FreDrain™ Ultra

Prefabricated HDPE Drainage Composite Strip Filter Pipe

FreDrain™ Ultra Strip Filter is a modular composite drainage and collection system consisting of a three dimensional, high-flow, drainage core which is wrapped with a non-woven filter geotextile. It is designed to replace a conventional sand or gravel covered pipe drains by providing a far greater contact area for water to pass, resulting in faster more efficient drainage

Available in 100mm, 200mm and 300mm widths. Other widths are available on request. A full range of fittings are available with the system for a fast and easy installation.

APPLICATIONS

1. Subsoil drains in roads, railways, sports field and building foundations
2. Behind shotcrete, in walls, between concrete piles, tunnels and embankments
3. Mining industry for slope drainage, dewatering tailings, etc
4. Stabilising slopes by lowering the water table thereby reducing surface erosion caused by surface run off

ADVANTAGES

The most important characteristic of any subsurface drainage system is its ability to collect water from the surrounding soil. Pipe and stone systems have major limitations when compared to FreDrain™ Ultra. The open area in FreDrain™ Ultra (60%) far exceed that of a perforated pipe (1.1%) and rigid strip filters (2.5%).

- Low installed cost – Combined installation and material cost is usually less than half of that for aggregate drains
- Easy to handle and install – Lightweight (less than 0.4 kg/m2), easy-to-handle
- Reduces drainage system space requirements
- Strong and durable – Crush strength of core resists damage during installation
- High flow capacity – Flat pipe structure of core provides multiple channels for vertical and horizontal

FreDrain™ Ultra

Drainage behind basement walls and stabilised embankments

FreDrain™ Ultra Rigid can used to reduce hydrostatic pressure behind walls. This can be done by spacing FreDrain™ Ultra down the slopes or behind walls at predetermined intervals or spacings. The use of custom made fittings at various levels along the FreDrain™ Ultra with PE or PVC pipe inserted prior to shotcrete , will provide the drain holes.

INSTALLATION

Place the FreDrain™ Ultra behind wall, in between piles or down embankment. The spacing of the FreDrain™ Ultra is dependent on the hydrostatic pressures, minimum shotcrete coverage, etc. and must be determined by the designer. The FreDrain™ Ultra can be secured by pins driven through the drainage strip into the soil behind.

JOINING

FreDrain™ Ultra Rigid StripFilter can be joined together by premade Couplers.
Slide one end of drain into each side of the connector.
Secure fitting to FreDrain™ Ultra Rigid StripFilter using a 100mm wide Reinforced Canvatape.

OUTLETS & CONNECTORS

Standard and specialised connectors and outlets are used to transition the collected water from FreDrain™ to FreDrain™ Ultra Rigid
Strip and to round smooth wall, PVC or corrugated polyethylene pipe.

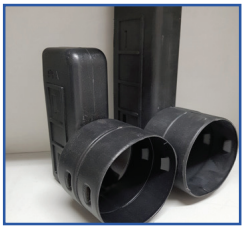
Specialised Connectors include: Inspection Joiners, T&Y Joiners, Right Angle Joiners, etc.








STANDARD ACCESSORIES


PROPERTIES

Core Properties	40mm x 170mm	Geotextile Properties
Material	HDPE	Flow(AS3706.9)>200m2/s
Roll Length (m)	50	EOS (AS3706.4)< 0.12 mm
Roll width (mm)	170	Strength Class A, Filtration (I-V) RMS R63
Roll Weight (kg)	52	Grab (AS3706.2) >500 N

Installation Instructions

Typical Subsoil Installation

TRENCHING

Dig a 50-100mm wide trench using a standard trenching machine,. The trench should be approximately 75mm deeper than the vertical height of the FreDrain™ Ultra.

INSTALLATION

Place the FreDrain™ Ultra in the trench to fit against the side of the trench and at the bottom of the trench. Backfill trench with coarse sand or fine gravel to avoid settlement.

JOINING

FreDrain™ Ultra can be joined together using a purpose made Coupler. The geotextile must fully cover all exposed FreDrain™ core to prevent soil particules entering and blocking the FreDrain™.

Slide one end of drain into each side of the coupler. Secure fitting to FreDrain™ Ultra using a 100mm wide Reinforced Canvas tape.

TEE CONNECTORS

FreDrain™ Ultra can be installed with branch lines to cover larger surface areas. Tee connectors are used to join straight and branch lines of strip drain together. Place the end section of each branch line 50mm into the tee connector and secure with 100mm wide tape. Use the stop guide lines on the fitting to ensure the drain inside the connector maintains an open area for water flow.

OUTLET CONNECTORS

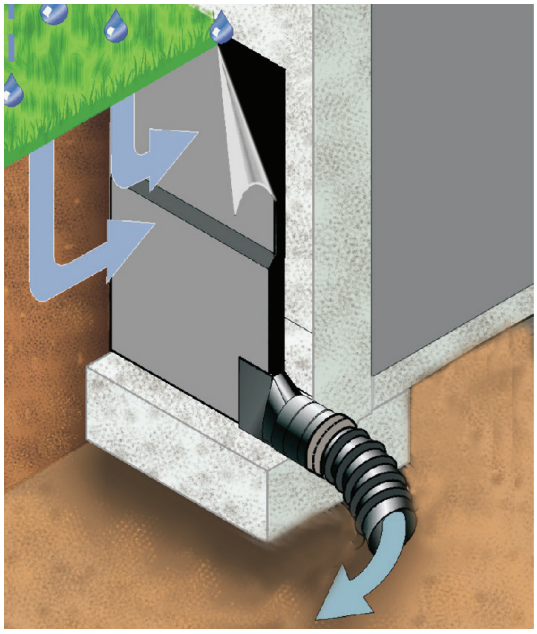
Outlet connections are used to transition the collected water from the FreDrain™ Ultra Strip to a 100mm diameter smooth wall, PVC or corrugated polyethylene pipe.

A. End outlets are available for 170mmn FreDrain™ Ultra Strips. Also available are universal end outlets that can be used for all FreDrain™ Ultra Strip widths

B. Universal tee outlets can be used with for all FreDrain™ Ultra Strips

C. Side outlets are available for 170mmn FreDrain™ Ultra Strips

FOUNDATION DRAIN



ROAD EDGE DRAIN