

# Hydroduct<sup>®</sup> 650

High compressive strength, pre-fabricated geocomposite drain consisting of a studded polystyrene core covered with a heavy duty, needle punched, non-woven polypropylene filter fabric

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## Product Description

- Superior compressive strength - studded core accepts structural and traffic loads, allows water to flow to designated drainage collection points.
- High flow capacity - drains 3 litre/sec/metre width.
- Simple, reliable drainage membrane - collects and controls percolated water under surfacing on podiums, trafficked decks, bridge decks, pipe bays, service ducts, planters on suspended or elevated roof areas, and basements.
- Rot proof - unaffected by permanent immersion in water, bacteria, dilute acids and alkalis.
- Cost effective - replaces expensive aggregate drainage layers or preformed drainage tiles and reduces dead loadings.
- Non-woven filter fabric - allows water to pass into the drain core while restricting the movement of soil and silt particles.
- Enhances waterproofing - conveys water away from waterproofing membrane and eliminates hydrostatic pressure build-up.
- Lightweight - easy to install, hand laid without equipment

## Applications

Hydroduct<sup>®</sup>650 is a high compressive strength, two-part, preformed geocomposite drainage sheet system, comprising a hollow studded polystyrene core covered on one side with strong non-woven polypropylene filter fabric. This robust drainage composite has been developed to provide a simple, reliable drainage system for collecting and controlling water under roof/podium finishes or used as a dewatering or permanent drainage system beneath basement structures.

The high 862kN / m<sup>2</sup> compressive strength of the sheet is capable of taking structural loadings whilst supporting insitu concrete and all types of cementitious or loose laid finishes.

Hydroduct 650 is designed to withstand traffic loadings and provide a high water flow capacity of 3 litre/second/metre width. The tough construction of the studded sheet makes it particularly useful on podium decks where a mixture of traffic surfaces are combined with landscape areas and planters. When installed it will prevent a build-up of water against the waterproof membrane to enhance its overall security and increase the factor of safety of the structure.

The drainage sheet should be laid on top of the waterproof membrane and protection as soon as possible to prevent mechanical damage from other trades. The roof/podium slabs should have adequate falls so that the collected water is carried towards the drainage gullies and channels in accordance with standard practice.

## Physical Properties

PROPERTY	TEST METHOD	TYPICAL VALUE
<b>Drainage Core</b>		
Polymer	N/A	High Impact Polystyrene
Thickness	ASTM C 366-B	9.5mm
Compressive Strength	ASTM D 1621	860kPa
Flow Rate	ASTM D 4716	3.0 litre/sec/metre width
<b>Geotextile</b>		
Type	N/A	Non-woven
Polymer	N/A	Polypropylene
Weight	ASTM D 3776	270g / m <sup>2</sup>
Tensile Strength	ASTM D 4632	900N
Trapezoidal Tear	ASTM D 4533	360N
Mullen Burst	ASTM D 3786	2750 kPa
Puncture Strength	ASTM D 4833	59 kg
Apparent Opening Size	ASTM D 4751	0.147mm (100 U.S.sieve)
Permittivity	ASTM D 4491	3260 Litre/min/m <sup>2</sup>

## Supply

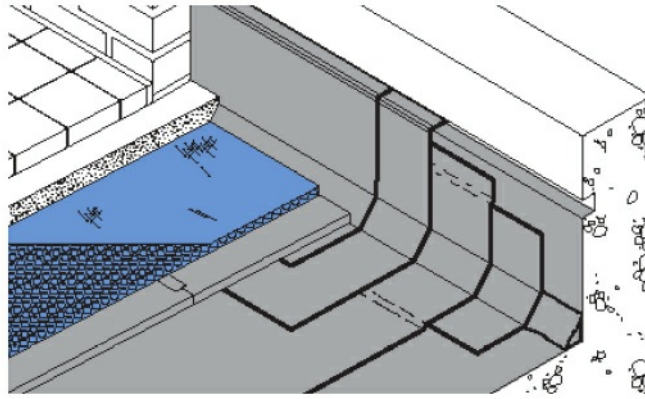
Hydroduct 650	1.22m x 15.25m long roll (18.6 sq m) weight 22.7kg
Storage	Keep under cover in original wrapping and cover immediately after installation

## Ancillary Products

Bitustik	150mm x 15.0m long rolls
Cut Fasteners	3 per roll of Hydroduct required

## Equipment by Others

Stanley knife for trimming.



## Installation

Can be laid directly under basement slabs or over Bituthene and with Servipak protection boards to prevent mechanical damage.

The geotextile filter fabric is always laid towards the water face to allow water entry. The sheets can be joined by overlapping the geotextile fabric and butt jointing the studded sheet. Cut Fasteners are then used to form a connector at centres to suit application by interlocking a minimum of two dimples on each sheet underneath ie. on the non-fabric face.

### Butt and Cut Jointing

Simple butt joints can be made by carefully separating the geotextile fabric and making a weathered overlap and fastening the joints using Cut Fasteners which interlock to form a connector at centres to suit application.

### Corners

Hydroduct 650 can be generally bent on site to form internal corners. External corners are formed by cutting the dimpled sheets at corners and providing an additional 100mm wide strip of the fabric to wrap around corner and overlap joint then bonding with Bitustik.

### Installation with drainage pipes

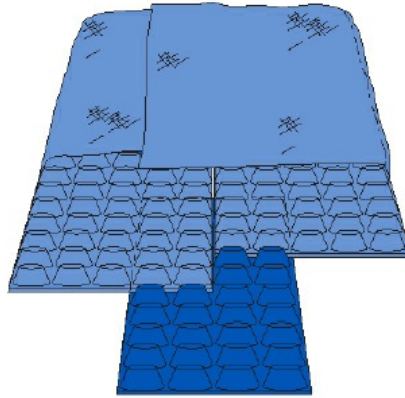
Peel back geotextile fabric from studded core. Place drain pipe against core, wrap with fabric and tuck behind core to hold in place prior to backfilling or concreting.

### Sealing edges

All exposed edges of Hydroduct 650 should have extra fabric tucked behind core to seal the leading edge to prevent debris or silt from entering the core.

## Finishes

A variety of surface finishes can be laid directly on top of Hydroduct 650 without affecting its performance or that of the surfacing. Concrete slabs, block/paving on sand beds, and growth medium for planters etc are all acceptable since the geotextile filter has been specially treated to prevent bonding or clogging.



## Specification

Hydroduct 650 drainage system shall be placed, fixed and terminated at the correct position to suit the relative levels and installed in accordance with the manufacturer's instructions and supplied by GCP Applied Technologies. For further information contact your local GCP representative.

## Technical Services

For assistance with working drawings for projects and additional technical advice, please contact GCP Applied Technologies.

## Health and Safety

Refer to relevant Material Health and Safety data sheets.

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Last Updated: 2022-01-28

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