



GEOFABRICS CASE STUDY



IMPROVING THE ROAD CONDITIONS OF SILO HIGHWAY, PAPUA NEW GUINEA

PRODUCTS USED

SOLMAX 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



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PROJECT DESCRIPTION

Silo Highway is an 84km long road that connects Silo Plantation with Numundo Oil Mill. It is frequently used by local traffic and heavy-duty fruit trucks that weigh over 20 tonnes. Due to heavy truck traffic and wet, weak subgrade, the road had deteriorated significantly. Regular maintenance and repairs were required by transporting aggregates from 40km away, which proved to be extremely costly.

New Britain Palm Oil Limited (NBPOL) contacted Markham Culverts for assistance on a cost-effective, long-term solution to improve the road conditions on Silo Highway.

OUR SOLUTION

Markham Culverts conducted an initial inspection of the site, during which they recommended the use of Solmax Mirafi RSi Multifunctional Woven Geotextile to assist with stabilising the road. To evaluate its effectiveness, two sections along the Silo Highway were chosen as trial sites for the Mirafi RSi installation.

Geofabrics assisted with creating a Mirafi RSi design using the Miraspec software. The team was onsite with Markham Culverts to provide training and technical support to NBPOL Civil Department. To complete two sections on Silo Highway, 200m of Mirafi RS380i was used, covering a total area of 920m².

The team revisited the site 24 hours after the Mirafi RSi installation and observed that the road remained stable, effectively supporting the weight and usage frequency of 40t cherry picker trucks and local traffic. The engineers were pleased with the Mirafi RSi solution as it was simple to install and resulted in cost-savings. The installation only required a 250mm layer of GAP75 fill, which was considerably less compared to 450mm of aggregate that previously had to be used every second month in order to repair the roads.

Since installing Mirafi RSi, this section of the road has not required any further maintenance.



920m²
total area covered

200m of
Mirafi RSi
used



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