

# Hydroduct® CF

High density polyethylene combined cavity former and vapour barriers for drained BS 8102:2009 Type C basement construction

## Description

Hydroduct® CF is a highly efficient, cost effective drained cavity former. When installed against the internal face of concrete floors and walls Hydroduct CF will provide a continuous drainage path that must link with the site internal drainage system.

## Principal Applications

Installed beneath floor screeds and between concrete and blockwork walls to form an efficient drained cavity to new and existing sub-structures which isolates internal finishes from the structure.

Hydroduct CF forms part of a Type C structure (drained protection) as described in BS 8102:2009.

## NHBC Requirements

Hydroduct Cavity Drain Systems (for Type B + C) meet the requirements of NHBC Chapter 5.4 combined system waterproofing design.

## Design

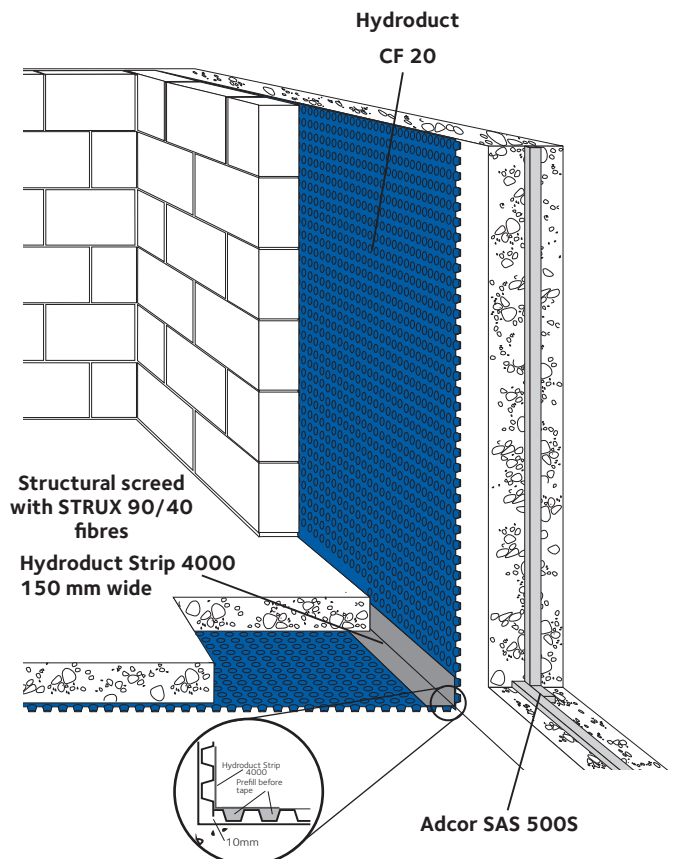
Sub-structures should be designed in accordance with the recommendations of BS 8102 2009 'Protection of Structures Against Water from the Ground' Additional design recommendations are made in CIRIA Report 139.

GCP recommends the use of waterstops to all reinforced concrete construction and movement joints in sub structures with drained cavity protection.

Product	Uses
Hydroduct CF 20	Forming drained cavities horizontally & vertically
Hydroduct CF 08	Forming drained cavities horizontally & vertically in lower risk applications

