

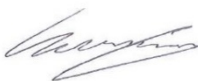
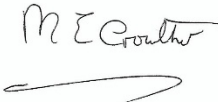


Number BAB-20-174-P-A-UK Replaces: -	  <p style="text-align: center;">BDA Agrément® BAB-20-174-P-A-UK</p>	Category In-situ reinforced concrete structures
Date December 2020		Phase Assessment
Project number 3159		Subject Waterproofing construction joints
Validity www.kiwa.co.uk/bda		
Product	Triton TT Waterstop	
Agrément holder	Triton Chemical Manufacturing Ltd 3-5 Crayford Commercial Centre Greyhound Way Crayford DA1 4HF	
	E.: sales@tritonsystems.co.uk T.: 01322 318830	
Description	 <p>Triton TT Waterstop, hereinafter the Product, consists of a formulated blend of sodium bentonite and butyl rubber, forming a high-swelling black in colour hydrophilic strip waterstop, which reacts with water to seal construction joints within concrete and has the ability to seal minor cracks and voids. The Product resists hydrostatic pressure, stopping the passage of water through the joint.</p>	
Scope (use)	Waterproofing of construction joints in in-situ reinforced concrete earth retaining structures, ranging from domestic basements to large civil engineering projects. The Product can also be used in new to existing concrete constructions, pipe penetrations in walls and floors, box out penetrations and remedial sections.	
Summary of Agrément	This Agrément covers the following: <ul style="list-style-type: none"> • Conditions of use; • Sources, including relevant codes of practice and test reports; • Independently verified Product characteristics; • Quality control and continuous surveillance; • Points of attention for the specifier and examples of details; • Installation procedure; • Compliance with national Building Regulations; • Compliance with non-Regulatory Requirements. 	
Major points of assessment	<p>Water tightness aspects (section 7.3) An essential property of the Product concerns its water pressure resistance. The Product will resist the passage of water and any other form of moisture or vapour infiltration from the ground.</p> <p>Resistance to damage (section 7.5) The Product is resistant to normal construction site activities, is unaffected by extremes of temperature and humidity and does not require any form of protection. The swelling capacity provides the capability of the Product to seal minor cracks and voids.</p> <p>Behaviour in relation to fire (section 7.6) The waterproofing of construction joints of reinforced concrete earth retaining structures using the Product can be designed to meet the UK requirements.</p> <p>Durability (section 7.7) When the Product is fully protected by concrete in normal service conditions it will provide a durable watertight seal for the life of the building in which it is installed; the expected life time of the building itself should be at least 60 years.</p>	
Statement	It is the opinion of Kiwa Ltd. that the Product is fit for its intended use, provided it is specified and installed in accordance with this Agrément.	
	 Chris Vurley, CEng Technical Manager, Building Products	 Mark Crowther, M.A. (Oxon) Kiwa Ltd. Technical Director
Version 01	<p style="text-align: center;">Kiwa Ltd. Unit 5 Prime Park Way, Prime Enterprise Park Derby, DE1 3QB, United Kingdom +44 (0)7718 57 05 64</p> <p style="text-align: center;">Copyright © 2020 Kiwa Ltd. www.kiwa.co.uk/bda</p>	
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<p>3 Independently assessed system characteristics of components used for critical functions**)</p>	<p>**) The critical functions which apply to this section are weatherproofing, fire and durability.</p> <p>Triton TT Waterstop Triton TT Waterstop consists of a formulated blend of sodium bentonite and butyl rubber, forming a high-swelling hydrophilic strip waterstop, which reacts with water to seal construction joints within concrete and has the ability to seal minor cracks and voids.</p> <ul style="list-style-type: none"> • identification properties <ul style="list-style-type: none"> - nominal dimensions (coils) : 25 mm x 19 mm x 5 m - 30 m per box, weight : 25 kg • water pressure resistance <ul style="list-style-type: none"> - full immersion, no leakage of waterbar connection at : 650 kPa <p>Ancillary items</p> <ul style="list-style-type: none"> • Triton TriMesh <ul style="list-style-type: none"> - Triton TriMesh is a profiled expanded metal mesh strip designed for mechanically fixing Triton TT Waterstop to cast-in-place concrete joint surfaces; Triton TriMesh can be used as an alternative method to Triton Swellmastic S2 for securing Triton TT Waterstop. • Triton Swellmastic S2 <ul style="list-style-type: none"> - Triton Swellmastic S2 is a high quality, neutral, moisture cured, elastic, 1-component adhesive sealant based on MS Polymer with a very high initial tack. 	
