Fosroc® Supercast® PVC Waterstops

Centrally and externally placed, pvc waterstop profiles for use in cast in-situ concrete

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
- Eyeletted edge flanges for positive fixing
- Simple on-site jointing
- Full range of moulded and fabricated intersection pieces

Standards Compliance

Supercast PVC complies to AS 4020-2018.

Copies of the report are available on the Fosroc website.

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 minimise site jointing.

The range consists of centrally placed profiles; Supercast Hydrofoil and externally placed profiles; Supercast Rearguard S, Supercast Rearguard R.

Principles of waterstop function

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

a) Valve principle

Simple waterstop profiles based on dumbells 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 bulbs.

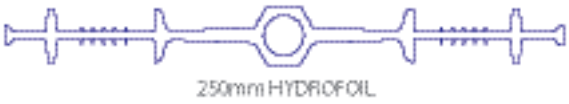
b) Tortuous path principle

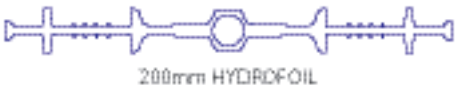
Profiles with more complex cross section have a much greater surface area. They present a much greater resistance and more difficult path for water to seep around the section.

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 area maintained in the transition from Rearguard profiles in floors to centrally places 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 snuggly.





Supercast Rearguard S

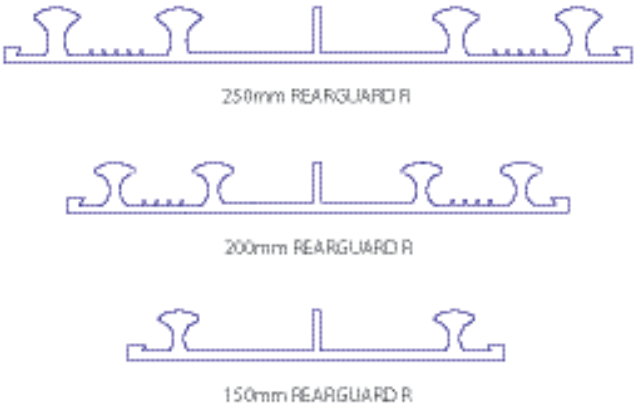
Section incorporates a flat top centre box which allows movement to be accommodated in expansion joints. The box also provides a seating to support joint fillers.

Fosroc® Supercast® PVC Waterstops

Supercast Rearguard R

Plain web sections which are placed externally for use in contraction and construction joints. They incorporate a central fin to assist setting out shutter location.

All Rearguard sections incorporate a nailing flange with a reinforced edge to provide a secure fixing that will resist tearing.



Design Criteria

The choice of the width and thickness of waterstops is largely governed by concrete thickness, the position of the reinforcement, aggregate size and complexity of the pour.

In general the 250mm width of waterstop is suited to wall thicknesses of 250mm and over. For concrete less than 250mm thick, the use of a narrower waterstop approximating to the wall thickness will be appropriate.

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 building concrete or when placed in vertical situations against permanent concrete shuttering, externally placed waterstops will resist water pressure from either face.

Properties

Form:	Extruded thermoplastic sections
Colour:	Blue
Hydrostatic head:	Up to 60 m
Joint movement:	Up to 10 mm

Compound complies with AS1683.15.2 and RoHS2

Specific gravity (ASTM D792:	1.32 ±0.02
Tensile strength (ASTM D638):	≥ 16 MPa
Elongation at break:	≥ 320%
Hardness (ASTM D2240):	Shore 'A' 76 ±3
Congo heat stability at 200 °C (IEC60811-3-2):	≥ 40
Cytotoxicity (ISO10993-5):	No Cytotoxins

Installation Instructions

Supercast Hydrofoil

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

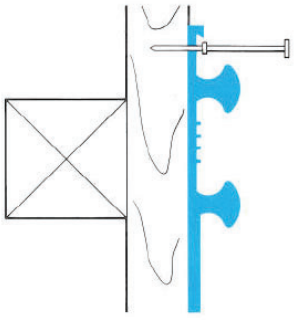
The eyelets used for securing the waterstops are located outside the edge bulbs so as not to create water paths around the profile.

