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**Agrément Certificate**

**06/4397**

Product Sheet 2 Issue 8

### VAPR-FREE BREATHER MEMBRANES

### FOR USE IN COLD NON-VENTILATED ROOFS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to VapR-free Breather Membranes for use in cold non-ventilated roofs, flexible three-layer polypropylene underlays in dwellings for use in pitched roof of up to 70° pitch.

(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 products described herein. These products 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 Eighth issue: 8 January 2024  
Originally certified on 29 March 2007

Hardy Giesler  
Chief Executive Officer

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

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

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

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

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

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## SUMMARY OF ASSESSMENT AND COMPLIANCE

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

### Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that VapR-free Breather Membranes for use in cold non-ventilated roofs if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



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

|                     |              |  |
|---------------------|--------------|--|
| <b>Requirement:</b> | <b>B3(4)</b> | <b>Internal fire spread</b>  |
| Comment:            |              | The products can contribute to satisfying this Requirement. See section 2 of this Certificate.         |
| <b>Requirement:</b> | <b>C2(b)</b> | <b>Resistance to moisture</b>  |
| Comment:            |              | The products will contribute to a roof satisfying this Requirement. See section 3 of this Certificate. |
| <b>Requirement:</b> | <b>C2(c)</b> | <b>Resistance to moisture</b>  |
| Comment:            |              | The products can contribute to a roof satisfying this Requirement. See section 3 of this Certificate.  |
| <b>Regulation:</b>  | <b>7(1)</b>  | <b>Materials and workmanship</b>   |
| Comment:            |              | The products are acceptable. See sections 8 and 9 of this Certificate.                                 |



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

|                    |             |  |
|--------------------|-------------|--|
| <b>Regulation:</b> | <b>8(1)</b> | <b>Fitness and durability of materials and workmanship</b>   |
| Comment:           |             | The products can contribute to a roof satisfying this Regulation. See sections 8 and 9 of this Certificate.  |
| <b>Regulation:</b> | <b>9</b>    | <b>Building standards - construction</b>   |
| Standard:          | 2.4         | Cavities   |
| Comment:           |             | The products can contribute to satisfying this Standard with respect to clause 2.4.2 <sup>(1)(2)</sup> . See section 2 of this Certificate.  |
| Standard:          | 3.10        | Precipitation  |
| Comment:           |             | The products will contribute to a roof satisfying clauses 3.10.1 <sup>(1)(2)</sup> of this Standard. See section 3 of this Certificate.  |
| Standard:          | 3.15        | Condensation   |
| Comment:           |             | The products can contribute to limiting the risk of interstitial condensation, with reference to clauses 3.15.1 <sup>(1)(2)</sup> , 3.15.3 <sup>(1)(2)</sup> and 3.15.7 <sup>(1)(2)</sup> of this Standard. See section 3 of this Certificate. |
| Standard:          | 7.1(a)      | Statement of sustainability  |
| Comment:           |             | The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.                   |
| <b>Regulation:</b> | <b>12</b>   | <b>Building standards - conversions</b>  |
| Comment:           |             | Comments in relation to the products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .   |

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



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

|                    |                    |   |
|--------------------|--------------------|---|
| <b>Regulation:</b> | <b>23(1)(a)(i)</b> | <b>Fitness of materials and workmanship</b>   |
| Comment:           | <b>(iii)(b)(i)</b> | The products are acceptable. See sections 8 and 9 of this Certificate.                                |
| <b>Regulation:</b> | <b>28(b)</b>       | <b>Resistance to moisture and weather</b>   |
| Comment:           |                    | The products will contribute to a roof satisfying this Regulation. See section 3 of this Certificate. |
| <b>Regulation:</b> | <b>29</b>          | <b>Condensation</b>   |
| Comment:           |                    | The products can enable a roof to satisfy this Regulation. See section 3 of this Certificate.         |
| <b>Regulation:</b> | <b>35(4)</b>       | <b>Internal fire spread – structure</b>   |
| Comment:           |                    | The products can contribute to satisfying this Regulation. See section 2 of this Certificate.         |

### Fulfilment of Requirements

The BBA has judged VapR-free Breather Membranes for use in cold non-ventilated roofs to be satisfactory for use as described in this Certificate. The products have been assessed as for use as roof tile underlays in dwellings in cold non-ventilated pitched roofs of up to 70° pitch.

