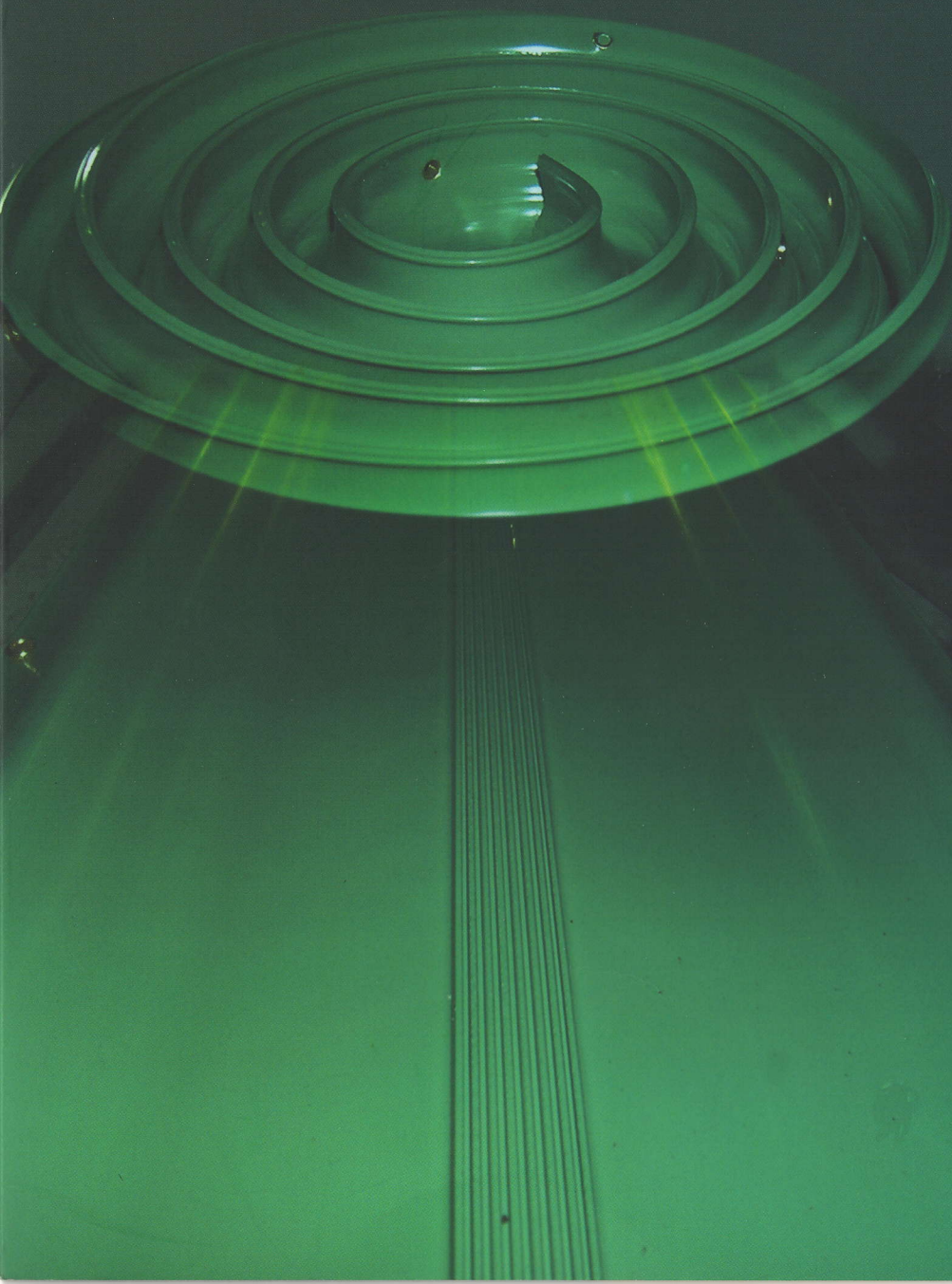


# BITUMAT PVC WATERSTOPS



**PVC WATERSTOPS**  
are produced by melting  
and shaping mixtures been  
obtained from  
Polyvinylchloride resin,  
stabilizer, plasticizer & anti  
oxidant dyestuff in suitable  
temperature & pressure  
in Extruders.



