



UNISTOP™ PVC

PVC WATERSTOP

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PRODUCT FEATURES

UNISTOP™ PVC WATERSTOP range are extruded from high grade polyvinyl chloride (PVC) resin extrusions that are plasticized and stabilized to offer long life performance in concrete structures against water leakages.

UNISTOP™ PVC WATERSTOP are designed to be cast into construction or expansion joints to prevent the passage of liquids under pressure. They work by creating a tortuous path with their profile, making it harder for liquids to travel across the joints and penetrate into the structure.

UNISTOP™ PVC WATERSTOP available in a different number of sizes & profiles to suit the project's requirement. They are available in roll lengths, alongside with the factory produced intersections to minimize on-site heat jointing and are selected according to the type of structure and application they are to be used in

UNISTOP ICJ	Internally placed waterstop for Construction Joints
UNISTOP IEJ	Internally placed waterstop for Expansion Joints
UNISTOP ECJ	Externally placed waterstop for Construction Joints
UNISTOP EEJ	Externally placed waterstop for Expansion Joints

ADVANTAGES

- High grade PVC for long term durability and integrity
- Alternative size and profiles to suit all kind of requirement
- Internal profiles come with brass eyelets on edge flanges for tying with steel reinforcements
- Prefabricated intersections to minimize on-site heat jointing
- Resistant to sea water, salt solution, potable and sewage water

FIELD OF APPLICATION

Water Tanks & Reservoirs	Basement & Underground Car Parks
Water & Sewerage Treatment Plants	Tunnels & Subways
Dam, Culverts & Spillways	Retaining Walls
Swimming Pools	Roof Decks & Podium Areas
Bund Walls	Lift Pits & Service Pits

TECHNICAL PROPERTIES

PROPERTY	TEST METHOD	RESULT
Hardness, Shore A	BS EN ISO 868	78
Water Absorption	BS EN ISO 62	0.1%
Specific Gravity	BS EN ISO 1183-1	1.30
Tensile Strength	ASTM D412	16.8 N/mm ²
Elongation at Break		460 %

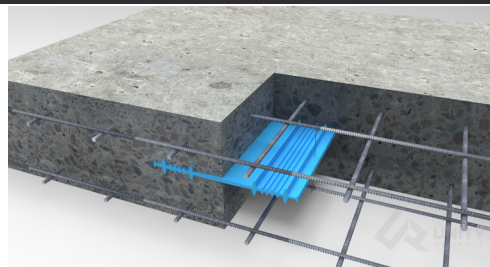
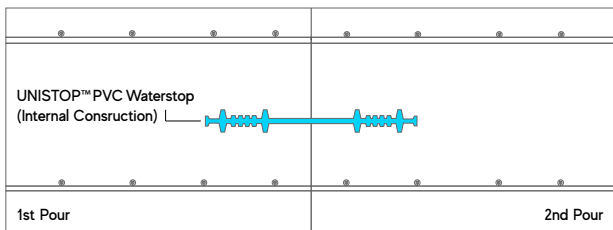
(All values given are subject to 5-10% tolerance / All values are based on testing of PVC compound / Compliance with ASTM/ BS standard.)

PHYSICAL PROPERTIES

MATERIAL	Polyvinyl Chloride (PVC) *(TPR also available upon request)
COLOUR	Blue *(Other colours available upon request)
PACKAGING	20m / roll (150mm width) 15m / roll (200mm width) 12m / roll (250mm width) 15m / roll (330mm width)
ROLL WEIGHT	Dependent upon profile

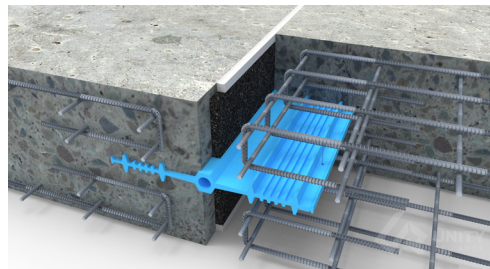
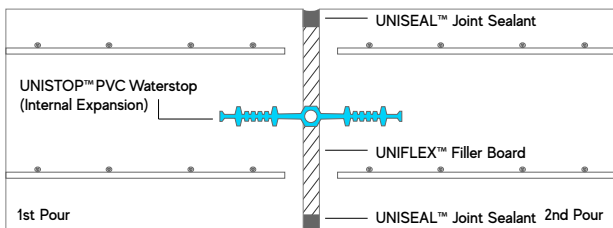
TYPICAL DRAWING & PROFILES

UNISTOP ICJ (Internal Construction Joint)



