



Triton Systems

Triton TT Admix Concrete System

BS: 8102 (2009) – Type B Integral Protection1



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Triton Chemical Manufacturing Co Ltd

Triton TT Admix - Watertight Concrete System

1. General Introduction

Triton Chemical Manufacturing Co Ltd have developed a watertight concrete system comprising an in depth crystalline waterproofing admixture and hydrophilic waterstops and mastics for the construction joints. This enables the construction of a watertight concrete structure in accordance with BS8102 type B type and form of construction and waterproofing.

Along with quality products, Triton offers full system back up, including liaison with the concrete batching plant, mix design, construction joint detailing, site monitoring, repairs and warranty (where required).

For full information and support please read product data sheets attached and/or contact Triton's technical department on 01322 318830 or visit Triton's website www.tritonsystems.com.



2. TT Admix

A unique chemical treatment for the waterproofing and protection of concrete, which is added to concrete at time of batching. The active chemicals in the TT Admix react with fresh concrete to generate insoluble crystalline growths, which seal the concrete against water penetration and protect the concrete against harsh environmental conditions.

TT Admix will:

- Withstand extreme hydrostatic pressure
- Increase durability
- Reduce shrinkage and cracking
- Protect concrete and steel from aggressive chemicals such as chlorides

TT Admix is added to concrete at time of batching in dry powder form (see attached concrete batching details) at a rate of 1.17% by weight of cement.

3. Concrete Mix Requirements

The concrete mix requirements for optimum performance of the TT Admix requires a minimum cement content of 350kgs/m³. The preference is for CEM1 (OPC), although a PFA* blend with a maximum 20% PFA content may be used.

The target water cement ratio is 0.45 (maximum permissible 0.5).

For reference the use of GGBS (ground granulated blast furnace slag) is not permitted.

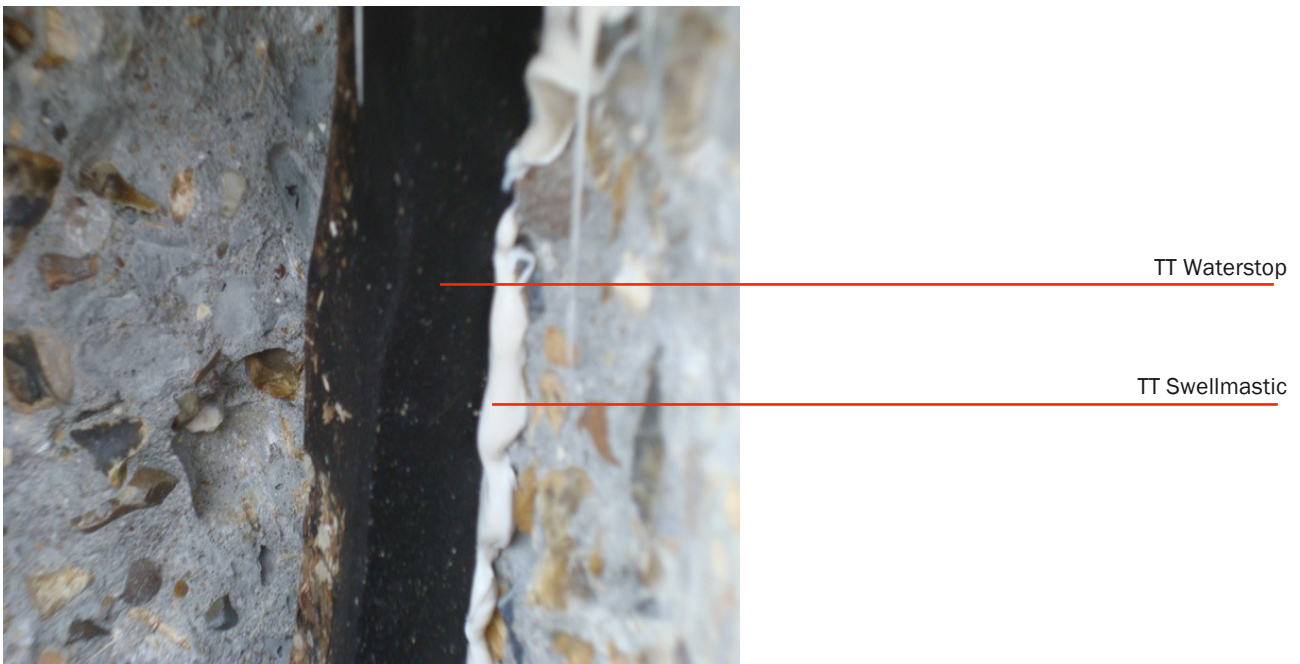
TT Admix: Alkali content 9.51% by weight of TT Admix. Total Chlorine % <0.02%. Water soluble Chloride % <0.03%.

4. Batching

TT Admix is supplied in soluble sachets, which are added to the concrete at time of batching, these should be added with the initial water and some of the aggregate at the beginning of the batching process. For full details please refer to TT Admix data sheet and Batching Details attached.

5. Construction Joints

Triton TT Waterstop and TT Swellmastic are used in all construction joints within the concrete structure.



A 10mm minimum groove to be created into the concrete at joint line to accommodate the TT Waterstop and TT Swellmastic. This is to ensure that the detail does not move during the concrete pour.

The TT Swellmastic is applied into the groove, at approximately 4 linear metres per 310ml cartridge to adhere the TT Waterstop. For full installation and application details please refer to product data sheets and drawing no. TT005.1 attached.

TT Waterstop is supplied as a 20mm x 25mm pre-formed Waterstop in a ready to use roll. It has a built in delay system and the product activates after 2 days of exposure to water. Once activated, it will withstand up to 40m head of water pressure. Due to the expansive forces exerted by the Waterstop, a minimum concrete cover of 50mm is required.

TT Swellmastic is a one part ready to use hydro reactive expansion sealant for waterproofing joints in construction and to adhere TT Waterstop. It is supplied in 310ml cartridges.

NB: THE USE OF TT WATERSTOP AND TT SWELLMASTIC IS A CRITICAL PART OF THE TT ADMIX WATERTIGHT CONCRETE SYSTEM AND MUST BE INCLUDED.

6. Service Entry Sealing

All service entry details and penetrations to the TT Admix concrete must be waterproofed using the TT Waterstop and/or TT Swellmastic as indicated in drawing no.TT007.1 attached.

7. Placement & Curing

Normal practices for the placement, compaction and curing of concrete should be followed as laid out in all relevant standards and in accordance with good concreting practice.

8. Monitoring

Triton will monitor the whole process including concrete batching, placement, curing, construction joint detailing and repair.

9. Repairs

Triton manufactures a range of compatible repair products and systems and any areas of honeycombing, voids or cracks should be repaired in accordance with TT Admix concrete repair details attached, and in accordance with the product data sheets for these products.

10. NBS Specification Clauses

TT Admix – J10 120 Proprietary waterproof admixture

TT Waterstop – E40 310 Designed joints in in situ concrete – flexible waterstops

TT Swellmastic – E40 530 Designed joints in in situ concrete – sealant

11. Standards & Useful Reference Documents

BS 8102 (2009) Code of Practice for the protection of below ground structures against water from the ground

BS 8110 Structural use of concrete *

BS 8007 Design of concrete structures *

*EN 1992 (Eurocode2) now refers

Waterproofing Design Guide – General Guidance to BS 8102 (2009) The Concrete Centre

Concrete Basements – Guidance on the design and construction of in-situ concrete basement structures – The Concrete Centre

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Triton Chemical Manufacturing Co Ltd

Sequence of procedures for addition of Triton TT Admix

1. Introduction

Triton TT Admix is added to the concrete at time of batching. The application rate is **1.2% BY WEIGHT OF CEMENT** (1.2KG / 100KG OPC).