**BITUMAT**



## INTRODUCTION

PVC Waterstops are used for providing water impermeability in expansion-contraction (structure) joint seen in concrete structures exposed to high & low water pressure and for preventing vibrations and deformations that would appear in concrete blocks.

Bitumat Waterstops is an internally cast PVC waterstop system manufactured in a range of sizes for use in reinforced concrete structures. It is essential to form a continuous waterstop network at all joints to prevent the ingress of water and it is vital to use factory produced fabrications. Bitumat Waterstops, internal flexible waterstop systems, have been developed for positive embedment in insitu concrete by creating a valve action to seal the water path, suitable for horizontal and vertical applications.

### USES

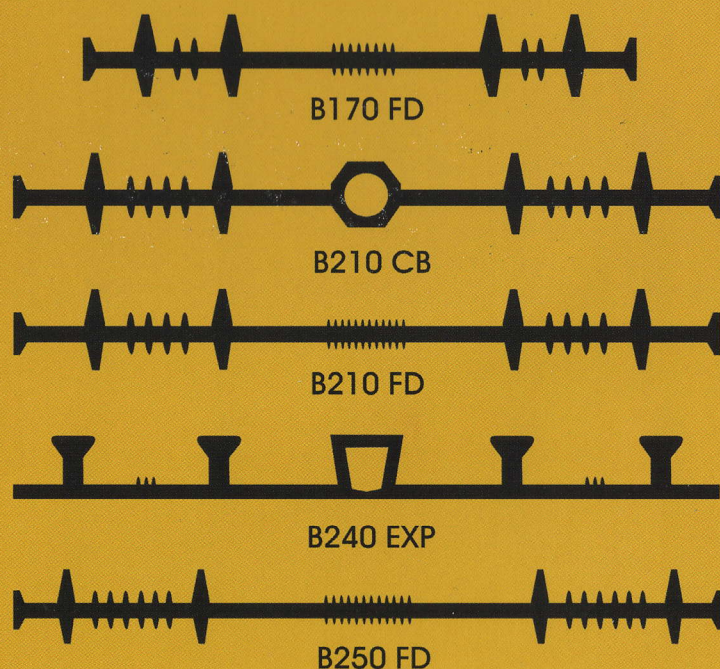
- Dams
- Ponds
- Canal Lining
- Water Cisterns
- Water Refining Facilities
- Swimming Pools
- Deck
- Construction Tunnels
- Hydro Electricity & Thermal Plants
- Bridges
- Refining Facilities
- Metro Constructions
- Power Plants Viaducts
- Supporting Walls
- Flooring Settled on Ground & Foundations

Bitumat waterstops serve as a barrier to the passage of water through, across, or along a construction joint in a concrete structure exposed to water on one or more surfaces. They are extruded from high grade PVC compounded with first quality plasticizers to form a pliable waterstop system.

### They are:

- Flexible
- Strong and Resilient
- Weather Resistant
- Unaffected by Low temperatures or constant immersion in water
- Resistant to many chemicals found in the soil.
- Easy to Install
- Accommodates Joint movements while preventing water movement through the joint.

### (B SERIES)



### Forming & Positioning Requirements

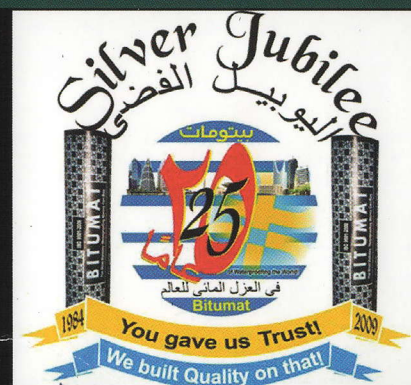
PVC waterstops are installed prior to the initial concrete pour to ensure proper positioning. Split formwork is generally required for slab-to-slab, slab-to-wall joints where ribbed or dumbbell style waterstops are used. Split forms allow half of the waterstop to be positioned inside the first pour with the other half projecting into the second pour.

