

# SOLCO POLYBAR WATERSTOP



Solco Polybar Waterstop is a Hydrophilic Thermoplastic Elastomer waterproofing strip for construction joints that remains stable throughout repeated wet/dry cycles.

- Saltwater version for use in salt water environments.
- Solco polybar swells by approx 450%
- Composition delays initial swelling allowing installation to insitu concrete applications.
- Reversible swelling through wet-dry cycles.
- Easy installation, nailing or gluing with Waterstop Sealant
- Has a good all-round chemical resistance (see Chemical Resistane table)



Colour	Product Code	Type
Red	SOLCOPOLYBAR	Standard
Yellow	SOLCOPOLYSALT	Salt Water Version 3%
Orange	SOCLOPOLYSUPER	Superswell Version 10%

## SOLCO - Water Stops

Last Issue Date: 16.11.15

### Product Description

Solco Polybar Waterstop is a hydrophilic Thermoplastic Elastomer waterproofing strip made from a combination of an elastomer and a hydrophilic resin. When confined between a construction joint, and in the presence of water it will swell to over four times its original volume and build up pressure inside the joint to seal against water leaks.

The composition of the Solco Polybar Waterstop ensures that initial swelling is delayed and makes Solco Polybar Waterstop safe to install in in-situ concrete applications.

In addition to the standard version (red), a Salt Water Variant for use in seawater (saline concentrations up to 3%) and contaminated water, as well as a SuperSwell variant for use under highly saline conditions (salt concentrations up to 10%) are also available in all sizes.

### Typical Uses

- Sealing joints between tunnel segments.
- Sealing joints between concrete precast elements,
- Horizontal/vertical construction joints & pipe penetrations,
- Sealing concrete to steel joints.
- Sealing construction joints in fresh concrete ensuring sufficient coverage to all edges (100mm all directions)

Technical Properties	
Swelling Capacity	max 450%
Density	1.21 g/cm <sup>3</sup> (ISO 2781)
Tensile Strength	2.3 MPA (ISO 37)
Elongation at Break	600% (ISO 37)
Hardness Shore A	25 (ISO 868)
Tear Strength	14 N/mm (ISO 34 - C)
Installation Temperature	-50° to +75°C

Solco Polybar	Solco Polybar Salt Water	Solco Polybar Superswell	Product Sizes
			20mm x 5mm x 10m
			20mm x 10mm x 10m
			20mm x 20mm x 5m
			20mm x 30mm x 5m
			30mm x 30mm x 5m
			50mm x 5mm x 15m
			100mm x 5mm x 15m
			U Joint for metal Waterstop 20mm x 2.4m
			T Joint for PVC Waterstop 2.4m

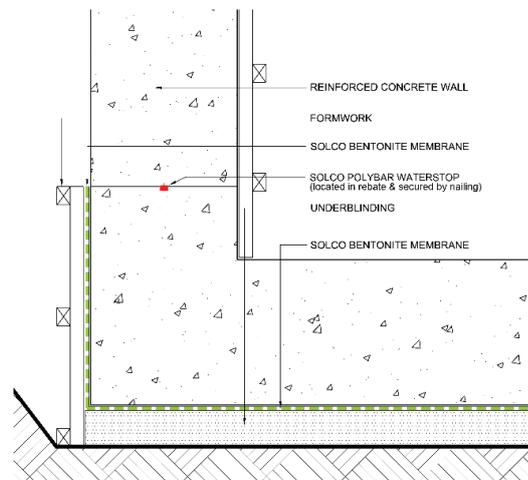
## Application

Solco Polybar Waterstops can only function properly in a confined space. The expansion will create pressure in the middle of the joint thus ensuring a watertight seal. Installation during heavy rain or in prolonged contact with water can result in a premature swelling of the strip, which should be avoided. Application surfaces should be level, dry, clean and free of oils, dust and laitance, etc.

## Installation by Nailing

Nail application is only recommended in insitu concrete applications. For precast element and segment applications, it is recommended to use the glue method due to concrete hardness. Solco Polybar should only be applied to level and smooth surfaces. If possible, make a rebate of the same width as the selected Solco Polybar Waterstop profile during concrete pour using a wooden or metal strip. If this rebate can not be made into the poured concrete surface and the surface is rough, it is recommended to level the surface with Solco Waterstop swellable Mastic before installation of the Solcast Waterstop.