1. DRY BATCH PLANT:

- Add the weighed out TT Super Admix to the drum of ready mix truck.
- Add 60 – 70% of gauging water to truck, along with 140 – 230kg of aggregate.
- Mix materials for 2 – 3 minutes.
- Add balance of materials to ready mix truck in accordance with standard batch procedures.

2. CENTRAL MIX OPERATION:

- Mix Triton TT Super Admix with water to form a slurry (**6kg TT Super Admix with 10 litres water to form slurry**).
- Pour slurry into drum of ready mix truck.
- Mix the aggregate, cement and water in the plant in accordance with standard batching procedures.
ENSURE WATER USED TO MAKE SLURRY IS TAKEN INTO ACCOUNT.
- Add concrete to truck and mix for minimum of 5 minutes.

NB: FOR FURTHER INFORMATION AND HEALTH AND SAFETY INFORMATION, PLEASE REFER TO PRODUCT DATA SHEET AND HEALTH AND SAFETY DATA SHEET.

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Triton Chemical Manufacturing Co Ltd

Triton TT Admix – Watertight Concrete System Honeycomb and Construction Joint Remedial Measures

1. Introduction

Following the placement, curing and compaction of the Triton TT Super Admix watertight concrete, upon removal of the formwork and exposing of the placed concrete, a visual inspection is required. If honeycombing or leaks to the construction joints are identified then the following remedial measures should be carried out:

2. Areas of Honeycombed Concrete

Any loose, friable concrete should be removed from the area, taking it back to a sound concrete base.

A liberal single coat application of Triton TT Super in depth crystalline waterproofer to be applied to the area.

Whilst the TT Super application is still “green”, Triton Fillet Seal, mixed as per data sheet, should be applied to the whole area to re-profile the concrete. This may need to be built up in layers depending on the depth required.

Following application of the Triton Fillet Seal, apply two further coats of the Triton TT Super slurry, extending beyond the area of repair by a minimum of 150mm.

3. Construction Joint Repairs

The construction joint should be chased out to create a minimum depth and width of 50mm to joint.

Where liquid water is seeping through joint, this should be plugged using Triton Quick Set plugging compound (TQS) as per details on attached data sheet.

Once leak has been stopped, apply a liberal application to the joint area of Triton TT Super.

Re-profile chased joint using Triton Fillet Seal, application as per attached Fillet Seal data sheet.

Overcoat the repaired joint with two coats of Triton TT Super, extending a minimum of 150mm to either side of joint.

4. Shutter Tie Holes

Roughen the cleared concrete surface of shutter tie hole by appropriate means.

Apply single coat of TT Super to roughened surface.

Re-profile to flush with Triton Repair Mortar or Fillet Seal

Apply two coats TT Super to repair and minimum 150mm to concrete surround.

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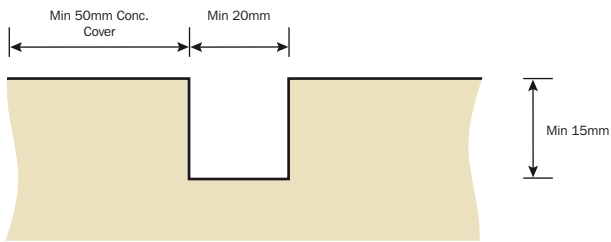
Email: info@tritonsystems.co.uk

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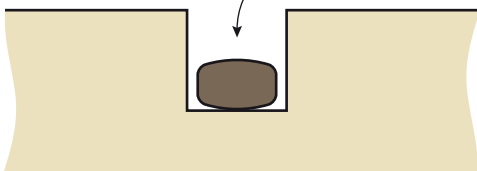


Installation guidelines for TT Waterstop and TT Swellmastic to construction joints

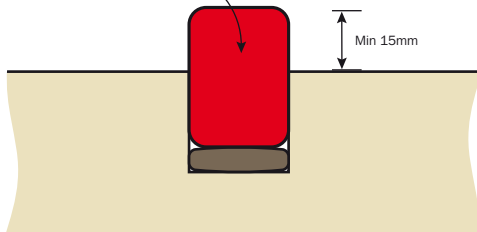
1. Chase Cast in centre of wall section/joint section. Approximately 20mm x 15mm



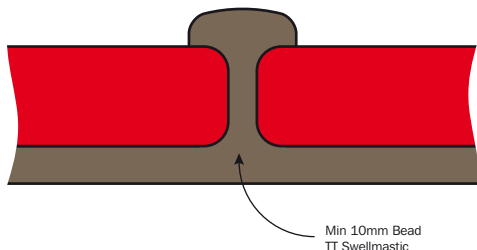
2. Min 10mm Bead TT Swellmastic to base of chase



3. TT Waterstop adhered to chase of Swellmastic



4. Joint option for TT Waterstop (within chase)



Typical vertical installation



Typical horizontal installation

For further information and assistance please refer to www.triton-chemicals.com or call Triton's technical team on 020 8310 3929.

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www.triton-chemicals.com



General Guidance Notes – types of cracks in concrete

1. Thermal cracks

These are caused by temperature rise, particularly in mass concrete, created by the heat of hydration. As the interior concrete increases in temperature and expands, the surface may be cooling and contracting thus causing tensile stress that may result in thermal cracks at the surface.

2. Drying shrinkage cracks

As most concrete mixes contain more water than actually required for the hydration process, the remaining water evaporates causing the concrete to shrink. Restraint to shrinkage causes tensile stresses to develop in the hardened concrete. Restraint to drying shrinkage is the most common cause of cracking in concrete.

3. Plastic shrinkage cracks

These are caused when the evaporation of water from the surface of freshly placed concrete is faster than it is replaced by bleed water, thus causing the surface to shrink. Due to restraint from the underlying concrete, tensile stresses develop in the weak plastic surface concrete resulting in shallow cracks of varying widths and depths.



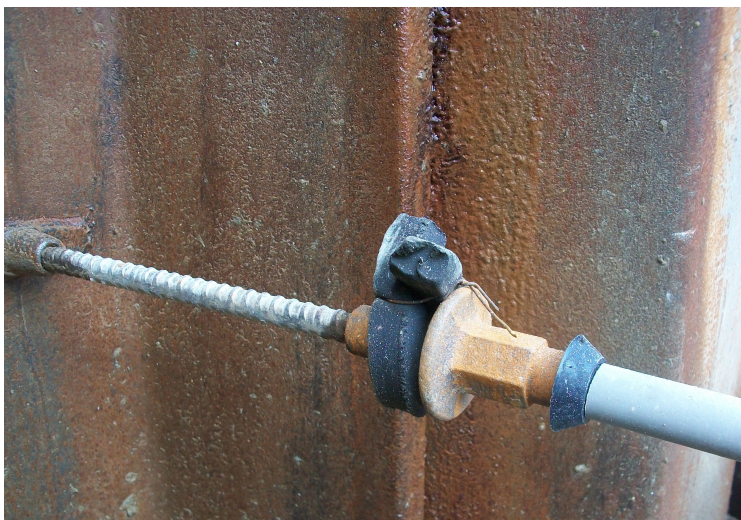
Service penetrations and tie bar detailing

1. Service penetrations



- Refer to typical detail drawing TT007.1
- Apply 10mm bead of TT Swellmastic around service penetration
- Apply TT Waterstop to Swellmastic
- If required, tie detail with fixing wire

2. Tie bars



- Apply 10mm bead TT Swellmastic around tie bar
- Apply TT Waterstop to Swellmastic application
- Tie at top with fixing wire



Kicker joint – Swellseal Mastic being applied to pre-formed rebate at approximately 10mm bead



