

# SURE-SHIELD® TPER

## INTERNATIONAL PROFILES CHEMICAL RESISTANT WATERSTOP



### PRODUCT DESCRIPTION

**Sure-Shield® TPER** (Thermoplastic Elastomeric Rubber) Waterstops lead the way in high technology waterstops that have been designed for use in primary and secondary containment structures where a highly chemical resistant waterstop is required to prevent the flow or migration of fluid through joints in concrete.

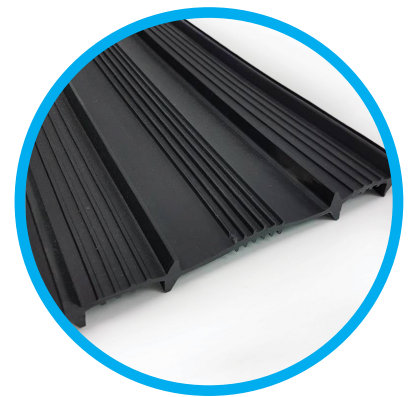
**Sure-Shield® TPER Waterstops** are extruded from specially compounded cross-linked TPER material that resists a wide range of chemicals, oils, fuels, solvents, alcohols and aqueous acids, bases and salt solutions.

**Sure-Shield® TPER Waterstops** provide high performance features for long-term durability and integrity of the structure, for continuous use in low and high temperatures and have excellent ozone and weather resistance.

**Sure-Shield® TPER Waterstops** are designed for use in many types of applications and structures, and are available in a number of different size profiles that are for use in construction, contraction or expansion joints.

**Sure-Shield® TPER Waterstops** are heat weldable and allow for fast and easy on-site welding/joining of the waterstop.

The efficiency of any waterstop is very dependent upon good workmanship, installation, and on full compaction of the surrounding concrete around the waterstop during concrete placement. Optimum performance will be achieved if the waterstop is installed by keeping these important factors in mind.



### ADVANTAGES

- A full range of profiles and sizes to suit all construction requirements.
- High quality compounded TPER for long term durability and integrity.
- Excellent heat & ozone resistance.
- Internal profiles come with factory pre-punched eyelets for easy and secure wire tying to reinforcement.
- Ability to withstand high hydrostatic head pressures.
- Factory made intersections to simplify and minimise on-site fabrication.
- On-site welding equipment is available upon request.



### AREAS OF APPLICATION

- |                            |                                |                             |
|----------------------------|--------------------------------|-----------------------------|
| ● Petrochemical Plants     | ● Pharmaceutical Plants        | ● Train & Vehicular Tunnels |
| ● Chemical Plants          | ● Waste Water Treatment Plants | ● Desalination Plants       |
| ● Fuel Storage Containment | ● Sewage Treatment Plants      | ● Reservoirs & Dams         |
| ● Refineries               | ● Airports & Seaports          | ● Swimming Pools            |
| ● Pulp & Paper Mills       | ● Bridges & Highways           |                             |

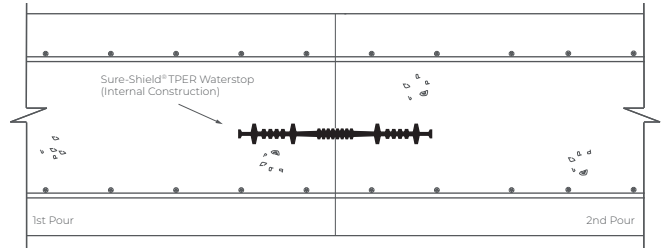
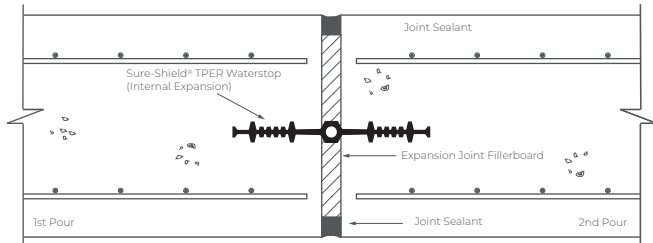
*Note: The product's design and performance, its intended use, installation and final confirmation and approval for use, must be provided by the project's Design Engineer and Project Manager.*