<p>4 Factory Production Control (FPC)</p>	<p>Kiwa Ltd. has determined that Triton Chemical Manufacturing Ltd, with respect to the Product fulfills all provisions concerning the specifications described in this Agrément. The FPC audit demonstrated that Triton Chemical Manufacturing Ltd have a satisfactory Quality Management System and are committed to operating an effective Quality System throughout their activities.</p>	
<p>5 Quality Management System</p>	<p>Triton Chemical Manufacturing Ltd have an effective Quality System in operation (based on their ISO 9001 certification). All processes inspected in the factory were well organised and there is sufficient space for conducting all processes including storage of raw materials and packaging of final products. All area managers and employees are well trained and confident in executing their respective tasks.</p>	
<p>6 Continuous surveillance</p>	<p>In order to demonstrate that the FPC is in conformity with the requirements of the technical specification described in this Agrément the continuous surveillance, assessment and approval of the FPC will be done in a frequency of not less than once per year by Kiwa Ltd.</p>	
<p>7 Points of attention for the specifier</p>	<p>1 Waterproofing design</p> <ul style="list-style-type: none"> - waterproofing systems should be designed by a waterproofing design specialist, such as designers who have successfully completed the Certified Surveyor in Structural Waterproofing (CSSW) qualification available from the Property Care Association (PCA); - the Product is designed for the waterproofing of construction joints in below-ground vertical and horizontal structural foundations, walls and covered decks; - the design of the waterproofing of the earth retaining structure shall be in accordance with BS 8102; - typical applications include the waterproofing of construction joints in backfilled concrete walls, structural slabs, covered rafts, covered decks, foundations, void-former installations and property line construction; - the Product is satisfactory for use in systems to seal concrete construction joints as part of Type A and B waterproofing protection of below-ground structures. This contributes to provide waterproofing protection Grades 1 and 2; and Grade 3 when part of a combined waterproofing protection solution design as defined in BS 8102; - the construction shall conform with current national Building Regulations, British Standards and relevant Codes of Practice; - the Product shall not remain permanently exposed. <p>2 Permitted construction</p> <ul style="list-style-type: none"> - only construction joints designed according to the specifications as given in this Agrément and as shown in section 8 or similar are allowed under this Agrément; in each case the specifier will have to cooperate closely with the Agrément holder. <p>3 Water tightness</p> <ul style="list-style-type: none"> - an essential property of the Product concerns its water pressure resistance. The Product will resist the passage of water and any other form of moisture or vapour infiltration from the ground; - construction joints of below-ground structures, waterproofed with the Product, when installed in accordance with section 9 of this Agrément will contribute to a Grade 3 waterproofing as defined in BS 8102 and comply with the relevant requirements of the national Building Regulations of England, Wales, Scotland and Northern Ireland. See also section 10. 	
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7 Points of attention for the specifier
(continued)