Kicker joint – TT Waterstop and Swellseal Mastic applied to rebated joint





Triton TT Super Admix – Watertight Concrete System – Record
 Telephone: 01322 318830 www.tritonsystems.co.uk

Site:	Client:	Tel:	Project Ref No:
	Main Contractor:	Tel:	Triton Ref No:
	Project Manager:	Tel:	Date:
	Concrete Contractor:	Tel:	Rep:
	Concrete Supplier:	Tel:	

DATE	CONCRETE VOLUME M ³	SITE LOCATION/ REFERENCE	CONSTRUCTION JOINT INSPECTION	JOINTS INSPECTED BY	WATER ADDITION ON SITE Y/N	TT SUPER ADMIX SUPPLY REF. Nos.	COMMENTS/ SITE CONDITIONS

Signature:

Date:



Warranty

for Triton TT Super Admix System

To the Client:

- 1.1 TRITON SYSTEMS is the supplier of the Triton TT Super Admix System for waterproofing of structural concrete used to all areas on site as recorded in admix pour record sheets at the _____ project and this Triton TT Super Admix System work is completed on _____
- 1.2 TRITON SYSTEMS does assume responsibility for the visible migration of water through properly compacted Triton TT Super Admix System concrete, contained in the concrete structures described above, for a period of **ten** years from the date of completion of the Triton TT Super Admix System concrete work, subject to the conditions as laid out herein.
- 1.3 This warranty is conditional upon the full compliance by the Main Contractor, his nominee, and other trades and supplies, with the main specifications tendered on and specifications, terms and conditions as set out by TRITON SYSTEMS for the use of Triton TT Super Admix System. It is specifically noted here that the responsibility for the cement content in Triton TT Super Admix System concrete being no less than 350kg per cubic metre, always rests with the contractor.
- Furthermore, any refusal to comply with requests made by TRITON SYSTEMS representatives on matters concerning the Triton TT Super Admix System concrete works will render this warranty null and void.
- 2.1 This warranty covers construction joints upon approval by TRITON SYSTEMS and pipe projections, shoring struts, and tie holes, where these are constructed according to TRITON SYSTEMS LTD recommended details. Responsibility does not include the penetration of water through cracks caused by structural failure or other causes, not through construction or expansion joints, nor at any point where the designed thickness of the concrete has been reduced. Nor shall this responsibility include water entry through honeycombing and/or voids made as a result of poor compaction of the Triton TT Super Admix System concrete, or leaking formwork, nor for concrete that has been disturbed or tampered with.
- 2.2 This warranty does not include or cover liability for damage of failure of the Triton TT Super Admix System waterproofing caused by fire, explosion, vibration, structural movement, lightning, thunderbolt, earthquake, riot, civil commotion, strikes or labour disturbances.
- 2.3 TRITON SYSTEMS' liability for any non-performance of the Triton TT Super Admix System then the Triton TT Super Admix works conform to paragraph 2.1 shall not in any event exceed the value of the Triton TT Super Admix System admixtures supplied and paid for, and is strictly limited only to the direct cost of repairs to – or rectification of – Triton TT Super Admix System concrete through which visible water is migrating. The Value in this warranty being the maximum value of the TT Super Admix supplied to the project in Great Britain, value in pounds sterling.
- 2.4 TRITON SYSTEMS shall be notified in writing of any non-performance of the Triton TT Super Admix System and the area of non-performance within 14 days after such non-performance shall have come to the knowledge of the Client or his representative having supervision of the Triton TT Super Admix System concrete works.
- 2.5 Remedial work, if necessary, will be carried out by – and at the expense of – TRITON SYSTEMS in a manner as may be directed by the Company or our nominee as soon as practicable after advise of any non-performance of the Triton TT Super Admix System has been received.
- 2.6 The issue of warranty is subject to all invoices been paid in full as per TRITON SYSTEMS current Terms and Conditions of sale.

Director
TRITON SYSTEMS

Date

Triton TT ADMIX



Description

Triton TT ADMIX is a unique chemical treatment for the waterproofing and protection of concrete. This admix is specially designed as a concrete additive at the time of batching.

Introduction

Packed as a dry powder compound, **Triton TT ADMIX** consists of Portland cement, very fine treated silica sand and various active proprietary chemicals. The active chemicals react with the moisture in the fresh concrete and the by-products of cement hydration causing a catalytic reaction that generates a non-soluble crystalline formation of dendritic fibres throughout the pores and capillary tracts of the concrete. Thus the concrete itself becomes sealed against the penetration of water or liquid, protecting the concrete from the deterioration effect of harsh environmental conditions.

Characteristics

1. Maximizes waterproofness of concrete
2. Will withstand extreme hydrostatic pressure.
3. Exceptional durability.
4. Reduces shrinkage and cracking.
5. Protection of concrete against certain aggressive chemicals including chloride attack to steel reinforcing.
6. Improves workability of concrete.
7. Allows passage of air and water vapour.
8. Cost effective.

Concrete Mix Requirements: (See additional information sheet)

- For purposes of warranties, minimum cement content 350kg/m³
- Water: Cement ratio – 0.45 (max 0.5)

Directions for use

For waterproofing concrete the recommended addition rate for **Triton TT ADMIX** is 1.2% by weight of cement. For enhanced chemical resistance please consult with Tritons Technical Services to determine the approximate addition rate. **Triton TT ADMIX** is added to the concrete at the time of batching. The sequence of procedures for addition will vary according to the type of batch plant operation and equipment.



1. READY MIX PLANT – DRY BATCH OPERATION

Add **Triton TT ADMIX** in powder form to the drum of the ready-mix truck. Drive the truck under the batch plant and add 60% - 70% of the required water along with 140kg – 230kg of aggregate. Mix the materials for 2-3 minutes to ensure the **Triton TT ADMIX** is distributed evenly throughout the mix water. Add the balance of materials to the ready-mix truck in accordance with standard batch practices.

2. READY MIX PLANT – CENTRAL MIX OPERATION

Mix **Triton TT ADMIX** with water to form a very thin slurry (e.g. 6kg – 8kg lb. of powder mixed with 10 litres of water). Pour the required amount of material into the drum of the ready-mix truck. The aggregate, cement and water should be batched and mixed in the plant in accordance with standard practices (taking into account the quantity of water that has already been placed in the ready-mix truck). Pour the concrete into the truck and mix for at least 5 minutes to ensure even distribution of the **Triton TT ADMIX** throughout the concrete.

3. PRECAST BATCH PLANT – PAN MIXER

Add **Triton TT ADMIX** to the rock and sand, then mix thoroughly for 2-3 minutes before adding the cement and water. The total concrete mass should be blended using standard practices.

NOTE: It is important to obtain a homogeneous mixture of **Triton TT ADMIX** with the concrete. Therefore, do not add dry **Triton TT ADMIX** powder directly to wet concrete as this may cause clumping and thorough dispersion will not occur.

For further information regarding the property use of **Triton TT ADMIX** for a specific project, consult with a Triton technical representative.

Specification

Type B Integral Protection in Accordance with BS8102 (2009)

NBS: Clause J10 120 Cementitious Mortar Tanking / Damp Proofing

Curing

Normal practices for placing and curing concrete should be followed as laid out in your local standards.

Technical Services

Technical assistance is available through Triton’s technical department or its field based technical representatives.

Packaging

- **Triton TT ADMIX** is available in 20kg Drums or pre-dosed 4.1kg water-soluble bags.
- Product must be stored dry at a minimum temperature of 7°C.
- Shelf life is one year when stored under proper conditions.

Health & Safety

- **Triton TT ADMIX** is alkaline.
- Protect hands with rubber gloves.
- Avoid contact with skin and eyes. Should this occur, flush with water.
- If irritation persists, contact physician.

