



GEOFABRICS CASE STUDY



MOISTURE-CONTROL GEOTEXTILE REINFORCES QUEEN STREET PAVEMENT

PRODUCTS USED

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

Megaфло® Green Socked Slotted Drain Pipe

- A wide, flat-shaped panel drainage system made from recycled HDPE and wrapped with Bidim® Green non-woven geotextile for quick and effective sub-surface drainage
- Up to 4.9 times faster water drainage compared to conventional 100mm round agi pipe due to its ability to effectively remove excess water with its increased in-take slot distribution
- Saves up to 50% installation compared to conventional 100mm round agi pipe
- Higher compressive strength under traffic loads due to its structural rigidity

MIRAFI® is a registered trademark of Solmax.

PROJECT DESCRIPTION

Livingstone Shire Council undertook a critical infrastructure upgrade on Queen Street in Yeppoon, Queensland, to address severe pavement cracking caused by a soft, saturated subgrade.

The Council required a solution that combined structural reinforcement with effective moisture management, drawing excess water away from the subgrade to improve long-term pavement performance, prevent further cracking, and reduce future maintenance requirements.

OUR SOLUTION

After consultation with their Pavements Engineer, the Council selected Mirafi H2Rx multifunctional woven geotextile, an innovative solution providing separation, filtration, reinforcement, and moisture management.

The construction team removed the existing pavement, stabilised the subgrade with basecourse material, and installed Megaфло Green socked slotted drain pipe. This wide, flat-shaped drain wrapped in Bidim® Green geotextile prevents soil migration and rapidly channels moisture from the subgrade. To enhance this drainage, Mirafi H2Rx geotextile was laid with a tile overlap and embedded into the Megaфло pipe, creating a direct pathway to effectively manage moisture levels.

Mirafi H2Rx geotextile was deployed across 3,600 m² of pavement, delivering critical reinforcement and moisture control. Its wicking properties efficiently removed excess moisture, preventing subgrade saturation and surface cracking. The material also provided essential separation and structural support, enhancing pavement durability.

A staged construction approach ensured minimal disruption, and the successful outcome demonstrated the geotextile's dual role in mechanical and moisture stabilisation.

3,600 m²
pavement reinforced

Effective
moisture control



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