### ASSESSMENT

#### Product description and intended use

The Certificate holder provided the following description for the product under assessment. VapR-free Breather Membranes for use in cold non-ventilated roofs are flexible three-layer polypropylene underlays in dwellings for use in pitched roofs.

The products are also available with integrated tapes for sealing overlaps.

The products have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

| Characteristic (unit)                   | VapR-free Breather Membranes |           |                 |                    |                |             |                  |
|---|------------------------------|-----------|-----------------|--------------------|----------------|-------------|------------------|
|   | VapR-free Light              | VapR-free | VapR-free Extra | VapR-free Eco.Plus | VapR-free Plus | Vapfree 160 | VapR-free Master |
| Thickness (mm)                          | 0.4                          | 0.4       | 0.4             | 0.5                | 0.52           | 0.57        | 0.6              |
| Mass per unit area (g·m <sup>-2</sup> ) | 100                          | 112       | 120             | 132                | 142            | 162         | 170              |
| Roll length (m)                         | 50                           | 50        | 50              | 50                 | 50             | 50          | 50               |
| Roll width (m)                          | 1.5                          | 1.5       | 1.5             | 1.5                | 1.5            | 1.5         | 1.5              |
| Colour                                  |                              |           |                 |                    |                |             |                  |
| upper                                   | various                      | various   | various         | various            | various        | various     | various          |
| lower                                   | various                      | various   | various         | various            | various        | various     | various          |

## Applications

The products are intended for use as permeable roof tile underlays in dwellings with cold non-ventilated tiled or slated roofs of any conventional plan and size. Features<sup>(1)</sup> successfully assessed include:

- duo pitched
- verges
- timber sarking planks<sup>(3)(4)(5)</sup>
- gable ends
- dormers
- mansard
- room-in-roof<sup>(2)</sup>
- hipped
- valleys.
- mono-pitched
- abutments

- (1) For roofs incorporating other features, or unconventional roof geometries or construction materials, the advice of the Certificate holder should be sought.
- (2) Where a room-in-roof results in part of a pitch being insulated (ie a warm roof), design and detailing of that part of the roof should comply with the relevant guidance given in Product Sheet 1 of this Certificate.
- (3) Timber sarking planks, Scottish practice: the membrane is laid over open-jointed timber planks (nominally 150 mm wide with a 2 mm gap) and fixed with galvanized clout nails. Slates are nailed through the membrane onto the sarking without battens.
- (4) Timber sarking planks, tiled roofs: counter battens of 12 mm minimum thickness should be used to provide a drainage path beneath the tiling battens. The membrane may be laid directly over the timber planks or draped over the counter battens.
- (5) Sheet sarking materials should not be used.

## Definitions for products and applications inspected

The following term is defined for the purpose of this Certificate as:

- pitched roof — a roof having a fall in excess of 1:6 and a maximum pitch of 70°.

## Product assessment – key factors

The products have been 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

Data were assessed for the following characteristics.

#### 1.1 Resistance to wind uplift

1.1.1 Results of resistance to wind uplift tests to BS 5534 : 2014 and consequent zones of applicability are given in Tables 2 and 3.