Supercast Rearguard

When used on ground slabs where waterstop is supported on blinding, Rearguard profiles usually require no fixing. Lay waterstop centrally over 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 Rearguard to vertical shutter

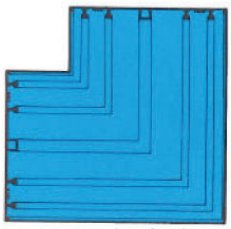


Fosroc® Supercast® PVC Waterstops

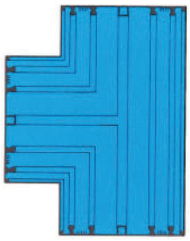
Intersection pieces

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

Standards intersections available for Supercast Hydrofoil:

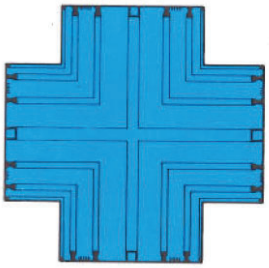


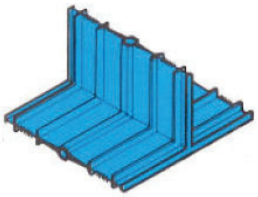
Flat mitre (M-O-F)



3 way on flat

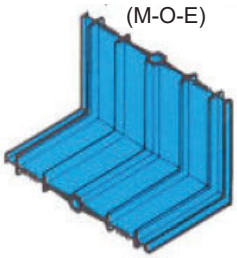
4 way on flat





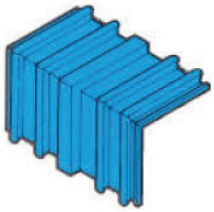
T-piece on edge (T-PCE)

90° mitre on edge (M-O-E)



Supercast Rearguard intersections are available in the above configurations with the exception of the 90° mitre on edge and T-piece. The 90° mitre on edge is replaced by:

90° mitre on edge (M-O-E-INT)



270° mitre on edge (M-O-E-EXT)

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 wither side of a special heated blade, until an even, molten bead of PVC appears around the section. 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.

Placement

Supercast	*Minimum placement radius on flat (m)	*Minimum placement radius on edge (m)
Hydrofoil 250mm	15	0.15
Hydrofoil 200mm	14	0.15
Hydrofoil 150mm	12	0.075
Rearguard R 250mm	10	N/A
Rearguard R 200mm	9	N/A
Rearguard R 150mm	8	N/A
Rearguard S 250mm	10	N/A

* Minimum practical radius which product can be “bent” before distortion is likely to occur. Ambient temperature may affect these typical dimensions.

Supply

Supercast	Roll length (m)	Weight per roll (kg)	Material code:
Hydrofoil 250mm	12	27.1	FC020303-UNIT
Hydrofoil 200mm	15	27.3	FC020302-UNIT
Hydrofoil 150mm	15	21.3	FC020301-UNIT
Rearguard R 250mm	12	29.8	FC020360-UNIT
Rearguard R 200mm	12	23.0	FC020340-UNIT
Rearguard R 150mm	12	15.2	FC020330-UNIT
Rearguard S 250mm	12	33.1	FC020350-UNIT

Fosroc® Supercast® PVC Waterstops

Welding Equipment

Jointing jigs

Various welding jigs are available to assist with joining the **Supercast** when required.

Supercast Hydrofoil Jig 150mm	FC070350-UNIT
Supercast Hydrofoil Jig 200mm	FC070351-UNIT
Supercast Hydrofoil Jig 250mm	FC070352-UNIT
Supercast Rearguard Jig 150mm	FC070355-UNIT
Supercast Rearguard Jig 200mm	FC070356-UNIT
Supercast Rearguard Jig 250mm	FC070357-UNIT

Heater blades

240v welding blades are available.

Parchem Welding Iron 414 JP	FC101135-UNIT
Parchem Welding Iron Teflon Cover	FC101140-UNIT

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

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

Sold under license from Fosroc International Limited. Fosroc and the Fosroc logo are trade marks of Fosroc International Limited, used under license.

Parchem Construction Supplies Pty Ltd
1956 Dandenong Rd Clayton VIC 3168
Ph: 1800 812 864
www.fosroc.com.au ABN 80 069 961 968

Distributed in New Zealand by: Concrete Plus Ltd
150 Hutt Park Road Gracefield Ph: 0800 657 156
www.fosroc.co.nz NZBN 9429033691282