For further information please contact:

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Ref: Triton TT ADMIX 07/11



Triton SWELLSEAL MASTIC

Field of Application

Triton SWELLSEAL MASTIC is used for:

- Sealing rough and smooth construction joints of in-situ cast concrete.
- Sealing joints between pre-cast segments (e.g. manholes, box culverts, cable ducts and pipes).
- Sealing around steel H-beams.
- Sealing between rough surfaces (e.g. slurry walls) and concrete slabs.
- Bonding strip sealants to rough surfaces.
- Sealing around bolt spacers and void formers.
- On secant pile walls.

Application

- Solvent free.
- Triton SWELLSEAL MASTIC can be applied to concrete, PVC, HDPE, steel, etc.
- The excellent filling and adhesion properties of the product provide a first line filling of cracks and voids, even on lightly humid, smooth or rough surfaces.
- In contact with water Triton SWELLSEAL MASTIC will expand to about 350% of its original volume.
- Flexible system, which adapts to the irregular surface of the substrate.
- Easy application with standard caulking gun.
- Durable: will exceed the construction's life.
- Has a good all-round chemical resistance* and can resist to petroleum, mineral and vegetable oils and greases.
- Triton SWELLSEAL MASTIC is approved for contact with potable water.

Description

- Triton SWELLSEAL MASTIC is a one-component, polyurethane based, solvent free, hydroswellable mastic, supplied in cartridges and aluminium sausages, for the sealing of construction joints and around pipe penetrations.
- Triton SWELLSEAL MASTIC cures and swells in the presence of moisture. Curing time depends on temperature and humidity conditions, i.e. curing time will reduce if RH and C° are higher. Triton SWELLSEAL MASTIC will become firm in 24-36 hours. Performance is not affected by the curing time.

Application

1. PRECAUTIONS

- Triton SWELLSEAL MASTIC is preferably applied onto a dust-free concrete surface.
- The surface can be rough or smooth, moist or dry.
- Installation during heavy rain or in prolonged contact with water results in a premature swelling of the strip, which should be avoided.
- Preferably the mastic should cure for 24 hours before pouring concrete.
- Despite the fact that Triton SWELLSEAL MASTIC has a very good adherence to the concrete, care must be taken, as with all products of this type, not to pour the concrete directly on the product to avoid damaging of the applied sealant.

2. APPLICATION METHOD

For 310cc cartridges

- Break the moisture proofing aluminium foil on the top of the cartridge and remove the seamer from the bottom. Cut the nozzles diagonally at the appropriate position. Place the cartridge into caulking gun.

For 600cc sausages

- Put the sausage in the empty tube of the caulking gun and cut 1 cm off the top of the sausage. Close the tube and install the nozzle. Cut the nozzle diagonally at the appropriate position.
- Triton SWELLSEAL MASTIC is applied with a caulking gun in an uninterrupted band (minimum 10 mm wide and high), in the middle of the joint or prefab element. Concrete cover should be at least 7 cm on both sides, in order to avoid cracks from the expansion pressure of swelling Triton SWELLSEAL MASTIC.



Technical / Data Properties

Property	Value	Norm
Solids	100%	Test DNC
Uncured		
Consistency	Gel / Paste	Test DNC
Density (at 20°C)	Approx. 1,45 kg/dm ³	DIN 53504
Slump in vertical applications	< 5 mm (average 3 mm)	Boeing test
Hand dry (at 20°C and 60% rel. humidity)	12 h	Test DNC
Flash Point	> 130°C	Pensky-Martens method
Cured (7 days at 25°C, 10 mm thick)		
Elongation at break	Approx. 625%	DIN 53504
Tensile strength	Approx. 2,2 N/mm ²	DIN 53504
Resistance to hydrostatic pressure	Up to 150 metres of water column.	Test DNC
Swelling capacity in contact with water	Swells to approx. 350% of its original dry volume	Test report KUL University

Appearance

During application pasty, after curing rubbery.
Colour: White

Consumption

The consumption of Triton SWELLSEAL MASTIC per linear metre depends on the quality of the surface of the concrete.

Nozzle diameter	Length (cartridge)	Length (sausage)
3 mm	20 - 25 m	40 - 50 m
6 mm	8 - 10 m	16 - 20 m
8 mm	4 - 5 m	8 - 10 m
10 mm	Approx. 3 m	Approx. 6 m

Packaging



310 ml cartridges	600 ml sausages
12 per cardboard box	12 per cardboard box
1 pallet = 75 cardboard boxes	1 pallet = 40 cardboard boxes
Weight per cartridge 0.55 kg gross 0.50 kg net	Weight per sausage 0.99 kg gross 0.90 kg net

Specification

NBS – Clause E40 530 Designed Joints in-situ concrete.

Storage

Minimum 12 months in a dry place at temperatures between 5°C and 30°C.

See shelf life information on the packaging.

Accessories

To be ordered separately

- Skeleton caulking gun for cartridges 310 ml.
- Caulking gun for sausages 600ml closed tube.
- Nozzle for caulking gun 600mm closed tube.

Health & Safety

- For full information consult the relevant Material Safety Data Sheet.

* for chemical resistances please contact your Triton representative.

For further information please contact:

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Ref: Triton SWELLSEAL MASTIC 06/11

Triton TT WATERSTOP

(25mm x 20mm)



Introduction

Triton TT WATERSTOP is a preformed waterstop consisting of sodium bentonite and butyl rubber and it swells up to 350% when in contact with water. When fully encapsulated by poured concrete, the expansive forces form a seal against concrete surfaces. This seal resists hydrostatic pressure, stopping water from entering the sub-structures. Triton TT WATERSTOP is able to withstand a 40 metre head of pressure. As with any hydrophilic waterstop, Triton TT WATERSTOP will return to its original size if the concrete and substrate is completely dry and no more moisture is present. If water or moisture is introduced again to the joints, Triton TT WATERSTOP will re-expand to seal the potential leaking joints.

Characteristic

1. Service life is indefinite with excellent resistance to acid & alkaline condition.
2. Easy installation and extruded in rectangular shapes for optimal adhesion during application.
3. Permanent water-tight function.

Triton TT WATERSTOP has a built-in delay system thus the waterstop will activate approximately after 2 days of constant exposure to water.

Limitations

- Triton TT WATERSTOP should not be used for expansion joints or subject to repetitive movements.
- Triton TT WATERSTOP should not be installed with less than 50mm of concrete cover to ensure that the pressure arising from the swelling action is accommodated.

Specification

PHYSICAL PROPERTIES	
Specific Gravity	1.35
Colour	Black
Tensile Adhesion Strength	> 30 kgf/cm ²
Volumetric Expansion Rate	>350%
Non-volatilization	99.7%

NBS Clause E40 310 Designed joints in-situ concrete.



* For installation details see TT Waterstop / Swell Mastic installation guide.

Areas of application

1. Poured in-situ construction joints.
2. Box culverts & retaining walls
3. Cut and cover tunnel construction
4. Underground (Utility) Vault Seal.
5. New to old concrete.

Volumetric Expansion

	2 days	110%
	3 days	250%
	5 days	350%
	2 days	105%
	3 days	200%
	5 days	350%

Packaging

20mm x 25mm x 5m rolls – 6 rolls per box

Box = 6 x 5m rolls (30m)

Storage

Triton TT WATERSTOP has a self life of 24 months; stored in original unopened cartons in cool, dry conditions, away from direct sunlight.

Health & Safety

- Always read the Health and Safety data sheets before use.
- Avoid skin and eye contact.
- Avoid inhalation of vapours.
- Wear safety glasses, gloves and overalls.

