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Agrément Certificate

22/6553

Product Sheet 1, Issue 1

GARLAND HIGH PERFORMANCE MODIFIED BITUMEN MEMBRANES

STRESSPLY FLEX SA ROOF WATERPROOFING MEMBRANE

This Agrément Certificate Product Sheet⁽¹⁾ relates to StressPly Flex SA Roof Waterproofing Membrane, for use as the top layer (capsheet) in a fully bonded waterproofing system on flat or pitched roofs with limited access and blue roofs on flat specifications, including protected zero fall roofs, in combination with a storm water attenuation system⁽²⁾.

(1) Hereinafter referred to as 'Certificate'.

(2) The storm water attenuation system is outside the scope of this 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 issue: 22 March 2023

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. 3537).

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

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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 StressPly Flex SA Roof Waterproofing Membrane, 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:	B4(1)	External fire spread
Comment:		The product is restricted by this Requirement, in some circumstances. See section 2 of this Certificate.
Requirement:	B4(2)	External fire spread
Comment:		On a suitable substructure, the product may enable a roof to be unrestricted under this Requirement. See section 2 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The product, including joints, will enable a roof to satisfy this Requirement. See section 3 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The product is acceptable. See section 8 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The use of the product satisfies the requirements of this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The use of the product is restricted under clauses 2.6.4 ⁽¹⁾⁽²⁾ and 2.7.2 ⁽¹⁾⁽²⁾ of these Standards, in some circumstances. See section 2 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		The product, when applied to a suitable substructure, may enable a roof to be unrestricted by clause 2.8.1 ⁽¹⁾⁽²⁾ of this Standard. See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The use of the product, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 ⁽¹⁾ and 3.10.7 ⁽¹⁾ . 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.

Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to the product 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)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The product, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 3 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The product is restricted by this Regulation, in some circumstances. See section 2 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		On a suitable substructure, the use of the product may enable a roof to be unrestricted under the requirements of this Regulation. See section 2 of this Certificate.

NHBC Standards 2023

In the opinion of the BBA, StressPly Flex SA Roof Waterproofing Membrane, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs, terraces and balconies*.

In addition, in the opinion of the BBA, the product, 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 product.

The NHBC Standards do not cover the refurbishment of existing roofs.

Fulfilment of Requirements

The BBA has judged StressPly Flex SA Roof Waterproofing Membrane to be satisfactory for use as described in this Certificate. The product has been assessed for use as the top layer (capsheet) in a fully bonded waterproofing system on flat or pitched roofs with limited access and blue roofs on flat specifications, including protected zero fall roofs, in combination with a storm water attenuation system.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. StressPly Flex SA Roof Waterproofing Membrane consists of a styrene-butadiene-styrene (SBS) polymer modified self-adhesive roofing membrane. The membrane is reinforced with non-woven composite polyester fabric stabilised with glass fibre. The bottom face of the membrane is coated with a self-adhesive elastomeric compound which adheres via pressure to the laying surface. This face is protected by a silicone release film which is removed during the application process. The upper face of the membrane is protected by mineral slates excluding one side lap, which is covered by a strip of silicone release film.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Roll length (m)	10
Mass per unit area (kg·m ⁻²)	4
Watertightness (60 kPa)	Pass
Shear resistance of joint (N per 50 mm)	
longitudinal direction	600
transverse direction	400
Maximum tensile force N per 50 mm)	
longitudinal direction	650
transverse direction	450
Elongation (%)	
longitudinal direction	35
transverse direction	45
Resistance to tear – nail (N)	
longitudinal direction	200
transverse direction	20
Dimensional stability (%)	
longitudinal direction	-0.3
transverse direction	0.1
Low temperature flexibility (°C)	-25
Flow resistance (°C)	100
Resistance to impact (mm)	1250
Resistance to static loading (kg)	15
Water vapour transmission	20,000

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:

- Garland SA Flex Base Sheet — an elastomer modified bituminous, self-adhesive underlay
- Garland SA Flex Vapour Barrier — an elastomer modified bitumen, self-adhesive vapour control layer (VCL) reinforced with 200 gsm woven glass and aluminium/polyester foil
- Garland SA Contact Primer — an SBS primer for use in preparing substrates prior to the installation of self-adhesive membranes
- Garland Insul-Lock — a polyurethane adhesive for bonding insulation
- Garland Insul-Bond — a two-part polyurethane adhesive for bonding insulation
- Garland Insul-Pro — a canister based polyurethane adhesive for bonding insulation
- Garland Garla-Prime — an asphalt-based roof deck primer.

Applications

The product is intended for use as the top layer (capsheet) in a fully bonded waterproofing system on flat or pitched roofs with limited access and blue roofs on flat specifications, including protected zero fall roofs, in combination with a storm water attenuation system⁽¹⁾.

(1) The storm water attenuation system is outside the scope of this Certificate.

Definitions for product and applications inspected

The following terms are defined for the purpose of this Certificate as:

- limited access roofs — a roof subject only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc
- flat roofs — a roof having a minimum finished fall of 1:80
- pitched roofs — a roof having a fall in excess of 1:6
- zero fall roofs — a roof having a finished fall which can vary between 0 and 1:80
- blue roofs — flat, including zero fall roofs, designed to allow controlled attenuation of rainfall during heavy and storm events, as part of sustainable urban drainage systems (SUDS).

Product assessment – key factors

The product was assessed for the following key factors, and the outcomes of the assessments are 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

Data were assessed for the following characteristics.

2.1 External fire spread

When tested to CEN/TS 1187 : 2012, Test 4 and classified to EN 13501-5 : 2016, the systems given in Table 2 achieved $B_{ROOF}(t_4)$ for slopes below 10°.

Table 2 Tested systems

Layer	System 1 ⁽¹⁾	System 2 ⁽²⁾
Substrate	18 mm OSB primed with a synthetic rubber/resin-based primer ⁽³⁾	18 mm OSB primed with a synthetic rubber/resin-based primer ⁽³⁾
Air and vapour control layer (AVCL)	3 mm modified bitumen self-adhesive AVCL ⁽³⁾	3 mm modified bitumen self-adhesive AVCL ⁽³⁾
Insulation	a range of between 30-240 mm of 30 kg·m ⁻³ polyisocyanurate (PIR) insulation board with coated glass tissue facer and backing, bonded to the AVCL with a polyurethane adhesive ⁽³⁾	a range of between 30-220 mm of 28 kg·m ⁻³ expanded polystyrene (EPS) insulation board bonded to the AVCL with a polyurethane adhesive ⁽³⁾
Base sheet	3 mm modified bitumen self-adhesive base layer ⁽³⁾	3 mm modified bitumen self-adhesive base layer ⁽³⁾
Capsheet	StressPly Flex SA, a modified bitumen self-adhesive 3.5 mm capsheet bonded to the base layer	StressPly Flex SA, a modified bitumen self-adhesive 3.5 mm capsheet bonded to the base layer

(1) Fire Test Report 21389B, Classification Report 21389D and Extended Application Report 21389C, conducted by Exova Warringtonfire. Reports available from the Certificate holder.

(2) Fire Test Report 21389G, Classification Report 21389J and Extended Application Report 21389H, conducted by Exova Warringtonfire. Reports available from the Certificate holder.

(3) These components are outside the scope of this Certificate.

2.1.1 On the basis of data assessed, the systems listed in Table 2 will be unrestricted by the documents supporting the national Building Regulations with respect to proximity to a boundary. Restrictions may apply at junctions with compartment walls.

2.1.2 A roof incorporating the product will also be unrestricted under the national Building Regulations with respect to a boundary in protected or inverted roof specifications, including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC.

2.1.3 In Wales and Northern Ireland, when used on flat roofs using a substrate designated in the supporting documents with the surface finishes listed below, the roof is also deemed to be unrestricted with respect to a boundary:

- bitumen-bedded stone chippings covering the whole surface to a depth of not less than 12.5 mm
- bitumen-bedded tiles of a non-combustible material
- sand and cement screed
- macadam.

2.1.4 The classification and permissible areas of use of other specifications should be confirmed by reference to the requirements of the documents supporting the national Building Regulations.

2.2 Reaction to fire

2.2.1 The Certificate holder has not declared a reaction to fire classification to BS EN 13501-1 : 2018 for StressPly Flex SA Roof Waterproofing Membrane.

2.2.2 On the basis of data assessed, systems incorporating StressPly Flex SA Roof Waterproofing Membrane will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.2.3 In England, the product, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a boundary, or on residential buildings more than 11 m in height or on other buildings more than 18 m in height. Restrictions apply on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.4 In Wales, the product, when used in pitches greater than 70°, excluding upstands, must not be used less than 1 m from a boundary, or on other buildings more than 18 m in height, or in some cases, on assembly and recreation buildings. These constructions must also be included in calculations of unprotected area.

2.2.5 In Scotland and Northern Ireland, for systems incorporating the product used in pitches greater than 70°, excluding upstands, that do not achieve the minimum Class E reaction to fire classification to BS EN 13501-1 : 2018, designers must seek guidance on the proposed use of the product from the relevant Building Control Body.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Weathertightness

Results of weathertightness tests are given in Table 3.

<i>Table 3 Weathertightness</i>			
Product assessed	Assessment method	Requirement	Result
Stressply Flex SA	Watertightness to BS EN 1928 : 2000	No leakage after 24 hours exposure to a 6 m head of water	Pass
Stressply Flex SA	Water vapour transmission to BS EN 1931 : 2000	Value achieved	$s_d - 265.92$ m
Stressply Flex SA	Peel resistance of joints to BS EN 12316-1 : 2000	≥ 100 N	Pass

3.1.2 On the basis of data assessed, StressPly Flex SA Roof Waterproofing Membrane, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture to the inside of a building and so satisfy the requirements of the national Building Regulations.

3.2 Resistance to wind uplift

Results of resistance to wind uplift tests are given in Table 4.

Table 4 Wind uplift results

Product assessed	Assessment method	Requirement	Result
Stressply Flex SA	Peel from substrate (concrete) to MOAT 64 : 2001	≥ 25 N per 50 mm	Pass
Stressply Flex SA Elastomer modified bituminous, self-adhesive underlay 40 mm glass tissue faced PUR PU insulation adhesive Elastomer modified bitumen, self-adhesive VCL reinforced primer SBS-based deck primer 18 mm OSB decking	Resistance to wind uplift to MOAT 64 : 4.3.2 : 2001	Design value ⁽¹⁾	3.5 kPa

(1) The value for a specific building should be calculated by a suitably competent and experienced individual in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex.

3.2.1 On the basis of data assessed, the adhesion of the bonded product is sufficient to resist the effects of wind suction, elevated temperature and thermal shock conditions likely to occur in practice and remain weathertight.

3.2.2 The resistance to wind uplift for warm roofs will be dependent on the cohesive strength of the insulation and the method by which it is secured to the roof deck. This must be taken into account when selecting a suitable insulation material.

3.3 Resistance to mechanical damage

Results of resistance to mechanical damage tests are given in Table 5.

Table 5 Mechanical damage results

Product assessed	Assessment method	Requirement	Result
Stressply Flex SA	Dynamic indentation to EOTA TR-006 : 1999	Value achieved	I ₃
Stressply Flex SA	Static indentation to BS EN 12730 : 2015, Method A (EPS)	15 kg declared	Pass
Stressply Flex SA	Static indentation to BS EN 12730 : 2015 Method B (concrete)	15 kg declared	Pass
Stressply Flex SA	Tensile strength to EN 12311-1 : 2000 longitudinal direction	650 N per 50 mm ± 20%	Pass
	transverse direction	450 N per 50 mm ± 20%	Pass
Stressply Flex SA	Elongation to EN 12311-1 : 2000 longitudinal direction	35% ± 20% absolute	Pass
	transverse direction	45% ± 20% absolute	Pass
Stressply Flex SA	Tear strength to EN 12310-1 : 2000 longitudinal direction	> 150 N	Pass
	transverse direction		Pass

3.3.1 On the basis of data assessed, Stressply Flex SA Waterproofing Membrane can accept, without damage, the foot traffic and light concentrated loads associated with installation and maintenance and the effects of minor movement likely to occur in practice while remaining weathertight. Reasonable care must be taken to avoid puncture by sharp objects or concentrated loads.

3.3.2 Where traffic in excess of the examples given in section 3.3.1 is envisaged, such as for maintenance of lift equipment, a walkway must be provided (for example, using concrete slabs supported on bearing pads).

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 Specific test data were assessed as given in Table 6.

Products assessed	Assessment method	Requirement	Result
Stressply Flex SA upper surface lower surface	Low temperature flexibility to EN 1109 : 2013 – control	-15°C	Pass
		-15°C	Pass
Stressply Flex SA upper surface lower surface	Heat aged for 240 days at 70°C	-15°C	Pass
		-15°C	Pass
Stressply Flex SA	Heat resistance to EN 1110 : 2010 – control	100°C	Pass
Stressply Flex SA	Heat aged for 240 days at 70°C	90°C	Pass
Stressply Flex SA	Peel from substrate (concrete) to MOAT 64 : 2001 – heat aged for 28 days at 80°C	≥ 25 N per 50 mm	Pass

8.3 Service life

8.3.1 Under normal service conditions, the product will have a life of at least 30 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 Localised loss of the mineral surfacing may occur, after some years, in areas where complex detailing of the roof design is incorporated.

PROCESS ASSESSMENT

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

9 Design, installation, workmanship and maintenance

9.1 Design

The design process was assessed, and the following requirements apply in order to satisfy the performance assessed in this Certificate⁽¹⁾.

(1) The storm water attenuation system is outside the scope of this Certificate.

9.1.1 Decks to which the product is to be applied must comply with the relevant requirements of BS 6229 : 2018, BS 8217 : 2005 and, where appropriate, *NHBC Standards 2023*, Chapter 7.1.

9.1.2 For design purposes of flat roofs, twice the minimum finished fall must be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls.

9.1.3 Structural decks to which the product is to be applied must be suitable to transmit the dead and imposed loads experienced in service. Allowance needs to be made for loading deflections to ensure that the free drainage of water is maintained.

9.1.4 Imposed loads, dead loading and wind loads must be calculated by a suitably experienced and competent individual in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005, and their UK National Annexes.

9.1.5 Blue roofs must be designed to allow controlled attenuation of rainfall during heavy and storm events, as part of sustainable urban drainage systems (SUDS) and in accordance with the *NFRC Technical Guidance Note for the construction and design of Blue Roofs – Roofs and podiums with controlled temporary water attenuation*.

9.1.6 Insulation materials to be used in conjunction with the product must be in accordance with the Certificate holder's instructions and be either:

- as described in the relevant clauses of BS 6229 : 2018, or
- the subject of a current BBA Certificate and be used in accordance with, and within the limitations of, that Certificate.

9.2 Installation

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

9.2.1 Installation must be carried out in accordance with this Certificate, the Certificate holder's instructions and the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 8217 : 2005. A summary of instructions and guidance are provided in Annex A.

9.2.2 The NHBC requires that Stressply Flex SA Waterproofing Membrane, once installed, be inspected in accordance with *NHBC Standards 2023*, Chapter 7.1, Clause 7.1.11, including the use of an appropriate integrity test, where required. Any damage to the products assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain product performance.

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, the product must only be installed by contractors who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

Ongoing satisfactory performance of the product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

The following requirements apply in order to achieve the performance assessed in this Certificate:

9.4.1 The product must be the subject of six-monthly inspections and maintenance in accordance with the recommendations of BS 6229 : 2018, Chapter 7, and the Certificate holder's own maintenance requirements, where relevant, to ensure continued satisfactory performance.

9.4.2 In the event of damage, the product must be repaired in accordance with the Certificate holder's instructions and this Certificate.

10 Manufacture

10.1 The production process for the product has been assessed, and provides 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 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 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 product and company names. The rolls are packed on pallets and shrink-wrapped in polythene.

