

Bauder Ltd

70 Landseer Road
Ipswich
Suffolk IP3 0DH

Tel: 01473 257671

e-mail: mail@bauder.co.uk

website: www.bauder.co.uk



Agrément Certificate

06/4350

Product Sheet 5 Issue 2

BAKOR HOT-APPLIED MONOLITHIC STRUCTURAL WATERPROOFING SYSTEM

BAKOR 790-11 HOT-APPLIED MONOLITHIC MEMBRANE DAMP-PROOFING SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Bakor 790-11 Hot-Applied Monolithic Membrane Damp-Proofing System, a modified bitumen-based waterproofing system, for use in forming a sandwich membrane on new or existing horizontal and vertical surfaces for basement waterproofing, or to form a damp-proof membrane for solid floors.

(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 system described herein. This system 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: 11 October 2024

Hardy Giesler

Originally certified on 25 February 2019

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.

British Board of Agrément

1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG

©2024

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

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 the Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System, 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)

Requirement:	C2(a)	Resistance to moisture
Comment:		The system will enable a structure to satisfy this Requirement. See section 3 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The use of the system can contribute to a construction satisfying this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.4	Moisture from the ground
Comment:		The system will enable a structure to satisfy this Standard, with reference to clauses 3.4.1 ⁽¹⁾⁽²⁾ , 3.4.6 ⁽¹⁾⁽²⁾ and 3.4.7 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system 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.
Regulation:	12	Building standards – conversion
Comment:		All comments given for the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾
		(1) Technical Handbook (Domestic).
		(2) Technical Handbook (Non-Domestic).



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

Regulation:	23(1)(a)(i)(ii)	Fitness of materials and workmanship
Comment:	(iii)(iv)(b)(i)	The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The system will enable a structure to satisfy this Regulation. See section 3 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, the Bakor 790-11 Hot-Applied Monolithic Membrane Damp-Proofing System, 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 system must be used in combination with either Type B or C waterproofing protection.

In addition, in the opinion of the BBA, the system, when installed and used in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards for Conversions and Renovations*, taking account of other relevant guidance within the Chapter and the suitability of the substrate to receive the system.

Fulfilment of Requirements

The BBA has judged the Bakor 790-11 Hot-Applied Monolithic Membrane Damp-Proofing System to be satisfactory for use as described in this Certificate. The system has been assessed for use in forming a sandwich membrane on new or existing horizontal and vertical surfaces for basement waterproofing, or to form a damp-proof membrane (DPM) for solid floors.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. The Bakor 790-11EV Hot-Applied Monolithic Membrane Damp-Proofing System is applied in two layers, sandwiching a reinforcement layer, to provide a waterproofing layer with a nominal coating thickness of 6 mm. The system consists of:

- Bakor 790-11 Monolithic Membrane — a waterproofing membrane based on a combination of refined bitumen, synthetic rubbers, recycled rubber content and other additives
- Bauder Polyester Reinforcement Sheet — a 60 g·m⁻² spunbonded polyester reinforcing scrim
- Bauder Butyl Flashing — a 1 mm thick, flexible detailing sheet, used to reinforce the membrane at expansion joints where movement is likely to occur, and for details and upstands
- Bauder Neoprene Flashing — a 1 mm thick, flexible detailing sheet, used to reinforce the membrane at expansion joints where movement is likely to occur, and for details and upstands
- Bauder Plant E42 — a polyester-based, mineral-surfaced, root-resistant bitumen protection sheet
- Bauder AP3 Protection Sheet — a high-density polymeric protection sheet
- Bauder Quick Dry Bitumen Primer — a primer for concrete, brick, and metal substrates
- Bauder Polymer Primer — a quick drying primer
- Bauder K4E Protection Sheet — a polyester-based, mineral-surfaced, bitumen protection sheet for exposed detailing
- Bauder K5E FBS Protection Sheet — a polyester-based, mica-surfaced, bitumen heavy duty protection sheet for use under hard landscaping.

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

- Bauder AP1 Access Sheet — a reinforced, modified bitumen Access Sheet
- Bauder G4E Sheet — a torch-applied detailing base sheet
- Bauder PYE PV 200 S4 Protection Sheet — a polyester based mica-surfaced, bitumen protection sheet for use under hard landscaping

- Bauder TEC KSA Duo Underlay — a self-adhesive detailing base sheet (the subject of BBA Certificate 10/4744, Product Sheet 1)
- XPS/EPS Inverted Roof Insulation Board
- XPS Upstand Insulation Board
- Stone Wool Upstand insulation board – stone wool with a fibre-cement facing board
- Water Flow Reduction Layer (WFRL) geotextiles, such as spun bonded polyethylene
- Bauder Growing Medium — for use in roof garden, extensive and biodiverse living roof applications
- Bauder Vegetation — for use in roof garden, extensive and biodiverse living roof applications
- Paviour supports and related ancillaries
- Mastic asphalt screed for use as a protection layer, levelling coat or to add falls
- Bauder Mineral Drain
- Bauder Drainage, Protection, Moisture Retention Layers and Ancillaries.

Applications

The Bakor 790-11 Hot-Applied Monolithic Membrane Damp-Proofing System is satisfactory for use as a sandwich membrane, on new or existing horizontal and vertical surfaces, for below ground waterproofing within a structure of concrete, brickwork, blockwork or masonry (Type A waterproofing as defined in BS 8102 : 2022), or as a DPM for solid floors in accordance with the relevant clauses of CP 102 : 1973, Section 3.

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

Product assessment – key factors

The system 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

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.

Table 1 Resistance to water and water vapour

System assessed	Assessment method	Requirement	Result
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Water vapour transmission rate to BS 3177 : 1959	Value achieved	0.26 g·m ⁻² ·day ⁻¹
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Head of water to MOAT 27: 1983	No leakage after 24 hours exposure to 60 kPa	Pass

3.1.2 On the basis of data assessed, the system will adequately resist the passage of water under hydrostatic pressure and moisture into the structure and so satisfy the relevant requirements of the national Building Regulations.

3.2 Resistance to mechanical damage

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

Table 2 Resistance to mechanical damage

Product assessed	Assessment method	Requirement	Result
Bauder Plant E42	Tensile strength to BS EN 12311-1 : 2000	Value achieved	
	Longitudinal direction		1475 N·(50 mm) ⁻¹
	Transverse direction		1420 N·(50 mm) ⁻¹
Bauder Plant E42	Elongation at break to BS EN 12311-1 : 2000	Value achieved	
	Longitudinal direction		31 %
	Transverse direction		30 %
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Resistance to dynamic indentation to EOTA TR-006 : 2004	Value achieved	L ₃
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Resistance to static indentation to EOTA TR-007 : 2004	Value achieved	L ₃
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Fatigue movement to EOTA TR-008 : 2004	Watertight and less than 75 mm delamination from the substrate after 1000 cycles	Pass

3.2.2 On the basis of data assessed, the system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care is required, however, to avoid puncture by sharp objects or concentrated loads.

3.2.3 The system can be detailed to accommodate the movement of designed construction joints and crack-inducing joints. The Certificate holder must be consulted for advice on suitable designs, but such advice is outside the scope of this Certificate.

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 this system were assessed.

8.2 Specific test data were assessed as given in Table 3.

Table 3 Durability tests

System assessed	Assessment method	Requirement	Result
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Flexibility at low temperature to CAN/CGSB 37.50-M89 : 1989 Control	Value achieved	-25°C
	Heat aged for 200 days at 70°C		-5°C
	Water exposure for 180 days at 60°C		-20°C
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Resistance to static indentation to EOTA TR-007 : 2004	Value achieved	L ₃
	Water exposure for 180 days at 60°C		
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Resistance to dynamic indentation to EOTA TR-006 : 2004	Value achieved	I ₃
	Heat aged for 200 days at 70°C		
Bakor 790-11 Hot Applied Monolithic Membrane Damp Proofing System	Fatigue movement to EOTA TR-008 : 2004	Watertight and less than 75 mm delamination from the substrate after 50 cycles	Pass

8.3 Service life

Under normal service conditions, the system will provide an effective barrier to the transmission of moisture for the design 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 satisfy the performance assessed in this Certificate.

9.1.2 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 dampness does not occur.

9.1.3 Where contact with material used as a damp proof course is likely, consideration must be given to the thermal stability of that material, owing to the high temperatures reached during installation.

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 The system must be installed in accordance with this Certificate, the Certificate holder’s instructions and the relevant requirements of CP 102 : 1973 and BS 8102 : 2022.