For further information please contact:

Triton

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Email: info@triton-chemicals.com

www.triton-systems.com



Triton Injection Tube

Description

Triton Injection Tube is designed for waterproofing construction joints in new and old structures. Triton Injection Tube has been designed specifically for the multiple injection of suitable grouts into construction joints and other areas that may require injection at a later date.

Triton Injection Tube is constructed from a specially formulated plastic with special slots, which prevent the infiltration of concrete water and laitance during casting but open when internal pressure is applied. Its flexible nature allows it to follow contours and should be placed in lengths of 10 metres (up to 30 metres if required).

Key Benefits

- Simple Installation
- Can be injected with all known resins
- Repeated injection possible
- Can withstand up to 12 metres head of pressure
- Can be installed up to 30 metre lengths

Typical Applications

- Concrete construction joints
- Shotcrete interfaces
- Basement waterproofing
- Water tanks
- Bund walls
- Pipe penetrations

Application Guidelines

Triton Injection Tube can be placed between the reinforcement bars or along the interface joints of concrete slabs. It is held in place using specially designed clips to ensure it remains in place even during concrete pouring.

The concrete base to which the tubing is fixed should be smooth and flat to ensure that the tube lays flat without any kinks that would interfere with the performance of the tube.

The tubing is then placed on the flat surface and fixed onto the concrete with clips at approximately 200 to 300mm centres throughout the required length. At either end of the hose, there are 200mm-500mm lengths of hose, these are colour coded blue and clear, this helps to identify where one length starts and the other end finishes. There are two alternative ways of forming the injection points. The standard way is for these lengths to be placed through the formwork to provide easy access when the injection work is required.



Cast in place



During Injection



After cleaning out Injection



The alternative is to use the shutter connector system.

Note: It is important that the Triton Injection Tube is placed flat to ensure correct installation, and must not be placed against reinforcement, does not cross ridges including other lengths of hose or itself and must not bridge gaps.

When placing the tube, ensure that it is placed consistently using the colour coding. This will make it easier when injecting the resin especially when the injection will be carried out at a much later date. When injecting, follow the flow of the resin to ensure thorough penetration is achieved.

Technical Data – Triton Injection Tube

Colour	Orange
Size	Internal 5-6mm
External	12mm
Construction	Virgin PVC
Slot length	4mm
Toxicity	Non-Toxic

Resin Requirement

Each metre of Triton Injection Tube requires approximately 200ml of grout for each injection, we recommend the use of Tampur 170 injection resin or similar. For more detailed advice please contact Triton.

Packaging

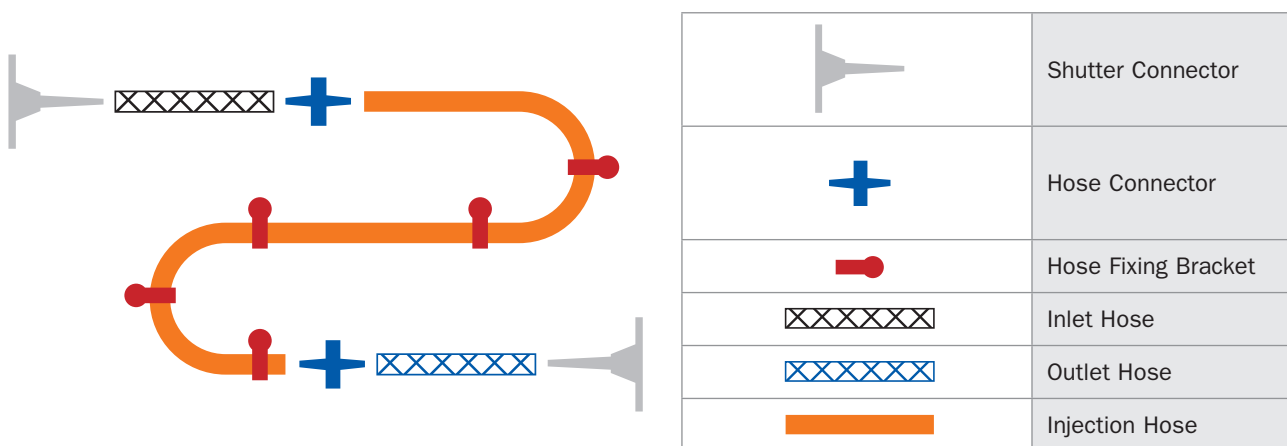
Triton Injection Tube is supplied in 10 metre packs and 100 metre packs complete with fixings and a choice of hose ends. Bulk is available on request.

Health & Safety

Triton Injection Tube should only be used as directed. We always recommend that the Health & Safety Data Sheet is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection.

Storage

Triton Injection Tube should be stored at room temperature (min 10°C and max 35°C), kept dry and out of direct sunlight.



Triton Contact Details:

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Triton FILLET SEAL

Description and Use

A pre-packed cement based and polymer modified product for use as a floor to wall junction seal during waterproofing works when using cementitious slurry coatings (**Triton TT55**) and renders. In most circumstances **Triton FILLET SEAL** need only be mixed with water for use. Where extra adhesion or flexibility are required, **Triton SBR** latex and **Triton TANKING MIX ELASTIFIER (T.T.M.E)** may be used respectively.

NOTE: Where water is leaking or seeping the use of **Triton QUICK SET** is advised.

The use of **Triton FILLET SEAL** helps to ensure a smooth transition between horizontal and vertical surfaces which minimizes the risk of leaving gaps or holes unsealed during the water proofing works.

Preparation

- Situations where the **Triton FILLET SEAL** will be employed should already have been prepared in accordance with the slurry coating or render specification. In the majority of instances the **Triton FILLET SEAL** will be applied onto the slurry coated surface as illustrated in FIG.1 below.

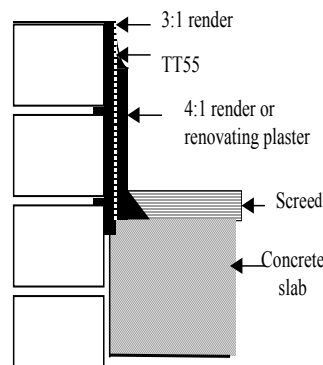


FIG. 1

The **Triton FILLET SEAL** becomes fully encapsulated within the layers of slurry coatings.

Usage

- Triton FILLET SEAL** normally needs only mixing with clean water before use.
- Add sufficient water to make a cohesive, stiff mortar.
- Ideally the **Triton FILLET SEAL** should be applied to partly cured (green) slurry coating (**Triton TT55**) surfaces to maximize adhesion. If this is not possible make up the **Triton FILLET SEAL** using a gauging solution composed of 1 part **Triton SBR** to 4 parts water (by volume).
- Pre-wet the surface with the same solution just before applying the **Triton FILLET SEAL**.
- When excessive stress concentrations are expected at floor / wall joints the use of **Triton T.T.M.E** added to the mix is advised.
- Triton T.T.M.E** increases flexibility and should be added neat to **Triton FILLET SEAL** until the required consistency is achieved.
- The slurry coating (**TT55**) under and overcoats should also contain **Triton T.T.M.E**.



NOTE: Only sound substrates suitable to be permanently sealed under a waterproofing system should be treated. Concrete, Brick, Stone, Render and Mortar in poor condition could deteriorate further when sealed inappropriately.

Application / Use

- Wall / Wall and Wall / Floor joint sealing in conjunction with **Triton TT55** waterproofing system.
- As a “non shrink” repair mortar for concrete and as part of repair system for **Triton TT SUPER ADMIX SYSTEM**.

Curing

- Avoid rapid drying out, overcoat as soon as set (5-6 hours dependent on conditions) whenever possible.
- Do not subject to running water until fully hardened (and overcoated).

