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**Agrément Certificate**

**18/5547**

Product Sheet 1 Issue 2

## JUTA WATERPROOFING SYSTEMS

### HYDROLOCK

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to HYDROLOCK, for use in waterproofing and damp-proofing underground reinforced concrete structures.

(1) Hereinafter referred to as 'Certificate'.

#### The assessment includes

##### Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

##### Process factors:

- compliance with Scheme requirements
- installation, delivery, handling, and storage
- production and quality controls
- maintenance and repair

##### Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



#### KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health, and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 3 May 2024  
Originally certificated on 4 July 2018

Hardy Giesler  
Chief Executive Officer

*This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.*

*The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No.0357).*

*Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

*The Certificate should be read in full as it may be misleading to read clauses in isolation.*

*Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

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## SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

### Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that HYDROLOCK, if installed, used, and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



#### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>C2(a)</b>	<b>Resistance to moisture</b>
Comment:		The product, including joints, will enable a structure to satisfy this Requirement. See section 3 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.



#### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)</b>	<b>Fitness and durability of materials and workmanship</b>
Comment:		The product can contribute to a structure satisfying this Regulation. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards – construction</b>
Standard:	3.4	Moisture from the ground
Comment:		The product, including joints, will enable a structure to satisfy clauses 3.4.1 <sup>(1)(2)</sup> , 3.4.5 <sup>(1)(2)</sup> , 3.4.6 <sup>(1)(2)</sup> and 3.4.7 <sup>(1)(2)</sup> of this Standard. See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product can contribute to satisfying 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.
<b>Regulation:</b>	<b>12</b>	<b>Building standards – conversions</b>
Comment:		Comments in relation to the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .
		(1) Technical Handbook (Domestic).
		(2) Technical Handbook (Non-Domestic).



#### The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(1)(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The product is acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>28</b>	<b>Resistance to moisture and weather</b>
Comment:		The product, including joints, will enable a structure to satisfy the requirements of this Regulation. See section 3 of this Certificate.

## Additional Information

### NHBC Standards 2024

In the opinion of the BBA, HYDROLOCK, if installed, used, and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 5.1 *Substructure and ground-bearing floors*, clause 5.1.20 *Damp-proofing concrete floors*, for use below the slab, and 5.4 *Waterproofing of basements and other below ground structures*.

Where Grade 3 protection is required and the below ground wall retains more than 600 mm measured from the top of the retained ground to the lowest finished floor level, the product must be used in combination with either Type B or C waterproofing protection.

## Fulfilment of Requirements

The BBA has judged HYDROLOCK to be satisfactory for use as in waterproofing and damp-proofing underground reinforced concrete structures, as described in this Certificate.

## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the product under assessment. HYDROLOCK consists of an approximately 7.5 mm thick waterproofing membrane consisting of two polypropylene geotextiles (a lower woven fabric and upper non-woven fabric) enclosing sodium-activated granular bentonite. The total weight of the bentonite is 5.0 kg·m<sup>-2</sup>.

The product is available in roll sizes of 1.25 x 5.1 m and 5 x 40 m for larger areas, for use in lining large areas such as horizontal floor slabs and vertical walls.

#### Ancillary Items

The Certificate holder recommends the following ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- HYDROLOCK PASTE — a trowel-grade sodium bentonite compound used for detailing work, eg, around penetrations, and for adhesive application of HYDROLOCK STRIP
- HYDROLOCK STRIP — a black, extruded strip of sodium bentonite/butyl rubber, for use as a water bar in construction joints and in conjunction with HYDROLOCK
- HYDROLOCK RAIL — a galvanized metal overlay strip used to prevent HYDROLOCK STRIP from moving during placement of concrete
- Accessory bentonite — a loose form of pulverised sodium bentonite used for detailing.

#### Applications

HYDROLOCK, when used with a minimum of 150 mm properly designed concrete, is satisfactory for use as a fully bonded Type A waterproofing protection as defined in BS 8102 : 2022 for the waterproofing of new structures and as a damp-proofing membrane for solid floors in accordance with the relevant clauses of CP 102 : 1973, Section 3.

