

HYDRODUCT[®] CF20

Cavity former: Robust, preformed, high density polyethylene dimpled sheet used as a cavity drain former

Product Description

- **Economical** - reduces construction overdig and maximises rental space.
- **Insitu application** - avoids using no-fines concrete or hand placed drainage tiles.
- **High water flow** - drainage pedestals permit free flow of water to drainage sumps averting water pressure.
- **Damp proof** - when used to line internal floors and walls.
- **High strength** - allows transfer of loads with minimal compression and deformation.
- **Chemically resistant** - unaffected by most acids and alkalis, oils and hydrocarbons, bacteria and micro-organisms.
- **Easy application** - functional, low weight, easily cut and fixed in position.

Applications

The realities of modern day design techniques of deep basement construction within confined working spaces, often with piled slabs and walls, make traditional tanking methods for the exclusion of unwanted ground water difficult to achieve. Alternative designs to provide utility and habitable grade environments require good, sound construction using watertight construction, which given the high and rising water tables within city areas places even greater emphasis on the quality of workmanship if no fail safe back-up is available.

An alternative is to provide an effective cavity wall and floor construction incorporating HYDRODUCT[®]CF20 Cavity Former. This is a simple, reliable and cost-effective cavity drainage system, which can be used to control, gather and safely route any infiltrated water to a collection point or sump by having falls to suit the anticipated ingress of water. Because the drainage system is installed after the basement has been constructed any defects in the watertight concrete can be rectified prior to installing the Hydroduct CF20.

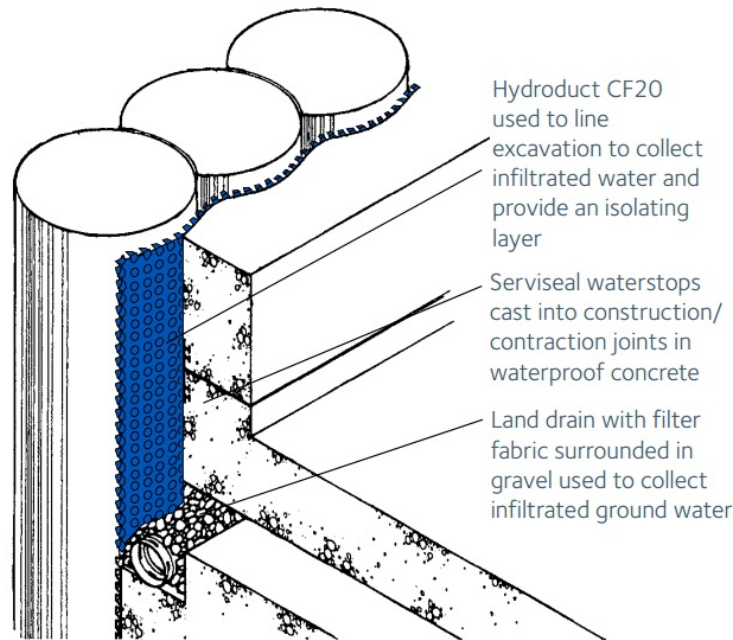
Hydroduct CF20 - 20mm stud height for high drainage capacity of approximately 10 litre/sec/metre length of wall.

Hydroduct CF20 cavity former comprises a robust, high density polyethylene sheet, moulded with dimples, or studs offering excellent resistance to most ground chemicals, root penetration, bacteria and alkalis. The cavity former is designed to withstand loads from wet concrete so that the drainage network will function satisfactorily under the imposed loading. Within cavity or sandwich construction it should be laid and securely fixed in position to prevent displacement during concreting operations. Drainage pipes, channels and sumps should be provided of sufficient capacity to collect the infiltrated water. The surface on which the Hydroduct CF20 is laid should be firm and smooth to allow free flow of water.

The surface should be level or laid to a slight fall depending on the spacing of the water collecting points, using either channels or gullies provided within the structure.