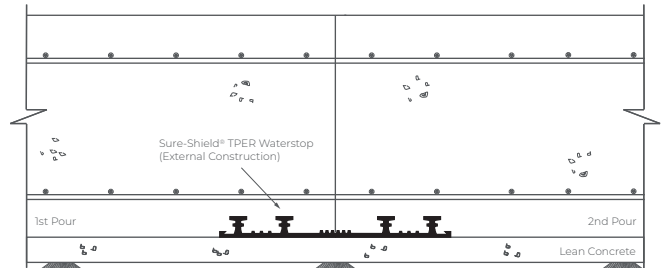
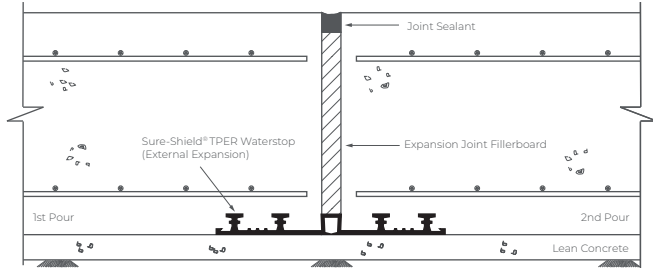
# TYPICAL APPLICATIONS

## EXPANSION JOINT      CONSTRUCTION JOINT

### STANDARD DETAIL OF WALL APPLICATIONS



### STANDARD DETAIL OF GROUND SLAB APPLICATIONS



## TECHNICAL FEATURES

COLOUR	Black
PACKAGING (ROLL SIZE)	150mm = 20m 200mm = 20m 250mm = 15m 320mm = 12m
STORAGE CONDITIONS & SHELF LIFE	5 years from the date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions out of direct sunlight and at temperatures between +5°C and +40°C
MATERIAL TYPE	TPER (Thermoplastic Elastomeric Rubber)
WELDING TEMPERATURES	Approximately 200°C
SERVICE TEMPERATURE RANGE	-25°C to +135°C



## PHYSICAL PROPERTIES

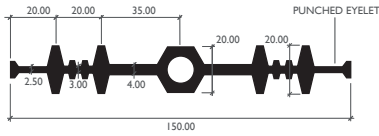
PROPERTY	TEST METHOD	RESULT
TENSILE STRENGTH, MPa	BS ISO 37 : 2011	6.9
ELONGATION AT BREAK, %	BS ISO 37 : 2011	560
WATER ABSORPTION AT 23°C, CHANGE IN MASS, %	BS ISO 1817 : 2015	0
SPECIFIC GRAVITY	BS ISO 2781 : 2008	1.00
HARDNESS, IRHD	BS ISO 48 : 2010	82
OZONE RESISTANCE	ASTM D1171	Passed, no cracking at 500 pphm

Note: Refer to CJSJA's in house Certificate of Analysis (COA) dated 30/12/2016 for test results pertaining to the above. A COA is conducted on every batch of raw material that is used in the production of Sure-Shield™ TPER waterstops. Independent laboratory test results are also available upon request. Project specific material properties can be custom compounded to suit. Material properties can vary between batches.

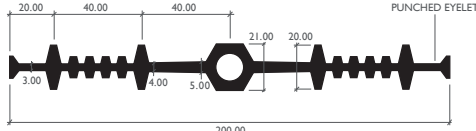


INTERNAL PROFILES

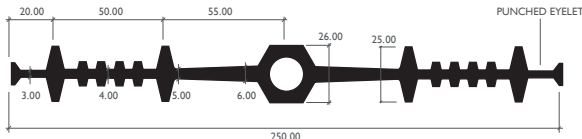
FOR EXPANSION JOINTS



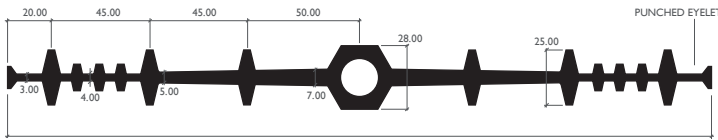
TPR 951



TPR 952

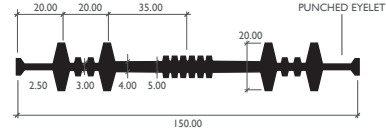


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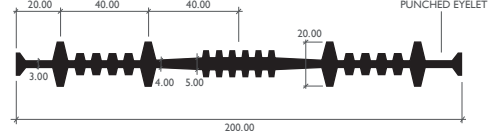