The product can be used externally on concrete to provide an effective barrier to the transmission of liquid water where Grades 1 to 3 waterproofing protection are required, as defined in BS 8102 : 2022, Table 2.

## Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

## 1 Mechanical resistance and stability

Not applicable.

## 2 Safety in case of fire

Not applicable.

## 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

### 3.1 Resistance to water and water vapour

3.1.1 Results of resistance to water and water vapour tests are given in Table 1.

Product assessed	Assessment method	Requirement	Result
HYDROLOCK	Measurement of hydraulic conductivity to ASTM D5887-16	$\leq 3.5 \times 10^{-11} \text{ m}\cdot\text{s}^{-1}$	$1.46 \times 10^{-11} \text{ m}\cdot\text{s}^{-1}$
HYDROLOCK	Watertightness under 60 kPa pressure to BS EN 1928 : 2000, Method A	No leakage	Pass
HYDROLOCK	Peel adhesion to concrete to ASTM D903-10	Value achieved	5.30 kN·m <sup>-1</sup>

3.1.2 On the basis of data assessed, when used in combination with a minimum 150 mm section of properly designed concrete, the product will adequately resist the passage of moisture into the structure. The product must be adequately confined to ensure a watertight seal is achieved in service.

3.1.3 The adhesion of the bonded product is sufficient to resist forces likely to occur in practice.

### 3.2 Resistance to mechanical damage

3.2.1 Results of resistance to mechanical damage tests are given in Table 2.

Product assessed	Assessment method	Requirement	Result
HYDROLOCK	Tensile strength to BS EN ISO 10319 : 2015		
	Longitudinal direction	Value achieved	11.4 kN·m <sup>-1</sup>
	Transverse direction		10.7 kN·m <sup>-1</sup>
HYDROLOCK	Junction peel strength to ASTM D6496-04	Value achieved	494 N·m <sup>-1</sup>
HYDROLOCK	CBR puncture resistance to EN ISO 12236 : 2006	Value achieved	2.14 kN

3.2.2 On the basis of data assessed, the product is robust and resistant to normal site activities. The dropping of heavy objects will normally have no damaging effect on the product. Any accidental cuts will self-heal when the product is hydrated following correct installation, if bentonite material is not lost from the edges of the cut.

### 3.3 Resistance to chemicals

3.3.1 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 these situations, or in chemically contaminated areas, advice must be sought from the Certificate holder, but such advice is outside of the scope of this Certificate.

3.3.2 Based on the knowledge of the materials used in the product, the product is not affected by organic contaminants.

## **4 Safety and accessibility in use**

Not applicable.

## **5 Protection against noise**

Not applicable.

## **6 Energy economy and heat retention**

Not applicable.

## **7 Sustainable use of natural resources**

Not applicable.

## **8 Durability**

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

### 8.2 Service life

Under normal service conditions and when fully protected, the product will provide an effective barrier to the transmission of moisture for the life of the structure in which it is incorporated, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

## **PROCESS ASSESSMENT**

Information provided by the Certificate holder was assessed for the following factors:

## **9 Design, installation, workmanship and maintenance**

### 9.1 Design

9.1.1 The design process was assessed by the BBA and the following requirements apply in order to meet the performance assessed in this Certificate.

9.1.2 Concrete structures in which the product is incorporated must be designed in accordance with BS EN 1992-3 : 2006 and its UK National Annex.

9.1.3 Where Grade 3 waterproofing protection is required, the environment must also be controlled by the use of ventilation, dehumidification and/or air conditioning (as appropriate) to ensure that dampness does not occur. An additional waterproofing system may be needed, where necessary.

9.1.4 The product prevents the passage of water between itself and the concrete structure to which it is fixed. The product must be adequately confined to ensure a watertight seal is achieved in service.