When nailing the strip into place, use nails with washers of a diam. smaller than the width of the Solco Polybar Waterstop. Ensure min 4 nails per linear meter. Slight tension should be applied to the waterproofing strip during nailing to assure complete contact with the joint surface. Do not stretch the strip during application of this tension. The installer must ensure complete contact of the strip with the joint surface during nailing, pull the strip to ensure the correct tension without overstretching when nailing.

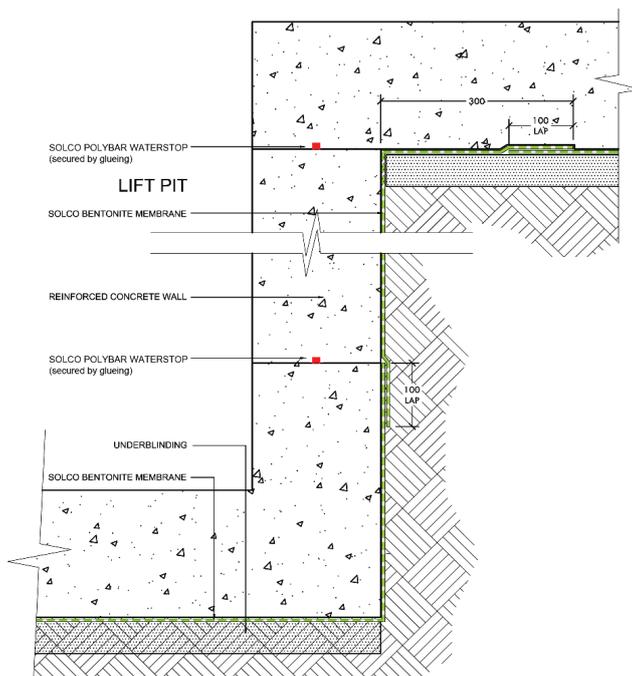


**Typical Kicker Detail**

## Installation by Glueing

Solco Polybar Waterstop when applied to precast elements are always applied on the outside face of the compression seal as closely inwards as possible. Remove dust, dirt and loose debris by brushing firmly, level rough and irregular surfaces with Solco waterstop sealant. It is recommended to unroll and pre-cut the waterstop strip to the required length. Apply a layer of Solco waterstop Adhesive with a Solco sealant gun on the concrete surface.

Unroll the Solco Polybar Waterstop strip and press firmly into the waterstop Adhesive. Wait until the adhesive is dry before pouring concrete (concrete cover of 100mm at all sides should always be maintained). Roll ends are simply butted together to assure a waterproof seal. Do not install by overlapping. The strip needs to be in contact with the joint over its full length.



**Typical Lift Pit Detail**

## Storage Conditions

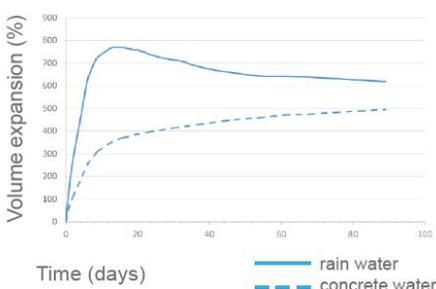
Solco Polybar Waterstop should be stored under cover, clear of the ground.

## Health & Safety

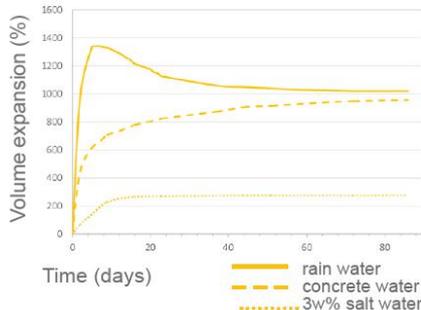
Please refer to health and safety data sheet on Solco Polybar Waterstop.

## Expansion Capacity of Solco Polybar / Polybar Salt & Polybar Superswell

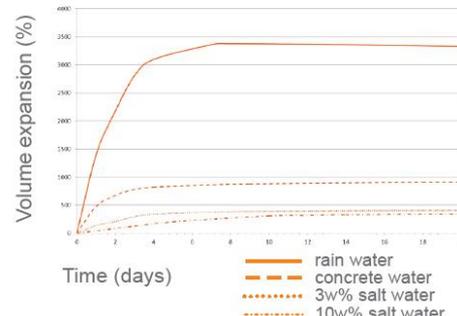
POLYBAR+ standard version 20x5 mm



POLYBAR+ salt water version 20x5 mm



POLYBAR+ superswell version 20x5 mm



## SOLCO Swellable Mastic



Solco Swellable mastic is a high quality, one component polyurethane mastic which swells in contact with water. Upon contact with water, the paste can expand up to 450% of its original volume. No primer is required when applying Solco Swellable mastic to a clean concrete surface.

For optimal adhesion, a stable, clean, dust, oil and fat-free surface is recommended. If required, cleaning with acetone or isopropanol is recommended. Solco Swellable Mastic can be applied to Solco Polybar Waterstops and Solco Hydrophilic Waterstops

### Storage Conditions

Solco Waterstop Adhesive should be stored in a dry and cool area with temperatures between +5°C and +25°C. Maximum 15 months storage from production date in its original unopened carton

### Health & Safety

Non-dangerous goods. Not subject to classification given current GHS regulations. Further information can be found in the MSDS.

### Solco Swellable Mastic - Technical Properties

Cartridge Size	310ml
Base	Polyurethane
Colour	Champagne
Curing system	Moisture cure
Application temperature	+1°C to +30°C
Skin formation*	120 minutes
Curing rate*	1.8mm / 24h
Hardness	15 ShA
Shrinkage	Max. 4%
Density	1.37 g/ml
Temperature resistance	-30°C to +90°C
E-modulus in film (DIN 53504)	0.34 N/mm <sup>2</sup>
Tear strength in film (DIN 53504)	ca. 60 N/mm <sup>2</sup>
Elongation at break in film (DIN 53504)	> 800%
Elongation at break in joint (ISO 839)	> 250%

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## SOLCO Waterstop Adhesive

Solco Waterstop Adhesive is an elastic one-component adhesive based on MS hybrid polymer which ensures fast and strong adhesion of water swellable sealing profiles to concrete. The fast skin formation and curing ensures that it is completely weather resistant, allowing concrete casting after just a few hours. Solco Waterstop Adhesive has excellent adhesion strength even on wet concrete surfaces.

No primer is required when applying Solco Swellable mastic to a clean concrete surface.

For optimal adhesion, a stable, clean, dust, oil and fat-free surface is recommended. If required, cleaning with acetone or isopropanol is recommended.

Solco Waterstop Adhesive can be applied to Solco Polybar Waterstops and Solco Hydrophilic Waterstops.

Solco Waterstop Adhesive has excellent resistance against water, aliphatic solvents, oils, fat, watered inorganic acids and alkalis, with moderate resistance to esters, ketone and aromatics. Concentrated acids and chlorinated hydrocarbons should be avoided.

### Storage Conditions

Solco Waterstop Adhesive should be stored in a dry and cool area with temperatures between +5°C and +25°C.

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### Health & Safety

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### Solco Waterstop Adhesive - Technical Properties

Cartridge	290ml
Colour	Grey
Processing temperature with 50% RH	+5 up to +40°C
Volume change (DIN 52451)	Approx. 6%
Consistency	Very thixotropic
Density at 23°C	1.40 +/- 0.05 g/cm <sup>3</sup>
Skin formation time at 23°C / 50% RH	Approx. 5 minutes
Curing rate (24hours at 23°C / 50% RH)	Approx. 3.5 mm
Temperature stability after curing	-40°C up to + 90°C (200°C for short time)
Hardness (ShA), DIN 53505, after 3 weeks storage at 23°C / 50% RH	50 +/- 2
Elongation modulus at 100% (DIN 53504 S2)	Approx. 1.6 N/mm <sup>2</sup>
Tensile strength (DIN 53504 S2)	Approx. 3.0 N/mm <sup>2</sup>