Storage and Handling

- Avoid breathing dust.
- Wear gloves and eye protection.
- Wash hands and exposed skin after use.
- Must be stored in dry frost-free conditions.
- If bags are stored correctly and unopened they will have shelf life for 12 months.
- Packed in 25kg bags.
- Minimum application temperature: 5°C.
- Maximum application temperature: 30°C.

Coverage

- 15 – 20Lm (25mm x 25mm triangular fillet) per 25kg approximately.

Health & Safety

For full information consult the relevant Material Safety Data Sheet.

*For chemical resistances please contact your Triton representative.

For further information please contact:

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www.triton-chemicals.com

Ref: Triton FILLET SEAL 06/11



Triton QUICK SET (T.Q.S)

Description and Use

Triton QUICK SET (T.Q.S) plugging compound is a one part fast setting cementitious material developed to stem water flow. T.Q.S as with all plugging compounds plug leaks to allow application of waterproofing layers to cure, but can be used as an all purpose instant setting repair mortar with a wide range of application.

A SIMPLE AND EASY TO USE VERSATILE MATERIAL, JUST ADD WATER.

Instructions for Use

- Mix up to 0.5kg of T.Q.S at a time.
- Mix quickly with clean water to a mortar consistency within 30 seconds and apply immediately by trowel or gloved hand and apply constant even pressure (when plugging water flow – approx. 30-60 seconds) until set.

Mixing Ratio

- Mix 1 part water to 4 parts powder by volume or 1 part water to 5 parts powder by weight. (Dry powder weight approximately 1220gms per litre).
- The mixing ratio is not critical and has little effect on the setting time.

T.Q.S Plugging compound is non-toxic, contains no chloride and is free from synthetic resins or epoxides.

Warning: Use rubber gloves to protect from heat generated during the setting period.

Storage

Store in dry conditions.
Stored correctly, shelf life is 12 months

Consumption

1.9kg/m² per mm thickness.

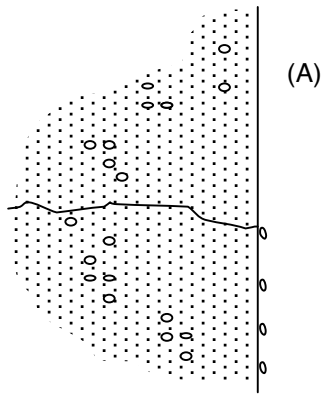
Health & Safety

T.Q.S contains ordinary Portland cement and is alkaline when mixed. It is odourless, contains no organic solvent and is not flammable. In the case of eye or skin contact wash immediately with water or saline solution. Obtain medical attention if irritation persists. If ingested do not induce vomiting, wash mouth out with water, drink water and seek medical attention. Handle in accordance with good industrial hygiene and safety practices. Wear impermeable plastic or rubber gloves and enclosed goggles for eye protection at all times when handling alkaline materials. All chemical materials should be treated with care and kept away from children and animals at all times.

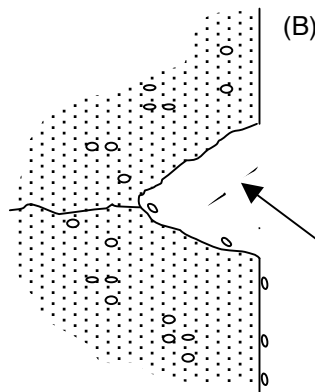
For full information consult the relevant Material Safety Data Sheet.

*For chemical resistances please contact your Triton representative.

PLUGGING SEVERE LEAKS WITH TRITON QUICK SET

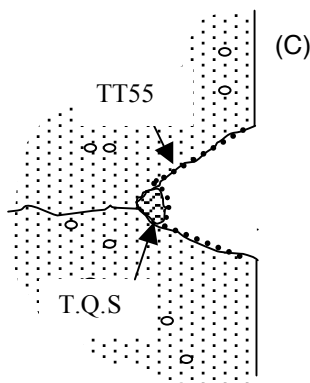


(A)



(B)

Chisel out defective area to a depth of approximately 50mm. Wash out the cutting thoroughly with clean water to remove loose matter and soak the concrete

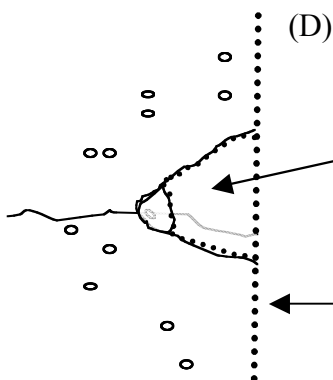


(C)

Stem the flow of water by plugging the back of the cutting as illustrated with **Triton QUICK SET**.

Remove any loose material and ensure that the concrete is thoroughly soaked and will not absorb any more water.

Remove any surface ponding and treat the cavity with a brush on coat of **TT55** as illustrated.



(D)

When the coating of **TT55** has dried to a tacky consistency fill the cavity with **Triton FILLET SEAL** ensuring the same is compacted back to surface

When mortar has set, apply a coating **TT55** to the surface of the repaired area as shown.

For further information please contact:

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Ref: Triton Quick Set (T.Q.S) 06/11



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NOTE

ALL INSTALLATION TO BE CARRIED OUT IN STRICT ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS. FOR FURTHER ASSISTANCE CONTACT **TRITON TECHNICAL** ON THE TELEPHONE NUMBER ABOVE.

