Don & Low Ltd
Glamis Road
Forfar
Angus DD8 1EY

Tel: 01307 452600
e-mail: nonwovens@donlow.co.uk
website: www.donlow.co.uk

Agrément Certificate
99/3648
Product Sheet 1 Issue 9

DON & LOW ROOF LININGS

DALTEX ROOFSHIELD FOR USE IN ENERGY EFFICIENT COLD NON-VENTILATED PITCHED ROOFS

This Agrément Certificate Product Sheet(1) relates to Daltex Roofshield(2) For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs, a roof lining for use in dwellings in cold non-ventilated pitched roofs of up to 70° pitch.

(1) Hereinafter referred to as 'Certificate'.
(2) Daltex and Roofshield are registered trademarks of Don & Low Limited.

The assessment includes

Product factors:

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

Process factors:

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

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

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

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

On behalf of the British Board of Agrément

Date of Ninth issue: 22 November 2023
Originally certified on 27 October 1999

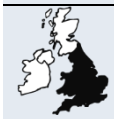
Hardy Giesler
Chief Executive Officer

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 Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched 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 product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The product will contribute to a roof satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to a roof satisfying this Requirement. See section 3 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product 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 product can contribute to a construction satisfying this Regulation. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard with respect to clause 2.4.2(1). See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The product will contribute to a roof satisfying clause 3.10.1(1) of this Standard. See section 3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to limiting the risk of interstitial condensation, with reference to clauses 3.15.1(1), 3.15.3(1) and 3.15.7(1) of this Standard. See section 3 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The product can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	**12**	**Building standards – conversions**
Comment:		Comments in relation to the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1) and Schedule 6(1).

(1) Technical Handbook (Domestic).

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

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

Additional Information

NHBC Standards 2023

In the opinion of the BBA, Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched 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*, without the need for additional high level ventilation.

Fulfilment of Requirements

The BBA has judged Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs to be satisfactory for use as described in this Certificate. The product has been assessed as a roof tile underlay for use 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. Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs is a triple-layer spun-bonded polypropylene breather membrane.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	Value
Thickness (mm)	0.75
Mass per unit area ($g \cdot m^{-2}$)	185
Roll length (m)	50/100
Roll width (m)	1.0/1.5(1)
Colour	
upper	green(1)
lower	white(1)

(1) Other widths and colours are available on request.

Applications

The product is intended for use in dwellings in cold non-ventilated tiled or slated roofs of any conventional plan and size. Features(1) assessed include:

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

(1) For roofs incorporating other features, or unconventional roof geometries or construction materials, the advice of the Certificate holder should be sought, but such advice is outside the scope of this Certificate.
(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 BBA Certificate 96/3220, Product Sheet 1.
(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 must 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 must not be used.

The product can also be used in non-ventilated warm and ventilated cold pitched roofs. These applications are covered by BBA Certificate 96/3220, Product Sheet 1.

Definitions for product 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 product has 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 Annex A, and consequent Zones of applicability, are given in Tables 2 and 3, respectively, of this Certificate.

Table 2 Declared wind uplift resistance (Pa)

Product	≤345 mm batten gauge with battened laps[3]	≤250 mm batten gauge with battened laps[2][3]	≤345 mm batten gauge with counter batten[1][3]
Daltex Roofshield for use in Energy Efficient Cold Non-Ventilated Pitched Roofs	1252	2574	2192

(1) This applies to any counter batten ≥11 mm deep. NHBC does not accept the Wind Zones and wind uplift resistance when using counter battens on an unsupported roof.
(2) 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.
(3) Mean of test results.

Table 3 Zones of applicability of Roofshield according to BS 5534 : 2014, clause A.8 with battened laps and laps with counter battens

Product	≤345 mm batten gauge with battened laps	≤250 mm batten gauge with battened laps	≤345 mm batten gauge with counter batten[1]
Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	Zones 1 to 3	Zones 1 to 5	Zones 1 to 5

(1) This applies to any counter batten ≥11 mm deep. NHBC does not accept the Wind Zones and wind uplift resistance when using counter battens on an unsupported roof.