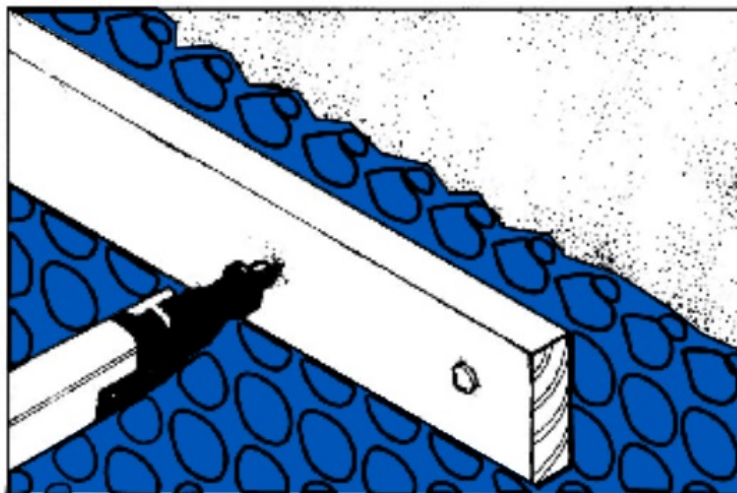
Where watertight concrete is used, minimal cavities are required since there are no fines to clog the drainage paths, and additional rental space is available which would otherwise be necessary when providing cleaning channels behind cavity walls. Once water has entered the structure it must be effectively controlled to safeguard the designed function especially for habitable accommodation. Modern “fast track” projects can dictate a different method of construction making drained cavity construction a viable, costeffective solution which can exploit the simplistic design approach of Hydroduct CF20.

Hydroduct CF20 may also be provided to create a durable isolation barrier between the ground and structure to prevent the ingress of unwanted ground water during the construction phase or to stabilise water pressure and levels after the building has been completed.

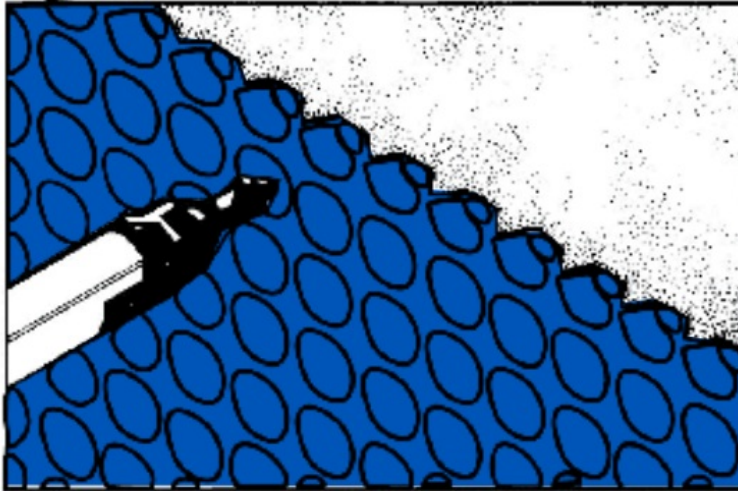


Typical section through structure with piled wall

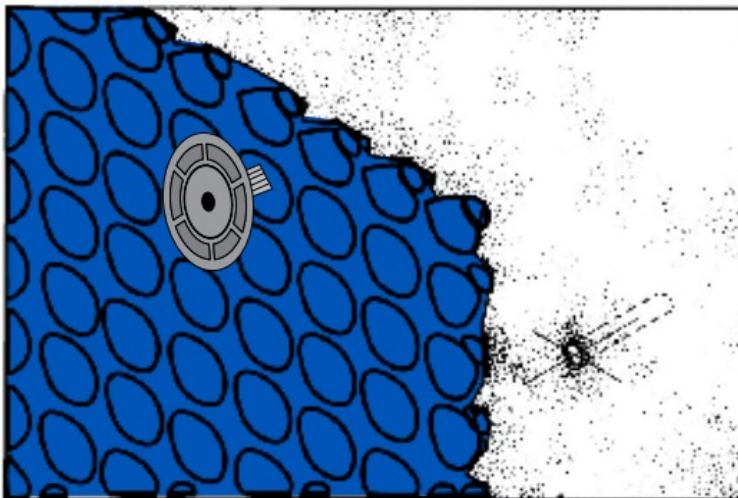
Method of Fixing



1. Tanalised batten shot fired into substrate.



2. Shot fire fixings direct through dimpled area.



3. Hydroduct CF20 Pins used as dowel pins into drilled holes.

Installation

Horizontal

Before commencing laying operations ensure that the substrate has falls to the drainage outlets or is laid to $\pm 5\text{mm}$ tolerance to prevent ponding in depressions.

