

## Chemical resistant waterstops

### Uses

Thermoplastic elastomeric rubber waterstops (ie. weldable TPV/TPER) are a specialty product for critical chemical, industrial and environmental applications. Conventional plasticised PVC waterstops do not offer the long term resistance to a broad range of aggressive chemicals, solvents and hot petroleum oils. Typical applications are:

- Primary and secondary containment
- Refineries
- Mining facilities
- Fueling depots
- Chemical plants and acid storage

### Advantages

- Outstanding chemical resistance to a range of deleterious fluids such as acids, oils and other aqueous solutions (Alcohol, Ketones, Glycols, Esters, & Hydrocarbons)
- Excellent retention of physical properties at elevated temperatures
- Superior ozone and weathering resistance
- No harmful plasticisers (phthalates)
- EPA compliant certificate (NSF standard 61)
- Range of profiles installation
- Prefabricated intersections

### Description

Earth Shield is used as a fluid tight diaphragm embedded in concrete, across and along the joint in what is considered a standard traditional installation method.

Unlike polyvinyl chloride (PVC) waterstop Earth Shield contains no plasticiser, stabiliser or filler to leech out when exposed to chemicals, fuels and aggressive industrial fluids. Detailed performance listing is available on request.

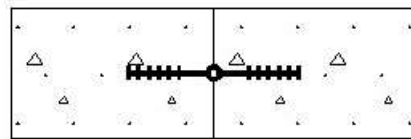
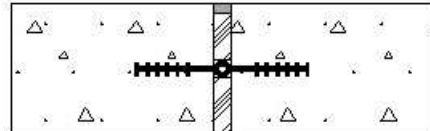
It can also withstand exposure to high and low temperatures (-60°C to 135°C) without detrimental effect.

Earth Shield has chosen a fully cross linked TPV (Thermoplastic Vulcanizate) as its standard elastomer compound which provides superior mechanical properties and retention as well as chemical resistance.

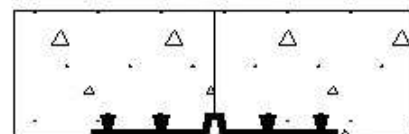
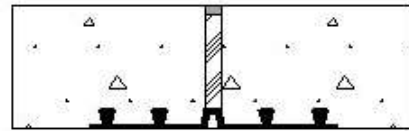
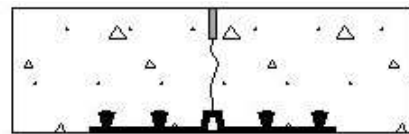
## Design Criteria

Profile selection should be based on the detailed drawings and specification for contraction, expansion and construction joints.

Ribbed centerbulb - accommodates lateral, transverse and shear movement and with its long fluid-flow path is the most versatile of the waterstop profiles available.



Rear Guard - waterstops are ideal for flat pavement jobs such as runways and large containment slab's etc.



## Properties

	Test Method	Results
<b>Shore A hardness (5 sec):</b>	ASTM D2240	90± at 25°C
<b>Tensile strength:</b>	ASTM D412	15.9 MPa
<b>Ultimate elongation (at break) 100% Modulus:</b>	ASTM D412 ASTM D746	530% 16.9 MPa
<b>Tear strength:</b>	ASTM D624	278 pli @ 25°C
<b>Compression set:</b>	ASTM D395	45% at 100°C
<b>Brittle point:</b>	ASTM D746	-25°C
<b>Ozone resistance:</b>	ASTM D1171	Passed, no cracking at 600 ppm
<b>Chemical resistance:</b>	ASTM D471	Meet or exceed specific testing standards

# Earth Shield TPV/TPER

## Installation Instructions

Earth Shield waterstops should be centered in, and run the full extent of the joint. All changes of directions should be pre-fabricated leaving only butt welding for the field. If installing in an expansion joint, keep centre bulb un-embedded to allow it to accommodate movement as designed. It is important that all waterstops are held securely during the concrete pour and that the concrete is properly compacted to remove voids and porous areas.

### Centrebulb installation

Position waterstop in joint as indicated on drawings. Centre the waterstop on the joint, with approximately one-half of waterstop width to be embedded in concrete on each side of the joint.

Allow clearance between waterstop and reinforcing steel of a minimum two times the largest aggregate size. Prevent pockets and air voids caused by aggregate bridging.

Secure waterstop in correct position at 300 mm maximum centres with tie wire to adjacent reinforcing steel. Centre-to-centre spacing may be increased upon written request and approval from Engineer.

Carefully place concrete without displacing waterstop from proper position. Thoroughly and systematically vibrate concrete in the vicinity of the joint and to maximise intimate contact between concrete and waterstop.

After first pour, clean un-embedded waterstop leg to ensure full contact of second concrete pour.

### Rear Guard installation

Position waterstop in joint as indicated on drawings. Centre waterstop on joint, with approx. one-half of waterstop width to be embedded in concrete on each side of joint. For horizontal applications where an already stable support exists, Rearguard profiles generally require no fixing as they are laid centrally along joint being formed. For vertical applications Rearguard profiles can be nailed through outer flanges directly onto formwork. Carefully place concrete without displacing waterstop from proper position. Thoroughly vibrate concrete in vicinity of joint to maximise intimate contact between concrete and waterstop. After first pour, clean un-embedded waterstop leg to ensure full contact of second concrete pour.

### Important notice

A Safety Data Sheet (SDS) and Technical Data Sheet (TDS) are available from the Parchem website or upon request from the nearest Parchem sales office. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

### Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

## Welding instructions

Thermoplastic Vulcanizate Waterstop — The joining of straight lengths shall be done by squaring the ends to be joined and using a thermoplastic welding iron with a non-stick surface specifically designed for waterstop welding. The correct temperature (210°C to 220°C) shall be used to sufficiently melt without charring the waterstop. The welded area, when cooled, shall show no signs of separation, holes, or other imperfections when bent in an angle by hand.

## Estimating

EarthShield Profile	Roll length	Material code
JP636 Centrebulb 150mm:	15.2m	FC000291-UNIT
JP936 Centrebulb 230mm:	15.2m	FC000295-UNIT
JP211 Rear Guard 230mm:	15.2m	FC000286-UNIT

Factory made intersections, Retro Fit and Dumbell waterstops are available on specific order.

Normal stocked products are the 230mm Centrebulb and 230mm Rear Guard profiles, other sizes are available on request.