## Advantages

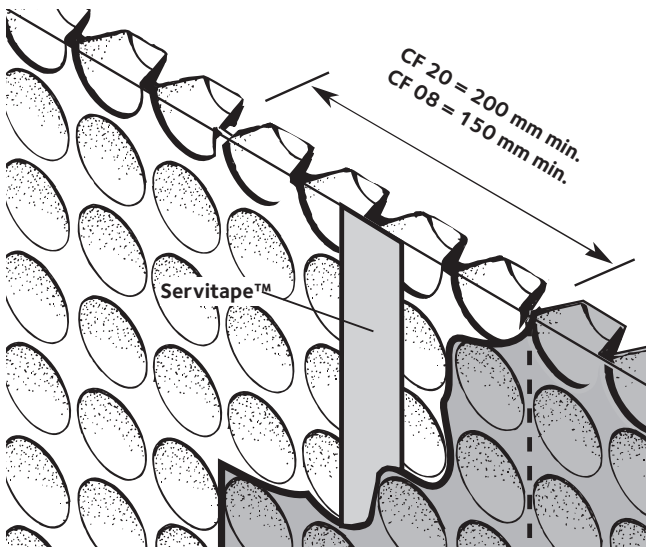
- **Design Flexibility** - Hydroduct cavity drain systems can be combined with GCP Preprufe membranes or Adprufe waterproofing admixture to provide enhanced protection in critical applications providing compliance with NHBC Chapter 5.4 combined system requirements from a single source.
- **Separates finishes from structure** - reduces the risk of water ingress
- **Waterproofing security** - allows inspection and leak remediation before installation.
- **Economical** - easy to install.
- **High strength** - load transfer through dimpled design.
- **Chemical resistant** - high density polyethylene resists all common groundwater contaminants.
- **Cost effective** - reduces lost internal space relative to traditional drainage mediums.



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



## Hydroduct CF 20 Installation



### Hydroduct CF to be overlapped at all joints bonded centrally with Servitape

The vertical Hydroduct CF should be installed before the horizontal.

#### Vertical:

Install Hydroduct CF in a continuous vertical strip (wall paper style) on walls, with dimples to the external wall using fixings at typically 600 mm centres. The detail for overlapping adjacent sheets is shown above. Where vertical strips are not practical, apply horizontally, but ensure horizontal laps are weathered to the external face and vertical joints are staggered. For penetrations through walls refer to GCP Technical Services. If horizontal laps are unavoidable, the upper sheet must be overlapped by the lower sheet, to ensure water is retained within the Hydroduct/wall cavity. Do not crease Hydroduct CF at the floor/wall junction - cut and butt as detail on previous page.

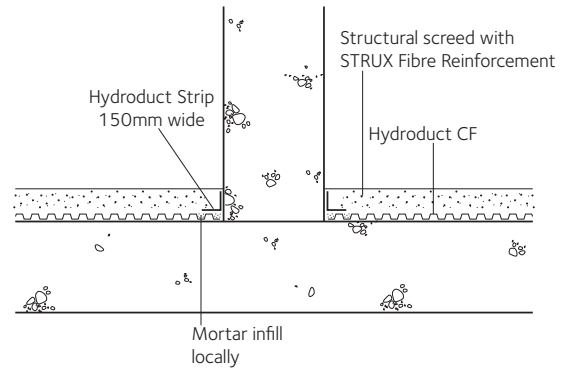
#### Horizontal:

Floor slabs should ideally be laid to falls to drainage gully or outlets. However a flat slab is acceptable providing there are no adverse falls and low spots are infilled. Where surface irregularities exceed 5 mm, cut back and make good. Loose lay Hydroduct CF with dimples to the floor and cut around any obstructions. Mechanically fix to substrate. Seal around column bases, obstructions etc by applying Hydroduct Strip to the clean dry Hydroduct CF and onto the primed substrate (see detail). All substrates to receive Hydroduct Strip other than Hydroduct CF should first be primed with B1 primer to ensure full adhesion. Fill dimples with mortar beneath Hydroduct Strip to provide a flat support surface.

Form laps by interlocking four dimples and sealing with 30 mm Servitape 4000 double sided adhesive tape. Where horizontal butt joints are unavoidable fill two rows of dimples each side of the joint with mortar. Cover butt joint with Hydroduct Strip.

Form end and side laps by interlocking four dimples and sealing with Servitape double sided adhesive tape. Ensure Hydroduct CF links fully with drainage outlets and inspect for damage. Damaged areas can be made good by cutting an over-sized patch of Hydroduct CF and fixing with Servitape 4000. All penetrations through Hydroduct CF should be sealed with a one part polyurethane sealant.