Unsupported

1.1.2 On the basis of data assessed, the product is 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 of ≤15 m, a pitch between 12.5 and 70°, and a site altitude of ≤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 given in Table 2 of this Certificate.

Supported

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

1.1.4 When used with slates nailed directly onto softwood sarking boards, the product is satisfactory for use in geographical Wind Zones 1 to 5 and will achieve wind uplift resistance of 2574 Pa.

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.

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

Product assessed	Assessment method	Requirement	Result
Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	Nail tear to EN 12310-1 : 2000 modified by EN 13859-1 : 2010, Annex A	Declared values	
	Longitudinal direction	230 N	Pass
	Transverse direction	275 N	Pass
	Mullen burst strength to BS 3137 : 1972	Value achieved	488 kPa

1.2.2 On the basis of data assessed, the product 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 characteristics.

2.1 Reaction to fire

2.1.1 When tested to BS EN ISO 11925-2 : 2010 and classified to BS EN 13501-1 : 2007, the product achieved a reaction to fire classification of Class E(1).

(1) BTTG Report reference 27/05429E/09/20. A copy of the report is 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 product is 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 product 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

Product assessed	Assessment method	Requirement	Result
Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	Resistance to water penetration to BS EN 1928 : 2000	No leakage	Pass

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

3.1.3 The product is classified as Class W1 in accordance with BS EN 13859-1 : 2014 and will resist the passage of water, 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 product resists the penetration of liquid water and consequently may be used as temporary weather protection prior to the installation of slates or tiles. The period of such use should, however, be kept to a minimum. Further information 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 Water vapour transmission tests

Product assessed	Assessment method	Requirement	Result
Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	Water vapour transmission rate to BS 3177 : 1959(1)	Value achieved	2409 gm^{-2} day^{-1}
	Water vapour resistance to BS 3177 : 1959(1)	Value achieved	0.09 $MNsg^{-1}$
	Air permeability to DIN EN 12114 : 2000	≥30 $m^3.m^{-2}.h^{-1}$(50 Pa^{-1})	Pass

(1) Tested prior to the harmonised technical specification of EN 13859-1 : 2010.

3.2.2 On the basis of the data assessed, the product is air permeable, allowing a significant additional mechanism for water egress by convection and it is suitable for use in cold non-ventilated pitched roof systems.

3.2.3 As the product's water vapour resistance is less than 0.25 $MNsg^{-1}$, it may be regarded as a low water vapour resistance (type LR) and air permeable underlay.

4 Safety and accessibility in use

Data were assessed for the following characteristics.

4.1 Slip resistance

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

Table 7 Results of slip resistance

Product assessed	Assessment method	Requirement	Result
Daltex Roofshild For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	BBA Internal Test Specification T1/10 Coefficient of friction – Dry		
	Longitudinal	Value achieved	0.8
	Transverse	Value achieved	0.7
	BBA Internal Test Specification T1/10 Coefficient of friction – Wet		
	Longitudinal	Value achieved	0.4
	Transverse	Value achieved	0.4

4.1.2 On the basis of data assessed, the product has a low coefficient of friction when wet, and care must be taken when moving or standing on a wet surface covered with the product.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

The product contains polypropylene, which can be recycled.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

