

## Premium grade, water swellable, waterstop range for use in cast in-situ concrete

### Uses

Hydrotite is used where watertight integrity is the prime issue. Typical applications include construction joints in:-

- Sewerage & water treatment plants
- Pipe penetrations
- Subway stations
- Swimming pools
- Basements
- Reservoirs
- Tunnels
- Pits

### Advantages

- Self-adhesive makes installation easier and reduces construction costs
- Co-extruded design means expansion is directed across the joint for maximum seal
- Delay coating to help prevent premature expansion
- Unaffected by repeated wet and dry cycles
- No site welding as is required for traditional PVC waterstops
- No need for special intersections, joining is by simple butt joins
- Can be applied to rough surfaces using Leakmaster gun grade waterstop
- Can be joined to traditional PVC waterstop
- No compaction or displacement problems
- Non toxic and non hazardous

### Description

Hydrotite is a hydrophilic waterstop which exhibits excellent durability and water sealing capacity. It expands as it absorbs water and fills concrete joint gaps conforming to the gap variation, ensuring excellent sealing. Hydrotite is based on the technology of hydrophilics, a material which expands in a controlled fashion by approximately eight times by volume in the presence of moisture to create a pressure seal within the joint.

When properly installed Hydrotite is capable of sealing heads of water up to 50 m and is used throughout the construction industry to seal horizontal and vertical construction joints for poured in-situ concrete.

Hydrotite offers various profiles for in-situ concrete construction joints such as DSS0220, CJ0725, CJ1020. It consists of a unique combination of expanding hydrophilic materials and non-expanding chloroprene rubber co-extruded together to form a single strip. The expanding section is blue with the non-

expanding section being black. The co-extruded design means that the expansion is directed across the joint for maximum sealing performance.

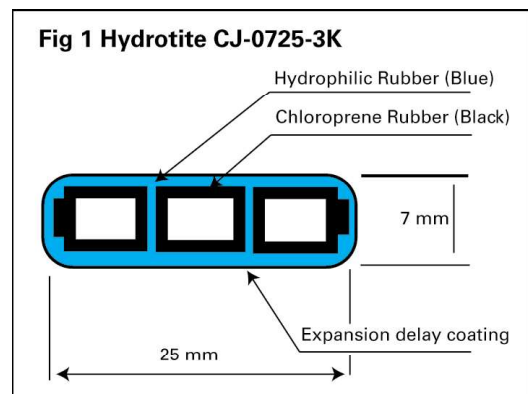
This expansion creates an effective compression seal within joints which shuts out the water path. Upon expansion Hydrotite turns from a dark blue colour to a light blue colour so that a visual inspection of the Hydrotite can be made and the contractor can check if the Hydrotite has not pre-expanded.

Hydrotite is treated with a delay coating to prevent it from absorbing water from the moist green concrete, to help stop any premature expansion should the joint become ponded with water prior to the second pour and to stop any premature expansion taking place before curing of the concrete. For areas where ponding or running water may be a problem, please contact Parchem for advice.

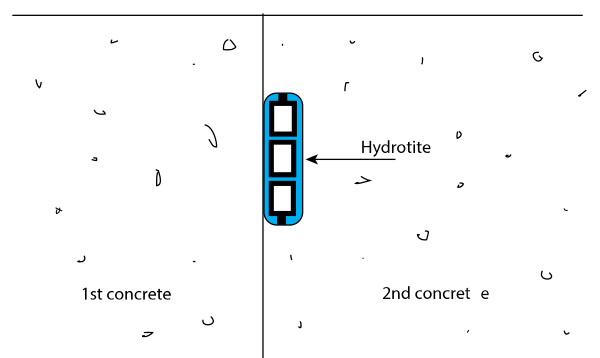
Hydrotite rectangular profiles are supplied with a self-adhesive backing which makes installation easier and lowers construction time and costs. The self-adhesive backing means that the purchase of other construction adhesives is not required and also saves the contractor the installation costs of applying the adhesive to the concrete.