Table 2 Declared wind uplift resistance (Pa) for VapR-free Breather Membranes

| Product            | ≤345 mm batten gauge with battened laps <sup>(2)</sup> | ≤250 mm batten gauge with battened laps <sup>(1)(2)</sup> | ≤345 mm batten gauge with taped laps <sup>(2)</sup> | ≤345 mm batten gauge with integrated taped laps <sup>(2)</sup> |
|--------------------|--|---|---|--|
| VapR-free Light    | 829  | 1841  | 1756  | 1713   |
| VapR-free          | 1036   | 2071  | 2146  | 2156   |
| VapR-free Extra    | 1172   | 2331  | 2310  | 2176   |
| VapR-free Eco Plus | 1187   | 2371  | 2364  | ≥1600  |
| VapR free Plus     | 1034   | 2193  | 2061  | ≥1600  |
| Vapfree 160        | 1139   | 2214  | 2143  | ≥1600  |
| VapR-free Master   | 1223   | 2556  | 2332  | ≥1600  |

- (1) Underlays with a wind uplift resistance at a 250 mm batten gauge that satisfy the minimum design wind pressure of 820 Pa for Zone 1 are deemed to satisfy the requirements for use at 100 mm batten gauge in all Wind Zones.0
- (2) Mean of test results.

**Table 3 Zones of applicability of VapR-free Breather Membranes with battened laps, taped and integral laps, according to BS 5534 : 2014, Clause A.8**

| Product            | ≤345 mm batten gauge with battened laps <sup>(2)</sup> | ≤250 mm batten gauge with battened laps <sup>(1)(2)</sup> | ≤345 mm batten gauge with taped laps <sup>(2)</sup> | ≤345 mm batten gauge with integrated taped laps <sup>(2)</sup> |
|--------------------|--|---|---|--|
| VapR-free Light    | Zone 1   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| VapR-free          | Zones 1 to 2   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| VapR- free Extra   | Zones 1 to 3   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| VapR-free Eco Plus | Zones 1 to 3   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| VapR free Plus     | Zones 1 to 2   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| Vapfree 160        | Zones 1 to 2   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |
| VapR-free Master   | Zones 1 to 3   | Zones 1 to 5  | Zones 1 to 5  | Zones 1 to 5   |

#### Unsupported

1.1.2 The products are satisfactory for use in unsupported systems in the geographical Wind Zones given in Table 3 of this Certificate, where a well-sealed ceiling, as defined in BS 9250 : 2007, Clause 3.7, is present and the roof has a ridge height ≤15 m, a pitch between 12.5 and 70°, and a site altitude ≤100 m, and where topography is not significant. For all other cases, the required uplift resistance should be determined using BS 5534 : 2014 and the Certificate holder's declared wind uplift resistances in Table 2 of this Certificate.

#### Supported

1.1.3 On the basis of data assessed, the products, when fully supported, have adequate resistance to wind uplift forces.

1.1.4 Timber sarking, such as square-edged butt jointed planks, are not considered to be airtight and the underlay is treated as unsupported.

### 1.2 Resistance to mechanical damage

1.2.1 Results of resistance to mechanical damage tests are given in Table 4.

**Table 4 Results of mechanical damage tests**

| Product assessed   | Assessment method        | Requirement    | Result  |
|--------------------|--------------------------|----------------|---------|
| Declared values    |                          |                |         |
| VapR-free Light    | Nail tear to             | 80 N           | Pass    |
| VapR-free Extra    | BS EN 12310-1 : 2000     | 120 N          | Pass    |
| VapR-Free Master   | Longitudinal direction   | 190 N          | Pass    |
| VapR-free          |                          | 115 N          | Pass    |
| VapR-free Eco Plus |                          | 145 N          | Pass    |
| VapR free Plus     |                          | 160 N          | Pass    |
| Vapfree 160        |                          | 185 N          | Pass    |
| Declared values    |                          |                |         |
| VapR-free Light    | Nail tear to             | 90 N           | Pass    |
| VapR-free Extra    | BS EN 12310-1 : 2000     | 140 N          | Pass    |
| VapR-Free Master   | Transverse direction     | 230 N          | Pass    |
| VapR-free          |                          | 135 N          | Pass    |
| VapR-free Eco Plus |                          | 175 N          | Pass    |
| VapR free Plus     |                          | 185 N          | Pass    |
| Vapfree 160        |                          | 195 N          | Pass    |
| VapR-free Light    | Mullen burst strength to | Value achieved | 338 kPa |
| VapR-free Extra    | BS 3137 : 1972           |                | 452 kPa |

1.2.2 On the basis of data assessed, the products have adequate strength to resist the loads associated with the installation of the roof.