REV.	MOD. BY	DATE	CHK. BY	APP. BY

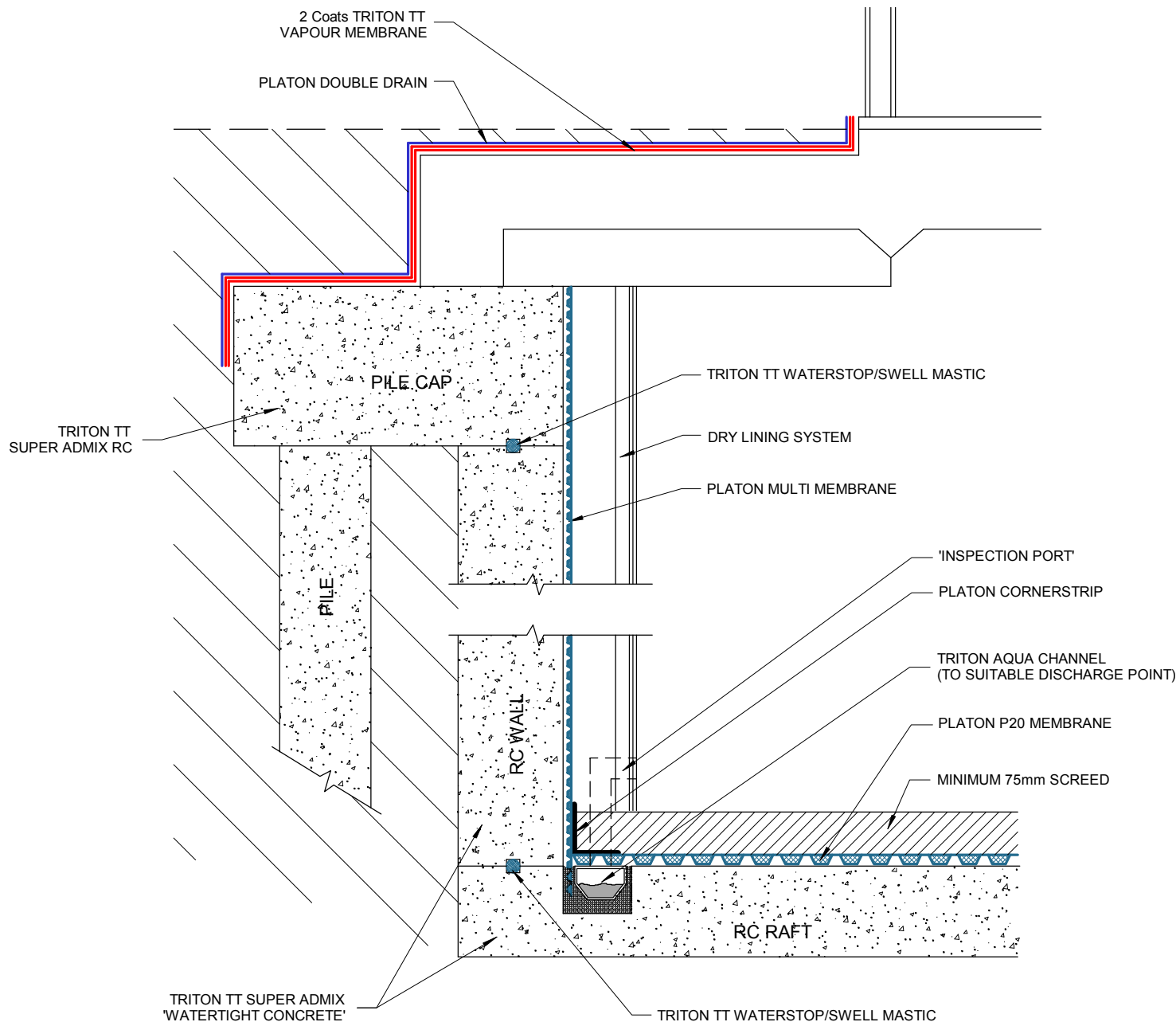
Alterations

TITLE:

Triton Waterproofing - Typical Detail
Combined System
TT Super Admix 'watertight Concrete'
Plus
Isola Platon Cavity Drain System

DRG. No.	TT/IP 040.1	REV	2
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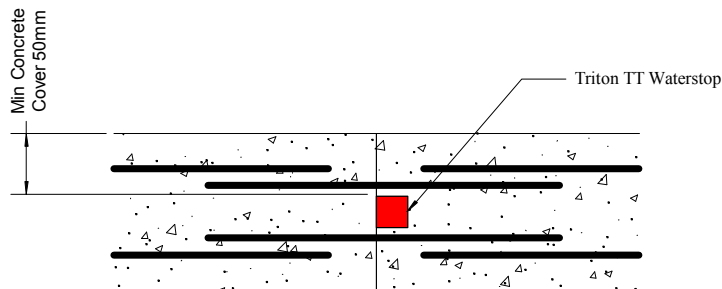
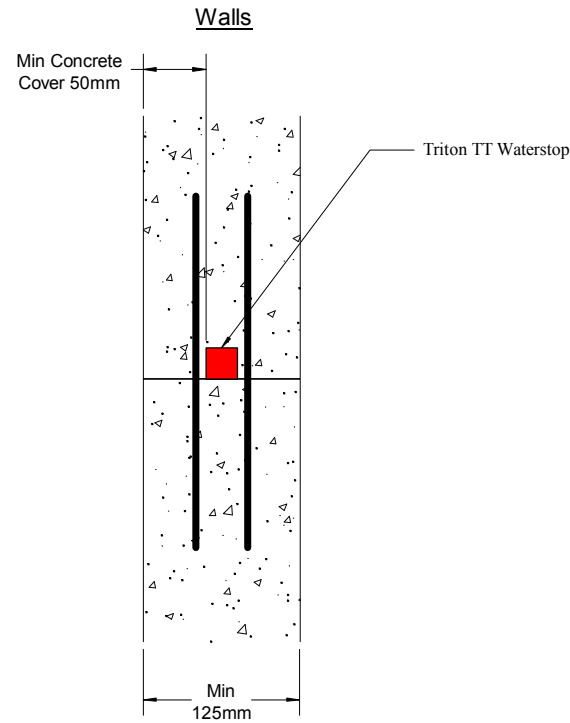
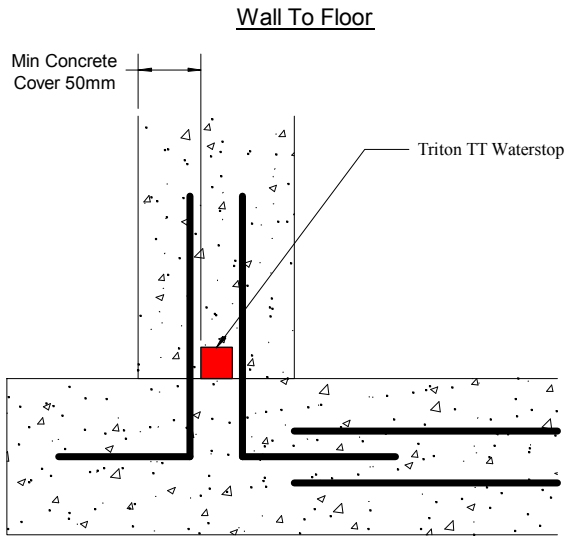
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DATE	10th July 2009	
SCALE (A3)	Not To Scale	
CHECKED		
APPROVED		



TRITON TT SUPER ADMIX RC

TRITON TT SUPER ADMIX WATERTIGHT CONCRETE'

TRITON TT WATERSTOP/SWELL MASTIC



Please Note:
On rough concrete surfaces
Triton TT Waterstop to be
adhered with Triton TT Swell Mastic

TRITON

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NUMBER ABOVE.

REV.	MOD. BY	DATE	CHK. BY	APP. BY

Alterations

TITLE:

Concrete Construction Joints
Using
Triton TT Waterstop

DRG. No.	TT 005.1	REV	2
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DRAWN	JDF, CBS	System Files:
DATE	25-06-07	
SCALE (A3)	Not To Scale	TT 005-1(2).pdf TT 005-1(2).dwg
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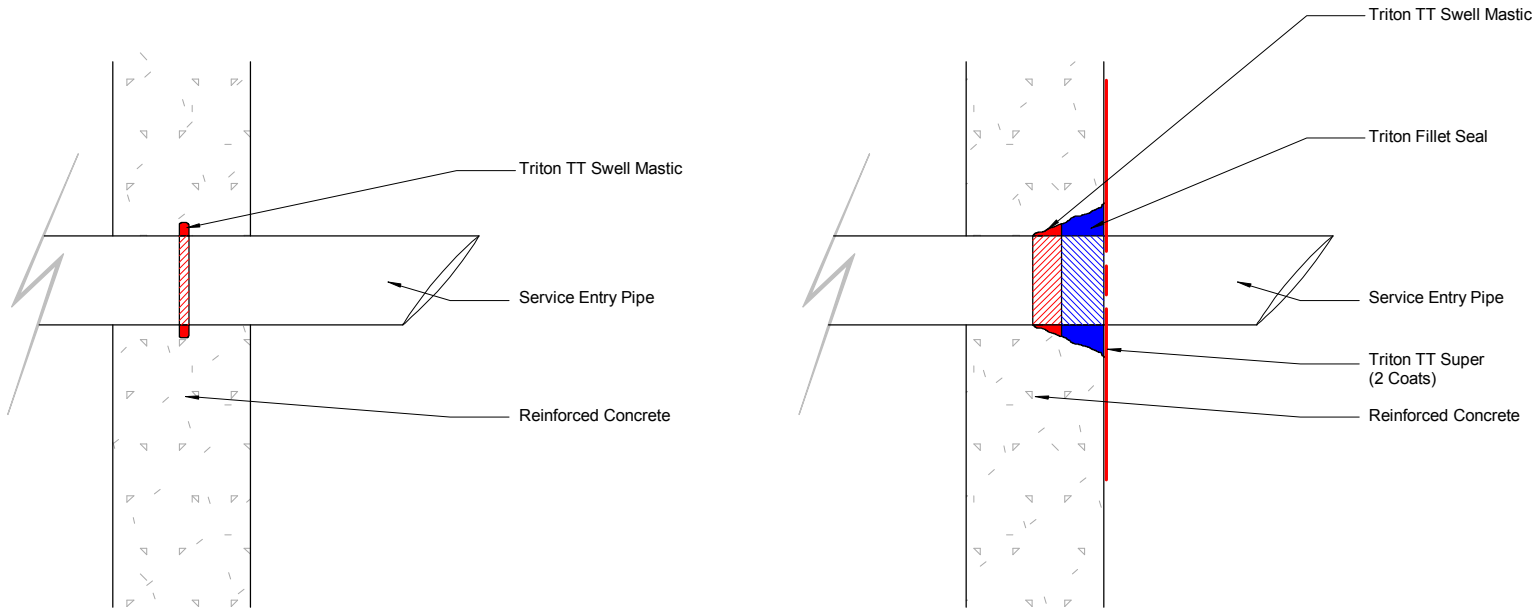
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New Construction