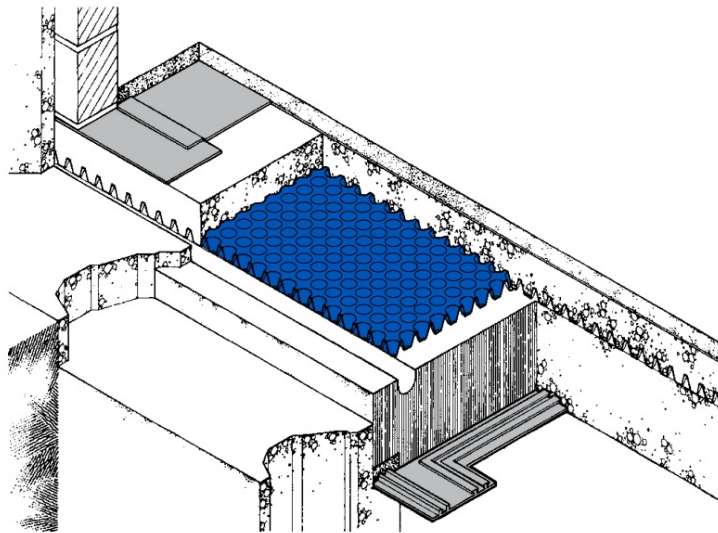
Hydroduct CF20 is generally loose laid with the dimples facing the substrate in a continuous form and trimmed to suit columns and other obstructions. The sheets are to be overlapped 75mm (2 dimples) longitudinally and bonded together with Bitutape double sided self-adhesive tape. End laps and all cut edges are formed by overlapping 150mm (3 dimples), interlocking the dimples and sealing between the sheets with Bitutape.

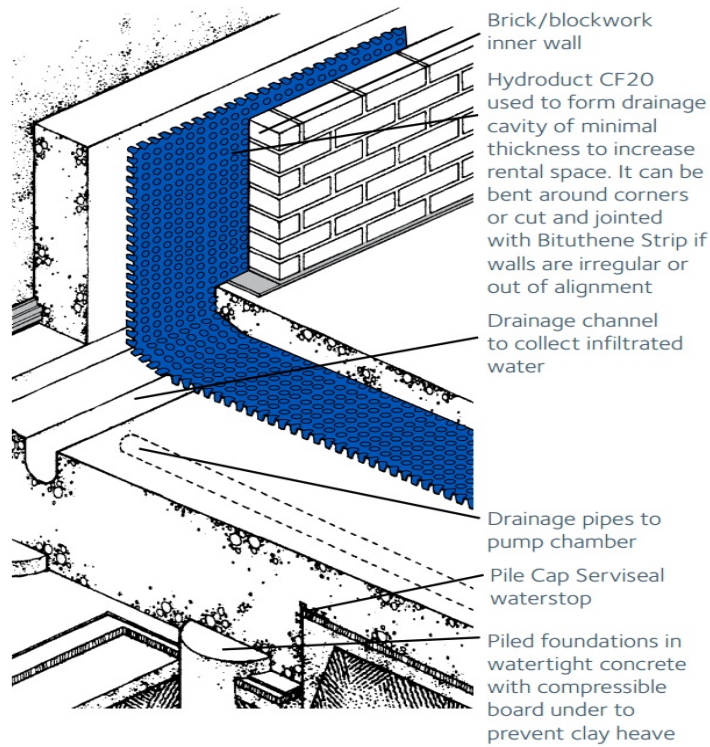
Where columns penetrate Hydroduct CF20 a continuous collar of Bituthene Strip should be married on to a primed surface painted with Primer B1. The Hydroduct CF20 is laid to fit the profile and the Bituthene Strip should be bonded on the horizontal layer of Hydroduct CF20 using a firm pressure to maintain the overall damp proofing. The Hydroduct CF20 should be carried through to all drainage channels and sumps to allow discharge of any water penetration. Hydroduct CF20 may be located at 600mm cross centres using the appropriate pins and washers placed on the flat sheet or within the dimpled area and fixed to the substrate. Plain fixings should be covered and sealed with a patch of Bitutape.

