

Supercast PVC Waterstop

Centrally and externally placed PVC waterstops

Uses

The Supercast range of PVC waterstops is designed to provide an integral sealing system for movement and construction joints in concrete cast in-situ. These joints typically occur in the following types of structure:

Water retaining

- Reservoirs, water towers and sewage tanks
- Dams, culverts, canals and spillways
- Swimming pools
- Bunded areas surrounding liquid retaining tanks

Water excluding

- Basements and underground car parks
- Tunnels and subways
- Abutments and retaining walls
- Roof decks and podium areas

Advantages

- Range of profiles to suit every need
- Fully continuous 4 bulbed network
- Reinforced eyeleted edge flanges for positive fixing
- Simple on-site jointing
- Full range of moulded and fabricated intersection pieces
- WRC approval for use in contact with potable water

Range

Centrally placed profiles;

- Supercast Hydrofoil
- Supercast Watafoil
- Supercast XHD Hydrofoil
- Supercast XHD Watafoil

Externally placed profiles;

- Supercast Rearguard S
- Supercast Rearguard R
- Supercast Rearguard Kicher
- Supercast Angleguard

Standards compliance

Supercast PVC waterstops are suitable for use in contact with potable water. "Water Byelaws Scheme -approved product" listing number 8804054.

Description

Supercast waterstops are extruded from a high grade PVC compound which has been formulated to give excellent flexibility and longevity characteristics. They are available as straight lengths and factory produced intersections or as a factory prefabricated segment of a network to minimize site jointing.

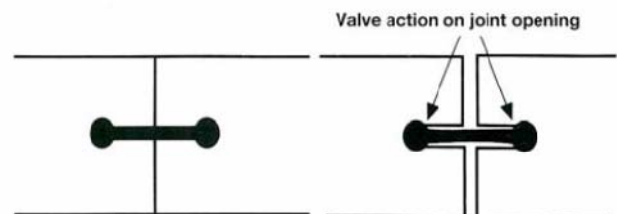
Principles of waterstop function

Supercast waterstops work because of two specific aspects of their design.

a) Valve principle

Simple waterstop profiles based on dumbbells are cast into the edges of adjacent concrete panels which act as baffles.

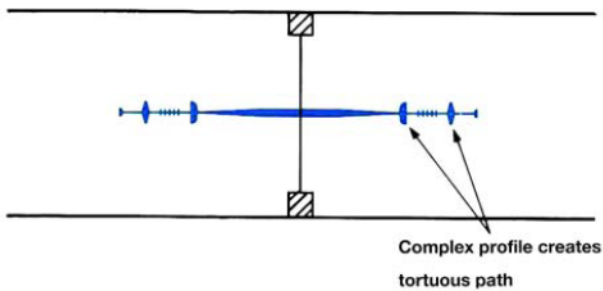
In the event of joints opening as drying shrinkage or other movement occurs, the edge bulbs of the profile act as anchors. These induce tensions across the waterstop resulting in a sealing effect at the inner faces of the edge



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b) Tortuous path principle

Profiles with a more complex cross section have a much greater surface area. They present a much greater resistance and more difficult path for water to seep around the section.



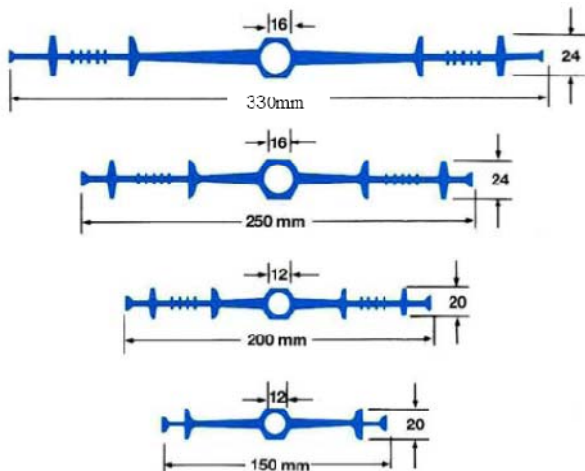
The Supercast range incorporates both of these principles.

The products offer a fully continuous 4 bulbed design maintaining both the valve and tortuous path principles. These principles are maintained in the transition from Rearguard profiles in floors to centrally placed profiles in walls.

Supercast Hydrofoil sections

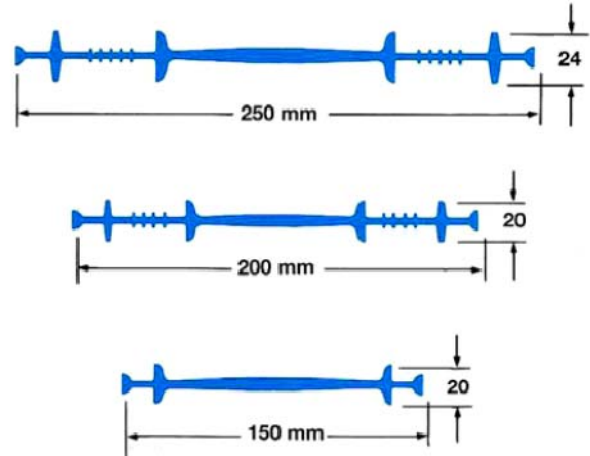
Centre bulb sections are used in expansion, contraction and construction joints. The centre bulb allows for movements in a structure to be accommodated whilst its hexagonal design provides a flat surface. This allows shuttering and joint fillers to fit snugly. The 330 mm profile is specially designed for use in roof slabs where a greater degree of movement may occur particularly during construction.

Hydrofoil section



Supercast Watafoil sections

Plain web sections are used in construction and contraction joint



All centrally placed Supercast waterstops incorporate an eyeletted, reinforced edge flange. This enables them to be easily positioned by wiring to surrounding reinforcement.

Heavy duty sections

Increased web thickness gives a much stiffer section. The stiffened profile is used where large volumes of concrete are being placed. They are used where concrete is being placed from a great height such as deep wall shutters.

Centrally placed waterstop

These waterstops are positioned within the thickness of the concrete components and as a result are supported by concrete on both sides. They are therefore able to withstand water pressure from either side. This makes them suitable for use in water retaining structures. They will prevent loss of water from within the tank and will prevent ingress of ground water when the tank is drained down.

Externally placed waterstop

These waterstops are designed for use in basement, foundation and floor slab construction in vertical and horizontal joints in both water retaining and water excluding structures. When used in walls, externally placed waterstops will only resist water pressure from the face to which they are fixed. When used below floor slabs, where the waterstop is supported by the blinding concrete or when placed in vertical situations against permanent

Supercast PVC Waterstop

Properties

Profile

Form	: Extruded thermoplastic sections
Colour	: Blue
Hydrostatic Head	: Up to 30 m
Joint movement	: Up to 10 mm

Compound

Typical figures	: To BS 2782 at 25°C
Tensile Strength	: Minimum 14 MN/m ²
Elongation at break	: Minimum 300%
Hardness	: Shore 'A' 80-90

Specification clauses

1. Supplier specification

Where indicated on the drawings, PVC waterstops shall be Supercast Waterstops obtained from Fosroc (address as shown). All wall/floor waterstop connections shall be made using Supercast intersection moulded transition pieces to ensure continuity of the four bulb profiles.

2. Performance specification

Where indicated on the drawings, PVC waterstops shall be made from extruded plasticised PVC compound. The compound used shall meet the US Corps of Engineers specification CRD-C 572-74. It shall have a tensile strength in excess of 14 MN/m² an elongation at break in excess of 300% and be capable of withstanding hydrostatic loading up to 30m.

Installation instructions

Supercast Hydrofoil and Watafoil

Waterstops must be installed so that they are securely held in their correct position while the concrete is being placed. Concrete must be fully compacted around the waterstops to ensure that no voids or porous areas remain. Where reinforcement is present, an adequate clearance must be left to permit proper compaction.

The brass eyelets used for securing the waterstop are located outside the edge bulbs so as not to create water paths around the profile.

