



MAXFLEX[®]

PVC

FLEXIBLE PVC WATERSTOP FOR SEALING OF JOINTS IN CONCRETE CAST IN-SITU

DESCRIPTION

MAXFLEX[®] PVC is a flexible internally or externally cast sealing system extruded from high-grade PVC compound that is cast into the centre or on to surface of concrete elements for sealing and waterproofing of expansion and construction joints in concrete structures that must be permanently watertight. Thus, design and size of the profile provide a difficult path and greater resistance for water around while allowing concrete to be easily placed around them.

There are two types of **MAXFLEX[®] PVC** sections:

- a) Internal/centrally placed waterstop belts.
- b) External/surface placed waterstop belts.

APPLICATION FIELDS

- Watertight sealing, maintaining the mobility for the treated elements subjected to water pressure or water retaining structures such as reservoirs, wastewater tanks, swimming pools, canals, water towers, etc., preventing loss of water.
- Waterproofing of joints on water excluding structures such as retaining walls, foundations, basements, floor slab, roof decks, tunnels, galleries, etc., preventing water ingress of ground water.
- Centrally placed pieces are positioned within the thickness of the concrete element and supported by concrete on both sides, so it withstands water pressure from either side.
- Externally placed pieces in walls withstands water pressure from the face to which they are fixed. Nevertheless, for below floor slabs, the system will resist water pressure from either place.

ADVANTAGES

- High flexibility, even at low temperatures: accommodates movements during constructions and service life of the concrete structure.

- Good resistance to high hydrostatic pressure from both faces of the concrete element.
- Protect rebars from water or moisture ingress.
- External profiles are provided with "T" shaped ribs and some rib and fin network respectively, for solid embedment in in-situ concrete and providing a tortuous path for water.
- Suitable for horizontal and vertical applications.
- Easy to butt weld on-site: welding equipment available.
- Available in different sizes, types and sections suitable for the most used construction requirements. Available pre-moulded and fabricated pieces and intersections, depending on their use.

APPLICATION INSTRUCTIONS

Design criteria and selection

Proper selection of the most suitable **MAXFLEX[®] PVC** section depends on the followings aspects or operational demands: a) shrinkage, contractions, temperature cycles, b) type and level of hydrostatic pressure and, c) type of joints (expansion, construction, etc.).

For further information on the design criteria and selection of joint types, please contact the Technical Department.

Piece preparation

Using a scissor cut **MAXFLEX[®] PVC** pieces to the specified length according to the work plan. Pre-assemble all strip joints, mitres, crossing or corners, i.e. factory-made junctions and fabrications, before the placement. Form a fully continuous waterstop network using the factory-made junctions with the site joints limited to simple butt welds of similar section. Profiles must not show any deformations or damages, which could affect their performance.

Placement of the pieces

MAXFLEX[®] PVC waterstop belts provide a barrier across joint in-situ concrete structures by casting the section centrally into the edges of adjacent concrete

elements. Thus, waterstop belts should be securely fastened and held in the correct position during concreting to prevent any movement.

Internal placed MAXFLEX® PVC waterstop belts on slab/wall joints. Belts should be installed together with the reinforcement and attached to the same by wiring to surrounding reinforcements (at least every 25-30 cm) in order to hold it in the horizontal plane. The belt fastening is carried out at margin anchoring ribs with installation clamps/clips and binding wire. This will prevent displacement and folding during concreting placement so that half of its width will be cast into the concrete approximately halfway through the thickness of the concrete element. Make sure that the waterstop belt is retained in the horizontal plane and that dense compacted concrete is formed, i.e. no entrapped air. After stripping the forms, the second half can be cast into the adjoining slab with similar precautions taken with regard to entrapped air.

External placed MAXFLEX® PVC waterstop belts on floor. Belts are placed on the sub-base, ground slabs or fixed on the formwork or any stable support before the rebars are installed, i.e. waterstop network should be simply loose laid direct on to the ground slab blinding concrete and centrally over the line of the joint to be formed.

External placed MAXFLEX® PVC waterstop belts on wall joints. Belts should be supported by nailing with double headed nails through the outer flange of the profile on to the formwork in such way that it does not fold over under the weight of the poured concrete. Thus, the head of the nail proud so that it is held in the cured concrete.

Site welding and jointing

MAXFLEX® PVC waterstop can be welded easily and rapidly on-site, so butt jointing is achieved by heat-fused welds using suitable heat welding equipment. Make sure that the belt ends to be jointed are of the same width and shape. Clean the area to be welded with any suitable solvent and dry them. The ends to be jointed are placed on an even and firm surface and then are cut square with a sharp knife and held in alignment in a special welding jig. The ends are pressed either side of a special heated blade/welding equipment, until an even, molten bead of PVC appears around the section or both sides.

The heated blade/welding equipment is then removed and the molten ends pressed fully together until they have hardened after 30-60 seconds. This procedure must be short and uninterrupted to prevent the heated sections from cooling before they are joined. The PVC cools to form a strong fusion welded joint. The welding operation requires two

persons; one holds the welding tool and the other presses the seams against the tool. Before reheating the tool, all PVC residues must always thoroughly removed from the welding tools using a wire brush.

After welding the **MAXFLEX® PVC** pieces, the weld seam must be closed with the welding tool over its full height and its full width. Optionally and in order to protect the welding seam, a 1,5 mm thick welding strip is pressed onto the whole seam and bonded with a hot-air blower directed against the strip.

Concreting

Before concreting, check the cleanliness and proper installation of the **MAXFLEX® PVC** waterstop i.e. absence of any dirt, secure fastening, alignment with respect to the joints and, distance to the rebars.

Ensure no voids or porous areas remain, i.e. concrete must be fully and properly compacted around the profiles. During compaction, the vibrating head must not come into contact with the waterstop belts.

Stripping the forms

For external/surface placed waterstop belts during the stripping the forms, avoid any damage or loosening or detachment from the fresh concrete.

PACKAGING

MAXFLEX® PVC waterstop are supplied in 25 m long rolls.

A wide range of standard intersections or junction pieces are available by special request to simplify and minimise on-site fabrication for the different **MAXFLEX® PVC** sections:

- Cross piece on flat
- T-piece on flat
- T-piece on vertical
- L-piece on flat
- Corner piece on vertical.

Complete welding kit composed of:

- Adjustable jointing jigs for different belt profiles.
- Heater blades/welding equipment for use with all jibs.
- Welding equipment and hot air blower.

STORAGE

MAXFLEX® PVC has an indefinitely shelf life when is stored in its original unopened wooden pallets in a dry and covered place, with temperatures between

5°C and 30°C. Protect against direct sunlight, heat and frost.

SAFETY AND HEALTH

Hot weld jointing of PVC pieces results in the liberation of hydrogen chloride mist and vapour. Thus, welding the **MAXFLEX® PVC** waterstop pieces should be carried out at well-ventilated areas or wear an oxygen mask in confined spaces. Do not work without the protection of safety rubber gloves, safety clothing and goggles. If vapour or mist comes in contact with the eyes, rinse immediately with clean water but do not rub. In case of skin contact, wash with abundant water and soap. If irritation persists, seek medical assistance. If ingested, seek immediate medical assistance. Do not induce vomiting. Provide suitable ventilation in the working area.

Safety Data Sheet of **MAXFLEX® PVC** is available by request.

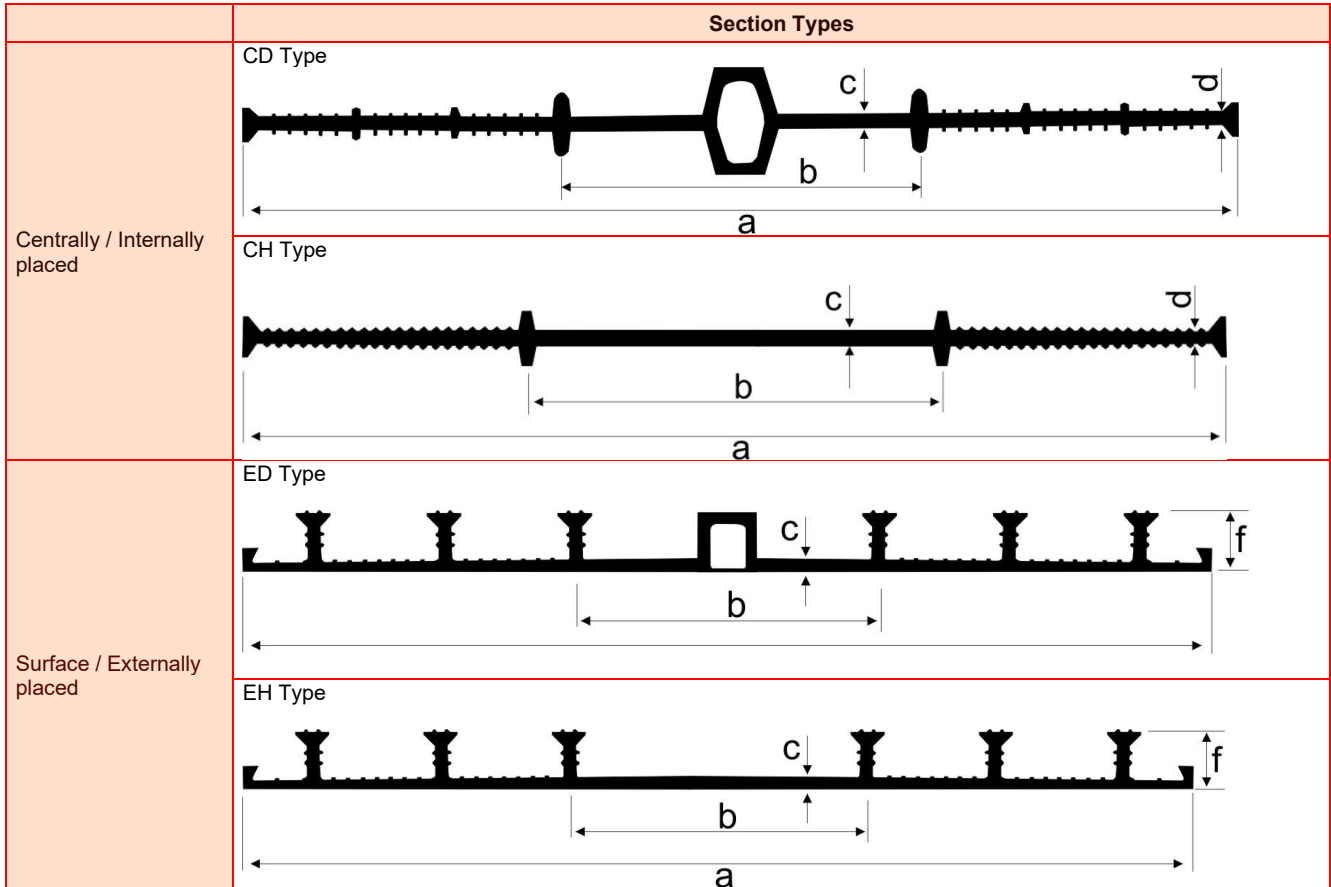
Disposal of the product and its empty packaging must be done by the final user and according to national regulations.

IMPORTANT INDICATIONS

- Make sure to form a continuous waterstop network at all joints to prevent the ingress or escape of water
- Observe at least a minimum concrete coverage of 20 mm all side between the waterstop belts and the rebars
- When removing the formwork, make sure that external/surface placed profiles are neither damaged nor loosened or detached from the fresh concrete
- During installation, avoid damaging and punching of the profiles by sharp edges of the rebars.
- Recommended movement range for the **MAXFLEX® PVC** waterstop to be limited to 10 mm.
- Excessive heating will cause haring and damage of the waterstop belts and provides an insufficient bonding.
- For any other applications not specified in this technical bulletin, consult our Technical Department.

TECHNICAL DATA

Characteristics of the product	
Appearance / Form	Extruded PVC (Polyvinyl Chloride) waterstop belts with different sections
Colour	Grey
Welding temperature min / max. (°C)	160 / 180
Service temperature (°C)	From -30 to +55
Elongation at break, ASTM D412 (%)	>250
Joint movement (mm)	>10
Tensile strength, DIN EN ISO 527 T3 (N/mm ²)	>10
Shore A hardness, DIN 53505	80 ± 3
Chemical resistance to wastewater, seawater and pure water	Good resistance



Type	Name	Width (mm)		Thickness (mm)		Locking anchor		Uses
		Overall (a)	Expansion element (b)	Expansion element (c)	Outside thickness (d)	Height (mm) (f)	Total number (N)	
Centrally placed / Internal	CD-15	150	50	3,5	2,5			Expansion joints Water pressure on both sides
	CD-19	190	65	3,5	2,5			
	CD-24	240	80	4	2,5			
	CD-32	320	110	5	3			Construction joint Water pressure on both sides
	CH-15	150	45	3	2,5			
	CH-19	190	70	3	2,5			
Surface placed / External	CH-24	240	80	3,5	2,5			Expansion joints Water pressure from face fixed*
	CH-32	320	100	4,5	3			
	ED-19	190	92	4		17	4	
	ED-24	240	90	4		20	4	Construction joints Water pressure from face fixed*
	ED-32	320	105	4		20	6	
	EH-19	185	87	2,6		15	4	
	EH-24	235	110	2,8		20	4	Construction joints Water pressure from face fixed*
	EH-32	325	110	3,5		20	6	

* Water pressure from on both sides when used below floor slabs or in vertical situations against permanent concrete shuttering

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. **DRIZORO®**, S.A.U. reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. In order to know the real data, a test on the jobsite must be done, and it will be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.