

CORDRAIN™

DRAINAGE SOLUTIONS



GEOFABRICS®

Smarter Infrastructure

OVERVIEW

Cordrain™ is an easy to install geocomposite drain specifically designed to reduce hydrostatic pressure behind structures.

Cordrain™ is a lightweight alternative to traditional gravel drains. Cordrain™ consists of a cusped polymer core (cuspatations on both sides), fitted with a nonwoven geotextile, bonded to the core on one side.

THE PROBLEM

Foundation, retaining and basement walls are especially susceptible to soil and water pressure. Hydrostatic pressure is the main cause of dampness, water leaks and loss in structural integrity to below ground walls.

FUNCTION

Cordrain™ is effective at reducing hydrostatic pressure by drawing down the groundwater and removing it before it reaches the face of the wall.

APPLICATIONS

Basement Walls - Cordrain™ intercepts groundwater before it reaches the structure. Cordrain™ also protects the waterproofing from damage during placement of backfill and provides a vapour barrier improving the effectiveness of the waterproofing.

Retaining Walls - Sheet drainage attached to the rear of the retaining walls reduces hydrostatic pressure improving long term wall stability

Box Culverts - The use of Cordrain™ around the outside of culverts controls leakage into the structure.

Shotcrete Walls - Lightweight sheet drainage installed in strips or full coverage. The core provides a good surface for adhesion of the shotcrete.

Bridge Abutments - Cordrain™ controls hydrostatic pressure that could reduce the stability of abutment walls.

BENEFITS

- Effectively reduces hydrostatic pressure behind walls
- Provides a vapour barrier between drainage layer and wall
- Enhances the waterproofing of structures
- Cordrain™ typically eliminates the need for aggregate or sand backfill
- Lightweight and flexible for easy handling and speed of installation
- Chemically resistant to most naturally occurring soils
- Predictable performance having uniform material properties
- Reduces drainage space requirements
- Strong and durable polymer core protecting the waterproofing layer from installation damage

HOW IT WORKS

Cordrain™ when laid against the structure removes excess water from the soil backfill and transports the water down to the collector drain (see Figure 1).

Cordrain™ incorporates a nonwoven geotextile and in most soils, the geotextile ensures stable filtration of the adjacent soil.

A soil filter develops within the first few millimetres of soil against the geotextile. As water passes from the original soil into the drain, it washes a few small particles with it for a short period of time after installation.

As the particles are washed through, a bridging network of slightly larger particles builds up against the geotextile.

This network prevents further small particles from being washed through, stabilising the soil and allowing only water to pass through the system (see Figure 2).

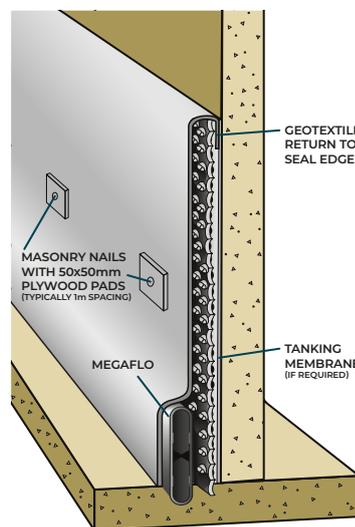


FIGURE 1.
BUILDING BASEMENTS/CELLARS (NOT TO SCALE)

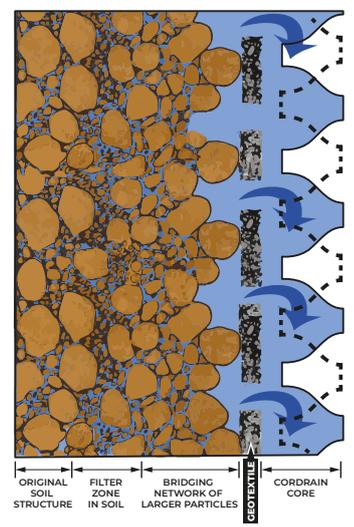


FIGURE 2.
MAGNIFIED CROSS SECTION OF CORDRAIN™ & SOIL FILTER
(NOT TO SCALE)