If the dimples go out of register due to undulations in the substrate, cut the sheet, form a lap in the usual manner and continue application. Walkways should be erected to support access and wheel barrows during the concreting of the top slab to prevent damage to the Hydroduct CF20. Before concreting inspect all areas to ensure the total integrity of Hydroduct CF20. Any damaged areas should be covered with a further oversized patch of Hydroduct CF20 bonded with Bitutape between the layers, and small cracks should be repaired by overbanding with Bitutape. The mesh reinforcement must be supported off localised concrete infill or reinforcement chairs with care taken to avoid point loads.

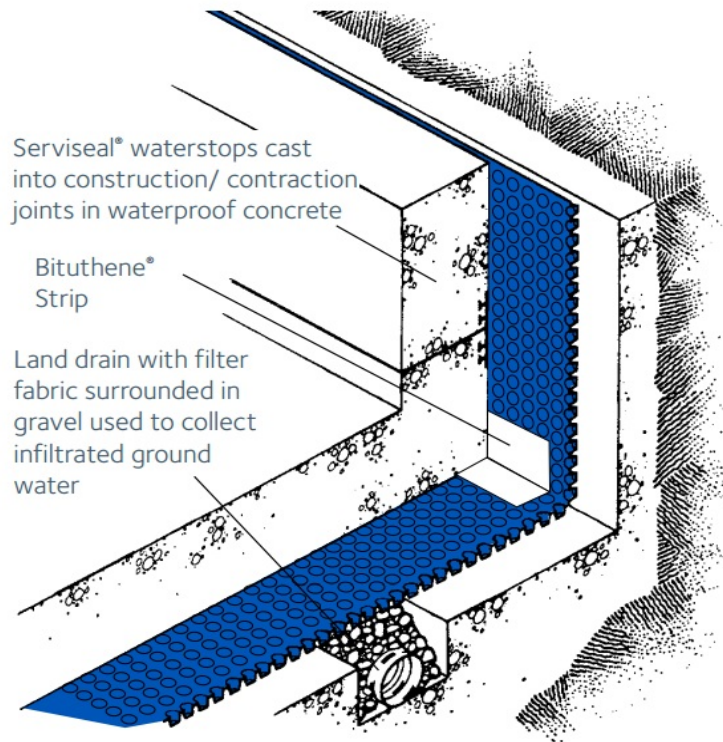
Vertical

Hydroduct CF20 must be fastened vertically with the dimples against the external face in a similar manner to horizontally by overlapping 75mm longitudinally or 150mm at end laps and fixed as above to locate it securely in position before building the inner concrete or blockwork wall. At the wall to floor junction continuity is achieved by using a 150mm wide strip of Bituthene Strip to join the horizontal to the vertical sheets.

