

# PERMASEAL FORM-TIE WATERSTOP

Hydrophilic Swellable Waterstop for Form-Tie holes & Sleeves

**Permaseal Form-Tie Waterstops expands around the form -tie system in the concrete structure, to give a permanent flexible watertight seal.**



**Form-Tie Plug**  
(Externally inserted into the Form - Tie Conduit Sleeve)



**Form-Tie Ring (UFO)**  
(Externally applied around the Form - Tie Conduit Sleeve or the Form - Tie Rod )



**Form-Tie Connector**  
(Externally applied around the Tie- Rod with a Form - Tie ring completing the seal )



## PERMA WATERSTOPS

## DATA SHEET

### Product Description

Permaseal Form- Tie Waterstop are produced from a unique hydrophilic rubber sealing compound which expands in controlled fashion when exposed to moisture to form a compression seal inside or around the form -tie system in the concrete structure, to give a permanent flexible watertight seal.

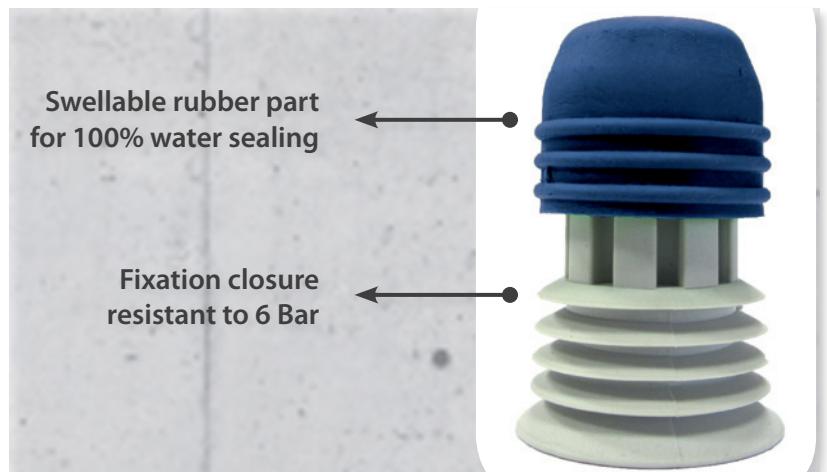
### Typical Uses

#### Water Retaining Structures

- Water Tanks, Reservoirs & Dams
- Water Treatment Plants,
- Sewage Treatment Plants
- Swimming Pools.
- Basements
- Underground Car Parks
- Tunnels & Subways
- Retaining Walls
- Pits & Manholes

### Features & Benefits

- Excellent sealing capabilities available in many different sizes, shapes and profiles
- Provides a permanent, flexible gasket and compression seal inside the concrete.
- High quality, non-biodegradable hydrophilic rubber that provides long - term durability and integrity.
- Ability to expand upto 400% in contact with concrete water and over 200% expansion in salt water.
- Has been tested to withstand 60 meters of hydrostatic water head pressure.
- Most suited to water retaining structures where direct water pressure is applied against the concrete.
- No external grout required to fill form- tie conduit sleeve hole after Permaseal Form - Tie Plug has been positioned.
- Non Toxic and can be used in potable water structure.
- Unaffected by repeated wet & dry cycles.
- Fast & Simple to install



## Typical Installations - Form- Tie Sleeve Hole - Installation Procedure

- Thoroughly clean out the form - tie conduit sleeve free of any dust, debris and foreign matter.
- Place the Permaseal Form-Tie Plug manually into the hole of the form-tie conduit sleeve.
- With a hammer and with a light - slow action, hammer the Permaseal Form- Tie Plug into the hole until flush with the outside edge of the form - tie conduit sleeve. No extra finishing is required.
- Check and make sure that the Permaseal Form-Tie Plug has a tight and secure fit.



Insert the Permaseal Form- Tie Plug into the hole.



Hammer the Permaseal Form- Tie Plug.



The Permaseal Form Tie Plug installed.