### 9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance are provided in Annex A.

9.2.3 The product must be installed in accordance with the relevant requirements of BS 8102 : 2022, the Certificate holder's instructions and this Certificate.

9.2.4 The product must be installed fully supported on flat, smooth surfaces, without wrinkles or folds in the product that could cause it to sag during concrete placing. The Certificate holder can advise on suitable surfaces for a particular installation.

9.2.5 All surfaces to which the product is applied must be sound and solid to ensure that no movement occurs during the pouring of concrete.

9.2.6 The product is installed with the non-woven geotextile facing uppermost (horizontal) or facing the structure vertically, ensuring that it will be in contact with the fresh concrete when it is poured.

9.2.7 The product will swell on contact with moisture and must be confined to ensure that a watertight seal is achieved in service.

9.2.8 The product must not remain permanently exposed.

9.2.9 The formation of a continuous waterproof barrier is achieved using lap joints. The minimum overlap between adjoining edges and roll ends is 100 mm. It is recommended that laps be staggered by a minimum of 300 mm to avoid four sheets overlapping in one location. All vertical lap joints must be secured by nailing laps together or fixing to the substrate with fasteners.

9.2.10 Overlaps of joints must be planned to ensure that they all run in a uniform direction. The concrete must be placed on top of the product following the direction of the overlaps, to avoid folding of the product during concrete placing.

9.2.11 In horizontal applications, following the required groundwork preparation, a minimum of 50 mm blinding layer consisting of lean concrete, sand or gravel is placed, compacted and levelled. This layer must be free from debris and have a smooth surface.

9.2.12 The product is rolled out manually or, to assist handling of larger rolls, with a spreader bar and trimmed to fit.

9.2.13 An additional 75 mm concrete blinding layer can be placed on top of the product as a protective measure to allow the erection of shuttering and steel fixing.

9.2.14 At the end of the slab, between the horizontal and vertical joint, the product is turned up by 90° and nailed to the vertical shuttering. Flat head nails are used so they can be removed prior to casting the concrete element. A sufficient length of product must be left to ensure the formation of recommended overlap joint with the vertical member.

9.2.15 Where construction joints are planned, the exposed product must be protected from premature hydration and mechanical damage using a suitable water-resistant liner.

9.2.16 If expansion joints are required, a suitable BBA-approved water bar must be used.

9.2.17 In vertical applications, the product can be either installed against the outside of existing walls or, preferably, be applied to the inside face of shuttering to be subsequently filled with poured concrete.

9.2.18 On cast concrete substrates, the product is aligned vertically and fixed through the overlaps to the concrete substrate, using proprietary washer-headed fasteners every 250 to 300 mm along the top edge.

9.2.19 When fixed to the inside face of shuttering, the product is preferably aligned vertically (although horizontal alignment is possible), ensuring that all laps face down, away from the flow of the poured concrete. The overlaps are secured to the shuttering using proprietary soft washers every 250 to 300 mm.

9.2.20 A minimum overlap of 350 mm must be ensured between the kicker and the wall. If necessary, an additional 400 mm product sealing strip can be used. This is placed directly over the construction joint running parallel, to ensure that the overlap of the liners is sealed tightly. The upper liner must overlap the lower to prevent ingress of soil and debris during backfilling.

9.2.21 Backfilling must be carried out as soon as possible after placing the product. Backfill material must be free from builders' debris and angular aggregate, and must be compacted to a minimum 85% Modified Proctor. To prevent soil or debris from damaging the installed liners, a 100 to 150 mm long protection board can be fixed to the product and secured using nails 200 to 300 mm beneath the maximum height of the vertical sealing. The Certificate holder can advise of suitable products, but such advice is outside the scope of this Certificate.

9.2.22 After backfilling, the application of the product is continued. The product must not be installed above the intended final ground level and must be terminated at that point on the concrete structure.

### 9.3 Workmanship

Practicability of installation was assessed by the BBA based on the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by installers who have been trained and approved by the Certificate holder.