Avoid compressing Hydroduct CF during concrete screed placement by using temporary boards to spread loads. Place reinforcement onto mortar 'dabs' to avoid point loads onto the Hydroduct CF.



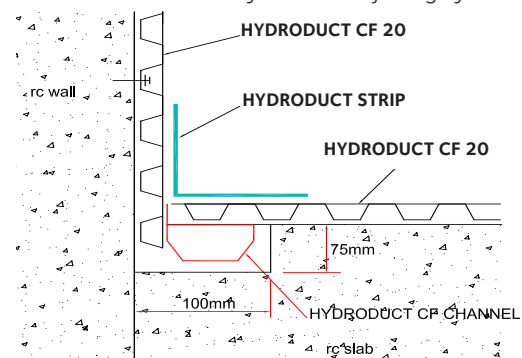
### Hydroduct CF - wall or column joint

#### Perimeter channel

The Hydroduct CF channel should be installed at the base of the wall where it will direct water leaking through the wall to the outlet connections leading to the sump. Maintenance of perimeter channel is in accordance with BS 8102.

The perimeter channel comprises the following:

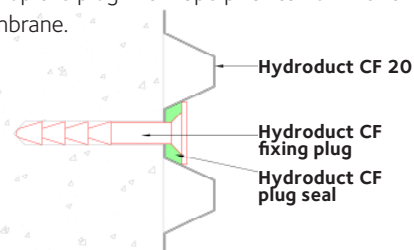
- **Hydroduct CF channel & Hydroduct CF channel upstand:** 2 metre long PVC channel including hole to collect water ingress and drain away to a sump.
- **Hydroduct CF end outlet:** To close the end of Hydroduct CF channel or to connect to sump. Use as a flow reducer to  $\varnothing$  40 mm before connection to sump through plumbing pipe. It should not be connected into foul sewage systems, soil pipes or any system which would allow foul odours to enter the building.
- **Hydroduct CF jetting eye:** To be connected to Hydroduct CF corner or Hydroduct CF T-junction. GCP recommends cleaning ports every 10 metres of Hydroduct CF channel.
- **Hydroduct CF Straight connector:** To connect two length of Hydroduct CF channel.
- **Hydroduct CF corner junction:** Connectors that allow connection of Hydroduct CF channel at corner. Works also as a cleaning port when connected with Hydroduct CF jetting eye.
- **Hydroduct CF T-junction:** T-section junction allows Hydroduct CF channel to be split. Works also as a cleaning port when connected with Hydroduct CF jetting eye.



### Typical drawing for connection and installation at bottom of wall

#### Fixing plug & seal

Use glass-filled nylon plug for fixing Hydroduct CF 20 in masonry walls and concrete. Use the rope to seal around the head of the plugs; wrap the plug with rope prior to hammer the fixing plug into the membrane.



## Use STRUX® 90/40 Fibre reinforcement to replace steel mesh in structural screed topping

- Minimises screed thickness, maximises headroom
- Reinforcement delivered and placed with screed
- Reduces labour and saves programme time
- Enhances safety - no handling and cutting of mesh in confined spaces
- Reinforcement evenly distributed throughout the screed to minimise cracking

### STRUX® 90/40 FIBRE REINFORCEMENT

#### Description

STRUX® 90/40 Fibre Reinforcement is a unique form of high strength, high modulus synthetic structural reinforcement that is distributed throughout the concrete matrix. STRUX 90/40 gives toughness, impact and fatigue resistance to concrete. It consists of synthetic fibres 40 mm in length with an aspect ratio of 90 that have specifically been designed to replace welded wire fabric, light reinforcing bars and steel fibres in flooring applications.

#### Uses

STRUX 90/40 is specially designed for ease of use, rapid dispersion, good finishability and improved pumpability in flooring applications. STRUX 90/40 may be used in commercial floors, industrial floors, residential floors, other flat work applications and form work applications. The performance of STRUX 90/40 depends on the compressive strength of concrete.

#### Advantages

STRUX 90/40 enhances safety during installation by eliminating the risk for potential injury caused by handling and placement commonly associated with steel fibres or welded wire fabrics. Additionally, STRUX 90/40 does not corrode.

The geometry, strength and the elastic modulus of STRUX 90/40 were optimized to provide superior crack control. With STRUX 90/40, fibres are uniformly built into the concrete, eliminating a concern over proper positioning of reinforcement. Also, STRUX 90/40 controls plastic shrinkage cracking and cracking due to drying shrinkage of the concrete.

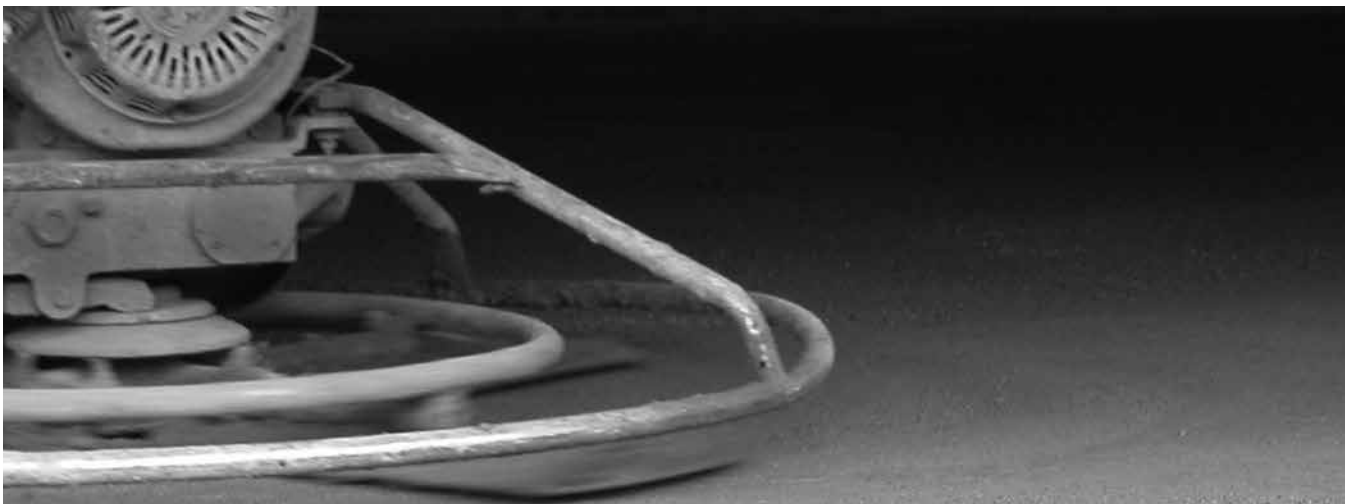
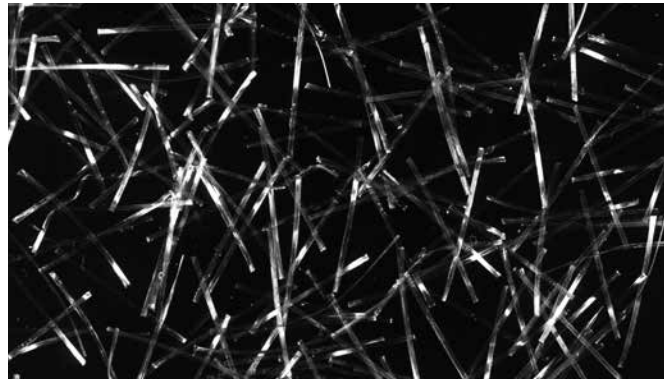
#### Addition Rates

STRUX 90/40 addition rates are dependent on the specific application and desired properties and will vary between 1.8 to 7.0 kg/m<sup>3</sup>. Please refer to GCP representative.

#### Advantages

STRUX 90/40 has been designed to provide:

- Tight crack control
- Good dispersion and pumpability
- Ductility
- Durability
- No corrosion issue
- Quick, easy and safe application
- An efficient and cost effective reinforcement alternative



Supply	Unit of Sale
<b>Hydroduct CF 20</b>	2.0 m x 20 m rolls
Weight	40 kg
<b>Hydroduct CF 08</b>	2.4 m x 20 m rolls
Weight	29 kg
Hydroduct CF Channel /Hydroduct CF Channel Upstand	Supplied per 1 piece - 2 metres long
Hydroduct CF Straight connector	Supplied per 1 piece
Hydroduct CF Corner junction	Supplied per 1 piece
Hydroduct CF T-junction	Supplied per 1 piece
Hydroduct CF End outlet	Supplied per 1 piece
Hydroduct CF Fixing Plug	Supplied per 1 bag 100 pieces
Hydroduct CF Plug Seal	Supplied per 1 box of 12 pieces of rope - 4.75 m x 10 mm
Bituthene Primer B1	5 or 25 litre cans
Servitape 4000	50 mm x 12 m rolls
Hydroduct Strip	150 mm x 20 m rolls
Storage	Hydroduct can be stored either externally or internally, ideally on pallets. B1 Primer, Servitape and Hydroduct Strip should be stored in dry conditions.

**Equipment by Others:** *LPat activated tools - Spit Pulsa 700E nail drill - or Tapcon (to suit substrates). Other Tools Required: Stanley Knife, paint brush, hammer drill with 6 mm drill bit*

## Compatibility

Hydroduct CF is compatible with all cementitious, bituminous and polyethylene building materials. For compatibility with other materials check with GCP Technical Services.

## Limitations

Not suitable for internal applications where no linkage with the site drainage system is possible.

## NBS Specification Clause

Refer to Clause J40 290.

## Health and Safety


There is no legal requirement for a Safety Data Sheet (SDS) for Hydroduct CF 20, Hydroduct CF 08, Servitape or Hydroduct Strip. For Primer B1 read the product label and SDS before use. Users must comply with all risk and safety phrases. SDS's can be obtained from GCP Applied Technologies or from our web site at [gcpat.com](http://gcpat.com).

Property	Typical Value	
	CF 20	CF 08
Sheet thickness (mm)	1.0	0.6
Dimple height (mm)	20	8
Vertical drainage capacity (litre/sec/metre)	10	2.25
Compressive Strength (prior to concreting) (kN/m <sup>2</sup> )	150	135
MVTR (moisture vapour transmission rate) (gm/m <sup>2</sup> /24 hr)	0.19	0.31

## Declared Values according to EN 13967:2012

Property	Typical Value	
	CF 20	CF 08
Water tightness to liquid water	Class W1	Class W1
Resistance to impact (Al-board) (mm)	1000 - Pass	NPD
Resistance to impact (EPS-board) (mm)	1000 - Pass	NPD
Resistance to tearing (Nail Shank) (N)	NPD	NPD
Joint strength (N/50mm)	NPD	NPD
Water vapour transmission (sD/d)	NPD	/
Resistance to deformation under load (N)	<200	/
Durability of water tightness against ageing/degradation (at 2 kPa)	Pass	NPD
Durability of water tightness against chemicals (at 2 kPa)	Pass	NPD
Tensile properties - unreinforced sheets (Strength in N/50mm)	Long ≥ 500 Trans ≥ 400	NPD
Tensile properties - unreinforced sheets (Elongation in %)	Long ≥ 50 Trans ≥ 40	NPD
Reaction to fire (Euroclass)	E	E
Dangerous substances	NPD	NPD

*All declared values shown in this data sheet are based on test results determined under laboratory conditions and with the product sample taken directly from stock in its original packing without any alteration or modification of its component parts.*

	Grace Construction Products Ltd Ipswich Road, Slough, Berkshire SL1 4EQ United Kingdom 12 CPD-44
	EN 13967 Hydroduct® CF08 and Hydroduct® CF20 Flexible sheets for waterproofing - plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet, waterproofing course moisture and ventilation, Type V Reaction to fire: E Resistance to water penetration: Passed

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