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Agrément Certificate
22/6065
Product Sheet 1

FLEX-R WATERPROOFING SYSTEMS

CLASSICBOND NON-REINFORCED EPDM ROOF WATERPROOFING SYSTEMS

This Agrément Certificate Product Sheet(1) relates to ClassicBond Non-reinforced EPDM Roof Waterproofing Systems, for use on flat and pitched roofs. Applications include loose-laid and ballasted, fully adhered, inverted roof gardens and green roofs.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Weathertightness — the systems will resist the passage of moisture into the interior of a building (see section 6).
Properties in relation to fire — the systems may enable a roof to be unrestricted under the national Building Regulations (see section 7).
Resistance to wind uplift — the systems will resist the effects of any likely wind suction acting on the roof (see section 8).
Resistance to mechanical damage — the systems will accept the limited foot traffic and loads associated with installation and maintenance, and minor structural movements occurring in service (see section 9).
Resistance to root penetration — the systems will adequately resist plant root penetration (see section 10).
Durability — under normal service conditions, the systems will provide a durable waterproof covering with a service life of at least 35 years (see section 12).

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

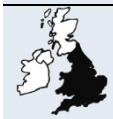
On behalf of the British Board of Agrément

Date of First Issue: 27 October 2022

Hardy Giesler
Chief Executive Officer

Regulations

In the opinion of the BBA, ClassicBond Non-reinforced EPDM Roof Waterproofing Systems, 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	**B4(1)**	**External fire spread**
Comment:		The systems are restricted by this Requirement in some circumstances. See section 7.5 of this Certificate.
Requirement:	**B4(2)**	**External fire spread**
Comment:		On suitable substructures, the use of the systems may enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.4 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The systems, including joints, will enable a roof to satisfy this Requirement. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The systems are acceptable. See section 12 and the *Installation* 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 systems satisfies the requirements of this Regulation. See sections 11.1 and 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	2.6	Spread to neighbouring buildings
Comment:		The systems are restricted under clause 2.6.4(1)(2) of this Standard in some circumstances. See section 7.6 of this Certificate.
Standard:	2.8	Spread from neighbouring buildings
Comment:		When applied to a suitable substrate, the systems may enable a roof to be unrestricted under clause 2.8.1(1)(2) of this Standard. See sections 7.1 to 7.4 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The systems, including joints, will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1(1)(2) and 3.10.7(1)(2). See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The systems 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 made in relation to the systems 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 systems are acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The systems, including joints, will enable a roof to satisfy the requirements of this Regulation. See section 6 of this Certificate.
Regulation:	**36(a)**	**External fire spread**
Comment:		The systems are restricted by this Regulation in some circumstances. See section 7.5 of this Certificate.
Regulation:	**36(b)**	**External fire spread**
Comment:		On suitable substructures, the use of the systems may enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.4 of this 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.

See sections: 1 *Description* (1.1) and 3 *Delivery and site handling* (3.3 and 3.4) of this Certificate.

Additional Information

NHBC Standards 2022

In the opinion of the BBA, ClassicBond Non-reinforced EPDM Roof Waterproofing Systems, 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*.

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

CE marking

The Certificate holder has taken the responsibility of CE marking the systems in accordance with harmonised European Standard BS EN 13956 : 2012.

Technical Specification

1 Description

1.1 ClassicBond Non-reinforced EPDM Roof Waterproofing Systems comprise membranes which are manufactured to the characteristics given in Table 1 and are available in two forms: standard ClassicBond (dusted) and ClassicBond Kleen (a clean membrane used to aid joint splicing).

Table 1 Nominal characteristics

Category	ClassicBond membrane	
	1.2	1.5
Thickness (mm)	1.2	1.5
Roll width (m)	1.37, 3.05, 4.5, 5.1, 6.10, 7.6, 9.15, 12.20 and 15.25	1.37, 3.05, 4.5, 5.1, 6.10, 7.6, 9.15, 12.20 and 15.25
Length (m)	15.25, 30.50, 38.10, 45.72 and 61.00	15.25, 30.50, 38.10 and 45.72
Mass per unit area ($kg \cdot m^{-2}$)	1.2	1.9
Tensile strength ($N \cdot mm^{-2}$)	≥ 6	≥ 6
Elongation (%)	≥ 350	≥ 350
Tear resistance (N)	≥ 25	≥ 25
Dimensional stability (%)	≤ 0.5	≤ 0.5
Colour	grey/black	grey/black

1.2 For an alternative method of splicing, the membranes are available with a factory-applied tape (FAT).

1.3 A white version of the membranes, ClassicBond-White, is available where the top laminate is white. It is manufactured to the same specifications and has the same nominal properties as the black version.

