

## 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**

**03/4003**

Product Sheet 2 Issue 12

### DON & LOW MEMBRANES

### BREATHABLE ROOFTX ROOF TILE UNDERLAYS FOR USE IN COLD NON-VENTILATED ROOFS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Breathable RoofTX<sup>(2)</sup> Roof Tile Underlays for use in cold non-ventilated pitched roofs of up to 70° pitch in dwellings.

(1) Hereinafter referred to as 'Certificate'.

(2) RoofTX is a registered trademark of Don & Low Ltd.

#### 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 Twelfth issue: 1 May 2024  
Originally certificated on 4 June 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.*

#### British Board of Agrément

Building 3, Hatters Lane  
Croxley Park, Watford  
Herts WD18 8YG

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tel: 01923 665300  
clientservices@bbacerts.co.uk  
www.bbacerts.co.uk

## 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 Breathable RoofTX Roof Tile Underlays 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 satisfying this Requirement. See section 3 of this Certificate.
<b>Requirement:</b>	<b>C2(c)</b>	<b>Resistance to moisture</b>
Comment:		The products will contribute to 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 construction 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)</sup> . See section 2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The products will contribute to satisfying clauses 3.10.1 <sup>(1)</sup> and 3.10.8 <sup>(1)</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)</sup> , 3.15.3 <sup>(1)</sup> and 3.15.7 <sup>(1)</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 - conversion</b>
<b>Comment:</b>		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)</sup> and Schedule 6 <sup>(1)</sup> .
		(1) Technical Handbook (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>
<b>Comment:</b>	<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>
<b>Comment:</b>		The products will contribute to satisfying this Regulation. See section 3 of this Certificate.
<b>Regulation:</b>	<b>29</b>	<b>Condensation</b>
<b>Comment:</b>		The products can contribute to satisfying this Regulation. See section 3 of this Certificate.
<b>Regulation:</b>	<b>35(4)</b>	<b>Internal fire spread - structure</b>
<b>Comment:</b>		The products can contribute to satisfying this Regulation. See section 2 of this Certificate.

## Fulfilment of Requirements

The BBA has judged Breathable RoofTX Roof Tile Underlays for use in cold non-ventilated roofs to be satisfactory for use as described in this Certificate. The products have been assessed roof tile underlays for use in cold non-ventilated pitched roofs up to 70° pitch in dwellings.

## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the products under assessment. Breathable RoofTX Roof Tile Underlays for use in cold non-ventilated roofs consist of composite structures comprising water vapour permeable film and two layers of nonwoven polypropylene fabrics.

The Conseal range of products is available with integrated tapes for sealing overlaps and are available in a range of colours.

The products have the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics*

Characteristic (unit)	RoofTX Optima /Conseal	RoofTX Prime /Conseal	RoofTX Ultra/Conseal	RoofTX 125/Conseal	Roof TX Pro/Conseal	RoofTX Maxi /Conseal	RoofTX Extra /Conseal
Thickness (mm)	0.35	0.40	0.40	0.50	0.6	0.6	0.9
Mass per unit area (g·m <sup>-2</sup> )	92	102	112	125	150	170	230
Roll length (m)	50	50	50	50	50	50	50
Roll width (m)	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>	1.0/1.5 <sup>(1)</sup>

(1) Other widths are available on request.

## Ancillary Items

The Certificate holder recommends double sided tape for taping overlaps, but this material has not been assessed by the BBA and is outside the scope of this Certificate.

## Applications

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

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

(1) For roofs incorporating other features, or unconventional roof geometries or construction materials, the advice of the Certificate holder must 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 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 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.

## Definitions for products and applications inspected

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

## **Product assessment – key factors**

The products were 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 wind Zones of applicability, are given in Tables 2 and 3 of this Certificate.