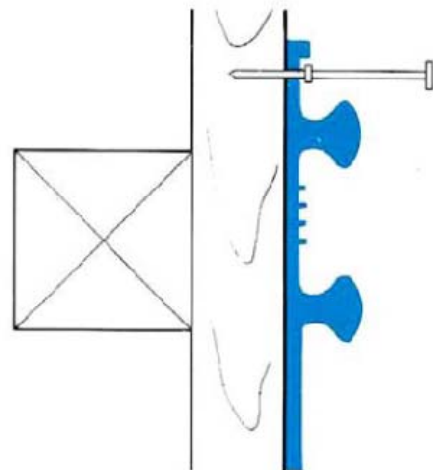
Supercast Rearguard

When used on ground slabs where the waterstop is supported on blinding, Rearguard profiles usually require no fixing. Lay the waterstop centrally over the line of the joint to be formed. Fixing to vertical shuttering is done by nailing through the outer nailing flanges leaving the head of the nail proud so that it is held in the cured concrete. This prevents the waterstop being displaced when the shuttering is struck.

Fixing to vertical shutter

Fixing Supercast Kicker Waterstop

In addition to nailing to the external shutter, the 330mm Kicker profile is equipped with brass eyelets in the central rib. Twist short lengths of tying wire through these eyelets so that when the kicker is cast they act as anchors, holding the centre of the waterstop tight against the face of the concrete. This prevents the build-up of debris between the waterstop and the kicker prior to the wall being poured.



Supercast Angleguard

Fixing in position is done in a similar manner to Supercast Rearguard.

Site jointing instructions

Jointing of Supercast waterstops is carried out using Fosroc Heat Welding Equipment. The ends to be joined are cut square and held in alignment in a special jig. The ends are then pressed against either side of a special heated blade, until an even, molten bead of PVC appears around the section.

Supercast PVC Waterstop

The heated blade is then removed and the molten ends pressed fully together. The PVC cools to form a strong fusion welded joint. Full instructions are available from Fosroc.

Estimating

	Section Width	Min on flat	Redii on edge	Roll length	
	Mm	m	m	m	
Supercast					
Hydrofoil	250	15	0.15	12	
	200	14	0.15	15	
	150	12	00.77	15	
Watafoil	250	15	0.15	12	
	200	14	0.15	15	
	150	12	00.77	15	
Rearguard R	250	15	0.15	12	
	200	14	0.15	15	
Rearguard					
Kicher	330		10	5.0	8
Angleguard	250		20	n/a	3
XHD Hydrofoil	250		15	0.23	10
XHD Watafoil	250		15	0.23	10

Fosroc PVC heat welding equipment

Intersection pieces

Standard intersection pieces are available for each Supercast waterstop profile. The standard on-flat intersection leg length is 230 mm from centre line. On-edge intersections have a standard 75 mm leg length.

Jointing jigs

150 mm Supercast Rearguard R & S
200 mm Supercast Rearguard R & S
250 mm Supercast Rearguard R & S
330 mm Supercast Rearguard Kicker
150 mm Supercast Hydrofoil & Watafoil
200 mm Supercast Hydrofoil & Watafoil
250 mm Supercast Hydrofoil & Watafoil
250 mm Supercast XHD Hydrofoil & Watafoil
330 mm Supercast Hydrofoil

Heater blades

110v and 220v, 350w blades are available.

Warning

Ensure that heater blades are earthed by the green / yellow wire.

Precautions

Health and safety

Hot weld site jointing of PVC waterstops results in the liberation of hydrogen chloride mist and vapour. The OEL (operational exposure limit) of 5 ppm can be exceeded in still air confined spaces, therefore forced ventilation must be provided or a suitable respirator used.



Fosroc (Thailand) Limited

777/9 Moo 7,
Bangplee-Tamru Road,
Bangplee Yai, Bangplee,
Samutprakarn 10540 Thailand

Important note

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telephone:
+66 (0)2325 0913-15

fax:
+66 (0)2337 3551

email:
thailand@fosroc.com