



CJ FORM-TIE WATERSTOP

PRODUCT DESCRIPTION

AITKEN FREEMAN Form-Tie Waterstops are produced from a unique hydrophilic rubber sealing compound which expands in a 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.

Available in a number of different sizes and profiles to suit the form-tie system and once installed, forms a continuous barrier, making CJ Form-Tie Waterstops ideal for preventing water penetration or egress.



CJ FORM-TIE PLUG



CJ FORM-TIE RING



FORM-TIE SLEEVE WITH PLUG & RING

ADVANTAGES

- Excellent sealing capabilities and available in many different sizes, shapes and profiles to suit the formwork form-tie system to be used. Custom profiles available upon request.
- Provides a permanent, flexible gasket and compression seal inside the concrete.
- High quality, non-biodegradable compounded hydrophilic rubber that provides long-term durability and integrity.
- Ability to expand up to 400% in contact with water and over 200% expansion in salt water.
- Has been tested to withstand over 50 metres of hydrostatic water head pressure. (Test report available upon request)
- For use in many different types of applications but especially suited for water retaining structures where direct water pressure is applied against the concrete and the form-tie system.
- No external grout required to fill form-tie conduit sleeve hole after CJ Form-Tie Plug has been positioned.
- Non-toxic and can be used in potable water structures.
- Unaffected by repeated wet and dry cycles.
- Fast and simple to install.

AREAS OF APPLICATION

Water retaining structures:

- Water tanks
- Reservoirs
- Dams
- Water Treatment Plants
- Sewage Treatment Plants
- Swimming pools
- Bund Walls

Water excluding structures:

- Basements
- Underground car parks
- Tunnels & Subways
- Retaining walls
- Pits & Manholes

NOTE : Areas of application should be verified and approved by the consulting engineer who is satisfied with the products suitability for its intended use.

LIMITATIONS

- Due to the expansive forces of the hydrophilic rubber compound, CJ Form-Tie Rings need to be installed with a minimum concrete cover of 75mm from any outside edge.
- Increase concrete cover when using lightweight or low strength concrete.
- Expansion rate can vary in water and salt water environments.

TECHNICAL FEATURES

1. FORM-TIE CONDUIT SPACER HOLE



1. Insert the CJ Form-Tie Plug into the hole.



2. Hammer the CJ Form-Tie Plug into the hole.



3. The CJ Form-Tie Plug completely installed.

NOTE : Only one application required to the external face of the wall. If preferred, an internal application on the water face can also be applied but is not necessary unless the hydrostatic water head pressure is very high or if it is required for aesthetic reasons.

2. FORM-TIE CONDUIT SLEEVES



Place the CJ Form-Tie Ring over the outside of the plastic form-tie conduit sleeve and position it approximately in the middle section.

3. FORM-TIE RODS



Place the CJ Form-Tie Ring over the outside of the metal form-tie rod and position it approximately in the middle section.

TECHNICAL FEATURES

1. FORM-TIE CONDUIT SLEEVE HOLES

- Thoroughly clean out the form-tie conduit sleeve free of any dust, debris and foreign matter.
- Place the CJ Form-Tie Plug manually into the hole of the form-tie conduit sleeve.
- With a hammer and with a light-easy action, hammer the CJ 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 CJ Form-Tie Plug has a tight and secure fit. If it is loose, then a larger diameter plug should be used.

2. FORM-TIE CONDUIT OR FORM-TIE RODS

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

PROFILE SELECTION

TYPE OF PROFILE	FORM-TIE SYSTEM USE
CJ Form-Tie Ring	Externally applied around the Form-Tie Conduit Sleeve or the Form-Tie Rod
CJ Form-Tie Plug	Externally inserted into the Form-Tie Conduit Sleeve hole



CJ22



CJ26

CJ FORM-TIE PLUGS



CJ1242



CJ2454

CJ FORM-TIE RINGS

PROFILE TYPE & CODE	SIZE OF PRODUCT	APPLICATION SEALING SIZE
CJ Form-Tie Ring CJ1242	I.D 12mm x O.D 42mm	Sleeve or rod O.D 12mm up to 16mm
CJ Form-Tie Ring CJ1754	I.D 17mm x O.D 54mm	Sleeve or rod O.D 17mm up to 23mm
CJ Form-Tie Ring CJ2454	I.D 24 mm x O.D 54 mm	Sleeve or rod O.D 24mm up to 30mm
CJ Form-Tie Plug CJ22	O.D 23 mm x 39mm long	Conduit sleeve with I.D 22mm
CJ Form-Tie Plug CJ24	O.D 25 mm x 51mm long	Conduit sleeve with I.D 24mm
CJ Form-Tie Plug CJ26	O.D 27 mm x 51mm long	Conduit sleeve with I.D 26mm

The above profile types are standard and custom profiles are available upon request to suit the form-tie system to be used.

Selecting the profile type is dependent upon the type of form-tie system being used and if needed, please consult AITKEN FREEMAN for further information.

NOTE : Profile type and size should be verified and approved by the consulting engineer who is satisfied with the products suitability for its intended use.

PACKAGING, WEIGHT & QUANTITY

PACKAGING	In sealed plastic bags and boxes
WEIGHT & QUANTITY	Dependent upon profile type and size

TECHNICAL FEATURES

ITEM TYPE	DESCRIPTION & INFORMATION
Material Type	- Rubber for plugs and rings - Plastic for plugs
Color	- Rubber for plugs and rings - Plastic for plugs
Expansion Capability	400% in concrete water and 200% in salt water
Hydrostatic Water Pressure Resistance	Over 5 bar (50 metres)
Chemical Resistance	In general, good resistance to Acids, Alkalis and most Aquas solutions. Be careful with solvents and hydrocarbons and refer to our chemical resistance chart.
Service Temperatures	-50°C to +70°C
Storage Conditions/Shelf Life	2 years from date of production if stored properly and in original unopened and undamaged sealed packaging in dry conditions, out of direct sunlight, not exposed to moisture and kept at temperatures between +10°C to +40°C.

PHYSICAL PROPERTIES

DESCRIPTION	TEST METHOD	RESULT
Tensile strength	ISO37	>2Mpa
Elongation at Break	ISO37	>400%
Hardness	ISO868	35

HYDROSTATIC WATER PRESSURE TESTING

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1. CJ Form-Tie Ring & Plug placed into position in the hydrostatic head pressure testing apparatus prior to clamping.



2. Testing CJ Form-Tie Ring & Plug being carried out in excess of 6 bar of water pressure.

WRITTEN SPECIFICATION

The Form-Tie Waterstop shall be CJ Form-Tie Waterstop (fill in profile type and size) as supplied by AITKEN FREEMAN. The Form-Tie Waterstop shall be produced from SEBS rubber and compounded with special hydrophilic polymers to be able to achieve a minimum expansion capability of 400% in water and a minimum of 200% expansion in salt water. The Form-Tie Waterstop must be able to withstand a hydrostatic water head pressure of not less than 5 bar and an independent laboratory test report must be provided to prove the product material type, the water immersion expansion percentage and the hydrostatic water head pressure capabilities.

HEALTH & SAFETY

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 Material Safety Data Sheet (MSDS), which is available upon request. 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.

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 a 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. No responsibility or liability by the Company will be accepted for misuse, misreading or derivation from the 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 this brochure may change at any time without notice.

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