain our load testing and compaction (104%) of the pavement layer through the site. We would not hesitate in using the Mirafi RSi in similar conditions again.

Wade Hind - Calibre Earthmoving



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