PVC Waterstop is easily butt spliced with a Teflon coated, thermostatically controlled splicing iron. The ends of the waterstop must be cut square to form matching edges. Uniformly melts the ends 380° using the thermostatically controlled splicing iron. It is important to use an indirect source of heat for this procedure. Direct exposure to a flame will change the chemical composition of PVC and result in a weak weld. When an 1/8" diameter melt bead develops on each waterstop end, remove the splicing iron and firmly press the two ends together in proper alignment. Hold until the material has fused and cooled. Allow the splice to cool naturally; do not quench. Melt temperature of the splicing iron must be maintained to avoid burning or charring the material. Heating irons have resistance type heating elements and experience diminished performance if a reduced voltage is supplied. Avoid operating with long runs of small gauge extension cords.

### Slab joints

The Bitumat PVC Waterstop is supported in specially prepared split stop-end formwork which holds the waterstop in the horizontal plane to prevent displacement and folding so that half its width will be cast into the concrete approximately half way through the thickness of the slab.

Care must be taken to ensure that the waterstop is retained in the horizontal plane and that adequate compaction of concrete takes place below the web of the waterstop in order to avoid "honeycombing". Lifting the





waterstop during compaction to release entrapped air will assist in forming dense compacted concrete. After stripping the formwork supporting the waterstop, the second half can be cast into the adjoining slab with similar precautions taken with regard to "honeycombing".

### Wall joints

The waterstop must be supported in split-end form work as described for slab joints, with great care taken to ensure that the waterstop does not fold over under the weight of the poured concrete. To eliminate fold-over, the waterstop should be wired to the reinforcing steel using the wiring holes provided. A fully continuous waterstop network shall be formed using factory made junctions with site joints limited to simple butt welds between similar sections.

### Typical Junction Pieces

Available for Flat Dumbbell and Centre Bulb Waterstops. Additional patterns other than those illustrated are available. Non regular design requirements of all types can be met by the supply of irregular L and Y Junction pieces manufactured in the full range of sizes. When ordering specify all the included angle.

### Supply for construction/contraction joints Flat Dumbbell

170mm wide	15m rolls wt 21.9 kg
210mm wide	15m rolls wt 27.8 kg
250mm wide	15m rolls wt 36.7 kg

### Supply for expansion/movement joints Centre Bulb

210mm wide	15m rolls wt 26.9 kg
260mm wide	15m rolls wt 38.4 kg

### Equipment

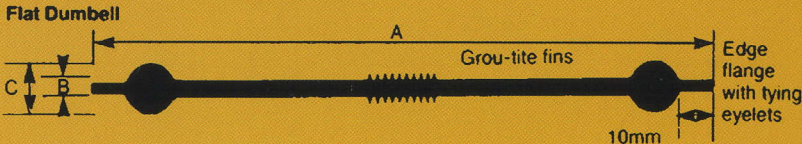
- PVC Edge Tie Welding Jigs Unit various sizes
- Electric (110v or 220v) Unit
- Welding Knife
- Mild Steel Welding Knife Unit



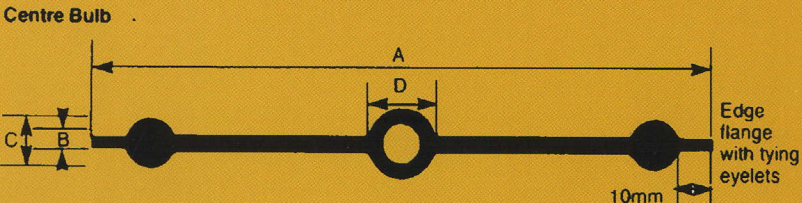
### (S SERIES)