4 Chemical resistance

- the gelling of sodium bentonite is adversely affected by the presence of electrolytes (particularly trivalent ions) and may also be affected by the presence of soluble cations such as those found in chalk or lime soils; in such cases advice shall be sought from the Agrément holder;
- the Product is not affected by organic contaminants.

5 Resistance to damage

- the Product is resistant to normal construction site activities, is unaffected by extremes of temperature and humidity and does not require any form of protection. The swelling capacity provides the ability of sealing minor cracks and voids.

6 Behaviour in relation to fire

- the Product does not prejudice the fire-resistance properties of the building, the waterproofed earth retaining structure being fully covered with earth; therefore, the components of the Product will not contribute to the development stages of a fire or present a smoke or toxic hazard;
- when properly installed, the Product will not add significantly to any existing fire hazard;
- the continuity of fire resistance must be maintained, as described in the relevant national Building Regulations, see section 10 of this Agrément.

7 Durability

Under normal service conditions the fully protected Product will provide a durable waterproof element for the life of the building in which it is installed.

8 Examples of details

Figure 1 – Typical RC slab construction joint

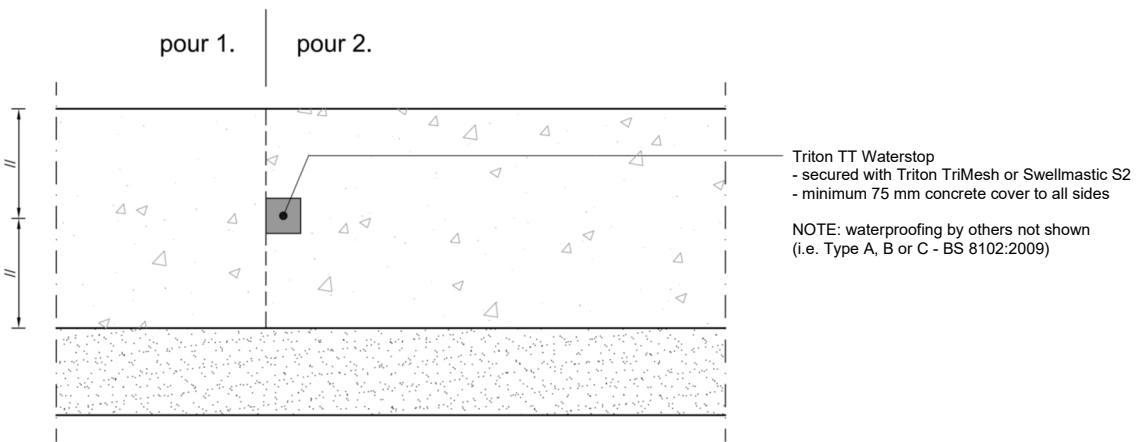
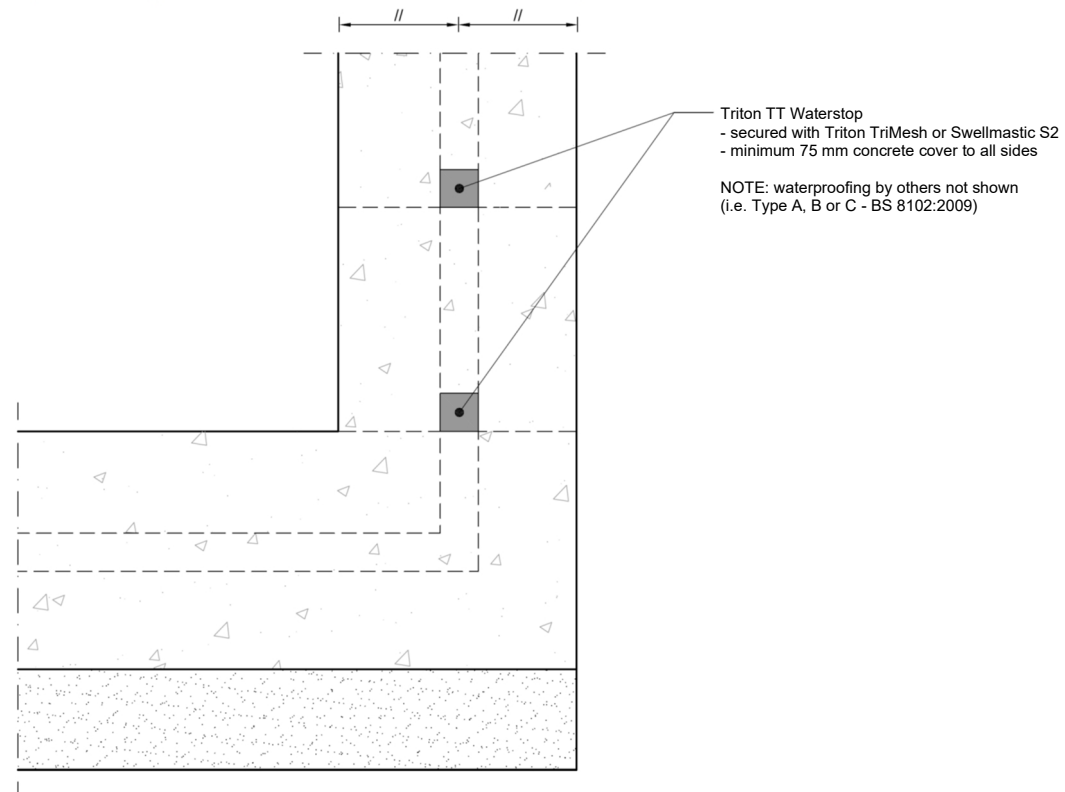