## TECHNICAL DATA

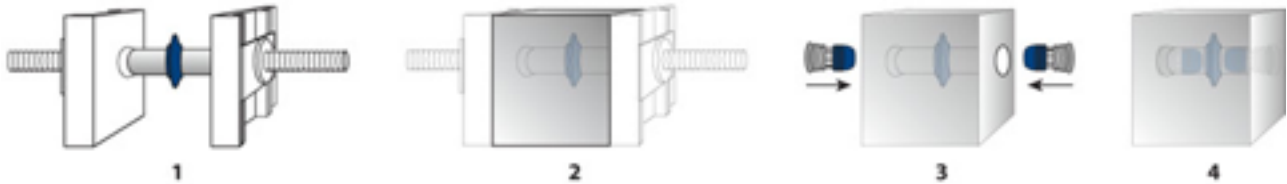
Suited for PVC, fiber cement, and steel spacers			
Material	Hard core = impact proof polyamide (PA)		
	Soft sealing = hydrophillic water swellable polymer		
	Resistant to contact with a wide range of chemicals. Contact our technical department in case of doubt.		
Swelling capacity in concrete water	>400%		
Swelling capacity in fresh water	>500%		
Swelling capacity in salt water	Approx. 150%		
Colour	Hard core = colour of concrete (grey)		
	Soft sealing = blue or other color on demand		
Dimensions	22 mm	24 mm	26 mm

## SIZES AND PACKAGING

Size	Spacer inner $\phi$ (mm)	Pcs / bag	Pcs / box	Pcs / pallet
22 mm	21,50 – 22,20	100	1.000	18.000
24 mm	23,50 – 24,20	100	500	9.000
26 mm	25,50 – 26,20	100	500	9.000

## Form - Tie sleeves & Form - Tie Rods- Installation Procedure

- Thoroughly clean the outside surface of the form -tie conduit sleeve or rod, free of any dust, debris and foreign matter.
- Place the Permaseal Form- Tie Ring over the outside face of the form- tie conduit sleeve or rod and slide it along to approx the middle section.
- A minimum of 75mm of cover from any outside edge of the concrete to the Permaseal Form- Tie Ring should be followed.
- Check and make sure that Perma Form -Tie Ring has a tight and secure fit around the sleeve or rod.
- The CJ Form- Tie Ring is now ready for the concrete to be placed.



## Limitations

- Due to expansive forces of the hydrophilic compound, Permaseal Form - Tie Rings need to be installed with a minimum concrete cover of 75mm from any outside edge.
- Increase concrete cover when using a light weight or a low strength concrete.

## TECHNICAL DATA

Property	
Hardness	± 25° Shore A
Tensile strength	>2MPa
Ultimate elongation	>300 %
Service temperature	-50°C / +70°C
Swelling capacity in rain water	500%
Swelling capacity in concrete water	400%
Swelling capacity in salt water	200%
Weather resistance	Excellent
Chemical resistance	Good overall chemical resistance, but we advise to be careful with aromatic oils and fuels, with vegetal oils and strong aromatic solvents.

# Intelligent water swellable system

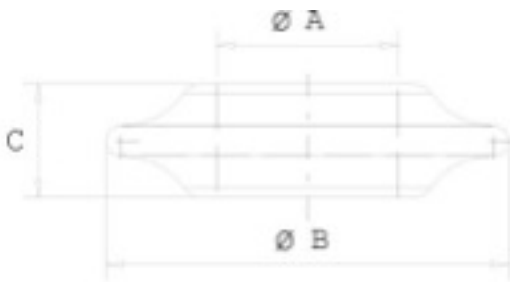
## SEALING UFO water swellable ring

Engineered design for high pressure water sealing up to 6 Bar



### SIZES

Size	Inside $\varnothing$ A (mm)	Outside $\varnothing$ B (mm)	Width C (mm)	Compatible with spacers with external $\varnothing$ (mm)
UFO 12 mm	12	41	15	12-16
UFO 17 mm	17	53,5	15	17-23
UFO 24 mm	24	53,5	15	24-30
UFO 31 mm	31	68,5	15	31-38
UFO 39 mm	39	68,5	15	39-60



### PACKING

Size	Pcs / bag	Pcs / box	Pcs / Pallet
UFO 12 mm	100	1.000	18.000
UFO 17 mm	100	700	12.600
UFO 24 mm	100	700	12.600
UFO 31 mm	50	500	9.000
UFO 39 mm	50	500	9.000

The information given in this data sheet is based on both the current development work and many years of field experience. Whilst every effort is made to ensure that the information is reliable, we cannot accept the responsibility for any work carried out with our materials as we have no control over methods of application, site conditions etc. All products are sold subjected to our standard conditions of sale which are available on request. Field services, where provided, does not constitute supervisory responsibility. For additional information, please contact our local representative.