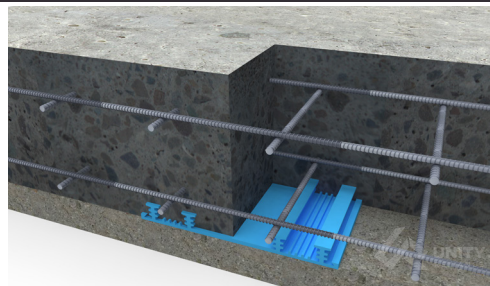
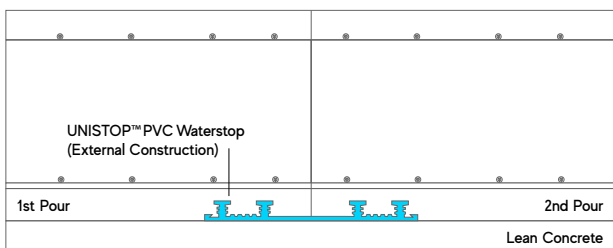
- ICJ 150 (150mm width)
- ICJ 200 (200mm width)
- ICJ 250 (250mm width)
- ICJ 330 (330mm width)

UNISTOP IEJ (Internal Expansion Joint)



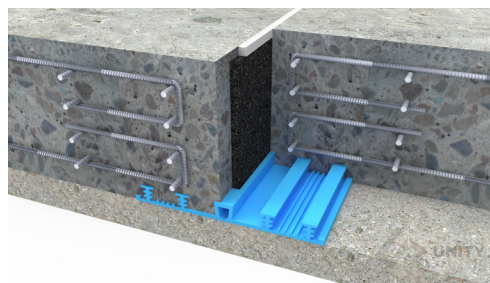
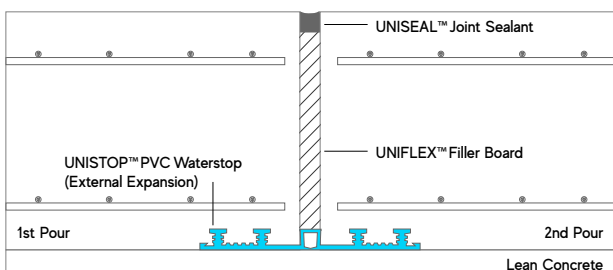
- IEJ 150 (150mm width)
- IEJ 200 (200mm width)
- IEJ 250 (250mm width)
- IEJ 330 (330mm width)

UNISTOP ECJ (External Construction Joint)



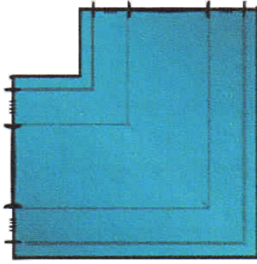
- ECJ 150 (150mm width)
- ECJ 200 (200mm width)
- ECJ 250 (250mm width)
- ECJ 330 (330mm width)

UNISTOP EEJ (External Expansion Joint)

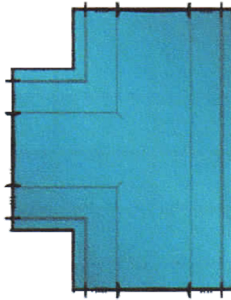


- EEJ 150 (150mm width)
- EEJ 200 (200mm width)
- EEJ 250 (250mm width)
- EEJ 330 (330mm width)

