



GEOFABRICS CASE STUDY



HIGH-PERFORMANCE GEOTEXTILE SOLVES WEBER ROAD SUBGRADE ISSUES

PRODUCTS USED

Solmax 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



RIAAN EAGAR

SALES ENGINEER - CENTRAL SOUTH ISLAND

☎ +64 21 916 736

✉ R.EAGAR@GEOFABRICS.CO.NZ

📍 CHRISTCHURCH, NEW ZEALAND

PROJECT DESCRIPTION

The Tararua District Council in New Zealand identified a section of Weber Road as hazardous due to ongoing deterioration caused by rutting, water ponding, and inadequate drainage. Situated on soft, compressible subgrade soils predominantly composed of high-moisture silts and clays, the site had low shear strength and a high risk of settlement. These conditions posed significant construction challenges, particularly in managing differential settlement, bearing capacity, and long-term pavement performance.

To address these issues, a geotextile solution was required to stabilise the subgrade, manage excess moisture, and extend pavement service life.

OUR SOLUTION

Mirafi H2Rx multifunctional woven geotextile was selected for its dual functionality and high-performance wicking capabilities. Designed to reinforce the subgrade, it delivers high tensile strength and lateral restraint to support traffic loads. Its patented wicking fibres also actively manage moisture by removing excess pore water, helping to prevent pumping and subgrade softening.

To prepare the ground for installation, light grading was undertaken to remove surface irregularities, with care taken to avoid using heavy equipment that might disturb the soft subgrade. Mirafi H2Rx geotextile rolls were then installed along the alignment using light machinery. The geotextile was laid in the direction of traffic flow, with longitudinal seams overlapped by 300 – 450 millimetres and cross-roll overlaps staggered to minimise potential weak points.

A total of 6,750 m² of H2Rx geotextile was installed to evenly distribute loads and reduce deformation across the soft, moisture-sensitive subgrade. Its unique wicking action continuously draws moisture away from the road base, preventing saturation and protecting the pavement's structural integrity. This transformed the site into a durable, high-performing roadway that effectively addressed the initial ground conditions.



**Moisture
control
and subgrade
stabilisation**

**6,750 m²
H2Rx
installed**



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