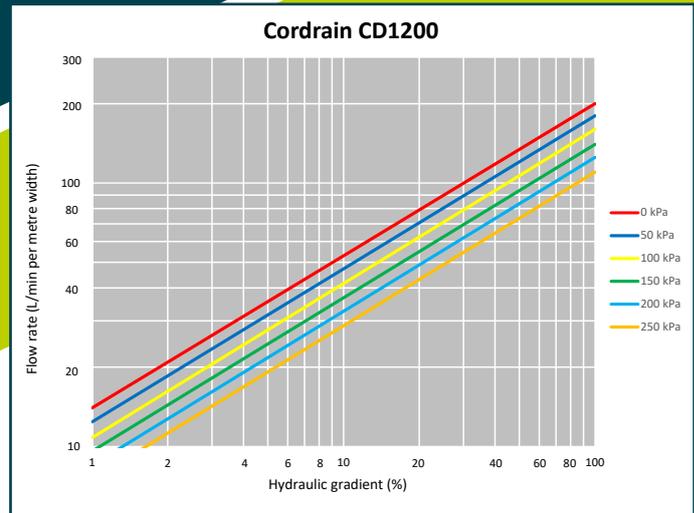
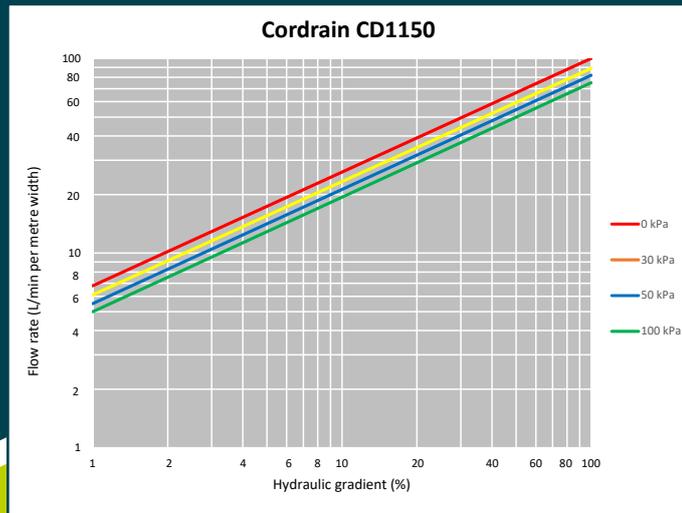
PRODUCT RANGE

Cordrain™ is offered in of a range of grades suitable for most vertical drainage applications.

PRODUCT	THICKNESS	CRUSH STRENGTH	REC. MAX SOIL DEPTH
Cordrain™ CD1150	12mm	100kPa	0 - 4 metres
Cordrain™ CD1200	18mm	250kPa	0 - 10 metres

- An approximate factor of safety of 3 has been used to determine the recommended maximum soil depth.
- The above values are a guideline only. It is up to the designer to calculate the in-situ backfill properties.

FLOW RATE vs HYRAULIC GRADIENT



PRODUCT DESCRIPTION

Cordrain™ is a geocomposite vertical drainage blanket which consists of a plastic cusped sheet (cusped on both sides) with a nonwoven geotextile bonded on one side only. The geotextile extends approximately 100mm beyond the edge of the drainage core to achieve a continuous cover at the overlapped joint.

TYPICAL PROPERTIES		UNITS	CD1150	CD1200
GEOTEXTILE	Grab Tensile Strength	N	500	
	Trapezoidal Tear Strength	N	180	
	EOS (O ₉₅)	µm	75	
	Flow Rate (Q ₁₀₀)	l/m ² /s	200	
PLASTIC CORE	Material		HDPE	
	Core Profile		Raised cusps on both side	
	Fungus Resistance		Excellent	
	Mass	g/m ²	720	900
	Crush Strength	kPa	100	250
	Core Thickness	mm	12	18
	In-plane Flow (nominal)	l/min/m	75	110
GEO-COMP-OSITE	Roll Length	m	30	25
	Roll Width	m	1.15	1.20

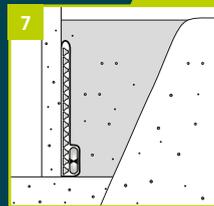
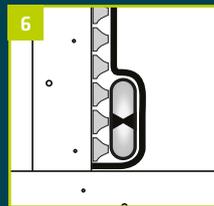
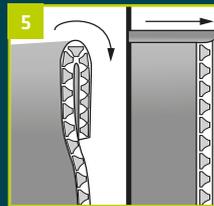
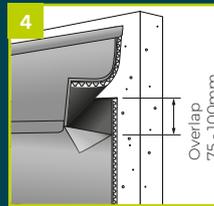
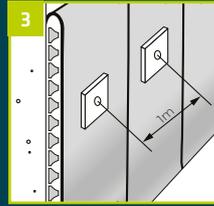
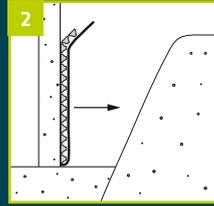
INSTALLATION GUIDELINES

Storage and Handling

Keep rolls stored on a dry, clean and even surface fully wrapped to protect the product from UV exposure.

Product Installation

1. Measure wall height and cut length of Cordrain™. Cordrain™ can be cut using most commonly available cutting blades. Ensure that Cordrain™ is not walked on that would result in damage to the product.
2. Place Cordrain™ up against the wall with the geotextile facing the soil you wish to drain.
3. Fix with masonry nails through a 50mm x 50mm pad of plywood or if waterproofing materials have already been applied then fix with a contact adhesive covering 5 raised cusps at 1m centres.
4. Join sheets horizontally by overlapping the black core layer by 75 – 100mm. The top geotextile is then lapped over the bottom geotextile and then taped down in position. Vertical joints are made similarly by overlapping cores and geotextile and taping down the top geotextile.
5. At the top of the Cordrain™ the fabric must either be turned over the core or secured against the wall using tape to prevent ingress of soil into the core.
6. Peel back the geotextile at the base of the core and place Megaflo collector drain up against the core along the base of the wall and lay geotextile back over Megaflo.
7. Backfill materials should be installed within 2 weeks to cover the Cordrain™ from exposure to UV. The backfill should be free draining to allow water to flow through to Cordrain™. Clay is not allowed. Backfilling and compaction to be carried out in accordance with the project specification.



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