

Permathene Newsletter

No 7, July 2006 Latest News and Information from Permathene Civil & Environmental

Permathene News

Successful Completion of First Liquid Boot Job in New Zealand

In June 2006 Permathene successfully completed the first New Zealand installation of Liquid Boot. To find out more please view the Case Studies section of this newsletter.



Launch of Estore

Permathene are proud to announce the official launch of estore. Permathene Estore allows customers to purchase products hassle free, on line and take advantage of some great offers.

Buying on line is easy all you have to do is register and start shopping. All listed products are accompanied by images, description, measurements. Freight is also calculated on the spot to ensure you get the most accurate cost estimate. Once you place an order we will immediately inform you of the status of your order and we will notify you of dispatch.

Permathene is the first in this industry to provide clients with the convenience of online shopping.

Most of our products are available on this site and can be shipped to locations anywhere in New Zealand and the Pacific.

New Erosion Control Range for Permathene Australia

Permathene Australia have acquired exclusive distributor rights for North American Green, the world's leading in erosion and sediment control specialist.

NA Green product range includes VMax TRM's which are an alternative to hard armor and riprap. Vmax range allows vegetation to be used in severe conditions where traditionally only gabion mattresses, rock riprap and concrete were the suitable alternatives. Vmax turf reinforcement mats are carefully designed using proprietary software which considers the lining solution from the initial unvegetated stage to the final vegetated stage.



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- Gasproofing Sewage (Liquid Boot®)

Geomembrane Range for Permathene Australia

Permathene Australia are proud to announce the exclusive distributor rights to the Plastika, Kritis, geomembrane range. This range includes: Flexible Polypropylene, HDPE, LLDPE.

New Staff

Mark Kendall was employed as a sales engineer in May 2006.

Before joining Permathene he spent five years in a retail Sales and Support program designed for a Start Up manufacturing company. Mark completed Toolmaking Apprenticeship in Auckland. He later moved to England where he worked in Derby.



With a wide range of Technical interests Mark is enthusiastic about a role in Permathene's Sales and Engineering department.

Product Feature

Liquid Boot® Waterproofing and Gas proofing Membrane

Liquid Boot® is a two component spray applied system designed specifically to quickly and permanently seal contaminated sites prior to construction. These are typically referred to as Brownfield sites*, including landfills, reclaimed land, converted petrol stations and dry cleaners, etc. Liquid Boot seals and protects against potential exposure from gases including methane and chemical contamination from industries such as chemical and petroleum production and storage.

The advantages of Liquid Boot over other methods include:

1. When applied the product completely covers all protrusions such as venting, columns, pads, etc. This is almost impossible using sheet materials such as HDPE, butyl rubber, polypropylene, bentonite and geosynthetic clay liners, etc. The problem with slow installation times and also when fastened to walls, footings and protrusions. The longterm integrity of the seal is questionable.
2. Liquid Boot is fast to install. The biggest problem facing construction over contaminated sites is the time it can take to install a sheet material which meets specification. As installation of sheet materials can often take weeks or months with deployment controlled by weather conditions and site preparation.
3. Liquid Boot can be applied to any surface type including service channels, below footings, above footings, walls, etc. The very types of surfaces which make other methods extremely time consuming to perform.
4. A single Permathene installation crew is able to install 800m² per day over any type of prepared site.



Applications:

- Gasproofing Membrane Liner (methane gas, volatile gas compounds, other soil contaminants)
- Potable Water Liner (canals, tanks, reservoirs, ponds)
- Conventional Waterproofing

As the speed of installation is unrestricted by protrusions and contours, an accurate cost of construction can be estimated by the QS. This is almost impossible when using sheet methods which will create friction between owner and specifier.

Liquid Boot is a 25 year old solution manufactured in Santa Ana, Orange County, California which has been proven by time. The county of Los Angeles Department of Public Works, which has one of the most stringent environmental codes in practice, has approved Liquid Boot as an effective methane gas barrier and by Los Angeles City for use as gas protection and below grade waterproofing. The US Navy has approved Liquid Boot for its installations worldwide.

The product is a chloroprene modified asphaltic (CMA) emulsion. Both components are waterborne and are cold-spray-applied forming a seamless, single course membrane which forms a complete waterproofing and gasproofing system and applicable in large scale industrial applications as well as smaller residential.

Settled product forms a black in colour seamless cured film thickness of approximately 2 mm (dependent on technical requirements). Formulas are proprietary, but consist generally of the "A Product", a proprietary polymer modified bituminous substance and the "B Product", a proprietary catalyst. The 2 products are cold sprayed at an 8 : 1 ratio determined by specialist spraying equipment.

Approvals:

Liquid Boot® has been approved by CSIRO (Australia) and US Board of Building and Safety Commissioners as a product for below-grade waterproofing and gas barrier, liner for canals, ponds and reservoirs for repairs and construction, brownfield (contaminated site) and landfill liner and gasproofing membrane as well as waterproofing of decks, roofs, retaining walls and balconies.

Liquid Boot® characteristics:

- Cold, spray-applied
- Seamless, monolithic membrane
- Elastic – stretches over 1,300%
- Non-toxic, no VOC's, no Solvents
- Water-based

Liquid Boot® advantages:

- Applied at room temperatures
- Sets instantly
- Minimum equipment and labour
- Cost effective

Permathene Ltd is the only New Zealand Liquid Boot approved supplier and applicator. For more information please call Permathene on 09 968 8888 or visit www.permathene.com.