Figure 2 – Typical RC slab/wall/kicker construction joints



8 Examples of details
(continued)

Figure 3 – Typical RC wall construction joint (plan)

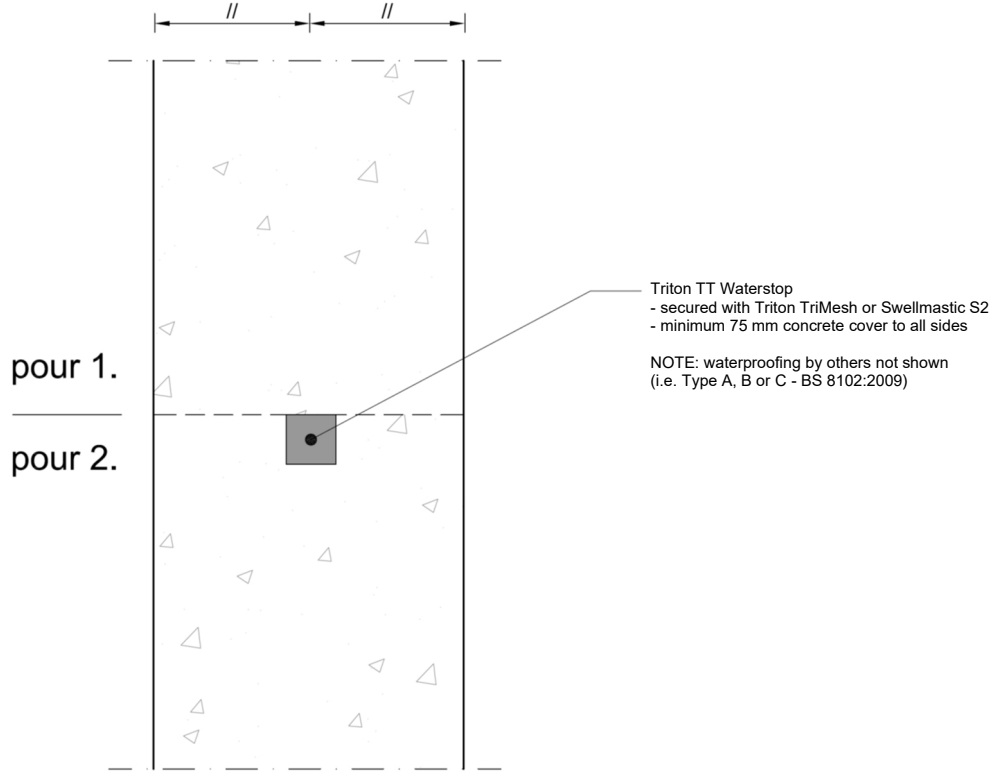
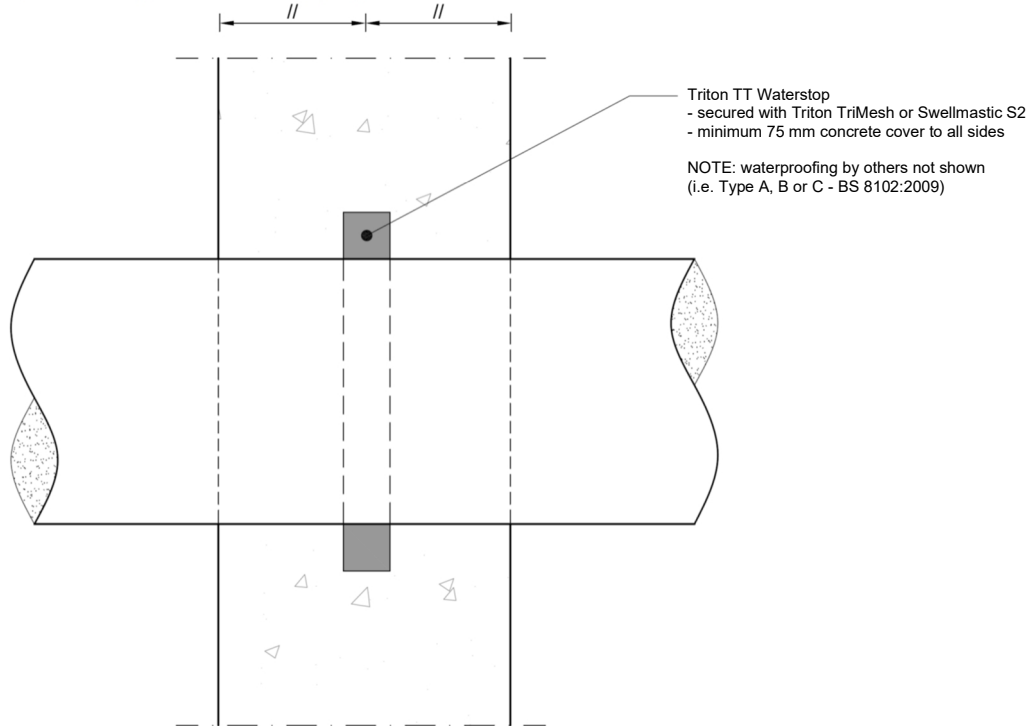
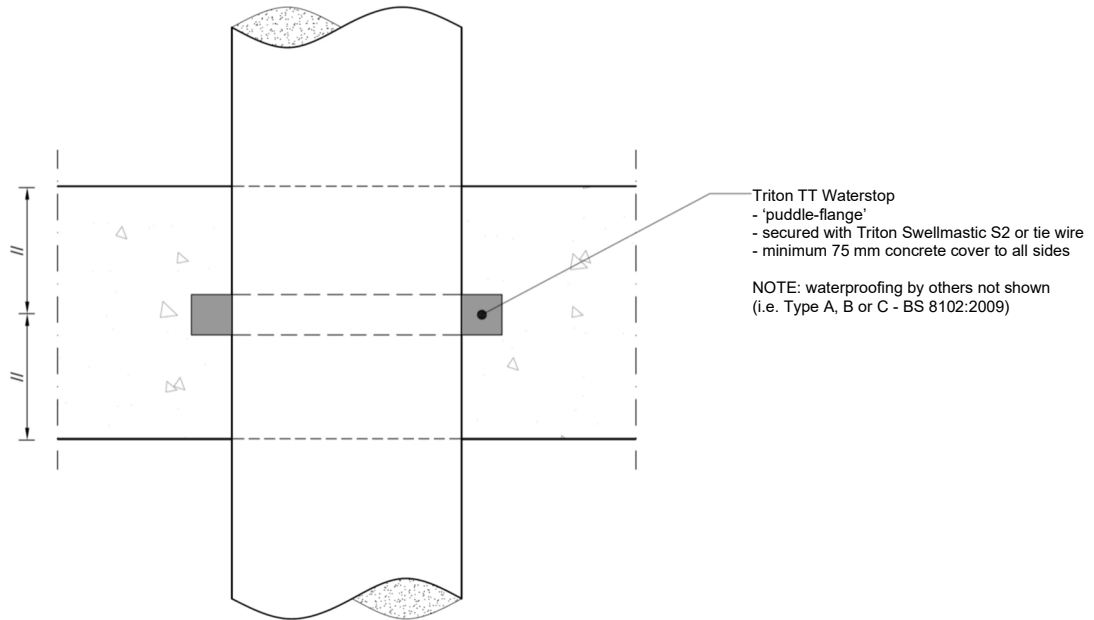


