

POLYSTOP

Internal and external PVC waterstop

POLYSTOP water stops are high grade Poly Vinyl Chloride (PVC) resin extrusions that are plasticized and stabilized to offer long life performance in concrete structures against water leakages. The cross section configuration features a multi rib design for an effective grip and tenacious anchor to the concrete and a flexible, hollow center bulb to accommodate moderate expansion and contraction in the concrete. POLYSTOP waterstops are manufactured to meet the most stringent performance specifications and are resistant to abrasion and chemicals.

CHARACTERISTICS

- ▶ High tensile strength & elongation
- ▶ Unique design. Specific ribbed profile for effective water sealing performance
- ▶ Brass eyelets on edge flanges for tying with steel reinforcements (Internal profiles)
- ▶ Heat weldable
- ▶ Non toxic. Suitable for use in contact with potable water
- ▶ Prefabricated intersections
- ▶ Excellent chemical resistance
- ▶ Non-staining. Will not discolor concrete or produce electrolytic action

FIELDS OF APPLICATION

POLYSTOP waterstops are used in conjunction with expansion and construction joints in RCC structures like:

- ▶ Water reservoirs & storage tanks
- ▶ Retaining walls, basements, foundations
- ▶ Subways, tunnels & culverts
- ▶ Drainage, sewerage & waste water structures
- ▶ Treatment plants
- ▶ Swimming pools
- ▶ Dams, canals

INTERNAL PROFILE DETAILS

POLYSTOP ICJ - Internal Construction Joints

The internal Construction joint waterstops is placed in the centre of the concrete construction joints. Since this type of waterstop is embedded into the concrete they are designed and incorporated with fins and multiple solid-core ribs along the two lengthwise edges. These fins interlocks the waterstop in the concrete thus providing a superior mechanical bond with the concrete. The ribs are designed with particular angle which anchors with the concrete and further reinforces the mechanical bond. In addition to that angle in the ribs ensures a torturous path for the passage of water.

POLYSTOP IEJ - Internal Expansion Joints

The Internal Expansion joint waterstop is placed in the centre/internal section of the concrete expansion joint. This waterstop has a central hollow bulb which is designed to allow the cyclical and differential movement in both lateral and

transverse direction without excessively stretching the material. For greater versatility and superior mechanical bonding, the waterstop is incorporated with multiple ribs and fins on both the lengthwise edges.

EXTERNAL PROFILE DETAILS

POLYSTOP ECJ - External Construction Joints

External construction joint waterstop is used at joints of slab on grade or walls that gets backfilled on vertical walls. The profile of this waterstop is flat with multiple ribs and fins along its flanges for better mechanical bond or interlock in the concrete.

POLYSTOP EEJ - External Expansion Joints

External expansion joint waterstop is used in concrete expansion or isolation joints. These are designed with centre bulb with a tear web. These type of waterstop is used where large movements in expected. Tear web keeps concrete out of the bulb during concrete placement. Upon joint movement, the thin tear web ruptures allowing substantial mechanical deformation of center bulb without stressing the material.

APPLICATION INSTRUCTIONS

Fixing Internally: Internal and centrally placed waterstops are positioned within the concrete where the centerline of the waterstop is aligned with the centre of the joint. Such waterstops functions as a watertight diaphragm wall against any water leakage. For a proper placement of the waterstop, split formwork is recommended when installing in slab-to-slab, slab-to-wall and wall-to-wall joints. The waterstop is then tied with wires through the eyelets provided at the end flanges to the reinforcement. This will ensure that the waterstop firmly held in position and is not misaligned or fold during the concrete pour. One half of the waterstop has to be positioned within the first pour and the other half projecting into the second pour. A tight fit between the waterstop and the form is also necessary to prevent excessive leakage of concrete paste, which could lead to honeycombing of the concrete.

Fixing Externally: The externally placed waterstop is installed prior to pouring of concrete. The external expansion joint profile is usually loosely laid on top

of the compacted grade or mudslab. The stop end form works are then fixed on top of the waterstop. The waterstop can either be nailed or glued into position to avoid displacements during the concrete pour. The External construction joint profile is glued or nailed on to the vertical shutter. The waterstop is so positioned that only the ribbed side is embedded into the concrete.

Joining: A fully continuous water stop network must be formed throughout. At bends and additional joints, factory welded junctions are to be used when jointing with the placed water stops. Field buttsplices shall be heat fused welded using a Teflon coated thermostatically controlled welding iron (240V). The edge of the water stop 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 water stop protrudes from the jig. Place the welding knife in between the two ends, and when the PVC starts melting ($>140^{\circ}\text{C}$), beads will start forming around the section. Remove the welding knife 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.