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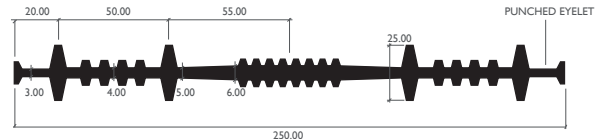
FOR CONSTRUCTION JOINTS



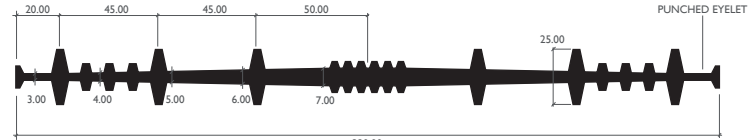
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TPR 956



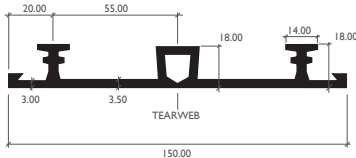
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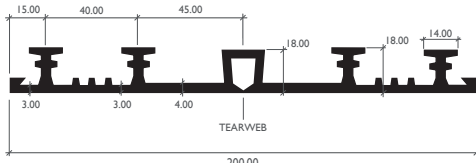
TPR 958

EXTERNAL PROFILES

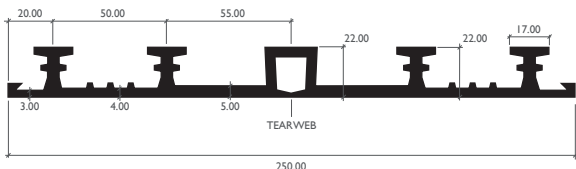
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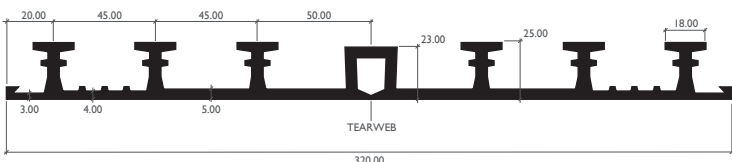
TPR 923



TPR 924

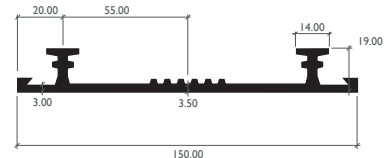


TPR 925

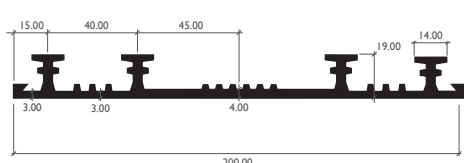


TPR 926

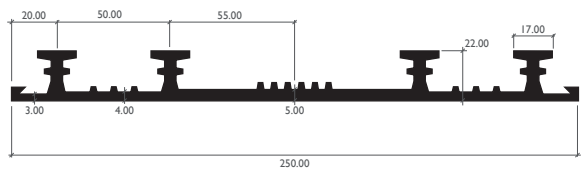
FOR CONSTRUCTION JOINTS



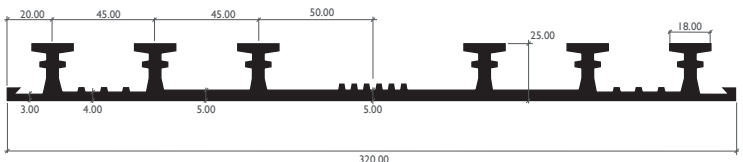
TPR 927



TPR 928



TPR 929

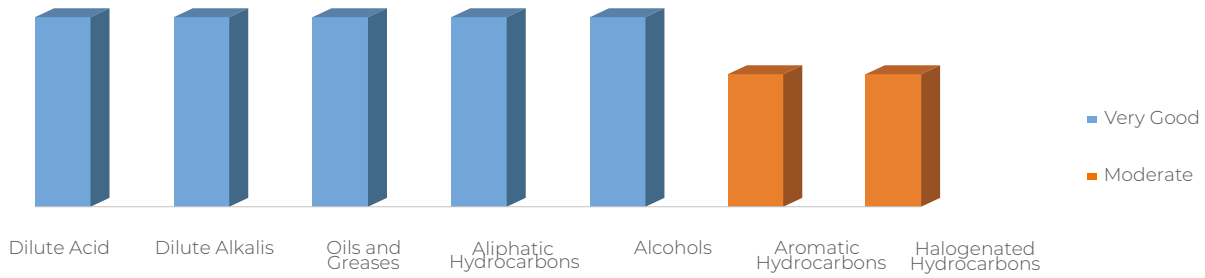


TPR 930

Note: Full dimension drawings available upon request



## CHEMICAL RESISTANCE



Note: TPER chemical resistance list available upon request



## PROFILE WIDTH SELECTION

The width of waterstop depends upon the thickness of the concrete and positioning of the reinforcement. The thickness of the concrete should be greater than or equal to the width of the waterstop profile. Refer to your engineer for further clarification and approval.



