Fosroc® Supercast PVC waterstops range

FOSROC constructive solutions

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 bulb network
- Reinforced eyeletted 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

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

Description

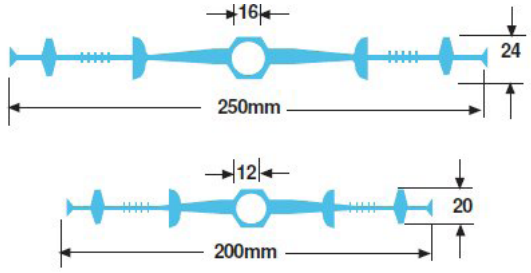
Supercast waterstops are extruded from a high grade PVC compound which has been formulated to give excellent flexibility and longevity characteristics. They are available as straight lengths and factory produced intersections or as a factory prefabricated segment of a network to minimise site jointing.

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.

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

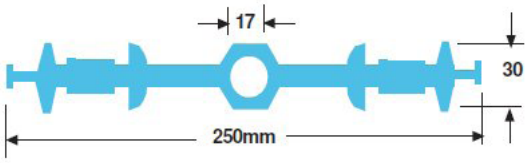
Hydrofoil sections



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.

XHD Hydrofoil section



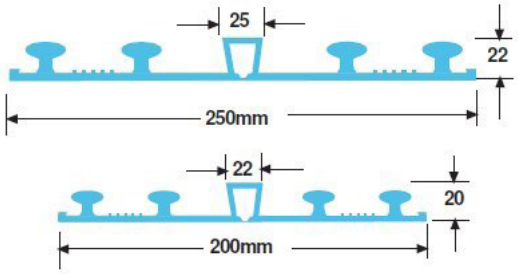
All dimensions are approximate and subject to Fosroc manufacturing tolerances.

Supercast Rearguard S

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

Supercast Rearguard S can also be used in contraction and construction joints.

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



Rearguard S sections

All dimensions are approximate and subject to Fosroc manufacturing tolerances.

APPROVED WRAS MATERIAL

Fosroc® Supercast PVC waterstops range

Design criteria

The choice of the width and thickness of waterstop 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 between 200mm and 250mm thick, the use of the 200mm waterstop will be appropriate and below 200mm, 150mm waterstop should be used.

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 concrete shuttering, externally placed waterstops will resist water pressure from either face.

Standards compliance

Supercast PVC waterstops are suitable for use in contact with potable water. Water Regulations Advisory Service approved product.

Drinking Water Inspectorate Regulation 25(1)b of the Water Supply (Water Quality) Regulations 1989.

Specification clauses

1. Supplier specification

Where indicated on the drawings, PVC waterstops shall be Supercast Waterstops obtained from Fosroc. All wall/floor waterstop connections shall be made using Supercast intersection 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 and an elongation at break in excess of 300%

Properties

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

Compound	
Typical figures:	To BS 2782 at 25°C
Tensile strength:	Minimum 14 MN/m²
Elongation at break:	Minimum 300%
Hardness:	Shore 'A' 80-90

Installation instructions

Supercast Hydrofoil

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.

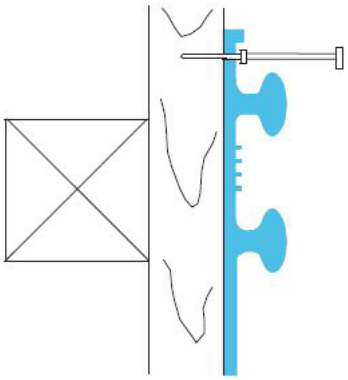
The brass eyelets used in securing the waterstop are located outside the edge bulbs so as not to create water paths around the profile.

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



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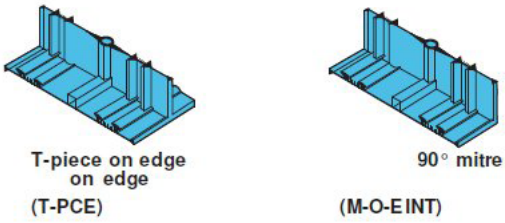
Site jointing instructions

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 either 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.