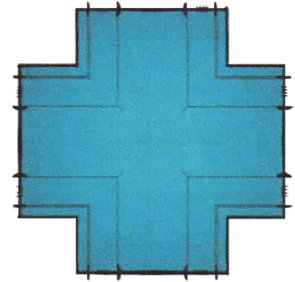
FACTORY PREFABRICATED INTERSECTIONS



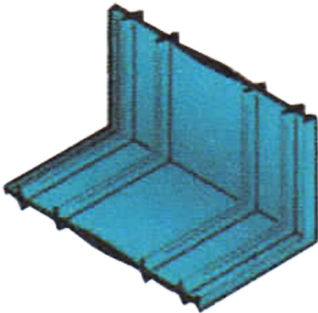
FLAT - L



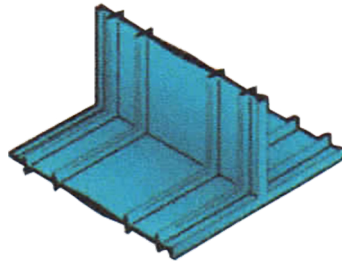
FLAT - T



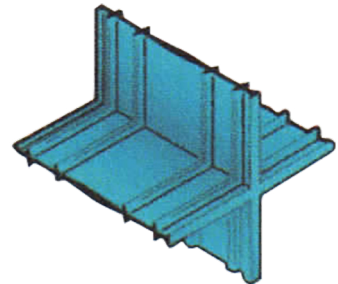
FLAT - X



VERTICAL - L

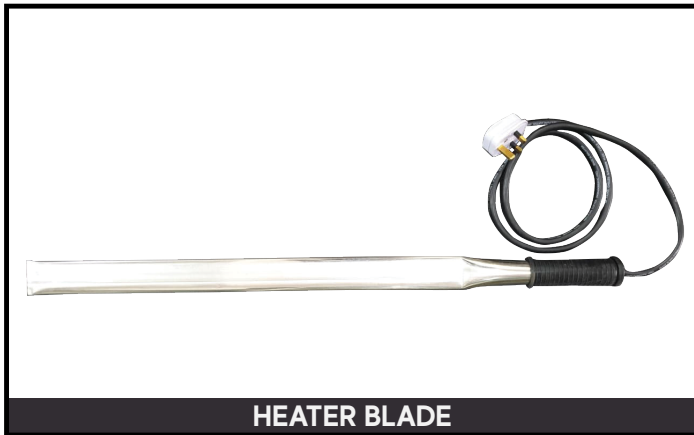


VERTICAL - T



VERTICAL - X

JOINTING ACCESSORIES



HEATER BLADE



JOINTING JIG

PROFILES AND WIDTH SELECTION GUIDELINE

The general rule of thumb is that for concrete wall or slab thicknesses of 250mm & above use a 250mm wide waterstop profile. For width less than 250mm, use either 150mm or 200mm profiles to match as near as possible the thickness of the wall or slab.

UNISTOP™ ICJ or **UNISTOP™ IEJ** internally placed waterstops are always used in wall joints in water retaining structures, and can also be used in roof & podium deck joints or wall joints in water excluding structures.

UNISTOP™ ECJ or **UNISTOP™ EEJ** externally placed waterstops are generally used when there is positive water pressure directly on the waterstop, particularly in water excluding structures such as basements, tunnels etc. But are also used in base slabs in water retaining structures.

INSTALLATION PROCEDURES

All waterstops must be securely fixed to avoid moving during concrete placement. Failure to achieve this will result in misaligned waterstops.

Prefabricated intersections shall be heat jointing to straight lengths prior to fixing on site.

Concrete must be fully compacted around the waterstops to ensure no voids or honeycombs.

▸ *PREPARATION*

Long term durability and function can only be achieved with good preparation & application to give a continuous waterstop network throughout the structure. Ensure the surfaces where the PVC waterstop is to be placed are clean and free from sharp projections. Unroll the waterstop along the line of the joint & cut to length allowing for appropriate intersections as required.

▸ *FIXING INTERNALLY*

UNISTOP™ ICJ or **UNISTOP™ IEJ** internally placed waterstops are positioned within the concrete where the centerline of the waterstop is aligned with the centre of the joint, and fixed in place using wire tied to the steel reinforcement through the eyelets provided at the end flange, along the length of the waterstop roll. The formwork should be securely erected either side of waterstop so as to clamp it in the middle of where the concrete will be poured.

To create expansion joints, cast one side of the concrete first, then securely fix **UNIFLEX PE™** (polyethylene fillerboard) to the concrete faces either side of the PVC waterstop centre bulb for the full depth of the joint, before casting the next piece of concrete directly against the **UNIFLEX PE™**.

▸ *FIXING EXTERNALLY*

UNISTOP™ ECJ or **UNISTOP™ EEJ** externally placed waterstops are usually laid on top of the compacted grade or lean concrete. The stop end form works are then fixed on top of the waterstop. It is fixed in place by nailing the waterstop through the outer reinforced web to the formwork along its length to avoid displacements during the concrete pour.

To create expansion joints, cast one side of the concrete first, then securely fix **UNIFLEX PE™** (polyethylene fillerboard) to the concrete face on top of the PVC waterstop centre bulb for the full depth of the joint, before casting the next piece of concrete directly against the **UNIFLEX PE™**.

▶ JOINTING

UNISTOP™ PVC WATERSTOP rolls and intersections must be hot welded together using a suitable jig and electric heating blade prior to placement. Different jigs should be used depending on the profile and width of waterstop used.

The edge of the waterstop shall be cut with a knife to get an even and sharp finish and aligned in a specially designed fixing jig. The edges will then be positioned in the jig in such a fashion that at least 25mm of waterstop protrudes from the jig. Place the heater blade in between the PVC ends and close the jigs together so the ends touch the heater blade.

Turn on the heater blade and allow it to melt the PVC either side. When the PVC starts melting, beads will start forming around both sides, remove the heater blade and press both the ends firmly against each other to form a neat buttsplice. Press the joints against each other for sometime till the PVC cools and forms a strong fusion welded joint.

SITE PHOTOS



This technical data sheet is given in good faith and does not guarantee the application work. All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the users responsibility to obtain the latest version of the information required.



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