## 2 Safety in case of fire

Data were assessed for the following characteristics.

### 2.1 Reaction to fire

2.1.1 When tested to ČSN EN ISO 11925-2 : 2010 and classified to ČSN EN 13501-1 : 2010 and ČSN EN 13501-1 : 2019, the products achieved a reaction to fire classification of Class E.

2.1.2 On the basis of data assessed, the products will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.1.3 When the products are used unsupported, there is a risk that fire can spread if they are accidentally ignited during maintenance works, eg by a roofer's or plumber's torch. As with all types of underlay, care should be taken during building and maintenance to avoid ignition.

2.1.4 When the products are used with timber sarking, such as square-edged butt jointed planks, the reaction to fire will be primarily determined by the sarking.

## 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

### 3.1 Weathertightness

3.1.1 Results of weathertightness tests are given in Table 5.

*Table 5 Results of weathertightness tests*

| Product assessed | Assessment method | Requirement | Result |
|------------------|-------------------|-------------|--------|
| VapR-free Light  | Watertightness to | No leakage  | Pass   |
| VapR-free Extra  | BS EN 1928 : 2000 |             | Pass   |

3.1.2 On the of the data assessed, the products can be used supported without affecting their water resistance.

3.1.3 The products are Class W1 in accordance with BS EN 13859-1 : 2014 and will resist the passage of water and wind-blown snow and dust into the interior of a building, under all conditions to be found in a roof constructed in accordance with the relevant clauses of BS 5534 : 2014.

3.1.4 The products resist penetration of liquid water and consequently may be used as temporary waterproofing prior to the installation of slates or tiles. The period of such use must, however, be kept to a minimum as is given in BBA Information Bulletin No. 2 *Permeable Roof Tile Underlay – Guide to Good Site Practice*.

### 3.2 Condensation

3.2.1 Results of water vapour transmission tests are given in Table 6.

*Table 6 Results of water vapour transmission tests*

| Product assessed | Assessment method    | Requirement    | Result |
|------------------|----------------------|----------------|--------|
| VapR-free Light  | Water vapour         | Declared value | Pass   |
| VapR-free Extra  | transmission rate to | $s_d = 0.02$   | Pass   |
| VapR-free Master | BS 3177 : 1959       |                | Pass   |

3.2.2 For roofs designed in accordance with BS 5534 : 2014 and BS 5250 : 2021, the products may be regarded as Type LR underlays.

## 4 Safety and accessibility in use

Data were assessed for the following characteristics.

### 4.1 Slip resistance

4.1.1 Slip resistance of VapR-free Breather Membranes was assessed based on test data from a related representative product.

4.1.2 On the basis of data assessed, the products have a high coefficient of friction, giving a slip-resistant surface for increased safety during the installation of the covering.

## 5 Protection against noise

Not applicable.

## 6 Energy economy and heat retention

Not applicable.

## 7 Sustainable use of natural resources

The products contain polypropylene, which can be recycled.

## 8 Durability

8.1 Specific test data were assessed, as given in Table 7.

| <i>Table 7 Results of durability tests</i> |   |                              |        |
|--|---|------------------------------|--------|
| Product assessed                           | Assessment method   | Requirement                  | Result |
| VapR-free Light                            | Tensile properties to BS EN 12311-1 : 2000  | Declared value               |        |
|  | Control   |                              |        |
|  | Longitudinal direction  | 220 N per 50mm               | Pass   |
|  | Transverse direction  | 140 N per 50mm               | Pass   |
|  | Wet strength soak at 23°C for 24 hours  | No significant deterioration |        |
|  | Longitudinal direction  |                              | Pass   |
|  | Transverse direction  |                              | Pass   |
|  | UV aged for 336h UVA at 50°C followed by 90 days heat ageing at 70°C  | No significant deterioration |        |
|  | Longitudinal direction  |                              | Pass   |
|  | Transverse direction  |                              | Pass   |
| VapR-free Light                            | Elongation to BS EN 12311-1 : 2000  | Declared value               |        |
|  | Control   |                              |        |
|  | Longitudinal direction  | 40%                          | Pass   |
|  | Transverse direction  | 70%                          | Pass   |
|  | Wet strength soak at 23°C for 24 hours  | No significant deterioration |        |
|  | Longitudinal direction  |                              | Pass   |
|  | Transverse direction  |                              | Pass   |
|  | UV aged for 336h UVA at 50°C followed by 90 days heat ageing at 70°C  | No significant deterioration |        |
|  | Longitudinal direction  |                              | Pass   |
|  | Transverse direction  |                              | Pass   |
| VapR-free Light                            | Resistance to water penetration to BS EN 1928 : 2000<br>UV aged 336h UVA at 50°C followed by 90 days heat ageing at 70°     | No leakage                   | Pass   |
| VapR-free Extra                            | Resistance to water penetration to BS EN 1928 : 2000<br>UV aged for 336h UVA at 50°C followed by 90 days heat ageing at 70° | No leakage                   | Pass   |

### 8.3 Service life

8.3.1 Under normal service conditions, the products will have a service life comparable with that of traditional roof tile underlays, provided they are not exposed to sunlight for long periods, and they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 The exposure of the products prior to completion of the roof must be kept to a minimum. Advice regarding exposure can be obtained from the Certificate holder, but such advice is outside the scope of this Certificate.

## 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 Designers, planners, contractors and/or installers must ensure that the roof and ceiling are constructed in accordance with the Certificate holder's instructions and the information given in this Certificate.

9.1.3 Project design wind speeds for the roof in which the products are installed must be determined, and wind uplift forces calculated, by a suitably experienced and competent individual, in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex.

9.1.4 The complete roof construction, ceiling boards to roof tiles, must be considered as a total system with regard to condensation risk. It is important that the products are laid in accordance with the Certificate holder's instructions and this Certificate to minimise the risk of condensation.

9.1.5 All penetrations into and out of the roof space must be properly sealed in accordance with the Certificate holder's instructions which include the use of the Certificate holder's recommended sealing tape. In addition, such features as vent stacks and boiler flues passing through the roof space must be sealed.

9.1.6 It is essential to minimise water vapour transfer into the loft space from the dwelling below, with a well-sealed ceiling as defined in BS 9250 : 2007, Clause 3.7. Appropriate measures include:

- ventilating the dwelling below in accordance with national Building Regulations and Standards for the dispersal and rapid dilution of water vapour, particularly from rooms that may experience high humidity (such as kitchens, utility rooms and bathrooms)
- covering all water tanks in the loft space and lagging pipework
- sealing penetrations in the ceiling and making loft hatches convection-tight by using a compressible draught seal
- ensuring that there is continuity of jointing with walls (and behind wall linings) at ceiling perimeters
- ensuring that masonry wall cavities do not interconnect with roof cavities.

9.1.7 For additional protection, the use of a vapour control layer/vapour check plasterboard must be considered.

#### 9.2 Installation

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

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions, and the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013. Installation can be carried out under all conditions normal to roofing work. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 The products must be installed with the coloured or printed side uppermost and lapped to shed water out and down the slope.



9.2.4 Overlaps must be provided with the minimum dimensions given in Table 8. The Certificate holder's advice must be sought when using tapes for sealing overlaps, but such advice is outside the scope of this Certificate.

**Table 8 Minimum overlaps**

| Roof pitch (°) | Horizontal lap – untaped, taped and integrated taped (double) (mm) |                 | Vertical lap (mm) |
|----------------|--|-----------------|-------------------|
|                | Not fully supported  | Fully supported |                   |
| 12.5 < 15      | 225  | 150             | 100               |
| ≥15            | 150  | 100             | 100               |

9.2.5 Minimum overlaps at hips must be 150 mm, and in valleys 300 mm.

### Procedure

9.2.6 The products are to be installed by draping over rafters and securing with tiling battens or installed taut over rafters and secured with counter battens and tiling battens.