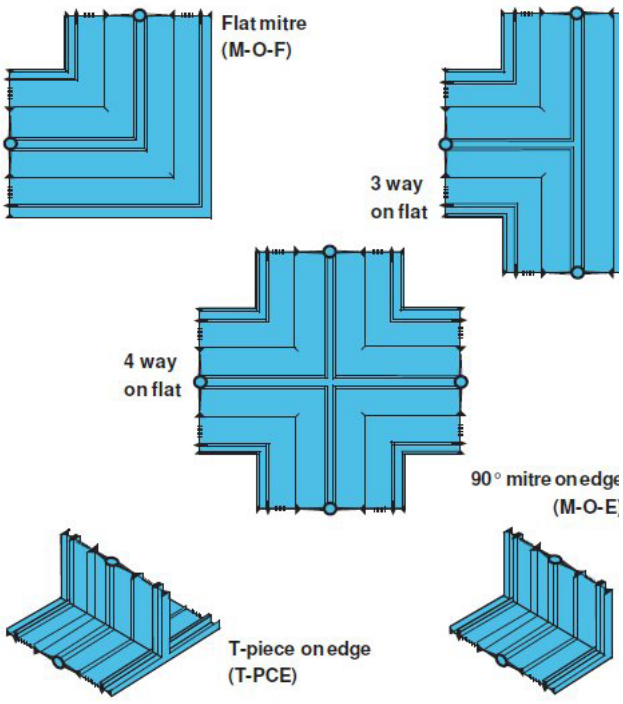
Intersection pieces

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.

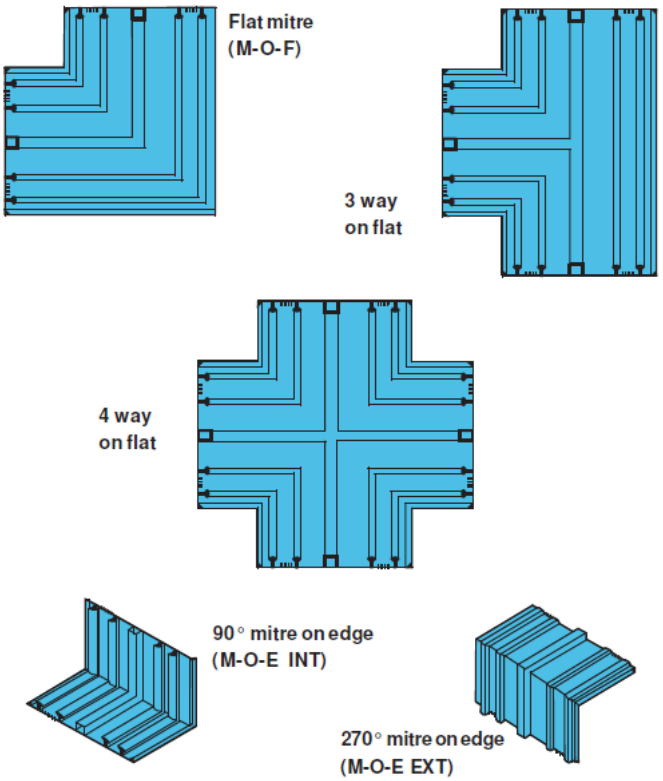
Factory welded Supercast Rearguard S to Hydrofoil and Rearguard S XHD Hydrofoil



Factory welded intersections for Supercast Hydrofoil and Supercast XHD Hydrofoil.



Factory welded intersections for Supercast Rearguard S



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Estimating

Supercast	Section width in mm	Wt/roll in kg	Minimum radii on flat m	Minimum radii on edge m	Roll length m
Hydrofoil	250	27.1	15	0.15	12
	200	27.3	14	0.15	15
	150	21.3	12	0.075	15
Rearguard S	250	33.4	10	5.0	12
	200	24.0	9	5.0	12
XHD Hydrofoil	250	42.9	15	0.23	10

Storage

Store in original unopened packaging, in cool dry conditions, away from sunlight.

Equipment

Jointing jigs

200 mm Supercast Rearguard S

250 mm Supercast Rearguard S

200 mm Supercast Hydrofoil

250 mm Supercast Hydrofoil

250 mm Supercast XHD Hydrofoil

Heater blades

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

Warning: Ensure that heater blades are earthed by the green/yellow wire, and that the wiring operation is carried out by a competent electrician.

Warning: Hot blade
Do not immerse blade in water/liquids.

Precautions

Health and safety

Hot weld site jointing of PVC waterstops liberates hydrogen chloride mist and vapour. Ensure adequate ventilation. If working in still air or confined spaces, provide forced ventilation or suitable respiratory protective equipment.

For further information refer to appropriate Product Safety Data Sheet.

Application instructions

Application at low temperatures

Care in the handling and installation of Supercast PVC waterstops is necessary at low ambient temperatures. Such temperatures will also require special precautions to be taken with the placing and curing of concrete.

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