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Agrément Certificate

08/4548

Product Sheet 1 Issue 6

TYVEK ROOF LINING SYSTEMS

TYVEK SUPRO 2507B ROOF TILE UNDERLAY FOR USE IN WARM NON-VENTILATED ROOFS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Tyvek⁽²⁾ Supro 2507B Roof Tile Underlay for use in Warm Non-Ventilated Roofs. It has been assessed for use in roofs of up to 70° pitch, in domestic and non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) Tyvek is a registered trademark of E.I DuPont de Nemours & Co or its affiliates.

The assessment includes

Product factors:

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

Process factors:

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

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



KEY FACTORS ASSESSED

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

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

On behalf of the British Board of Agrément

Date of Sixth issue: 9 October 2024
Originally certified on 8 April 2008

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 Tyvek Supro 2507B Roof Tile Underlay for use in Warm 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)

Requirement:	B3(4)	Internal fire spread
Comment:		The system can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	C2(b)	Resistance to moisture
Comment:		The system can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The system can contribute to satisfying this Requirement. See section 3 of this Certificate.
Regulation:	7(1)	Materials and workmanship
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The system can contribute to satisfying this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	9	Building standards – construction
Standard:	2.4	Cavities
Comment:		The system can contribute to satisfying this Standard, with reference to clause 2.4.2 ⁽¹⁾⁽²⁾ . See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.8 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾⁽²⁾ , 3.15.3 ⁽¹⁾⁽²⁾ and 3.15.7 ⁽¹⁾⁽²⁾ . See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The system can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards – conversion
Comment:		Comments in relation to the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .
		(1) Technical Handbook (Domestic).
		(2) Technical Handbook (Non-Domestic).



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

Regulation:	23(1)(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The system can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	29	Condensation
Comment:		The system can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	35(4)	Internal fire spread – structure
Comment:		The system can contribute to satisfying this Regulation. See section 2 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Tyvek Supro 2507B Roof Tile Underlay for use in Warm Non-Ventilated Roofs, 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 7.2 *Pitched roofs*.

Fulfilment of Requirements

The BBA has judged Tyvek Supro 2507B Roof Tile Underlay for use in Warm Non-Ventilated Roofs to be satisfactory for use as described in this Certificate. The system has been assessed for use in pitched roofs of up to 70° pitch, in domestic and non-domestic buildings.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. Tyvek Supro 2507B Roof Tile Underlay for use in Warm Non-Ventilated Roofs is a vapour permeable, high-density polyethylene (HDPE) membrane backed with a polypropylene scrim. The system is available with or without an integral adhesive tape (the system incorporating adhesive tape is known as Tyvek Supro Plus 2507B).

The system has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Thickness (mm)	0.49
Mass per unit area ($\text{g}\cdot\text{m}^{-2}$)	145
Roll length (m)	50
Roll width (m)	1.0, 1.5
Colour	White underside, grey top side and red logo

Ancillary Items

The following ancillary items are essential for use with the system and have been assessed with the system:

- DuPont AirGuard Control Air Leakage Barrier (8327AD) — an air barrier for use in slated or tiled pitched roof systems (the subject of Product Sheet 3 of this Certificate)
- DuPont AirGuard Reflective (5814X) — an air barrier and vapour control layer for use in roofs and ceilings (the subject of Product Sheet 4 of this Certificate)

- DuPont AirGuard Reflective E (8314X) — an air and vapour control layer (AVCL) for use in roofs and ceilings (the subject of Product Sheet 9 of this Certificate)
- DuPont AirGuard A2 FR (5816X) — a reinforced foil laminate for use as a low-emissivity, insulating air and vapour control layer (AVCL) in roofs and ceilings (the subject of Product Sheet 10 of this Certificate)
- DuPont AirGuard Smart (2009B) — an air and vapour control layer (AVCL) for use in roofs (the subject of BBA Agrément Certificate 21/5964 Product Sheet 1)
- Tyvek Acrylic Tape (2060B) — a single-sided tape for use at joints, laps and repairs
- Tyvek Flex Wrap EZ Tape (2064FW) — a flexible sealing tape for use in building penetrations.

Applications

The system is intended for use as fully supported (and secured with counter battens and battens) or unsupported underlays (installed by draping over rafters and securing with tiling battens), in tiled and slated warm non-ventilated pitched roof systems, constructed in accordance with the relevant clauses of BS 5534 : 2014.