Hydrotite, as with any hydrophilic waterstop will return to its original size if there is no more water or moisture present. Hydrotite will then re-expand when water or moisture is again introduced to the joint. Some leakage may occur before Hydrotite re-expands fully. Repeated wet and dry cycling of this nature does not effect the functioning of Hydrotite.

The standard dimension and shape of CJ-0725-3K is as per Fig. 1.



Typical Application of Hydrotite



# Hydrotite

## Guide to Profile Selection

Shown below is a guideline of where Hydrotite profiles have been specified and used in construction joints in various projects. Joint details should be verified by the Consulting Engineer who should determine the suitability of the products for its intended use.

|   |                                   |
|---|-----------------------------------|
| <b>Construction Joints:</b>   | DSS0220, CJ0725-3K,<br>CJ1020-2K  |
| <b>Pipe Penetrations:</b>   | DSS0220, CJ0725-3K,               |
| <b>Thru Tie Holes:</b> (refer to separate installation document available from Parchem) | RSS rods:<br>RSS2519D<br>RSS2014D |

## Design Criteria

Hydrotite should be used to prevent the passage of water through low movement joints in both new in-situ concrete and between new and existing concrete. Hydrotite can also be used around penetrating pipe entries prior to concrete placement. Hydrotite increases in volume in the range of up to 800% and gives a resistance to hydraulic heads of up to 50 metres.

Hydrotite waterstops should be positioned to ensure that a minimum of 50 mm cover of concrete is present to accommodate pressure developed during the swelling process.

Hydrotite is suitable for applications between existing and newly placed concrete where there is little or no steel continuity and therefore some small movement may occur.

Hydrotite is generally not suitable for use in expansion joints.

## Specification Clause

Hydrophilic expanding waterstops shall be placed at the joints in the concrete at the locations shown on the drawings in accordance with the requirement of this specification.

Waterstops where shown on drawings shall be Hydrotite (*fill in profile number*) Hydrophilic Waterstops as supplied by Parchem.

The waterstop shall consist of a non-expansive chloroprene rubber, co-extruded with a blue hydrophilic rubber.

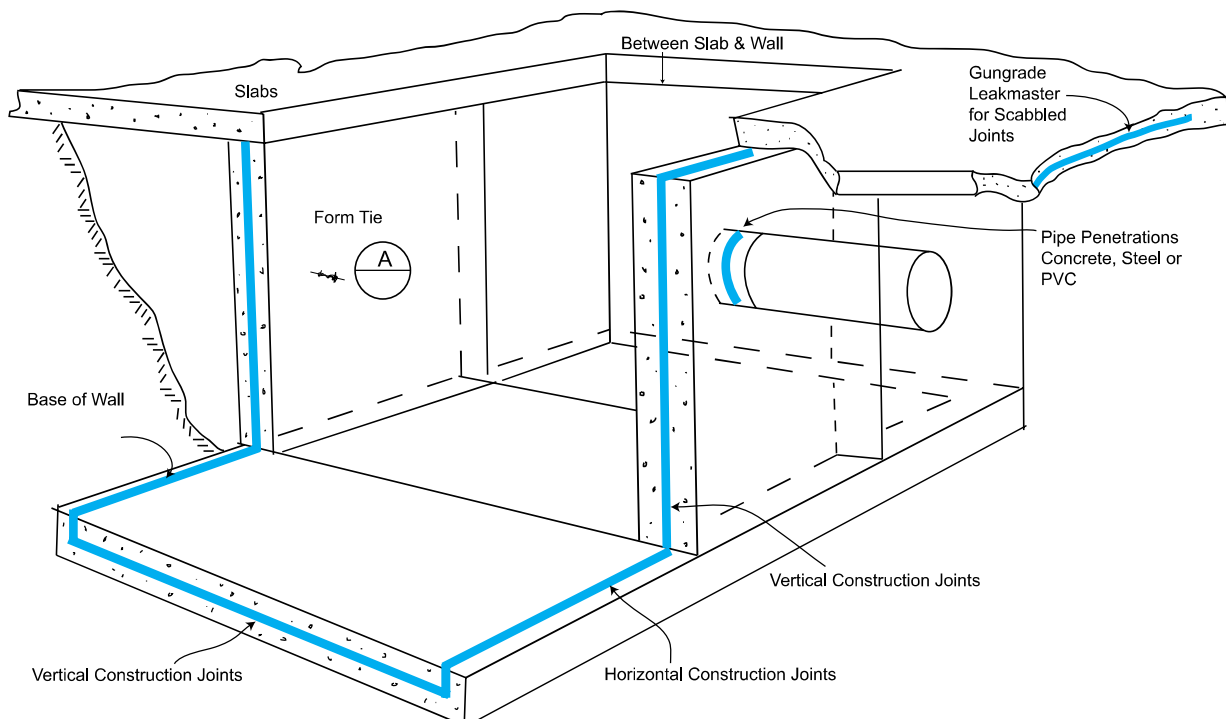
The waterstop shall be treated with a delay coating to prevent premature expansion.