1.4 Other products for use with the systems include:

- Bonding Adhesive 90.8.30A — a solvent-based contact cement, based on polychloroprene (Neoprene) for bonding the EPDM sheet to the substrate
- Splicing Cement EP95 — a cement, based on solvent, butyl rubber and other synthetic resins which is cold-applied to bond laps between EPDM sheets and/or EPDM flashing
- SecurTAPE — a synthetic rubber-based tape for use in lap jointing
- Factory-applied Tape (FAT) — 75 or 150 mm wide SecurTAPE, applied in the factory and used to splice adjoining sheets together on site
- HP-250 Primer — a primer for use with Splicing Cement, SecurTAPE or pressure-sensitive products in preparation of membrane surface
- LV-600 Primer — an alternative primer for use with Splicing Cement, SecurTAPE or pressure-sensitive products in preparation of membrane surface
- Splice Cleaner — a synthetic rubber/resin solution for cleaning EPDM prior to bonding laps, except when splice tape is used.

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

- EPDM Elastoform and ClassicBond-White Flashing — non-vulcanised (uncured) EPDM 1.5 mm thick with a polythene backing, available in widths from 150 to 450 mm
- Pressure-sensitive products — a range of detailing products (such as flashings and corners) with a pressure adhesive incorporated
- In-seam Sealant — a rubber-based sealant applied within lap joints made using Splicing Cement EP95 only
- Lap Sealant — an EPDM mastic to form a feathered edge along lap edges at flashings and details and at field splices when Splicing Cement EP95 is used
- Water Cut-off Mastic — a synthetic rubber/resin sealing mastic to act as a sealing agent between the EPDM or flashing sheets and accessories
- Walkway sheeting — an 8 mm thick styrene butadiene rubber (SBR) sheet, to give additional protection in areas of high accessibility
- Colour coating — an acrylic, elastic roof coating to provide optional roof colours
- ClassicBond-White accessories — ClassicBond-White splicing cement, ClassicBond-White Splice Cleaner and ClassicBond-White Lap Sealant are used with ClassicBond-White and serve the same purpose as their counterparts
- Pourable sealer — a two-component, polyurethane-based sealant, for use in areas where flashing is difficult to apply
- HP Protective Mat — a polypropylene needle-punched fabric for use as a protection or separation layer
- RUSS strip — a reinforced EPDM membrane strip which is fastened to the substrate. The membrane is adhered to this at the roof perimeter and penetrations

- Fasteners and fastening plates — for use in mechanically fastened applications
- Termination bars — for fixing membrane at roof perimeters.

2 Manufacture

2.1 ClassicBond Non-reinforced EPDM Roof Waterproofing Systems are manufactured by blending EPDM (ethylene-propylene-diene monomer), processing oils and other additives. The membranes are produced by calendering or extruding, then vulcanising.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out 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.

3 Delivery and site handling

3.1 The membranes are delivered to site in rolls wrapped in polythene. Provision may be required for load spreading and handling at roof level when large area sheets are used. The wrapper bears the product name, identification and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored on the delivery pallet, horizontally in a cool, dry area and under cover. The membranes should only be unwrapped from packaging at the time of installation and unused material returned to its packaging until required.

3.3 Accessories are normally delivered in the quantities given in Table 2.

Table 2 Delivery details

Accessory	Quantity and packaging
Splicing Cement EP95 and HP-250 Primer	3.8 or 9.5 litre cans
Splice Cleaner and Bonding Adhesive 90.8.30A	3.8 or 18.9 litre cans
Lap Sealant	25-tube cartons
LV-600 Primer	3.8 litre cans

3.4 The Certificate holder has taken the responsibility of classifying and labelling the systems components under the *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).