### Product Range at a glance

SN	FD	CB	HD	EX
1	170			
2	210			
3	250			
4		210		
5		260		
6			240	
7				240

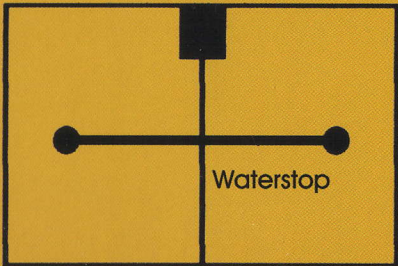


Type	Dimensions	A	B	C
170 FD		170mm	5mm	13mm
210 FD		210mm	5mm	13mm
250 FD		250mm	5mm	19mm

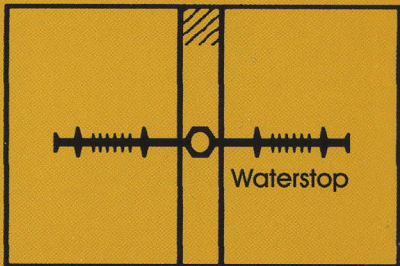


Type	Dimensions	A	B	C	D
210 CB		210mm	5mm	13mm	8mm

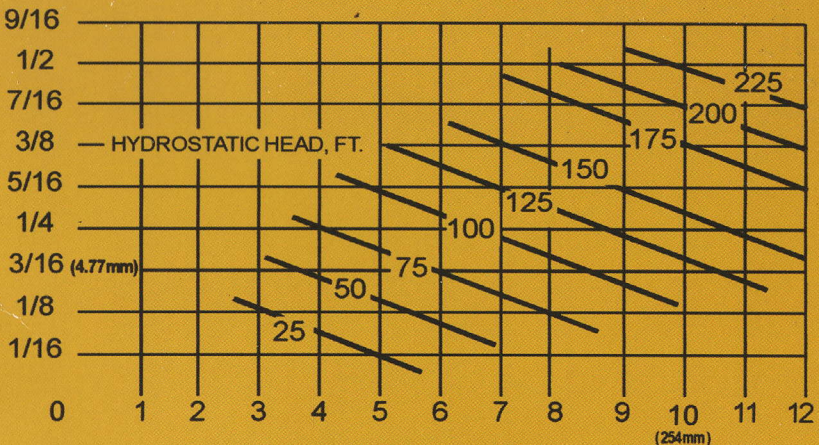
The above series of profiles subject to availability.