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

11.2.1 The product should be kept dry, at room temperature and protected from the elements.

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.

CLP Regulations

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

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the product, in accordance with Designated Standard EN 13707 : 2013.

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with Designated Standard EN 13707 : 2013.

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 Bureau Veritas (Certificate 191934).

Additional information on installation

General

Installation must be in accordance with the Certificate holder's instructions and this Certificate.

A.1 Deck surfaces must be dry, clean and free from sharp projections such as nail heads and concrete nibs.

A.2 The product may be laid in conditions normal to roofing work and must not be laid in rain, snow or heavy fog. If the temperature is below 5°C, suitable precautions must be taken against the formation of condensation on the substrate.

A.3 The waterproofing layers must always be installed with staggered overlaps and in such a manner that no counter-seams in the direction of the outlets are made.

A.4 At falls in excess of 5° (1:11), precautions against slippage, and requirements for mechanical fixing as required by BS 8217 : 2005, must be observed.

A.5 If the roof is likely to be subjected to uncontrolled pedestrian access, the substructure must satisfy the requirements of the relevant clauses of BS 8217 : 2005, and one of the surface finishes described in clause 6.12 of the Code of Practice must be used.

A.6 When using mineral surface-finished membranes on roofs with limited access, further surface protection is not required.

Procedure

A.7 Starting at the low point of the roof, the membrane is unrolled in the desired position. The membrane is folded length-wise back onto itself, the split back release film is removed from the exposed side and the membrane is gradually pushed into place.

A.8 Even pressure is applied along the entire length of the membrane from the centre to outer edges to avoid air pockets or wrinkles.

A.9 The process is repeated for the other side and pressure firmly applied with a suitable weighted roller to ensure 100% adhesion.

A.10 End laps and side laps must be sealed using a hot-air gun with a flat nozzle and the seam rolled for 100% positive adhesion.

A.11 The membrane laps are heat welded, ensuring that a 50 mm gap is maintained between the heat gun nozzle and seam roller for a consistent weld.

A.12 A minimum of 150 mm end laps and 100 mm side laps must be obtained to ensure a watertight seal has been achieved.

A.13 Detailing is carried out in accordance with the Certificate holder's instructions.

Bibliography

- BS 6229 : 2018 *Flat roofs with continuously supported flexible waterproof coverings — Code of practice*
- BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*
- BS 8000-4 : 1989 *Workmanship on building sites — Code of practice for waterproofing*
- BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*
- BS EN 1928 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*
- BS EN 1931 : 2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*
- BS EN 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1991-1-3 : 2003 + A1 : 2015 *Eurocode 1 — Actions on structures — General actions — Snow loads*
- NA + A2 : 18 to BS EN 1991-1-3 : 2003 + A1 : 2015 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex to *Eurocode 1 — Actions on structures — General actions — Wind actions*
- BS EN 12316-1 : 2000 *Flexible sheets for waterproofing — Determination of peel resistance of joints — Part 1 : Bitumen sheets for roof waterproofing*
- BS EN 12730 : 2015 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*
- BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*
- CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*
- EN 1109 : 2013 *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*
- EN 1110 : 1999 *Flexible sheets for waterproofing. Bitumen sheets for roof waterproofing. Determination of flow resistance at elevated temperature*
- EN 12310 -1 : 1999 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Part 1 : Bitumen sheets for roof waterproofing*
- EN 12311-1 : 1999 *Flexible sheets for waterproofing — Determination of tensile properties — Part 1 : Bitumen sheets for roof waterproofing*
- EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests*
- EN 13707 : 2013 *Flexible sheets for waterproofing — Reinforced bitumen sheets for roof waterproofing — Definitions and characteristics*
- EN ISO 9001 : 2015 *Quality management systems — Requirements*
- EOTA TR 006 *Determination of the resistance to dynamic indentation — May 1999*
- MOAT 64 : 2001 *UEAtc Technical Guide for the Assessment of Roof Waterproofing Systems made of Reinforced APP or SBS Polymer Modified Bitumen Sheets*

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.