3.5 EPDM flashing rolls should be stored in a clean, dry position and in temperatures between 5 and 25°C. The flashing cures gradually and should not be stored for more than six to nine months. As the flashing cures it will become less flexible and, although this does not affect its waterproofing characteristics, it does become more difficult to form at details.

3.6 Bonding adhesive 90.8.30A, Splicing Cement EP95, Lap Sealant and Water Cut-off Mastic should be stored in a dry place in temperatures between 5 and 25°C. Site storage of these products should not exceed six months.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on ClassicBond Non-reinforced EPDM Roof Waterproofing Systems.

Design Considerations

4 General

4.1 ClassicBond Non-reinforced EPDM Roof Waterproofing Systems are satisfactory for use as:

- a loose-laid and ballasted waterproofing layer, mechanically fastened at edges and upstands, on flat roofs up to a maximum fall of 1:6 with limited access
- a fully bonded waterproofing layer, mechanically fastened at edges and upstands, on flat and pitched roofs with limited access
- a loose-laid system to the inverted roof concept, on flat roofs with limited access.
- green roofs and roof gardens, when used with a suitable root barrier.

4.2 Decks to which the systems are to be applied must comply with the relevant requirements of BS 6229 : 2018 and, where appropriate, *NHBC Standards* 2022, Chapter 7.1.

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

- roof garden (intensive) — a roof with a substantial layer of growing medium with planting that can include shrubs and trees, generally accessible to pedestrians
- green roof (extensive) — a roof with a shallow layer of growing medium planted with low-maintenance plants such as mosses, sedums, grasses and some wild flower species.

4.4 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc. Where traffic in excess of this is envisaged, additional protection to the membrane must be provided (see section 9 of this Certificate and the relevant clauses of the Certificate holder's installation instructions).

4.5 Flat roofs are defined for the purpose of this Certificate as those having a minimum finished fall of 1:80(1). For design purposes, twice the minimum finished fall should be assumed, unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.

(1) *NHBC Standards* 2022 require a minimum fall of 1:60 for green roofs and roof gardens.

4.6 Pitched roofs are defined for the purpose of this Certificate as those having a fall in excess of 1:6.

4.7 Contact with bituminous, coal tar and oil-based products must be avoided as the membrane is incompatible with lower grades of bitumen. If contact with such products is likely, a separating layer must be interposed before installing the waterproof sheet. Where doubt arises, the advice of the Certificate holder should be sought.

4.8 Recommendations for the design of green roofs and roof garden specifications are available within the latest edition of *The GRO Green Roof Guide — Green Roof Code of Best Practice for the UK*, issued by The Green Roof Organisation (GRO).

4.9 Structural decks for inverted roofs, green roofs and roof gardens must be suitable to transmit the dead and imposed loads experienced in service.

4.10 Imposed loads, dead loading and wind loads specifications must be calculated by a suitable experienced and competent individual, in accordance with BS EN 1991-1-1 : 2002, BS EN 1991-1-3 : 2018 and BS EN 1991-1-4 : 2010 and their UK National Annexes.

4.11 The drainage systems for inverted roofs, green roofs or roof gardens must be correctly designed, and the following points should be addressed:

- provision made for access for maintenance purposes
- dead loads for green roof and roof gardens can increase if the drains become partially or completely blocked causing waterlogging of the drainage layer
- additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs – Drainage and U value corrections.*

4.12 In inverted roof specifications, the ballast requirements must be calculated by a suitably experienced and competent individual, in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. Additional guidance for inverted roof specifications is given in BBA Information Bulletin No 4 *Inverted roofs — Drainage and U value corrections.*

4.13 Insulation systems or materials used in conjunction with the systems must be approved by the Certificate holder and 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.

4.14 If rigid glass fibre or mineral wool roof insulation products are used in conjunction with the systems, they must be overlaid with 13 mm thick fibreboard unless otherwise authorised by the Certificate holder.