### 9.4 Maintenance and repair

9.4.1 As the product is confined by the concrete and has suitable durability, maintenance is not required.

9.4.2 Any damage occurring during installation must be repaired in accordance with the following:

9.4.2.1 Where material is lost from the product, a patch of HYDROLOCK must be applied.

9.4.2.2 The patch is secured by nailing over the damaged area, ensuring that the patch extends a minimum of 200 mm on each side.

9.4.2.3 If the damage is more extensive, the product must be replaced with fresh HYDROLOCK.

## **10 Manufacture**

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA will review the above activities on a regular basis through a surveillance process, to verify and re-assure that the specifications and quality control operated by the manufacturer are being maintained.

## **11 Delivery and site handling**

11.1 The Certificate holder stated that the product is delivered to site in packaging bearing the company and product name, roll and lot number, weight and dimensions.

11.2 Rolls of 1.25 x 5.1 m HYDROLOCK weigh 34 kg and have a diameter of 100 mm. They are supplied singly or on pallets of 25 rolls, strapped with steel banding. Rolls of 5 x 40 m HYDROLOCK weigh greater than 1000 kg and have two lifting straps.

11.3 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.3.1 The product must be stored in dry conditions, under cover and away from the possibility of damage or premature contact with water.



Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

### Construction (Design and Management) Regulations 2015

### Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

### CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard EN 13491 : 2004.

### Additional information on installation

#### General

A.1 The product may be applied under most normal site conditions, including sub-zero temperatures and during heavy rainfall. Under wet conditions, the product can withstand light construction traffic without significant extrusion of the bentonite. Slight losses at the exposed edges of a lap joint will not impair the watertightness but may have an adverse effect on site safety. Excess pressure must be avoided once the product is hydrated without the proper confinement.

A.2 The product is easy to handle and can be cut using a sharp knife.

A.3 The Certificate holder must be consulted for advice of a particular application, to ensure that this is adequately achieved and the operation properly supervised, but such advice is outside the scope of this Certificate.

#### Penetrations and sealing

A.4 Sealing around protrusions through the product, eg, at details such as piles and service pipes, is achieved by cutting a hole in the product, fitting the product over the protrusion and sealing around the protrusion on top of the product with a bentonite paste<sup>(1)</sup>.

A.5 Foundation piles to be sealed must be clean and free from surface irregularities. The area surrounding the pile is covered with a bentonite powder<sup>(1)</sup> and a pre-trimmed section is slipped over the protruding steel reinforcement or laid against the pile, ensuring that no areas remain unsealed. The whole area is protected by covering with another pre-trimmed product which is fixed to the lower product with nails.

(1) The Certificate holder can advise on suitable materials, but this advice and products are outside of the scope of this Certificate.

## Bibliography

ASTM D903-10 *Standard test method for peel or stripping strength of adhesive bonds*

ASTM D5887-16 *Standard test method for measurement of index flux through saturated geosynthetic clay liner specimens using a flexible wall permeameter*

ASTM D6496-04 *Standard test method for determining average bonding peel strength between the top and bottom layers of needle-punched geosynthetic clay liners*

BS 8102 : 2022 *Protection of below ground structures against water ingress - Code of practice*

BS EN 1928 : 2000 *Flexible sheets for waterproofing. Bitumen, plastic, and rubber sheets for roof waterproofing — Determination of watertightness*

BS EN 1992-3 : 2006 *Eurocode 2 : Design of concrete structures — Liquid retaining and containing structures*  
NA to BS EN 1992-3 : 2006 UK National Annex to *Eurocode 2 : Design of concrete structures — Liquid retaining and containing structures*

BS EN 13491 : 2004 + A1 : 2006 *Geosynthetic barriers — Characteristics required for use as a fluid barrier in the construction of tunnels and underground structures*

BS EN ISO 10319 : 2015 *Geosynthetics — wide-width tensile test*

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

EN ISO 12236 : 2006 *Geosynthetics — Static puncture test (CBR test)*

### Conditions

#### 1 This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.