PRECAUTIONS

- Concrete in and around the waterstop has to be properly compacted in order to ensure a full contact of the waterstop and a water tight seal.
- Surface of the waterstop shall be cleaned of all dirt and cement laitance which can affect the water tight seal with the concrete.
- The clearance between the waterstop and the reinforcement should be at least twice that of the maximum size of the aggregate. This will prevent the formation of voids and honeycomb around the waterstop.
- The waterstop should not be punctured to allow a reinforcement to pass through the waterstop.
- Installed waterstops should be protected from UV. Prolonged exposure will make the PVC waterstop brittle.

STORAGE

Store the material in a cool and shaded area. Protect from UV and high temperatures. Prolonged exposure to sunlight and harsh environment will result in deterioration of the product. Keep away from sharp edges to prevent damage.

HEALTH & SAFETY

POLYSTOP is completely non-hazardous and non-flammable. But care should be taken while cutting and welding the joints. Hydrogen Chloride vapors will be released during the hot welding, therefore the working area should be properly ventilated.

SUPPLY

POLYSTOP ICJ	4mm	250mm x 10m,	wt 15kg [#]
		200mm x 10m,	wt 13kg [#]
		150mm x 10m,	wt 11kg [#]
POLYSTOP IEJ	4mm	250mm x 10m,	wt 17kg [#]
		200mm x 10m,	wt 15kg [#]
		150mm x 10m,	wt 13kg [#]
POLYSTOP ECJ	4mm	250mm x 10m,	wt 20kg [#]
		200mm x 10m,	wt 18kg [#]
		150mm x 10m,	wt 15kg [#]
POLYSTOP EEJ	4mm	250mm x 10m,	wt 24kg [#]
		200mm x 10m,	wt 20kg [#]
		150mm x 10m,	wt 17kg [#]
POLYSTOP ECJ	10mm	250mm x 10m,	wt 33kg [#]
		250mm x 10m,	wt 38kg [#]
		250mm x 10m,	wt 39kg [#]
POLYSTOP EEJ	10mm	250mm x 10m,	wt 46kg [#]
		250mm x 10m,	wt 46kg [#]
		250mm x 10m,	wt 46kg [#]
Ancillaries/Tools		Pre-fabricated junctions, jointing jigs, welding knife 240v	

Approximate weight

TECHNICAL SPECIFICATION

PROPERTIES	VALUES	TEST STANDARDS
Width, (mm)	150, 200, 250	
Web thickness, (mm)	4, 10	
Specific Gravity	≥ 1.32	
Tensile strength, (N/mm ²)	≥ 15	BS 2782
Elongation, (%)	≥ 300	BS 2782
Shore A Hardness	80 \pm 5	ASTM D 2240
BS Softness	40-50	BS 2782
Resistance to water pressure @5bar	Nil	BS EN 12390
Water absorption, (%)	<0.2	ASTM D 570
Chemical resistance	pH 2.5 to 11.5	ASTM D 543
Suitability with potable water (WRC)	Passes (Non Toxic)	BS 6920
Standard Compliance	BS 2571, CRD-C 572-74	

All values given are subject to 5-10% tolerance.

Apart from the information given here it is also important to observe the relevant guidelines and regulations of various organisations and trade associations as well as the respective standards. The aforementioned characteristics are based on practical experience and applied testing. Warranted properties and possible uses which go beyond those warranted in this information sheet require our written confirmation. All data given was obtained at an ambient and material temperature of $+23^{\circ}\text{C}$ and 50 % relative air humidity unless specified otherwise. Please note that under other climatic conditions hardening can be accelerated or delayed.

The information contained herein, particularly recommendations for the handling and use of our products, is based on our professional experience. As materials and conditions may vary with each intended application, and thus are beyond our sphere of influence, we strongly recommend that in each case sufficient tests are conducted to check the suitability of our products for their intended use. Legal liability cannot be accepted on the basis of the contents of this data sheet or any verbal advice given, unless there is a case of wilful misconduct or gross negligence on our part. This technical data sheet supersedes all previous editions relevant to this product.

Manufactured in G.C.C.

Henkel Polybit Industries Ltd.
P.O. Box 293, Umm Al Quwain, UAE
Sales Tel: +971 6 7670777, Fax: +971 6 7670197
Factory Tel: +971 6 7670777, Fax: +971 6 7671669

Henkel Polybit Industries Ltd.(Branch)
P.O. Box 2230, Al Khobar 31952, K.S.A
Tel: +9663 8894110, Fax: +9663 8995313



Internet: www.henkelpolybit.com E-mail: polybit@henkelpolybit.com

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