Figure 4 – Typical RC wall pipe penetration



8 Examples of details
(continued)

Figure 5 – Typical RC slab pipe penetration



Remark 1: The Triton Chemical Manufacturing Ltd Details Manual contains many more details.

Remark 2: As part of a technical consulting service the Agrément holder can provide bespoke details, for example on special construction joints and movement joints.

<p>9 Installation aspects</p>	<p>1 General</p> <ul style="list-style-type: none"> - the Product shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément and only by contractors whose employees have been trained and approved by the Agrément holder; - special attention has to be given to the cleaning and preparation of all areas and connections involved before the Product components are installed. Substrates should be sound, dry and free of dirt, grease, rust, oil, curing agents or other contaminants. <p>2 Delivery and site handling</p> <ul style="list-style-type: none"> - the Product is delivered to site in boxes; the label should include Product name, the suppliers name, health and safety information, weight, the BDA Agrément identification label, preparation and installation instructions and the number of this Agrément; it is recommended to read the Material Safety Data Sheet (MSDS) carefully prior to the opening of the packaging; - all components shall be stored away from direct heat, in dry conditions, under cover and away from the possibility of damage or premature contact with water; - the boxes shall be protected from being dropped or crushed by objects; care must be exercised when storing large quantities on site; - the components shall not be exposed to open flame or other ignition sources and be stored away from flammable material such as paint and solvents; - to ensure maximum performance of the components when installed, on site precautions should be taken to protect them from excessive mud and dirt (good site practice). <p>3 Substrate preparation</p> <ul style="list-style-type: none"> - substrate surfaces should be clean and free of standing water; - loose/flaking concrete and laitance should be removed by mechanical means; - forming of rebates/chases is not required. <p>4 Application of the Product using Triton TriMesh</p> <ul style="list-style-type: none"> - following substrate preparation, uncoil the Product, remove release paper and then place onto the substrate ensuring the minimum concrete coverage depth is maintained; - Triton TriMesh strips are then placed over the Product, overlapping strip ends by a maximum of 25 mm. Overlaps are nailed through with the fixings supplied at maximum 300 mm centres or as required to match the substrate profile; - on irregular surfaces it should be ensured that the Product remains in direct contact with the substrate along the entire installation; - end-to-end or end-to-side Product junctions are created by simple butt joints. Ensure continuity is achieved through the Product by pressing the ends together; - start at junctions, do not stretch the Product to fit and do not overlap the Product. <p>5 Application of the Product using Triton Swellmastic S2</p> <ul style="list-style-type: none"> - following substrate preparation apply a continuous bead of Triton Swellmastic S2 to the substrate; - firmly press the Product into the Triton Swellmastic S2 and hold for a minimum of 20 seconds. For best results apply the Product to the Triton Swellmastic S2 within 15 minutes of Triton Swellmastic S2 application; - Triton Swellmastic S2 can be applied to damp surfaces, but not in standing water; - end-to-end or end-to-side Product junctions are created by simple butt joints. Ensure continuity is achieved through the Product by pressing the ends together; - start at junctions, do not stretch the Product to fit and do not overlap the Product. <p>6 Limitations</p> <ul style="list-style-type: none"> - Triton TT Waterstop is not designed to function in movement/expansion joints; - Triton TT Waterstop is designed for minimum 20 N•mm² reinforced concrete & requires confinement and a minimum 75 mm cover to all sides; - Triton TT Waterstop shall not be subjected to submersion or remain in contact with water prior to concrete pour; if the product exhibits any considerable swell prior to concrete pour it shall be replaced; - it is recommended to consult the Agrément holder in conditions where salt water or severe groundwater chemical contamination exists or is expected. <p>7 Maintenance</p> <ul style="list-style-type: none"> - as the Product is confined by concrete, maintenance is not required, provided that no part of the Product remains permanently exposed. 	