Existing Structure

REV.	MOD. BY	DATE	CHK. BY	APP. BY
Alterations				

TITLE:

Service Entry Sealing To
Concrete Structures

DRG. No.	TT 007.1	REV	2
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DRAWN	JDF, CBS	System Files:
DATE	25-06-07	
SCALE (A3)	Not To Scale	
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APPROVED		
		TT 007-1(2).pdf TT 007-1(2).dwg



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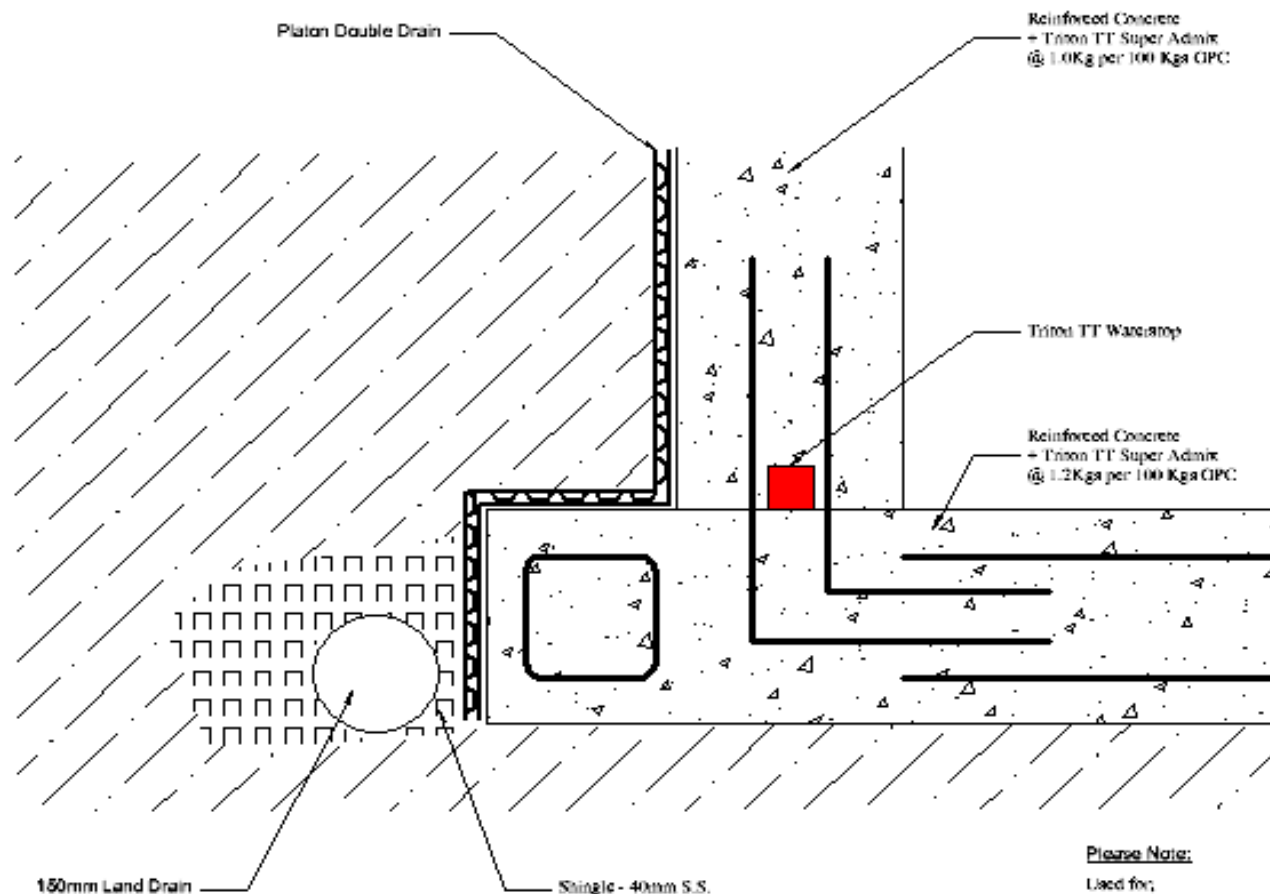
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Please Note:
Used for:
Basements
Lift Pits
Car Parks
Swimming Pools

REV.	MOD. BY	DATE	CHK. BY	APP. BY
Alterations				

TITLE:
New Concrete Construction
Waterproofing
Using
Triton TT Super Admix & Waterstop

DRG. No.	TT 008.1	REV	2
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DRAWN	JDF, CBS	System Files: TT 008-1(2).pdf TT 008-1(2).dwg
DATE	25-06-07	
SCALE (A3)	Not To Scale	
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Case Study

APRIL 2012

Triton supplied:

Triton Super Admix – to produce 2,000m³ of watertight concrete, Triton TT Waterstop, Triton TT Swellseal Mastic



The development is a stone's throw from Wembley Stadium

WATERTIGHT CONCRETE BASEMENT FOR LUXURY WEMBLEY DEVELOPMENT

Two 20 storey buildings, one a hotel and the other a luxury residential and commercial apartment block, have been constructed a stone's throw from London's Wembley Stadium. Triton was appointed by main contractor, Donban Construction, to supply a watertight concrete system (comprising type B method of waterproofing as defined in BS 8102 2009) for the large underground car park which will serve both buildings.

The watertight basement measures 80m x 70m x 4.5m deep and is constructed from 2,000m³ of concrete incorporating Triton's Super Admix to form the ring beam – which can be seen in the photograph sitting on top of contiguous piles – the floor slab and the concrete liner wall.



The ring beam waterproofed with Triton Super Admix

Case Study

Triton Super Admix is a specialist chemical treatment for the waterproofing and protection of concrete – designed to be used as an admix at the time of batching. The active chemicals react with fresh concrete to generate a non-soluble crystalline formation which seals the concrete itself against the penetration of water or liquid, inhibiting the ingress of water through small cracks, shrinkage etc. and protecting it from the deterioration effect of harsh environmental conditions.

Triton's technical team worked closely with concrete suppliers, Cemex, and recommended a dosage rate of 4.1kg of TT Super Admix per 3m³ of concrete. Triton continued to provide support and advice to the main contractor and concreting sub contractor (JNC Utilities) as the job progressed.

Triton TT Waterstop (a water bar) and Triton TT Swellseal Mastic, was applied to all concrete construction joints and concrete interfaces. The application of these products was also overseen by Triton's technical team who monitored and recorded the application of every waterproofing element of the basement's construction up to ground level prior to providing a warranty on the system.

Useful links:

<http://donban.dns-systems.net/divisions.php>

<http://www.jncutilities.co.uk/safety.html>

www.cemex.com

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Dig out



The watertight basement measures 80m x 70m x 4.5m deep



Preparing to pour the watertight floor slab