The system must be used over suitable timber-based sarking (Type 3 particleboards, Type 3 OSB or Type 2 plywood), either with continuous insulation or insulation placed between the rafters.

Definitions for products and applications inspected

Pitched roofs are defined for the purposes of this Certificate as those having a fall in excess of 10° and a maximum pitch of 70°.

Product assessment – key factors

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

1 Mechanical resistance and stability

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 Annex A, and consequent Zones of Applicability, are given in Tables 2 and 3 of this Certificate.

Table 2 Wind uplift resistance (Pa)

System	≤345 mm batten gauge with battened lap ⁽¹⁾	≤250 mm batten gauge with battened lap ⁽¹⁾⁽³⁾	≤345 mm batten gauge with taped lap ⁽¹⁾⁽²⁾	≤345 mm batten gauge with 2060B tape lap ⁽¹⁾⁽²⁾
Tyvek Supro 2507B	1643	3272	—	3371
Tyvek Supro Plus 2507B ⁽²⁾	1750	—	3204	—

(1) Mean of test results.

(2) The laps were taped using the integral adhesive tape.

(3) Underlays with a wind uplift resistance at a 250 mm batten gauge that satisfies the minimum design wind pressure of 820 Pa for Zone 1 are considered to satisfy the requirements for use at a 100 mm batten gauge in all Wind Zones.

Table 3 Zones of Applicability of Tyvek Supro 2507B Roof Tile Underlay according to BS 5534 : 2014, clause A.8, with battened laps and integral adhesive taped laps

System	≤345 mm batten gauge with battened lap	≤250 mm batten gauge with battened lap	≤345 mm batten gauge with taped lap	≤345 mm batten gauge with 2060B tape lap
Tyvek Supro 2507B	Zones 1 to 5	Zones 1 to 5	—	Zones 1 to 5
Tyvek Supro Plus 2507B ⁽¹⁾	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	—

(1) The laps were taped using the integral adhesive tape.

Unsupported

1.1.2 On the basis of data assessed, the system is satisfactory for use in unsupported systems, in the geographical Wind Zones given in Table 3, 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 75°, and a site altitude ≤ 100 m, and where topography is not significant. For all other cases, the required uplift resistance must be determined using BS 5534 : 2014⁽¹⁾.

(1) A BRE calibrated wind pressure calculator designed for the purpose of calculating exceptions can be found at: www.windpressure-calculator.tyvek.co.uk

Supported

1.1.3 The system, when fully supported, has adequate resistance to wind uplift forces.

1.1.4 The system may be used at any batten gauge in all Wind Zones when laid over nominally airtight timber-based sarking (Type 3 particleboard, Type 3 OSB or Type 2 plywood), and insulation for warm-roof design. It may also be used in applications where slates are nailed directly onto sarking boards.

1.1.5 Timber sarking, such as square-edged butt jointed planks, is not considered to be airtight and the underlay is treated as unsupported. Counter battens must be used in fully supported applications.

1.2 Resistance to mechanical damage

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

Table 4 Mechanical damage			
System assessed	Assessment method	Requirement	Result
Tyvek Supro 2507B	Nail tear to	≥ 50 N	
	BS EN 12310-1 : 2000		
	with modifications as per		
	BS EN 13859-1 : 2014, Annex B		
	Longitudinal direction		Pass
	Transverse direction		Pass
	Mullen burst strength to	Value achieved	724 kN·m ⁻²
	BS 3137 : 1972		

1.2.2 On the basis of data assessed, the system has 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 characteristic.

2.1 Reaction to fire

2.1.1 When tested to BS EN ISO 11925-2 : 2020 and classified to BS EN 13501-1 : 2018, the system achieved a reaction to fire classification of Class E⁽¹⁾.

(1) Classification report reference MA 39 – 23-09657, issued by Magistratsabteilung 39 - Prüf-, Überwachungs- und Zertifizierungsstelle der Stadt Wien, 16 October 2023, and available from the Certificate holder on request.

2.1.2 Designers must refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall construction.

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

2.1.4 When the system is 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 Weathertightness			
System assessed	Assessment method	Requirement	Result
Tyvek Supro 2507B	Water penetration to BS EN 1928 : 2000 with modifications as per BS EN 13859-1 : 2014 Annex A	No leakage	Pass
	Hydrostatic head to BS EN 20811 : 1992	Value achieved	230 cm

3.1.2 On the basis of data assessed, the system can be used supported and unsupported without affecting its water resistance.