4.15 The NHBC requires that the roof membranes, once installed, are inspected in accordance with *NHBC Standards* 2022, Chapter 7.1, Clause 7.1.11, and undergo an appropriate integrity test, where required. Any damage to the membrane is repaired in accordance with section 14 of this Certificate and reinspected.

5 Practicability of installation

Installation of the systems must only be carried out by installers trained and approved by the Certificate holder.

6 Weathertightness

The systems, including joints, when completely sealed and consolidated, will adequately resist the passage of moisture into the interior of a building and so enable a roof to comply with the requirements of the national Building Regulations.

7 Properties in relation to fire

7 .1 When tested flat to DD CEN/TS 1187 : 2012, Test 4, and classified to BS EN 13501-5 : 2016, the following systems achieved Class B_{ROOF}(t4), and so are unrestricted with respect to proximity to a boundary by the documents supporting the national Building Regulations:

#	Substrate	Primer	VCL	Insulation type (thickness - mm)	Fixing method	Adhesive	Membrane
1	OSB 18 mm	FG 35	Alutrix 600 0.6 mm	PIR (150)	MF	90.8.30A	ClassicBond Kleen 1.5
2	Plywood 18 mm	-	-	-	-		ClassicBond 1.2
3		-	-	-	-		ClassicBond 1.5

7.2 When tested flat to BS 476-3 : 2004, the following systems achieved an EXT. F. AC rating, and so are also unrestricted with respect to proximity to a boundary by the documents supporting the national Building Regulations:

#	Substrate	VCL	Insulation type (thickness - mm)	Fixing method	Adhesive	Membrane
1	OSB 18 mm	Polyethylene 300 µm	PIR Glass-faced (100)	MF	90.8.30A	ClassicBond 1.2
2		-	PIR Al-faced (100)			

7.3 A roof incorporating the systems will also be unrestricted under the national Building Regulations with respect to proximity to a boundary in the following circumstances:

- when used in protected or inverted roof specifications including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC
- a roof garden covered with a drainage layer of gravel 100 mm thick and a soil layer 300 mm thick

- irrigated roof gardens and green roofs.

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

7.5 In England, Wales and Northern Ireland, the systems, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings that have a storey at least 18 m above ground level and which contain one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools and additionally in Northern Ireland, nursing homes and places of lawful detention, and proximity to boundary restrictions apply in some cases.

7.6 In Scotland, the systems, when used in pitches of greater than 70°, excluding upstands, should not be used on buildings that have a storey more than 11 m above ground level and proximity to boundary restrictions apply in some cases.

7.7 If allowed to dry, plants used in a roof garden may allow flame spread across the roof. This should be taken into consideration when selecting the plants. Appropriate planting irrigation and/or protection must be applied to ensure the overall fire rating of the roof is not compromised.

8 Resistance to wind uplift

8.1 The adhesion of adhered systems is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice. Where any doubt exists regarding suitability of substrate, the advice of the Certificate holder should be sought.

8.2 Where the membrane is adhered to insulation boards, the resistance to wind uplift 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.

8.3 The ballast requirements for loose-laid and ballasted systems must be calculated by a suitably experienced and competent individual, in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex. The membrane should always be ballasted with a minimum depth of 50 mm of aggregate. In areas of high wind exposure, the Certificate holder's advice should be sought. Alternatively, concrete slabs on suitable supports can be used.

8.4 The soil used in roof gardens and ballast on inverted/protected roofs must not be of a type that will be removed or become delocalised owing to wind scour experienced on the roof.

8.5 It should be recognised that the type of plants used in roof gardens could significantly affect the expected wind loads experienced in service.

9 Resistance to mechanical damage

9.1 The membranes can accept the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 Where traffic in excess of this is envisaged, such as for maintenance of lift equipment, a layer of 8 mm thick SBR Walkway sheeting should be provided in accordance with the Certificate holder's instructions.

9.3 The systems are capable of accepting minor structural movement while remaining weathertight.

10 Resistance to root penetration

When used with a suitable root barrier, the systems and their joints are resistant to root penetration and can be used in a roof waterproofing system for roof gardens and green roofs.

11 Maintenance

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

11.2 Guidance is available within the latest edition of *The GRO Green Roof Code – Green Roof Code of Best Practice for the UK.*

11.3 Where damage has occurred it must be repaired in accordance with section 16 and the Certificate holder's instructions.