* Brownfield is defined by the US EPA as follows: "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant".



Delta: Dimpled Drainage Sheeting by Dorken

Delta is an optimum internal drainage system for basement walls creating a capillary break and replacing sub-base in ground slab construction. As waterproofing membrane protection of underground structures Delta acts as a barrier to give protection from the backfill. The dimples create a vapour and thermal insulation barrier in both internal walls and adjacent to waterproofing systems.

Delta offers protection against rising damp in ground slabs and replaces traditional lean concrete sub-base slabs without compromising the load-bearing capacity of the sub-base.

We stock several types as follows: 8 mm, the standard dimpled sheeting with a very high compressive strength, Delta 20 mm with a higher flow rate, Delta Geo which has a filtration geotextile backing to prevent clogging.

Delta dimpled sheeting is manufactured from environmentally friendly, long-lasting, and resistant special polyethylene. It provides a highly effective and efficient seepage and drainage layer in all areas of construction. It is pressure resistant, rot proof, and resistant to saline solutions, inorganic acids, alkalis, and liquids such as alcohol, organic acids, esters, ketones, and similar substances. Delta dimpled sheeting cannot be damaged or affected either by minerals, humic acid, or bacterial decomposition in the earth, nor can bacteria, fungi and microorganisms attack it. In regard to both the soil and the groundwater the dimpled sheeting remains completely inert and does not give off any damaging or environmentally hazardous substances.



Applications:

- Basement walls
- Tunnels
- Ground slabs
- Hazardous chemical storage areas

Product Types:

Delta NP

Sub-base course/ vapour barrier for vertical installations. Very high flow rate, high compressive strength and low installation cost.

Delta MS

Sub-base course/ vapour barrier for horizontal installations. The ideal alternative to a traditional waste slab subbase. Providing high quality and security and low installation cost.

Delta Geo Drain

A 3-layer integrated system for secure protection and drainage of the waterproofed surface, supplied in roll form for easy transport and installed in one simple operation. Delta Geo Drain protects the structural waterproofing from physical stressing and drains away water. Physical performance is in full accordance with DIN 18195 and DIN 4095. Delta Geo Drain upgrades conventional waterproofing to a high performance sealing system.



Case Study

NZFS Training Facility Stormwater Retention Bunker Baffles

Type of the project: Stormwater Retention Pond Baffles

Date of Completion: Early 2006

The retention pond was created at this facility for treatment of stormwater by allowing for settling of hydrocarbons and suspended solids. To increase ponds productivity, 5 baffles, sized 6.5 x 2.2 m each were specified by SKM, Build by Permathene Limited and installed by Ebert Construction. The baffles were sized to fit the width and height of the pond with a 300 mm square opening located at 300 mm from the bottom of the pond and 500 mm from the side of the pond. Baffles were installed such that the openings are at alternate sides of the pond to maximise the length of flow path.

Every unit was fabricated from Permaliner (Flexible Polypropylene) with a floating device and tension wire rope at the top of the baffle and galvanised anchor chain, fitted through 50 mm PVC pipe inserted into welded seam at the bottom of the baffle.



Abbots Way Retirement Village, Auckland

Type of the project: Gas-Proofing

Date of Completion: Early 2006

Size: 4000 m²

The scope of works for the supply and installation of Gas Proofing Geomembrane at block 1A of this project includes a base layer of 1.5mm smooth HDPE liner and a top layer of 0.5 mm Flexible Polypropylene (Permaliner), with double seam and extrusion welding.

There four layers of Syntex GNP 135 non-woven geotextile has been installed under and above every layer of the geomembrane for protection. Each layer of the geomembrane has been attached to the foundation walls by the use of flat aluminium bars in place by Ramset anchor fasteners at 300 mm intervals. Double-sided moisture and vapour resistant pressure sensitive tape is applied between the membrane and the wall in order to ensure a watertight and gas proof seal.

The foundation walls require the manual application of a preparation agent in order to achieve a surface suitable for the adhesion of the polyisobutylene tape.



Liquid Boot Project

Type of the project: Gas - Proofing Sewage and Stormwater Manholes with Liquid Boot® Geomembrane

Date of Completion: July 2006

Size: 1100 m²

A Liquid Boot® Geomembrane has been specified for Gas Proofing of the Stormwater and Sewage Manholes for Retirement Village construction.

Liquid Boot® is seamless, two-component spray-applied Geomembrane, designed for gas-and waterproofing applications on so-called "Brownfields".

Term "Brownfields" is designed for a description of former landfill sites, reclaimed land, converted petrol stations, dry cleaners, chemical manufacturing facilities, etc.

Each manhole has to be properly prepared for the installation, and then Liquid Boot® geomembrane applied directly onto the concrete, creating a monolithic, seamless system, preventing landfill gas penetration to the constructed buildings.

This site has over 90 manholes for both, storm and wastewater, scattered all over the construction site, so high mobility of the installation units is crucial.

A strict QA system is making sure that consistency of the membrane is not compromised at any part of the installation.