The waterstop is to be installed strictly in accordance with the manufacturers recommendations. Please refer to Hydrotite Installation Guidelines.

## Physical properties of Hydrotite

| Item                    | Unit              | Hydrophilic Rubber |         | Chloroprene Rubber |         |
|-------------------------|-------------------|--------------------|---------|--------------------|---------|
|                         |                   | Standard           | Typical | Standard           | Typical |
| <b>Specific Gravity</b> |                   | 1.40 ± 0.10        | 1.35    | 1.40 ± 0.10        | 1.41    |
| <b>Hardness</b>         | (JIS-A)           | 50 ± 5             | 52      | 50 ± 5             | 51      |
| <b>Tensile Strength</b> | N/mm <sup>2</sup> | min. 2.94          | 3.63    | min. 8.82          | 12.25   |
| <b>Elongation</b>       | %                 | min.600            | 760     | min. 400           | 435     |

Hydrotite Areas of Application



# Hydrotite

## Chemical Resistance

The influence of pH values of concrete, grouting material and ground water upon the expansion of Hydrotite was tested using hydrophilic rubber as follows.

The specimen was immersed in each solution for seven days and the retention value of tensile strength and elongation were measured. Then, the specimen was removed from each solution and placed in tap water for seven days. The specimen was then compared with specimens that had been expanded in tap water only.

The retention value of both physical properties and expansion was compared with that of specimens tested in tap water.

### Table 2: Behaviour in chemical solution

Hydrotite exhibited retention values 90% or more in the following solutions:

- pH 3 aqueous solution
- pH 5 aqueous solution
- pH 7 (tap water)
- pH 9 aqueous solution
- pH 11 aqueous solution
- Ferrous aqueous solution
- Bentonite aqueous solution
- Grout aqueous solution

## Supply

| Profile                            | Dimensions    | Material code |
|------------------------------------|---------------|---------------|
| Hydrotite CJ0725-3K ADH / 10m roll | 7mm x 25mm    | FC000550-UNIT |
| Hydrotite CJ1020-2K ADH / 10m roll | 10mm x 20mm   | FC000555-UNIT |
| Hydrotite DSS0220 ADH / 25m roll   | 2mm x 20mm    | FC000560-UNIT |
| Hydrotite RSS1610D / 10m roll      | 16mm diameter | FC000580-UNIT |
| Hydrotite RSS2014D / 10m roll      | 20mm diameter | FC000455-UNIT |
| Hydrotite RSS2205D / 10m roll      | 22mm diameter | FC000595-UNIT |
| Hydrotite RSS2519D / 5m roll       | 25mm diameter | FC000545-UNIT |

## Limitations

- Not recommended for use in suspended slabs or expansion joints
- Minimum of 50 mm cover of concrete over Hydrotite for reinforced concrete and 100 mm cover of concrete or unreinforced concrete based on concrete strength of 22.5N mm<sup>2</sup>
- Expansion rate can vary in salt or contaminated water
- Not for use where excessive shrinkage or movement may occur



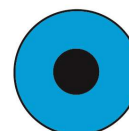
CJ0725



CJ1020



DSS0220



RSS sections

### 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.