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

Table 8 Results of durability tests

Product assessed	Assessment method	Requirement	Result
Daltex Roofshield For Use In Energy Efficient Cold Non-Ventilated Pitched Roofs	Dimensional stability to BS EN 1107-2 : 2001	≤2%	
	Longitudinal direction		Pass
	Transverse direction		Pass
	Resistance to water penetration to BS EN 1928 : 2000 336 hours UVA at 50°C followed by 90 days heat ageing at 70°C	No leakage	Pass
	Tensile strength to EN 12311-1: 2000, modified by EN 13859-1 : 2010, Annex A Control:	Declared values	
	Longitudinal direction	390 N·(50 mm)$^{-1}$	Pass
	Transverse direction	230 N·(50 mm)$^{-1}$	Pass
	Tensile strength to EN 12311-1 : 2000, modified by EN 13859-1 : 2010, Annex A 336 hours UVA at 50°C followed by 90 days heat ageing at 70°C	Declared values	
	Longitudinal direction	330 N·(50 mm)$^{-1}$	Pass
	Transverse direction	190 N·(50 mm)$^{-1}$	Pass
	Elongation to EN 12311-1 : 2000, modified by EN 13859-1 : 2010, Annex A Unaged:	Declared values	
	Longitudinal direction	55 %	Pass
	Transverse direction	75 %	Pass
	Elongation to EN 12311-1 : 2000, modified by EN 13859-1 : 2010, Annex A 336 hours UVA at 50°C followed by 90 days heatageing at 70°C	Declared values	
	Longitudinal direction	40%	Pass
	Transverse direction	60%	Pass

8.3 Service life

8.3.1 Under normal service conditions, the product 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 product 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 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.

9.1.2 When the product 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.

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

9.1.4 Project design wind speeds for the roof in which the product is 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.

9.1.5 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.

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

9.1.7 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 product is laid in accordance with the Certificate holder's instructions and this Certificate to minimise the risk of condensation.

9.1.8 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.

9.1.9 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.

9.1.10 A vapour control layer is not required.

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 NHBC requires that the product, once installed, is inspected in accordance with of *NHBC Standards 2023*, Chapter 7.2 *Pitched roofs.* Any damage to the product assessed in this Certificate must be repaired in accordance with section 9.4 of this Certificate and reinspected, in order to maintain product performance.

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

9.2.5 Overlaps must be provided with the minimum dimensions given in Table 9.

Table 9 Minimum overlaps

Roof pitch (°)	Horizontal lap (mm)		Vertical laps (mm)
	Not fully supported	Fully supported	
12.5 < 15	225	150	100
≥15	150	100	100

Procedure

9.2.6 The product is 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 product when installed as an unsupported system is fixed in the traditional method for roof tile underlays, ie laid parallel to the eaves and draped between the rafters, with the coloured/printed side uppermost.

Taut

9.2.8 When laid horizontally, the product 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 can 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 must be installed either above or beneath the underlay for drainage purposes.

Finishing

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

9.2.12 To minimise the risk of condensation, it is important that the following details are maintained:

- all penetrations, eg pipework, electrical fittings to the loft space, must be sealed
- the loft hatch must be securely sealed to ensure a draught-free fit
- the insulation must be pushed into the eaves and against the underlay to avoid gaps.

9.2.13 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 tile/slate manufacturer's instructions, especially when using tightly jointed slates or tiles, where a ventilated batten space should be provided.

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

9.4 Maintenance and repair

9.4.1 As the product is confined in 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 product can 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 has 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 individually wrapped in polythene packaging, along with a technical leaflet bearing the product name and the BBA logo incorporating the number of this Certificate.

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

11.2.1 Rolls must be stored flat or on end on a smooth, clean surface, under cover and protected from sunlight.

ANNEX A – SUPPLEMENTARY INFORMATION †

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.

UKCA marking

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

CE marking

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

Management Systems Certification for production

The management system of Don & Low Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM 45536).

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**.**

Condensation

A.2 Energy loss by ventilation in conventionally ventilated cold roofs will be significantly reduced by the non-ventilated system.

A.3 In non-ventilated roof systems, the risk of condensation is equivalent to, or less than, that for conventionally ventilated cold roof systems.

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 air permeability of the product will reduce this risk (see section 3.2). The risk of condensation diminishes as the building naturally 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 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 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimensional stability — Plastic and rubber sheets for roof waterproofing*

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*

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

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

BS EN 13501-1 : 2007 + A1 : 2009 *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 ISO 9001 : 2015 *Quality management systems — Requirements*

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

DIN EN 12114 : 2000 *Thermal Performance of Buildings — Air Permeability of Building Components and Building Elements*

Conditions

1 This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

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

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

British Board of Agrément
1st Floor, Building 3, Hatters Lane
Croxley Park, Watford
Herts WD18 8YG
tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk