

PERMATHENE NEWS

No 2

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Permathene Ltd has recently achieved **ISO 9002** Certification in recognition of the procedures and systems used by the company to monitor Quality Control and Quality Assurance. Also of note is Geosynthetics Manager Mr Moninder (Witty) Bindra who has been granted full membership to the prestigious IPENZ (The Institution of Professional Engineers New Zealand).



Permathene MD Matt Cossio being presented with the ISO 9002 Certificate by JAS-ANZ auditor Oliver Evans.

Regional Park Project, Hopuhopu



Landlok TRM 450 turf reinforcement mat was used in this project to enhance the natural ability of plants to protect soil from erosion and improve the beauty of this regional park. By using a flexible three dimensional turf reinforcement system on a slope or a bank, seed and soil is retained and seed

germination is stimulated which greatly accelerates natural growth of vegetation.

In this project, Landlok TRM 450 worked because of its unique three dimensional construction that creates a thick matrix with numerous void spaces. Through soil filling, sediment retention and proper seeding, the plant roots take hold within the mesh and permanently anchor the entire structure to the ground.

Approximately 1000m² area was covered with Landlok TRM 450, which is manufactured by SI Corporation, a world leader in permanent and temporary erosion control solutions and distributed exclusively in NZ by Permathene Ltd.

Client: Waikato Raupatu Land Trust

Consultant: Opus International Consultants Ltd, Hamilton

Contractor: Tanlaw Corporation Ltd, Ngaruawahia

Product: Landlok TRM 450

Date: July 1999 - October 1999

Lagoon Barrier Curtain, Whitford

Client: Manukau Water

Contractor: Wilkinson Smith Contractors Ltd, Auckland

Consultant: Opus International Consultants Ltd, Auckland

Product: Permaliner 1mm

Date: September 2000

Manukau City Council operates the Beachlands Maraetai Water Treatment Plant in Whitford. In September 2000 Permathene was selected to supply a lagoon barrier curtain. The purpose of the curtain is to separate the existing lagoon which is approx 15m x 60m into two biological process sections. The curtain was fabricated from 1mm Permaliner FPA (Flexible Polypropylene Alloy). With excellent tensile strength and resistance to UV and chemical attack it has an expected life of many years. The vertical barrier was made buoyant with polyurethane floats and is anchored to the bottom of the pond by heavy 20mm diameter chain. A synthetic rope through the floats is tensioned by means of a winch to hold the barrier curtain in place.



Takaka Hill Washout Repair Project, Nelson

Client: Transit New Zealand

Consultant: Opus International Consultants Ltd, Nelson

Contractor: Excell Corporation Ltd, Nelson

Product: Syntex High Strength Wovens

Date: July 2000

Hheavy rainfall caused a section of SH 60 on the Takaka Hill, west of Nelson to slip causing a hazard to road users. Attempts to stabilise the slope using a combination of backfill, gabions and rock facing across the steepest and narrowest section of the washout were unsuccessful. After thorough discussions with the contractors, Syntex 2x2 and Syntex 4x4 high strength woven geotextiles were approved for use in the construction of a Mechanical Stabilised Earth (MSE) wall. Syntex high strength geotextiles are designed for exactly this type of application. The heavy individual yarns are woven into a unique twill pattern forming an extremely tough geotextile with superior hydraulic characteristics which are considered ideal for reinforcement of soft soils, steepened slopes, retaining walls, lagoon closures and lining support systems. The area was graded and smoothed, removing all rocks and debris. Two layers of AP 65 aggregate, 150mm thick were placed using Syntex 4x4 geotextiles. Next, the first layer of Syntex 2x2



was laid over the compacted Onekaka Schist Sandy soil. This sequence was repeated until the wall reached its total height of 6m. Hydroseeding the wrapped face of the wall was suggested. Syntex is distributed by Permathene Ltd in the Pacific region and India.

Asphalt Overlay, Dunedin

Client: Dunedin City Council

Contractor: Fulton Hogan Ltd, Dunedin

Consultant: City Consultants, Dunedin

Product: Pave-Dry

Date: April 2000

As part of the Dunedin City Council's annual shape correction program, Burlington St, a 6m wide street that is used as an important link between High Street and Moray Place with approx. 6000 vehicles passing per day, was identified for repair and repaving work.

The geotechnical report showed that there was no major underlying subgrade problem, however the surface was asphalt that had oxidised and cracked over time. It was decided by City Consultants to lay Pave-Dry asphalt overlay fabric over the existing surface, completed by an asphalt leveling course and a 38mm asphalt overlay. Pave-Dry increases the pavement life, retards reflective cracking and reduces maintenance costs. Pave-Dry is a nonwoven, needlepunched polypropylene staple fibre geotextile, specifically engineered for asphalt overlays. As the polypropylene has an affinity for petroleum products there is considerable migration of tack coat into the



yarns. This creates an inert, laminated, monolithic composite that has been proven to delay resurfacing years longer than conventional repaving techniques.

Fulton Hogan, Dunedin installed Pave-Dry with the calandered side up. All the cracks (>6.3mm wide) were filled with an appropriate crack sealant and the tack coat was sprayed approx 150mm wider than the width of the fabric. All seams were overlapped 75mm along roll edges and 150mm at roll ends.

Pave-Dry, being a polypropylene based fabric, is fast becoming the preferred method in the industry as trials have determined it can be recycled back into the asphalt making it far more economical and environmentally friendly than products made with other polymers.

Banbury's Carpark Development, Waipu

Client: Banbury Ltd, Waipu, Northland

Consultant: Permathene Ltd, Auckland

Product: Turf Pave Sub Surface Paving

Date: July 2000

Banbury Ltd developed this 600m² area as a parking lot for cars. The area was fairly soft and required subsurface paving technology to distribute loads from pedestrian and vehicular traffic to the basecourse below, minimising grass and root compaction. The criteria was to provide a product which was more aesthetically pleasing and more cost effective than concrete or asphalt. Permathene supplied Turf Pave, a lightweight



HDPE grid structure specially designed to stabilise and support turf, grass or decorative gravel. It allows the creation of stabilised and durable lush lawns, which add to the quality and beauty of the environment. Simple and economical to install, resistant to UV, acids, alkalis, extreme temperatures.

Pond Construction, Wellington

Client: Lambton Harbour Developments

Contractor: Downer Construction Ltd, Wellington

Architect: Athfield Architects

Landscape Architect: Megan Wraight

Pond Construction: Kiel Landscapes & Stonework Ltd

Products: Permaliner .75mm and Syntex 1001



The pond is a fresh water rock pool set within an artificially created coastal headland. Water is supplied from stormwater runoff from the roof of an adjacent building. The original construction design specified the pond liner be of a steel reinforced concrete construction. However, due to the economics and inefficiencies created by forming a geometric shape within rigid concrete, it was decided to use .75mm Permaliner (FPA) polypropylene geomembrane. The geomembrane was manufactured in our factory and sealed between two layers of heavy grade Syntex 1001 nonwoven geotextile for added protection and supplied in roll form to Kiel Landscapes & Stonework Ltd who completed the installation. The installation process was to excavate the natural pond shape, lay the Syntex encased Permaliner and cover with 100mm of high strength concrete. Finally rocks, gravels and textures were placed in and around the pond to create a natural finish.

New Products from Permathene

Landlok Biodegradable Erosion Control Blankets (ECBs) combine forces with vegetation - “nature’s own” erosion preventer to stem the loss of soil on slopes, banks and channels. Made from weed free straw and coconut (coir) fibres, these ECBs act as dimensionally stable, reinforced mulches to hold seeds and soils in place until vegetation is established. Available in short term and long term, photo degradable and 100% biodegradable for environmentally sensitive areas. The proper selection of erosion control blankets is important to ensure a fully functional erosion control system. Soil type, climate, site geometry, agronomic factors and precipitation / hydraulic conditions all play a role in the selection process.



Vercan Root Barrier: A textured high density polyethylene specially designed to confine tree roots. Easy to install by using a narrow width excavator and flexible to form any contour, Vercan Root Barrier is the simple long term solution to prevent cracked paths, roads, pipes and damage to other utilities.



Roll Sizes: 600mm x 30m

900mm x 30m

1200mm x 30m

For any further information on these products and projects, please contact us.

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