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<p>10 Building Regulations</p>	<p>1 Requirements England: The Building Regulations 2010 and subsequent amendments</p> <ul style="list-style-type: none"> - A1 Loading – when adequately confined, the Product contributes to satisfying this Requirement, see section 7.5 of this Agrément; - C2(a) Resistance to moisture - the Product as installed in construction joints, will enable a below-ground structure to satisfy this Requirement, see section 7.3 of this Agrément; - Regulation 7 Materials and workmanship – the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance, see section 9 of this Agrément. <p>2 Requirements Wales: The Building Regulations 2010 and subsequent amendments</p> <ul style="list-style-type: none"> - A1 Loading – when adequately confined, the Product contributes to satisfying this Requirement, see section 7.5 of this Agrément; - C2(a) Resistance to moisture - the Product as installed in construction joints, will enable a below-ground structure to satisfy this Requirement, see section 7.3 of this Agrément; - Regulation 7 Materials and workmanship – the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance, see section 9 of this Agrément. <p>3 Requirements Scotland: The Building (Scotland) Regulations 2004 and subsequent amendments</p> <p>3.1 Regulations 8 (1)(2): Fitness and durability of materials and workmanship</p> <ul style="list-style-type: none"> - the Product is manufactured from acceptable materials which are considered to be adequately resistant to deterioration and wear under normal service conditions, provided they are installed in accordance with the requirements of this Agrément, see section 9 of this Agrément; - maintenance or repair work will not be necessary unless (a part of) the external wall is damaged by fire or is affected by structural modifications. <p>3.2 Regulation 9: Building Standards-Construction</p> <ul style="list-style-type: none"> - 1.1 (a)(b) Structure – the application of the Product will not adversely affect the building’s ability to transmit loadings, see section 7.5 of this Agrément; - 3.4 – Moisture from the ground - the Product will resist the passage of water and any other form of moisture or vapour infiltration from the ground, see section 7.3 of this Agrément; - 7.1 (a) Statement of sustainability - the Product can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. <p>3.3 Regulation 12: Building Standards-Conversions</p> <p>All comments given for the Product under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of the Building (Scotland) Regulations 2004 and subsequent amendments, and clause 0.12 of the Technical Handbook (Domestic).</p> <p>4 Requirements Northern Ireland: The Building Regulations (Northern Ireland) 2012 and subsequent amendments</p> <ul style="list-style-type: none"> - 23(a)(i)(iii)(b) Fitness of materials and workmanship – the Product is manufactured from materials which are considered to be suitably safe and acceptable for use as waterproofing as described in sections 7 and 9 of this Agrément; - 28 Resistance to ground moisture and water – the Product will resist the passage of water and any other form of moisture or vapour infiltration from the ground, see section 7.4 of this Agrément; - 30 Stability – when adequately confined, the Product contributes to satisfying this Requirement, see section 7.5 of this Agrément. <p>5 Construction (Design and Management) Regulations 2015 Construction (Design and Management) Regulations (Northern Ireland) 2016</p> <p>Information in this Agrément may assist the Principal, Construction Design and Management co-ordinator, specifier and contractors to address their obligations under these Regulations, see sections 3 and 4 of this Agrément.</p>	
<p>11 NHBC Standards</p>	<p>In the opinion of Kiwa Ltd. Triton TT Waterstop, if installed, used and maintained in accordance with this Agrément, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards Part 5 Substructure, ground floors, drainage and basements, Chapters 5.1 Substructure and ground bearing floors and 5.4 Waterproofing of basements and other below ground structures.</p>	
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