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

3.2 Condensation

3.2.1 The result of a water vapour resistance test is given in Table 6.

Table 6 Water vapour resistance ⁽¹⁾			
System assessed	Assessment method	Requirement	Result
Tyvek Supro 2507B	Water vapour transmission properties to BS EN ISO 12572 : 2016	Declared value $s_d \leq 0.035 \text{ m}$	Pass

(1) Water vapour resistance, in $\text{MN}\cdot\text{s}\cdot\text{g}^{-1}$, may be taken as $5 \times s_d$ value.

3.2.2 A condensation risk analysis was carried out based on the result given in Table 6 and satisfactory conclusions were drawn.

3.2.3 For roofs designed in accordance with BS 5534 : 2014 and BS 5250 : 2021, the system may be regarded as a Type LR underlay.

4 Safety and accessibility in use

Data were assessed for the following characteristic.

4.1 Slip resistance

4.1.1 Results of slip resistance tests are given in Table 7.

Table 7 Slip resistance

System assessed	Assessment method	Requirement	Result
Tyvek Supro 2507B	Slip resistance – Dry	Value achieved	43 Pendulum Test
	to BBA Internal Test Specification T1/10		Value (PTV)
	Slip resistance – Wet	Value achieved	20 PTV
	to BBA Internal Test Specification T1/10		

4.1.2 On the basis of data assessed, the system has a good slip resistance when dry, giving a slip resistant surface for increased safety during the installation of the covering. Care must be taken in wet conditions during installation work owing to a reduction in slip resistance.

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 system were assessed.

8.2 Specific test data were assessed as given in Table 8.

Table 8 Durability

System assessed	Assessment method	Requirement	Result
Tyvek Supro 2507B	Dimensional stability to BS EN 1107-2 : 2001 Longitudinal direction	$\leq 2\%$	Pass
	Transverse direction		Pass
	Flexibility at low temperature to BS EN 1109 : 2013	Value achieved	-50°C
	Tensile strength to BS EN 12311-1 : 2000 with modifications as per BS EN 13859-1 : 2014, Annex A Control	Value achieved	
	Longitudinal direction		310 N·(50 mm) ⁻¹
	Transverse direction		241 N·(50 mm) ⁻¹
	Tensile strength to BS EN 12311-1 : 2000 with modifications as per BS EN 13859-1 : 2014, Annexes A and C	Change < 30%	
	Longitudinal direction		Pass
	Transverse direction		Pass
	Elongation to BS EN 12311-1 : 2000 with modifications as per BS EN 13859-1 : 2014, Annex A Control	Value achieved	
	Longitudinal direction		16%
	Transverse direction		26%
	Elongation to BS EN 12311-1 : 2000 with modifications as per BS EN 13859-1 : 2014, Annexes A and C	Value achieved	
	Longitudinal direction		12%
	Transverse direction		19%
	Resistance to penetration to BS EN 1928 : 2000 with modifications as per BS EN 13859-1 : 2014, Annex A and C	No leakage	Pass

8.3 Service life

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

8.3.2 The exposure of the system 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 specified in this Certificate.

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

9.1.3 In common with all roofs, care must be taken in the overall design and installation to minimise the risk of water vapour coming into contact with cold parts of the construction. Factors to be considered and minimised include moisture diffusion through the ceiling, infiltration through unsealed openings/penetrations in the ceiling and services evaporating or venting moisture into cold spaces.

9.1.4 When used in direct contact with treated timber, the advice of the Certificate holder must be sought on compatibility.

9.1.5 Fibre contraction within the membrane can sometimes occur when in contact with water or solvent based timber treatments, temporarily resulting in a loss of water resistance. This only applies to wet treatments which have been freshly applied or soaked (by rainfall). Sufficient time must be allowed for timber treatments to dry before the installation of Tyvek and AirGuard membranes.

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, the Certificate holder's instructions and the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2023. 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 system 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 9. 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 9 Minimum overlaps

Roof pitch (°)	Horizontal lap (mm)		Vertical laps (mm)
	Unsupported	Fully supported	
12.5 to < 15	225	150	100
≥ 15	150	100	100

Procedure

Unsupported

9.2.5 The membrane, when installed as part of an unsupported system, must be fixed in the traditional method for roof tile underlays, ie draped between the rafters to allow drainage of liquid water under the tiling battens.

Fully supported

9.2.6 The membrane is laid directly over a supporting layer such as rigid insulation or a suitable timber-based sarking (Type 3 particleboards, Type 3 OSB or Type 2 plywood).

9.2.7 The membrane is secured to the support with counter battens at least 12 mm thick to create drainage and vapour dispersal space⁽¹⁾ between the membrane and the tiles or, when using timber sarking, the traditional Scottish practice is employed, with the tiles or slates fixed directly into the boards.

(1) This space must be ventilated in accordance with BS 5250 : 2021 when using tight-fitting roof coverings.

9.2.8 The counter battens, when used, must be fixed with an appropriate screw or galvanized clout nails at a maximum spacing defined as appropriate for the specific application. Tiling battens must be secured to the counter battens and rafters with appropriate fixings. Alternatively, the membrane may be installed draped over counter battens, with sufficient drape to allow drainage of liquid water under the tiling battens.

9.2.9 Care must be taken to minimise the risk of interstitial condensation, particularly for timber sarking which may be below the dew-point for extended periods during winter months.

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 system must be installed by a competent general builder, or a contractor, experienced with this type of system.

9.4 Maintenance and repair

9.4.1 As the system is confined within a roof structure and has suitable durability, maintenance is not required. However, any damage occurring before enclosure must be repaired.

9.4.2 Damage to the system must be repaired with Tyvek Acrylic Tape (2060B). Extensively damaged areas are made good by overlaying a new sheet sealed in place with Tyvek Acrylic Tape (2060B), taking care to lap the sheet correctly by a minimum 100 mm horizontal laps / 150 mm vertical laps. To confirm which method is most applicable, the Certificate holder's advice must be sought in this respect. Care must be taken to ensure the watertightness of the roof is maintained.

10 **Manufacture**

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

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

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

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

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

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

† 10.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 **Delivery and site handling**

11.1 The Certificate holder stated that the system is delivered to site in packaging bearing the Certificate holder and the system names, the batch code 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 Rolls must be stored flat on their sides, on a smooth, clean, dry surface, under cover and protected from sunlight.

ANNEX A – SUPPLEMENTARY INFORMATION †

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

Construction (Design and Management) Regulations 2015

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

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

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the system in accordance with Designated Standard EN 13859-1 : 2014.

CE marking

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

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001 : 2015 by DQS GmbH (Certificate 000093 QM15) and ISO 14001 : 2015 by Lloyd's Register (Certificate 10322753).

Additional information on installation

General

- A.1 Eaves guards must be used to protect the system from sunlight and to direct water into the gutter.
- A.2 Detailing of abutments, verges and hips must be in accordance with the Certificate holder's instructions.
- A.3 The 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 : 2023 and the tile/slate manufacturer's instructions, especially when using tightly jointed slates or tiles.

Condensation

A.4 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*.

Inclined ceiling and insulation (warm roof)

A.5 For roofs with an insulated inclined ceiling, ventilation above or below the underlay will not be required provided that the passage of moisture by diffusion and by convection is controlled, eg by a vapour control layer or a continuous envelope of insulation with a high vapour resistance and with sealed joints. Ventilation to the batten space may be required if specified by the tile manufacturer or where the roof covering is airtight, as described in BS 5250 : 2021.

Partially inclined ceiling and insulation (warm and cold roof)

A.6 Where an insulated ceiling spans only part of the roof line, resulting cold roof spaces should be installed in accordance with Product Sheet 2 of this Certificate.

Bibliography

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

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 : 2023 *Workmanship on construction 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 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimensional stability — Plastic and rubber sheets for roof waterproofing*

BS EN 1109 : 2013 *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*

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 — 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 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*

BS EN ISO 12572 : 2016 *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties — Cup method*

BS EN 13501-1 : 2018 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

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

BS EN 20811 : 1992 *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

BS EN ISO 11925-2 : 2020 *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Single-flame source test*

ISO 9001 : 2015 *Quality management systems — Requirements*

ISO 14001 : 2015 *Environmental management systems — Requirements with guidance for use*

Conditions of Certificate

Conditions

1 This Certificate:

- relates only to the 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.

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 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.

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 system or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the system
- actual installations of the system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the system, 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 system which is contained or referred to in this Certificate is the minimum required to be met when the 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.

British Board of Agrément

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