**Table 2 Declared wind uplift resistance (Pa)**

Products	≤345 mm batten gauge with battened laps <sup>(3)</sup>	≤250 mm batten gauge with battened laps <sup>(2)(3)</sup>	≤345 mm batten gauge with taped laps <sup>(3)</sup>	≤345 mm batten gauge with integrated taped laps <sup>(3)</sup> (Conseal)	≤345 mm batten gauge with counterbatten <sup>(1)(3)</sup>
RoofTX Optima/Conseal	701	1604	1498	1406	—
RoofTX Prime/Conseal	826	1715	1830	1782	1531
RoofTX Ultra/Conseal	838	1954	1932	>1600	1932
RoofTX 125/Conseal	1182	2471	>1600	>1600	>1600
Roof TX Pro/Conseal	1337	—	—	—	>1600
RoofTX Maxi/Conseal	1529	2613	>1600	>1600	>1600
RoofTX Extra/Conseal	1860	>1860	>1600	>1600	>1600

(1) This applies to any counter batten ≥11 mm deep.

(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 according to BS 5534 : 2014, clause A.8 with battened laps and laps with counter battens**

Products	≤345 mm batten gauge with battened laps	≤250 mm batten gauge with battened laps	≤345 mm batten gauge with taped laps	≤345 mm batten gauge with integrated taped laps (Conseal )	≤345 mm batten gauge with counter batten <sup>(1)</sup>
RoofTX Optima/Conseal	unclassified	Zones 1 to 5	Zones 1 to 4	Zones 1 to 4	Zones 1 to 4
RoofTX Prime/Conseal	Zone 1	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 4
RoofTX Ultra/Conseal	Zone 1	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5
RoofTX 125/Conseal	Zones 1 to 3	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5
Roof TX Pro/Conseal	Zone 1 to 4	—	—	—	Zones 1 to 5
RoofTX Maxi/Conseal	Zones 1 to 4	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5
RoofTX Extra/Conseal	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5	Zones 1 to 5

(1) This applies to any counter batten ≥11 mm deep.

## Unsupported

1.1.2 On the basis of data assessed, 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 of  $\leq 15$  m, a pitch between 12.5 and 70°, and a site altitude of  $\leq 100$  m, and where topography is not significant. For all other cases, the required uplift resistance must 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 The products when fully supported, have adequate resistance to wind uplift forces.

1.1.4 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 tests*

Product assessed	Assessment method	Requirement	Result
RoofTX Optima/Conseal	Tear resistance to EN 12310-1 : 2000	$\geq 50$ N	Pass
RoofTX Prime/Conseal	with modifications as per		Pass
RoofTX Ultra/Conseal	BS EN 13859-1 : 2014 Annex B		Pass
RoofTX 125/Conseal	longitudinal direction		Pass
Roof TX Pro/Conseal	transverse direction		Pass
RoofTX Maxi/Conseal			Pass
RoofTX Extra/Conseal			Pass
RoofTX 125/Conseal	Mullen burst strength to BS 3137 : 1972	Value achieved	459 kN·m <sup>-2</sup>

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 The results of reaction to fire tests are given in Table 5.

**Table 5 Result of reaction to fire test**

Product assessed	Assessment method	Requirement	Result
RoofTX Optima/Conseal <sup>(1)(8)</sup>	Reaction to fire tested to BS EN ISO 11925-2 : 2010 and classified to BS EN 13501-1 : 2007	Value achieved	E,d2
RoofTX Prime/Conseal <sup>(2)(8)</sup>			E,d2
RoofTX Ultra/Conseal <sup>(3)(8)</sup>			E
RoofTX 125/Conseal <sup>(4)(8)</sup>			E
Roof TX Pro/Conseal <sup>(5)(8)</sup>			E
RoofTX Maxi/Conseal <sup>(6)(8)</sup>			E
RoofTX Extra/Conseal <sup>(7)(8)</sup>			E,d2

- (1) Test Report reference 27/04716A/08/18 issued by BTTG. The report is available from the Certificate holder on request.  
 (2) Test Report reference 27/04840B/11/18 issued by BTTG. The report is available from the Certificate holder on request.  
 (3) Test Report reference 27/04386A/10/17 issued by BTTG. The report is available from the Certificate holder on request.  
 (4) Test Report reference 27/04716C/08/18 issued by BTTG. The report is available from the Certificate holder on request.  
 (5) Test Report reference 27/06129C/04/23 issued by BTTG. The report is available from the Certificate holder on request.  
 (6) Test Report reference 27/06275/10/23 issued by BTTG. The report is available from the Certificate holder on request.  
 (7) Test Report reference 27/04890C/01/19 issued by BTTG. The report is available from the Certificate holder on request.  
 (8) The specimens were tested unsupported with no backing board.

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 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 must 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 6

**Table 6 Weathertightness**

Product assessed	Assessment method	Requirement	Result
RoofTX Optima/Conseal	Resistance to water penetration to EN 1928 : 2000 with modifications as per BS EN 13859-1 : 2014 Annex A	No leakage	Pass
RoofTX Prime/Conseal			Pass
RoofTX Ultra/Conseal			Pass
RoofTX 125/Conseal			Pass
RoofTX Maxi/Conseal			Pass
RoofTX Extra/Conseal			Pass

3.1.2 On the basis of 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-driven 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 the 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. 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 resistance tests are given in Table 7.

*Table 7 Water vapour resistance test result*

Product assessed	Assessment method	Requirement	Result
RoofTX 125/Conseal	Water vapour transmission properties to	Declared value	Pass
RoofTX Extra/Conseal	EN ISO 12572 : 2001	$S_d = 0.029 \text{ m (+/- 0.01)}^{(1)}$	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 As the products' water vapour resistance is less than  $0.25 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$ , they 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 Results of slip resistance tests are given in Table 8.

*Table 8 Slip resistance test result*

Product assessed	Assessment method	Requirement	Result
RoofTX 125	BBA Internal Test Specification T1/10	Value achieved	
	Coefficient of friction		
	dry		0.97
	wet		0.65

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 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 polyolefins, which can be recycled.

## 8 Durability

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

8.2 Specific test data were assessed, as given in Table 9.



Table 9 Results of durability tests

Product assessed	Assessment method	Requirement	Result
	Tensile strength to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	230 (-50) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A	250 (-50) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Ultra/Conseal	- control	260(-50) N·(50 mm) <sup>-1</sup>	Pass
RoofTX 125/Conseal	longitudinal direction	285 (-65) N·(50 mm) <sup>-1</sup>	Pass
Roof TX Pro/Conseal		325 (-70) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Maxi/Conseal		400 (-80) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Extra/Conseal		470 (-80) N·(50 mm) <sup>-1</sup>	Pass
	Tensile strength to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	125 (-30) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A	140 (-40) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Ultra/Conseal	- control	150 (-35) N·(50 mm) <sup>-1</sup>	Pass
RoofTX 125/Conseal	transverse direction	165 (-45) N·(50 mm) <sup>-1</sup>	Pass
Roof TX Pro/Conseal		295 (-50) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Maxi/Conseal		260 (-50) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Extra/Conseal		300 (-60) N·(50 mm) <sup>-1</sup>	Pass
RoofTX Optima/Conseal	Tensile strength to EN 12311-1 : 2000	Change <30%	Pass
RoofTX Prime/Conseal	with modifications as per		Pass
RoofTX Ultra/Conseal	BS EN 13859-1 : 2014 Annex A and C		Pass
RoofTX 125/Conseal	longitudinal direction		Pass
RoofTX Maxi/Conseal	transverse direction		Pass
RoofTX Extra/Conseal			Pass
	Elongation to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	65 (-20) %	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A	60 (-20) %	Pass
RoofTX Ultra/Conseal	- control	80 (-16) %	Pass
RoofTX 125/Conseal	longitudinal direction	70 (-16) %	Pass
Roof TX Pro/Conseal		50 (-20) %	Pass
RoofTX Maxi/Conseal		80 (-20) %	Pass
RoofTX Extra/Conseal		70 (-20) %	Pass
	Elongation to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	70 (-22) %	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A	70 (-20) %	Pass
RoofTX Ultra/Conseal	- control	90 (-18) %	Pass
RoofTX 125/Conseal	transverse direction	90 (-18) %	Pass
Roof TX Pro/Conseal		85 (-22) %	Pass
RoofTX Maxi/Conseal		100 (-22) %	Pass
RoofTX Extra/Conseal		100 (-20) %	Pass
	Elongation to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	35 (-20) %	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A and C	40 (-20) %	Pass
RoofTX Ultra/Conseal	longitudinal direction	42 (-8) %	Pass
RoofTX 125/Conseal		30 (-20) %	Pass
RoofTX Maxi/Conseal		65 (-20) %	Pass
RoofTX Extra/Conseal		40 (-20) %	Pass
	Elongation to EN 12311-1 : 2000	Declared values	
RoofTX Optima/Conseal	with modifications as per	40 (-22) %	Pass
RoofTX Prime/Conseal	BS EN 13859-1 : 2014 Annex A and C	50(-20) %	Pass
RoofTX Ultra/Conseal	transverse direction	72 (-14) %	Pass
RoofTX 125/Conseal		40 (-20) %	Pass
RoofTX Maxi/Conseal		80 (-22) %	Pass
RoofTX Extra/Conseal		50 (-20) %	Pass

*Table 9 Results of durability tests (continued)*

Product assessed	Assessment method	Requirement	Result
RoofTX Optima/Conseal	Resistance to water penetration to EN 1928 : 2000 with modifications as per BS EN 13859-1 : 2014 Annex A and C	No evidence of water leakage	Pass
RoofTX Prime/Conseal			Pass
RoofTX Ultra/Conseal			Pass
RoofTX 125/Conseal			Pass
RoofTX Maxi/Conseal			Pass
RoofTX Extra/Conseal			Pass
	Low temperature flexibility to EN 1109 : 2000	Declared values	
RoofTX 125/Conseal		-60°C	Pass
RoofTX Extra/Conseal		-40°C	Pass
RoofTX Extra/Conseal	Dimensional Stability to EN 1107-2 : 2001 longitudinal direction transverse direction	≤2 %	Pass
			Pass

### 8.3 Service life

8.3.1 Under normal service conditions, the products will have a service life comparable to 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 specified in this Certificate.

9.1.2 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.

9.1.3 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.

9.1.4 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.

9.1.5 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.

9.1.6 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.

9.1.7 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.

9.1.8 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 : 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 products must be installed with the coloured and 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 10.

*Table 10 Minimum overlaps*

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

### Procedure

9.2.5 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*

9.2.6 The products to be installed as part of an unsupported system are fixed in the traditional method for roof tile underlays, ie laid parallel to the eaves and draped between the rafters, with the coloured and printed side uppermost.

#### *Taut*

9.2.7 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*

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

9.2.9 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.

### 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 must be installed by a competent general builder, or a contractor, 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 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 products 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 rolls are delivered to site individually wrapped in polythene. A technical leaflet bearing the product name and the BBA logo incorporating the number of this Certificate is included with each roll.

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 a clean, level surface, under cover and protected from sunlight.

Supporting information in this Annex is relevant to the products 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 products 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 BS EN ISO 9001 : 2015 by BSI (Certificate FM 45536).

### Additional Guidance

#### General

A.1 Where possible, eaves guards should be used to protect the products 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 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 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 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 — Wind actions*  
NA to BS EN 1991-1-4 : 2005 + A1 : 2010 UK National Annex to *Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 13501-1 : 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*

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

EN 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimensional stability — Plastic and rubber sheets for roof waterproofing*

EN 1109 : 2000 Flexible sheets for waterproofing. Bitumen sheets for roof waterproofing. Determination of flexibility at low temperature

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*

EN ISO 12572 : 2001 *Hygrothermal performance of building materials and product — Determination of water vapour transmission properties — Cup method*

### 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.