12 Durability

Under normal service conditions, the ClassicBond Non-reinforced EPDM Roof Waterproofing Systems will have a service life of at least 35 years.

Installation

13 General

13.1 Installation of ClassicBond Non-reinforced EPDM Roof Waterproofing Systems must be carried out by trained installers and approved by the Certificate holder, in accordance with the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989 and BS 8217 : 2005, the Certificate holder's instructions and this Certificate.

13.2 Substrates to which the systems are applied must be sound, dry, clean, and free from sharp projections such as nail heads and concrete nibs. When the systems are to be laid on a rough substrate, a loose-laid, non-woven polyester fleece (minimum 150 $g \cdot m^{-2}$) must be placed over the substrate.

13.3 Installation should not be carried out during inclement weather (eg rain, fog or snow). When the temperature is below 5°C suitable precautions against surface condensation must be taken.

13.4 Where contact with low-grade bitumen, coal tar or oil-based products is likely, an isolating layer should be interposed between the product and the substrate. If compatibility with other products is in doubt, the advice of the Certificate holder should be sought.

13.5 The membrane must be mechanically fastened around the perimeter of the roof and around any penetration of the sheet, using fastening plates or reinforced universal securement strip (RUSS).

13.6 When using a loose-laid specification, account should be taken in the design of the deck, of the extra dead loading owing to the weight of the aggregate.

14 Procedure

Loose-laid and ballasted

14.1 The 1.2 mm thick EPDM membranes may be used for the loose-laid application, but only on roofs with a fall of between 1:80 and 1:6.

14.2 The membrane is mechanically fastened around the perimeter and penetrations (see section 13.5). Lap jointing and flashing is carried out as detailed in sections 15.1 to 15.8 (seaming procedure), and sections 15.9 to 15.12 (flashing).

14.3 Loose-laid applications should be covered by at least 50 mm of river-washed, well-rounded gravel. If crushed stone ballast is used, a protective sheet should be laid between the membrane and the aggregate. In areas of high wind

exposure, paving slabs may be considered for use at a distance of one metre from the perimeter, to avoid damage to the membranes owing to wind uplift.

14.4 An alternative method of ballasting is to use concrete paving, maximum size 600 by 600 mm. A protective sheet (minimum 150 g·m^{-2}) must be laid between the EPDM and the supports.

14.5 When the membrane is to be laid directly onto a concrete deck, a protective sheet must be laid first. This is not required if insulation, a minimum of 19 mm thick, is to be laid immediately under the membrane. When used as the waterproofing layer in a roof designed to the inverted roof concept, a protective sheet must be laid between the concrete deck and the membrane.

Fully bonded (adhered)

14.6 The membrane is used for fully adhered applications on roofs with a minimum finished fall in excess of 1:80.

14.7 All insulation boards are attached to the structural deck by bitumen bond, adhesives, or mechanical fasteners as appropriate to the type and thickness.

14.8 When used as a fully adhered system, the resistance to wind uplift will be limited by the cohesive strength of the insulation and the method of attachment. These factors should be taken into account when selecting the insulation material. Polyurethane insulation boards must be mechanically fixed, bonded in a polyurethane adhesive or bitumen bonded to prevent bowing.

14.9 The fully adhered application may not be used directly onto insulation materials (eg polystyrene) which would be adversely affected by the solvent in the adhesive, or onto bituminous materials, without consulting the manufacturer.

14.10 A layer of bonding adhesive is applied to both the substrate and the membrane by means of a roller at an application rate of 0.75 litres per m^2. When the adhesive has reached its tacky point, the membrane is applied to the substrate and rolled to ensure a full bond and that no air has been trapped beneath the membrane.

14.11 The membrane is mechanically fastened around the perimeter and penetrations (see section 13.5). The laps are sealed and the flashing installed (see sections 15.1 to 15.8 and sections 15.9 to 15.12 respectively).