## SITE JOINING

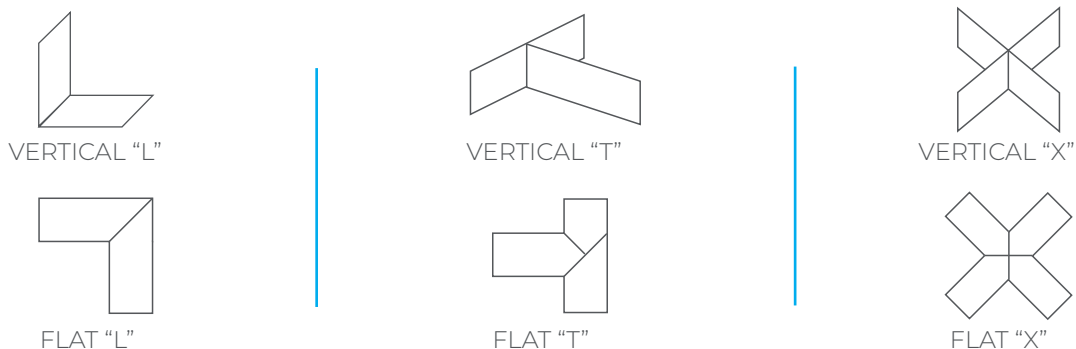
CJSA recommends the use of its specialised welding equipment for on-site welding which consists of thermostatically-controlled Welding Irons and special Welding Jigs (each type of CJSA Sure-Shield® TPER Waterstop requires its own welding jig to suit the particular shape). On-site joining is a simple exercise using CJSA Heat Welding Equipment comprising of an adjustable Welding Jig and Welding Iron.

The ends of the waterstop are cut square and placed into the adjustable Welding Jig, then push the ends of the waterstop against the Welding Iron and bring the two ends together until the molten ends of the Sure-Shield® TPER Waterstop fuse together. When ordering Welding Equipment, please advise profile number of the waterstop required.



## FACTORY MADE INTERSECTIONS

A wide range of standardized prefabricated intersection pieces are available allowing easy site welding of butt joints to Sure-Shield® TPER Waterstop junction pieces. Customised pieces can be made to suit and in such cases, drawings must be provided giving exact dimensions and jointing details.



## WRITTEN SPECIFICATION

Where shown on the drawings waterstops shall be Sure-Shield® TPER Chemical Resistant Waterstop (state profile number required) as supplied by CJSA. Provide factory made waterstop fabrications for all changes of direction, intersections and transitions, leaving only straight butt joined splices for on-site fabrication.



## HEALTH AND SAFETY INFORMATION

Joining of **Sure-Shield® TPER Waterstops** is performed by heat welding which results in the discharge of hydrogen chloride mist and vapour. In confined spaces or in still air conditions, the use of a ventilation fan or suitable respirator should be used, and the advice and approval of the Site Safety Supervisor is essential. For further information or advice on health and safety precautions, safe handling, storage and correct disposal of products, please refer to the most recent product Safety Data Sheet (SDS), which is available upon request.



## DISCLAIMER

The information and the recommendations relating to the application and end use of this product are given in good faith and are based on the information provided by the manufacturer of the product and/or the Company's current knowledge and experience in connection with the product when properly stored, handled and applied under normal conditions and no liability of final function at the job site is assumed. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability of, or fitness for, particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written and/or oral recommendations, or from any other advice offered by the Company. The Company also has no express or implied knowledge of any particular purpose for which the product is required and any such information given will not be taken into account in the supply of this product. No responsibility or liability by the Company will be accepted for misuse, misreading or derivation from recommended guidelines in respect of this product and the user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. The information contained in our brochure may change at any time without notice. Any use of this product, **Sure-Shield® TPER Waterstops**, in any application should be approved as suitable for use/application by the Design Engineer and Project Manager.

**Effective Date: 14 NOVEMBER 2019**

### CJSA

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