

# Hydroduct® Horizontal Drainage & Irrigation Sheets

Creep resistant geocomposite drainage sheets, providing highly efficient drainage or irrigation to horizontal roofs and decks

## Description

Hydroduct® drainage sheets are pre-fabricated geocomposites comprising studded polystyrene drainage cores covered with polypropylene filter fabrics. Usually used in conjunction with GCP waterproofing membranes they provide efficient, cost effective drainage planes to horizontal roof and concrete deck surfaces to quickly route water into drainage outlets.

Hydroduct drainage sheets should always be correctly linked with drainage outlets to ensure water is drained into the roof or deck drainage system.

## Product Range

### DRAINAGE

#### Hydroduct® 200

Polypropylene non-woven filter fabric on one face of an 12 mm studded drainage core. For pedestrian and lightly trafficked roof decks. Can be applied to waterproof membranes that have been covered with protection boards.

#### Hydroduct® 220

Polypropylene non-woven filter fabric on one face of an 12 mm studded drainage core with a pressure dissipation plastic film bonded to the other face. For service reservoirs and other buried concrete structures. For service reservoirs only can be applied to Bituthene 4000 without protection boards.

## Advantages

- Polystyrene has minimal creep under long term loading - drainage capacity maintained
- Fully compatible with GCP waterproof membranes
- Provides additional factors of safety against water penetration through roof decks
- Range of filter fabrics to cover hard and soft landscaped finishes
- Range of compressive strength cores to suit different loading and trafficking conditions
- Provides an efficient, low cost drainage plane to horizontal roof decks
- Geotextile filter fabrics prevent soil particles entering drainage core - minimises risk of clogging
- Rot proof - unaffected by immersion in water and resistant to dilute concentrations of chemicals
- Quick and easy to install - no site plant needed
- Hydroduct 401 and 501 provide both water discharge and retention functions for low and regular maintenance green roofs.



### DRAINAGE & IRRIGATION

#### Hydroduct® 650

Polypropylene woven filter fabric on one face of an 12 mm high strength studded drainage core. For vehicular trafficked roof decks and where cementitious overlays are used.

#### Hydroduct® 401

Polypropylene non-woven filter fabric on one face of an 12 mm studded drainage core with a separation geotextile bonded to the other face. For low and regular maintenance green roofs and planter boxes with minimum falls of 1 in 80.

#### Hydroduct® 501


Polypropylene non-woven filter fabric on one face of a 26 mm studded drainage core with a separation geotextile bonded to the other face. For draining and irrigating, low and regular maintenance green roofs and planter boxes with falls of less than 1 in 80.

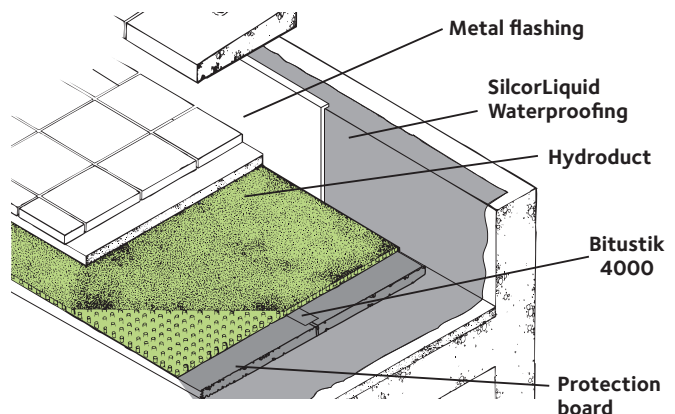
#### Hydroduct® Root Barrier

Heavy-duty polyethylene root barrier for green roofs and planter boxes.

## Limitations

1. Do not apply hot asphalt/bitumen to Hydroduct products.
2. Hydroduct products are not suitable for use with rubber or plastic paving slab supports.
3. At temperatures below 0°C, additional fixings are necessary to secure the geotextile to the drainage core. Contact GCP for further details.