Construction Joint

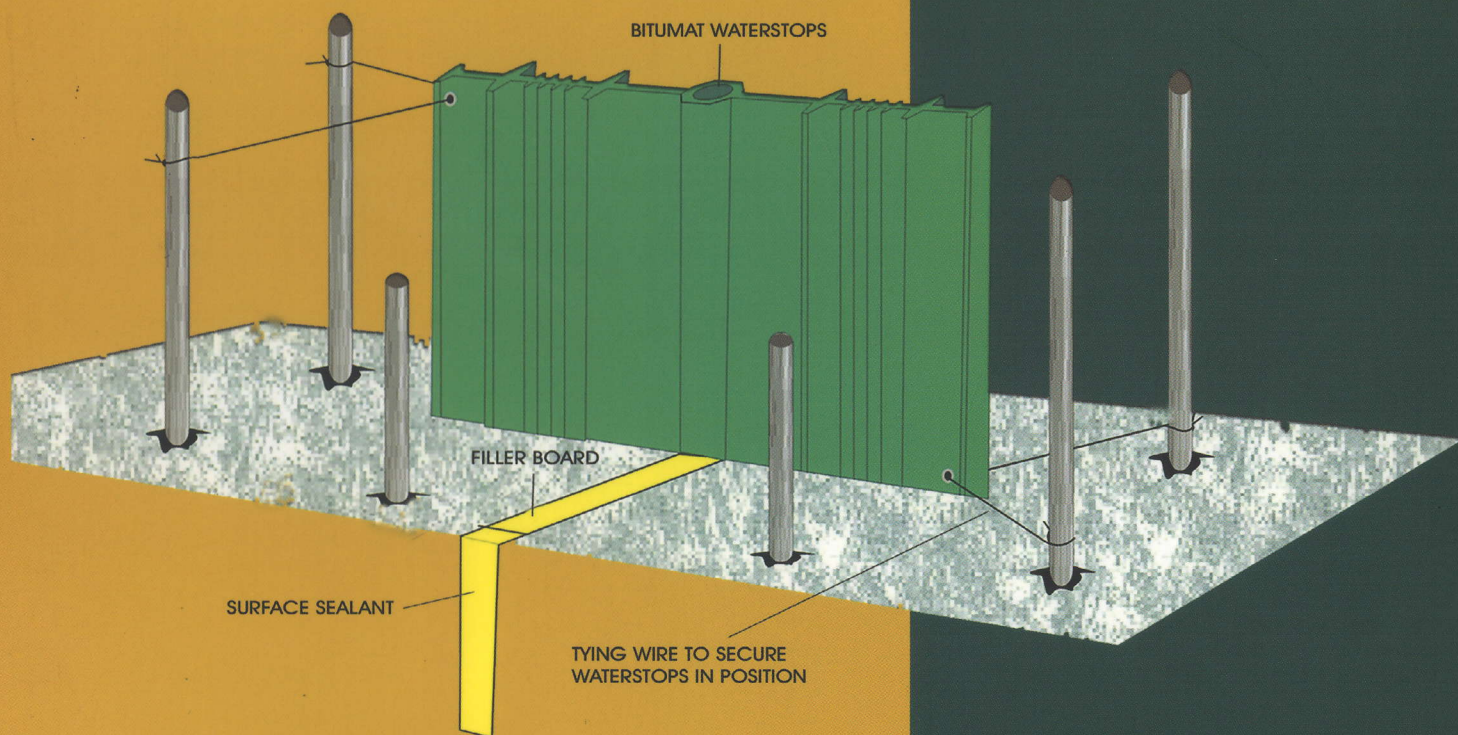


Expansion Joint



Adapted from Corps of Engineers "waterstops and other joint materials" EM1110-2-2102  
(To convert to MM, multiply by 25.4)





### Equipment by others

Fine tooth saw, wire brush, Stanley knife, 110v or 220v power source, blow lamp if non-electrical mild steel knife is used.

### Health and Safety

Fused site welded jointing of PVC waterstops can result in the liberation of hydrochloric acid fumes. In confined spaces forced ventilation must be provided or a suitable respirator used. On open sites special precautions are not normally required but operators should avoid inhaling any fumes. Before using electric welding knife ensure that it is correctly earthed.

### Specification

Bitumat PVC waterstops of the size and dimension specified shall be used to form a continuous network as shown on the detailed drawings and fixed in position with site jointing limited to butt joints, strictly in accordance with the manufacturer's instructions.

### Properties of PVC Compound

Tensile strength	13.78 N/mm <sup>2</sup> (2000 psi)
Elongation at break	300%
B.S. Softness	45
Specific Gravity	1.25 - 1.35

Compound Tested in accordance with BS 2571 and US Corps of Engineers CRD-C572-74.

### DO NOT

- 1.) Embed bulb in concrete. It must be positioned in center of joint to ensure freedom of movement.
- 2.) Drive nails through center of Waterstop when forming.
- 3.) Lap sections of Waterstop. All joints should be spliced with a heat-sealing method.

### DO

- 1.) Systematically and thoroughly vibrate concrete around waterstop to avoid honey-combing and voids in concrete and to ensure complete contact between waterstop and concrete.
- 2.) Hold Waterstop securely in place to prevent misalignment during concreting operations.
- 3.) Use a thicker section Waterstop (3/8" or 1/2") for heavy pours &/ or a large aggregate.



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