15 Details

Seaming procedure (Splicing Cement)

15.1 At laps, the top sheet is folded back by about 300 mm and both surfaces of the lap are cleaned with Splice Cleaner, HP-250 Primer or LV-600 Primer. Splicing Cement EP95 is applied to both surfaces by roller to give an even coverage, and must be allowed to dry until tacky. A continuous 4 mm bead of In-seam Sealant is applied 12 mm in from the back edge of the splice. The top sheet is rolled back down towards the bottom sheet and joined by applying firm hand pressure.

15.2 The lap is rolled with a steel or silicone roller, applying positive pressure, towards the outer edge of the lap. The edge is cleaned using Splice Cleaner. After verification that a good seal has been achieved, a bead of Lap Sealant is applied to the exposed edge of the lap.

Seaming procedure (SecurTAPE)

15.3 Dirt and excess dust is cleaned from the area of the splice in accordance with the Certificate holder's instructions. The area is then cleaned using either HP-250 or LV-600 Primer, and allowed to dry.

15.4 The bottom sheet is marked 13 mm from the edge of the top sheet along the entire length of the splice. The tape is aligned with the marked line and pressed down using firm, even hand pressure, leaving the top release liner in place.

15.5 The minimum splice width should be 50 mm, with a minimum of 3 mm of tape extending beyond the splice edge.

15.6 The top release liner is removed and the top sheet is allowed to fall freely onto the exposed tape. The top sheet is pressed onto the tape using firm, even hand pressure across the splice towards the outer edge of the lap.

15.7 The lap is rolled with either a steel or silicone roller, applying positive pressure, towards the outer edge of the lap, and not parallel to it. For lap joints at details, the edge is cleaned using Splice Cleaner, and a bead of Lap Sealant applied to the exposed edge of the lap.

Seaming procedure (FAT)

15.8 The rolls are laid out in accordance with the Certificate holder's instructions. The release film on the tape is removed and the splice primed prior to consolidation of the joint.

Flashing

15.9 Concurrently with the installation of the EPDM membrane, the EPDM flashing is applied. The flashing is first bonded to the horizontal EPDM membrane and lapped, according to the procedure in sections 15.1 to 15.7, with minimum lap widths of 75 mm. A continuation of the deck membrane may be used for flashing, as is the practice when RUSS strip is used.

15.10 The flashing is adhered to the vertical surface of the wall using bonding adhesive or, alternatively, using the pressure-sensitive flashings.

15.11 The flashing is mechanically fastened at its upper edge and protected by dressing back to the wall and covering with coping stones, or by the use of a counter-flashing.

15.12 Advice for specific flashing requirements is available from the manufacturer.

16 Repair

In the event of damage, repairs can be carried out by cleaning the area around the damage and applying a patch of the product as prescribed in the Certificate holder's instructions (see section 14).

Technical Investigations

17 Tests

17.1 Tests on the membranes were conducted and the results assessed to determine:

- water vapour transmission
- tensile strength/elongation
- nail tear strength
- tear strength
- low temperature flexibility
- dimensional stability
- static loading
- dynamic impact
- fatigue cycling
- heat ageing
- ozone resistance
- UV ageing

In order to assess:

- robustness during service
- vapour transmission properties
- durability.

17.2 Tests on joints produced using Splicing Cement EP95, SecurTAPE HP-250 and SecurTAPE LV-600 were conducted to determine:

- shear strength of joints
- T-peel for HP-250 and LV-600.

18 Investigations

18.1 Existing data on fire performance of the membrane were assessed.

18.2 A user survey was performed to assess the performance of the membrane in the UK.

18.3 Additional results of test data on the jointing system were assessed.

18.4 The manufacturing process was evaluated, and details were obtained of the quality and composition of the materials used.

18.5 A 30-year-old existing site was visited to assess the durability of the EPDM membranes.

Bibliography

BS 476-3 : 2004 Fire tests on building materials and structures — *Classification and method of test for external fire exposure to roofs*

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 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 + A1 : 2015 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 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

BS EN 13956 : 2012 *Flexible sheet for waterproofing – Plastic and rubber sheet for roof waterproofing – Definitions and characteristics*

DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

19 Conditions

19.1 This Certificate:

- relates only to the product/system 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.

19.2 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.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system 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.

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

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

19.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system 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.