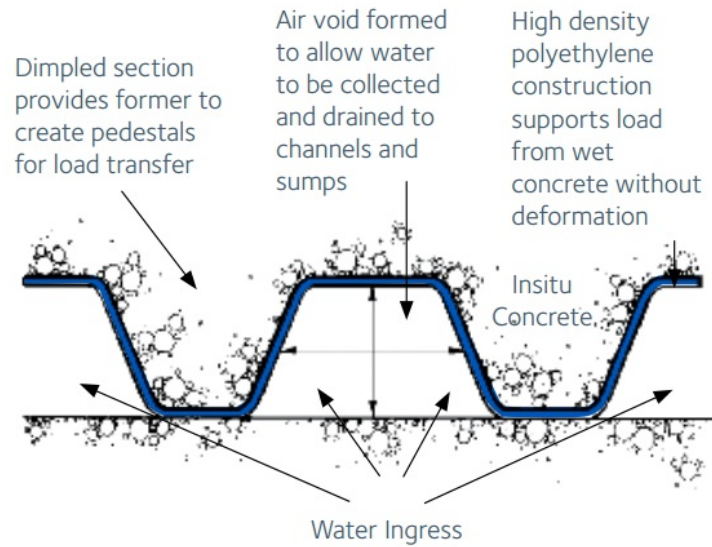




Hydroduct CF20 used within sandwich construction to form a drainage cavity and collection layer which maximises rental space



Typical section through underground structure with Hydroduct CF20 Cavity Former used to line excavation and collect infiltrated water



Hydroduct CF20 used as a drainage former horizontally

Supply

Hydroduct CF20

1.36m x 6.00m sheets
weight 8.00kg

Storage

Under cover in original wrapping

Fixings

Hydroduct CF Pins

8mm \varnothing x 70mm

Hydroduct CF Washers

1mm \varnothing

Bituthene Strip

150mm x 12.0m rolls
weight 2.5kg
5 rolls per carton

Complementary Materials

Bituthene, flexible, cold-applied, self-adhesive membranes

Various grades to suit application, refer to separate data sheets

Primer B1

18.2 litre pails coverage 6-8 sq m per litre

Bitutape, self-adhesive linking strip

20mm x 5m rolls

Equipment by Others

Hammer drill with 6mm diameter masonry drill bit, Hilti DX 36M cartridge gun and cartridges. Aerosmith pneumatic nailer model 90CT with KS Pins (99630) 30mm long or 19mm pins with rubber and steel washer.

Masonry nails and hammer, Stanley knife for trimming.

Performance

Chemical resistance	Inert to most dilute acids, alkalis, resistant to oils and hydrocarbons, neutral to drinking water.
Organic resistance	Unaffected by root penetration and bacteria, rot proof.
Operating Temperatures	-30 °C to +80 °C
Material	1.0mm thick, black, high density polyethylene
Stud height	20mm
Drainage capacity	Approx. 10 litre/sec/ metre length
Air volume between studs	Approx. 14 litre/m ²
Compressive strength	Approx. 150kN / m ²

Specification

Hydroduct CF20 Cavity Former shall be placed, fixed and terminated at the correct position, and linked as necessary with the site drainage in accordance with the manufacturer's instructions and supplied by GCP Applied Technologies. For further information contact your local GCP representative.

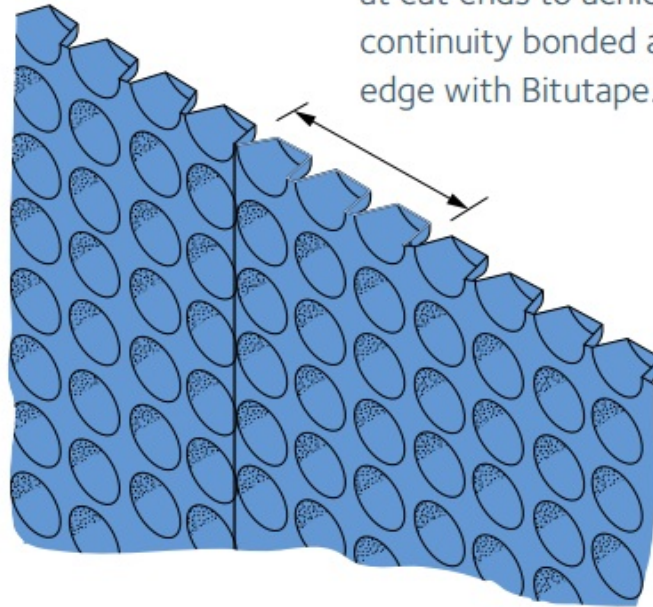
Health and Safety

Refer to relevant Material Health and Safety data sheets.

Technical Services

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

Hydroduct CF20 to be overlapped 150mm at cut ends to achieve continuity bonded at edge with Bitutape.



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