 0799	Grace Construction Products Ltd Ipswich Road, Slough, Berkshire SL1 4EQ United Kingdom 12 CPD-44
	EN 13252:2000 + A1:2005 Hydroduct® 200, Hydroduct® 220, Hydroduct® 401, Hydroduct® 501, Hydroduct® 650 Geotextile for filtration, separation and drainage (F+S+D) in drainage systems, Type F+S+D



Details shown are typical illustrations only and not working drawings. For assistance with working drawings and additional technical advice please contact GCP Technical Services.

## Technical Data: Hydroduct®

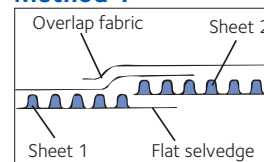
	200	220	650	401	501	Root Barrier
Core Thickness (mm)	12	12	12	12	26	0.8
Width (m)	1.25	1.25	1.25	1.25	1.25	6
Length (m)	32	32	32	20	32	25
Comprehensive strength (kN/m <sup>2</sup> )	700	700	900	700	500	-
Drainage flow at 2% gradient under load of 20 kN/m <sup>2</sup> (l/s/m)	0.60	0.60	0.72	0.68	2.14	-

### Declared Values according to EN 13252:2000 + A1:2005

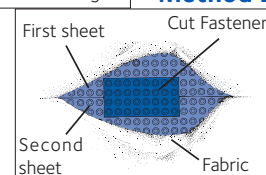
Resistance to static puncture (CBR test) (kN)	≥ 1.26		≥ 3.1		Exempt from EN 3252: 2000 + A1:2005
Tensile strength (kN/m)	MD: ≥ 7    CMD: ≥ 7		MD: ≥ 7 CMD: ≥ 7		
Dynamic perforation resistance (cone drop test) (mm)	≥ 26		≥ 8.8		
Characteristic open size (µm)	100 ± 30		173 +33 / -88		
Water permeability normal to the plane (ms)	≥ 0.063		≥ 0.048		
Water flow capacity in the plane (m <sup>2</sup> /s)	≥ 3.5 x 10 <sup>-3</sup>		≥ 3.8 x 10 <sup>-3</sup>		
Durability	To be covered within 30 days. Predicted to be durable for a minimum of 25 years in natural soils with 4 < pH > 9 and soils temperatures < 25 °C				
Dangerous substances	NPD				

Applications: Hydroduct®	200	220	650	401	501	Root Barrier
Pedestrian deck/terrace						
Deck planter boxes						
Vehicle trafficked deck						
Intensive green roof						
Extensive green roof						
Service reservoirs and buried concrete structures						
Inverted roofs						

#### Method 1



#### Method 2



## Installation

Installed on top of GCP waterproofing membranes and protection boards. Hydroduct filter fabrics are bonded to the drainage core with pressure-sensitive glue which permits the fabric to be peeled back to form overlaps etc.

The glue can be softened if required using a hot air gun. Do not use an open flame since this will damage the fabric. 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 100 mm and butt jointing the studded sheet at the flat selvedge. Cut Fasteners are then used to form a connector at centres to suit application by interlocking a minimum of two dimples on each sheet and reinstating the fabric to form a weathered lap.

**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 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 100 mm wide strip of the fabric to wrap around corner and overlap joint then bonding with Bitustik.

**Installation with drainage pipes:** Cut studded core to suit drainage outlet. Slit geotextile and tuck under core to hold in place prior to installing or finishes.

**Sealing edges:** All exposed edges of Hydroduct should have extra fabric tucked behind core to seal leading edge to prevent debris or silt from entering the core. Loose lay Hydroduct Root Barrier (where necessary) to the waterproofing protection layer. Form a minimum 75 mm overlap at all joints. All laps in Hydroduct Root Barrier should be fused welded with a 110 volt hot air gun. Ensure all laps are clean and dry. Wait until hot air gun temperature has stabilised and use off-cuts to test temperature and technique. Form weld by slowly moving gun along the lap and rolling the upper sheet with a small roller. Do not overheat the laps. Check weld strength and re-heat poorly welded areas

**Finishes:** A variety of surface finishes can be laid directly on top of Hydroduct drainage sheets, dependent on deck use. Contact GCP Technical Services for further guidance.

## Health and Safety

There is no legal requirement for a Safety Data Sheet for the Hydroduct range of products. For health and safety questions on these products please contact GCP Applied Technologies.

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