#### *Draped and loose laps*

9.2.7 The products when installed as part of an unsupported system are fixed in the traditional method for roof tile underlay, ie laid parallel to the eaves and draped between the rafters.

#### *Taut*

9.2.8 When laid horizontally, the products must be pulled taut and nailed to hold securely in position. Counter battens (minimum thickness 25 mm) are then fixed to the rafter.

#### *Timber sarking planks*

9.2.9 For fully supported roofs (traditional Scottish practice), the slates must be nailed through the product into the timber sarking planks, normally 150 mm wide with a 2 mm gap.

9.2.10 For fully supported roofs (where battens are used) counter battens of minimum thickness 12 mm should be installed either above or beneath the underlay for drainage purposes.

### 9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information, and BS 5534 : 2014. To achieve the performance described in this Certificate, the products can be installed by competent slaters/tilers experienced with these types of products.

### 9.4 Maintenance and repair

9.4.1 As the products are confined in a roof structure and have suitable durability, maintenance is not required. However, any damage occurring before enclosure must be repaired.

9.4.2 Damage to the products must be repaired prior to the installation of slates or tiles, by replacing the damaged areas or by patching and sealing correctly. Care must be taken to ensure that the watertightness of the roof is maintained.

## 10 Manufacture

10.1 The production processes for the product has 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 product is delivered to site in packaging bearing the product name, marketing company name, grade identification and the BBA logo incorporating the number of this Certificate.

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 rolls must be stored flat on their sides, on a smooth, clean, dry surface, under cover and protected from sunlight.

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

### Construction (Design and Management) Regulations 2015

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

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

### CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard EN 13859-1 : 2014.

### Additional information on installation

#### General

A.1 Where possible, eaves guards should be used to protect the product from sunlight and to direct water into the gutter.

A.2 When used in direct contact with treated timber, the advice of the Certificate holder should be sought on compatibility, but such advice is outside the scope of this Certificate.

#### Finishing

A.3 Detailing of abutments, verges and hips must be in accordance with the Certificate holder's instructions.

A.4 Tiling and slating must be carried out in accordance with the relevant clauses of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013 and the Certificate holder's instructions, especially when using tightly jointed slates or tiles, ie where a ventilated batten space should be provided.

#### Condensation

A.5 Energy loss by ventilation in conventionally ventilated cold roofs will be significantly reduced by the non-ventilated system.

A.6 In non-ventilated roof systems, the risk of condensation is equivalent to, or less than, that for conventionally ventilated cold roof systems.

A.7 The risk of condensation is highest in new-build construction during the first heating period, where there is high moisture loading owing to wet trades, such as in-situ cast concrete slabs or plaster. The risk of condensation diminishes as the building dries out. See BBA Information Bulletin No. 1 *Roof Tile Underlays in Cold Roofs during the Drying-out Period*.

## Bibliography

BS 3137 : 1972 *Methods for determining the bursting strength of paper and board*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 5250 : 2021 *Management of moisture in buildings: code of practice*

BS 5534 : 2014 + A2 : 2018 *Slating and tiling for pitched roofs and vertical cladding — Code of practice*

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*

BS 8000-6 : 2013 *Workmanship on building sites — Code of practice for slating and tiling of roofs and walls*

BS 9250 : 2007 *Code of practice for design of the airtightness of ceilings in pitched roofs.*

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

BS EN 1991-1-4 : 2005 + A1 : 2010 *Eurocode 1 — Actions on structures — General actions*

NA to BS EN 1991-1-4 : 2005 + A1 : 2010 *UK National Annex to Eurocode 1 — Actions on structures — General actions*

BS EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Bitumen sheets for roof waterproofing*

BS EN 12311-1 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Bitumen sheets for roof waterproofing*

ČSN EN 13501-1 + A1 : 2010 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

ČSN EN 13501-1 : 2019 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

ČSN EN ISO 11925-2 : 2010 *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test*

EN 13859-1 : 2014 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for discontinuous roofing*

## 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
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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.

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