9.2.3 In-situ structural concrete with a density lower than 1842 kg·m⁻³ (owing to substrate friability) and lightweight insulating concretes are not acceptable substrates for application of the systems.

9.2.4 Concrete or screeded surfaces must have a suitable finish, free from loosely adhering material and sharp protrusions. Concrete must be dry and dust free. The Certificate holder can advise on particular applications, but such advice is outside the scope of this Certificate. Surfaces must be conditioned with either Bauder Quick Dry Bitumen Primer or Bauder Polymer Primer, at a nominal coverage rate of between 4 and 8 m² per litre, depending on the primer used, and allowed to dry before the application of the membrane.

9.2.5 Vertical surfaces of brickwork, blockwork and, if necessary, masonry must be rendered to give an even surface. Brickwork or blockwork not rendered must be flush pointed to give a smooth surface without sudden changes in level.

9.2.6 Cakes of Bakor 790-11 Monolithic Membrane are heated in a mechanically agitated melter which has a double jacket containing either air or a heat transfer mineral oil and is fitted with thermometers to measure the melt and air/oil temperatures. Electrically operated mechanically agitated melters which are insulated between melting chamber and external frame, and is fitted with computer controlled thermometers to measure melt temperature are also acceptable for melting Bakor 790-11.

9.2.7 The nominal temperature range for the molten membrane is 180 to 200°C. The temperature of the melt must never exceed 215°C.

9.2.8 The molten membrane is discharged from the melter into a suitable container and applied to the surface using a long-handled squeegee for horizontal surfaces and a suitable spreader for vertical surfaces.

9.2.9 When used over construction joints or other minor cracks, the membrane must be reinforced with Bauder Polyester Reinforcement Sheet.

9.2.10 When used across expansion joints, the membrane must be reinforced with Bauder Butyl or Bauder Neoprene Flashing.

9.2.11 The first layer of molten membrane must have a nominal thickness of 3 mm.

9.2.12 Bauder Polyester Reinforcement Sheet is embedded by lightly brushing it into the first layer of the membrane whilst it is still warm and tacky. The reinforcement overlaps must be at least 75 mm and fully sealed by the Bakor 790-11EV Monolithic Membrane.

9.2.13 The second layer of the molten membrane, applied over the top of the reinforcement, must have a nominal thickness of 3 mm.

9.2.14 The system must be protected immediately with either a specified access or protection sheet in accordance with the Certificate holder's instructions.

9.2.15 When used for internal tanking, the membrane must be loaded against back pressure in accordance with BS 8102 : 2022.

9.3 Workmanship

Practicability of installation was assessed on the basis of the Certificate holder's information and BS 8217 : 2005. To achieve the performance described in this Certificate, installation of the system must be carried out by installers who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

As the system is confined within the structure and has suitable durability, maintenance is not required. However, it must be ensured that any damage to the system is repaired as soon as possible and before being confined within the structure. The system may be repaired by removing the damaged area and reinstating the system to the original specification. The advice of the Certificate holder must be sought, but such advice is outside the scope of this Certificate.

10 **Manufacture**

10.1 The production processes for the system 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 has undertaken to review the above measures on a regular basis through a surveillance process, to verify 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 system components are delivered to site in packaging bearing the component names, Certificate holder's name, and batch number.

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

11.2.1 Rolls must be stored upright, on a clean and level surface, away from excessive heat and kept under cover, protected from physical damage and contamination.

Supporting information in this Annex is relevant to the system 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.

CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the components under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 by BSI (Certificate FM 86932).

Bibliography

- BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*
- BS 8102 : 2022 *Code of practice for protection of below ground structures against water from the ground*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing – Code of practice*
- BS EN 12311-1 : 2000 *Flexible sheets for waterproofing – Determination of tensile properties – Bitumen sheets for roof waterproofing*
- CAN/CGSB 37.50-M89 : 1989 *Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing*
- CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*
- EN ISO 9001 : 2015 *Quality management systems – Requirements*
- EOTA TR-006 : 2004 *Determination of the resistance to dynamic indentation*
- EOTA TR-007 : 2004 *Determination of the resistance to static indentation*
- EOTA TR-008 : 2004 *Determination of the resistance to fatigue movement*
- MOAT 27 : 1983 *General directive for the assessment of roof waterproofing systems*

Conditions of Certificate

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.

British Board of Agrément

1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG

©2024

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk