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Agrément Certificate
06/4334
Product Sheet 3

BREATHABLE ROOFTX ULTRA AND ROOFTX OPTIMA MEMBRANES

FOR USE IN TIMBER-FRAME CONSTRUCTIONS

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Breathable RoofTX Ultra and RoofTX Optima Membranes, for use in timber-frame walls with a cavity and conventional masonry, weatherboarding, tile or slate cladding.

AGRÉMENT CERTIFICATION INCLUDES:

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



KEY FACTORS ASSESSED

Weathertightness — the products will contribute to protecting a wall against water penetration (see section 5).

Risk of condensation — the products have low resistance to water vapour transmission and will reduce the risk of interstitial condensation (see section 6).

Strength — the products have adequate strength to resist damage during the construction of walls (see section 7).

Durability — the products will have a service life comparable to other similar elements of construction, eg vapour control layers (see section 10).

The BBA has awarded this Agrément 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

A handwritten signature in black ink, appearing to read 'Simon Wroe'.

Date of First issue: 9 October 2009

Simon Wroe
Head of Approvals — Materials

A handwritten signature in black ink, appearing to read 'Greg Cooper'.

Greg Cooper
Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Breathable RoofTX Ultra and RoofTX Optima Membranes, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a wall meeting this Requirement. See section 5.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The products will contribute to a wall meeting this Requirement with respect to interstitial condensation. See section 6.1 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The use of the products satisfy this Regulation. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.10	Precipitation
Comment:		The products will contribute to a wall satisfying clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.7 ⁽¹⁾⁽²⁾ of this Standard. See section 5.1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The products can contribute to a wall satisfying clauses 3.15.1 ⁽¹⁾⁽²⁾ and 3.15.5 ⁽¹⁾ of this Standard, with respect to interstitial condensation. See section 6.1 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for these products under Regulation 9, 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) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The products will contribute to a wall satisfying this Regulation. See section 5.1 of this Certificate.
Regulation:	C5	Condensation
Comment:		The products can enable a wall to satisfy this Regulation. See section 6.1 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligation under these Regulations.

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Breathable RoofTX Ultra and RoofTX Optima Membranes, when installed and used in accordance with this Certificate as meeting Technical Requirement R3, in relation to *NHBC Standards*, Chapter 6.2 *External timber framed walls*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Breathable RoofTX Ultra and RoofTX Optima Membranes, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *External walls – timber frame*.

General

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

Technical Specification

1 Description

1.1 Breathable RoofTX Ultra and RoofTX Optima Membranes are composite structures, manufactured via lamination of a water vapour permeable film between two layers of nonwoven polypropylene spunbond, to form flexible breather membranes.

1.2 The products are available in two grades and have the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (units)	RoofTX Ultra	RoofTX Optima
Thickness (mm)	0.4	0.35
Weight per unit area (gm ⁻²)	112	92
Roll length (m)	up to 50	up to 50
Roll width (m)	1.0/1.5	1.0/1.5
Roll weight (kg)	min 6.0, max 9.0	min 5.0, max 7.0
Colour		
upper	various	various
lower	various	various

1.3 Quality control checks are carried out on the incoming materials, during production and on the finished product. Quality control checks on the finished product include:

- weight
- hydrostatic head
- tear strength
- tensile strength and elongation.

2 Delivery and site handling

2.1 Rolls are delivered to site individually wrapped in polyethylene. A technical leaflet bearing the product name is included with each roll and the BBA identification mark incorporating the number of this Certificate is shown on the leaflet. Labels with the lot identifiers are attached to each roll for traceability.

2.2 The rolls should be stored flat on their sides or on end, on a smooth, clean, dry surface, under cover and protected from sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Breathable RoofTX Ultra and RoofTX Optima Membranes.

Design Considerations

3 Use

3.1 Breathable RoofTX Ultra and RoofTX Optima Membranes are satisfactory for use as on-site or factory-applied breather membranes in timber-frame walls.

3.2 In the absence of other guidance, suitable timber-frame walls are defined as those designed and built in accordance with *NHBC Standards*, Chapter 6.2.

3.3 The products meet the requirements for a Class W1 material in accordance with BS EN 13859-2 : 2004 and are suitable for use in constructions designed for use in very severe conditions as defined in *NHBC Standards*, Appendix 6.1-A. See also *NHBC Standards*, Chapter 6.2, Clause M5.

4 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor, experienced with this type of product.

5 Weathertightness



5.1 The products resist liquid water penetration, wind-blown snow and will protect the sheathing and frame from external moisture (see section 1.4, Table for *Physical properties — general*).

5.2 The products can be used as temporary weather protection during construction, prior to the completion of external brickwork or claddings. The period of such use, however, should be kept to a minimum. Advice should be sought from the Certificate holder.

6 Risk of condensation



6.1 The products have a design resistance to water vapour transmission of less than or equal to 0.6 MNsg^{-1} and are defined as a breather membrane in accordance with BS 5250 : 2002. Therefore, they will contribute towards minimising the risk of condensation in suitably designed walls (see section 14, Table for *Physical properties — directional*).

6.2 The risk of condensation occurring within the wall of a timber-frame building will depend upon the properties and vapour resistance of other materials used in the construction, the internal and external conditions and the effectiveness of the internal vapour control layer.

7 Strength

7.1 The products will resist the normal loads associated with construction and installation into timber-frame constructions.

7.2 The products are not adversely affected by water and will retain their properties when wet (see section 14 Table for *Physical properties — directional*).

8 Properties in relation to fire

8.1 The products will have similar properties to polyolefin membranes in relation to fire, tending to burn and shrink away from the heat source. The products are unclassifiable in terms of the Building Regulations and this should be considered when assessing the overall fire risk.

8.2 The products achieve a class D classification in accordance with BS EN 13501-1 : 2002.

8.3 Cavity barriers should be used to satisfy the requirements of the national Building Regulations.

9 Maintenance

As the products are confined within a wall space and have suitable durability (see section 10) maintenance is not required. However, it must be ensured that damage occurring before enclosure is repaired (see section 13).

10 Durability



The products will be virtually unaffected by the normal conditions found in a timber-frame wall and will have a life comparable with other similar elements of construction, eg vapour control layers.

Installation

11 General

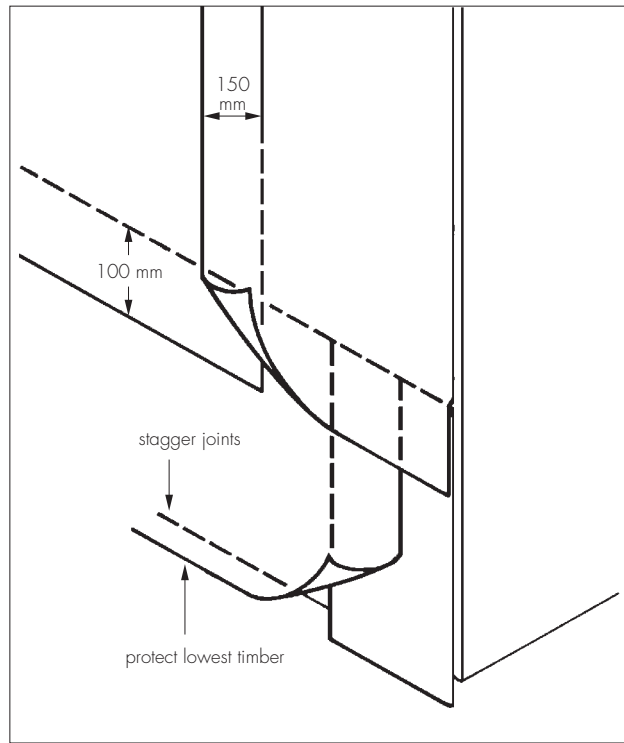
Breathable RoofTX Ultra and RoofTX Optima Underlays must be installed and fixed in accordance with the Certificate holder's instructions and recommendations given in *NHBC Standards*, Chapter 6.2 *External timber-framed walls* where appropriate.

12 Procedure

12.1 The products must be secured at regular intervals not exceeding 500 mm with austenitic stainless steel staples or nails to prevent damage by wind action.

12.2 Upper layers should overlap lower layers to shed water away from the sheathing. Vertical laps should be staggered wherever possible (see Figure 1).

Figure 1 Membrane installation



12.3 Laps should not be more than:

horizontal 100 mm
vertical 150 mm

12.4 It is essential that the positions of studs are marked on the face of the breather membranes, usually by tape, to enable fixing of wall ties or battens.

12.5 It is essential that lowest timbers in the wall are protected by the breather membrane.

13 Repair

The products can be damaged by careless handling, high winds or vandalism. Damage to the membranes can be repaired prior to the installation of external walls or claddings by laying another sheet over the damaged area and sealing it correctly, ensuring water is shed away from the sheathing.

14 Tests

Samples of Breathable RoofTX Ultra and RoofTX Optima Membranes were obtained from the Certificate holder for testing. The results of the tests carried out by, or on behalf of, the BBA are summarised in Tables 2 and 3.

Table 2 Physical properties — directional

Test (units)	Mean result		Method ⁽¹⁾
	RoofTX Ultra	RoofTX Optima	
Tensile strength (N per 50 mm)			BS EN 12311-1
unaged			
longitudinal	268	261	
transverse	138	134	
aged ⁽²⁾			
longitudinal	205	197	
transverse	108	102	
Elongation at break (%)			BS EN 12311-1
unaged			
longitudinal	54	73	
transverse	62	86	
aged ⁽²⁾			
longitudinal	30	34	
transverse	37	43	
Tear resistance (nail) (N)			BS EN 12310-1
unaged			
longitudinal	126	109	
transverse	93	63	

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) UVA aged for 336 hours at 50°C/heat aged for 90 days at 70±2°C.

Table 3 Physical properties — general

Test (units)	Mean result		Method ⁽¹⁾
	RoofTX Ultra	RoofTX Optima	
Water vapour transmission at 25°C/75% RH (gm ⁻² day ⁻¹)	1367	1155	BS EN 12311-1
Vapour resistance (MNsg ⁻¹)	0.15	0.18	
Dimensional stability (%)			BS EN 1107-2
longitudinal	-0.95	-1.27	
transverse	-0.22	0.00	
Resistance to water penetration			BS EN 1928 ⁽²⁾
unaged	Class W1	Class W1	
aged ⁽³⁾	Class W1	Class W1	
Mullen burst strength (kNm ⁻²)	438	438	BS 3137
Head of water (cm)	540	598	BS EN 20811

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

(2) As modified in accordance with BS EN 13859-1 : 2005.

(3) UVA aged for 336 hours at 50°C/heat aged for 90 days at 70±2°C.

15 Investigations

The manufacturing process was assessed including the method adopted for quality control and details were obtained of the quality and composition of the materials used.

Bibliography

- BS 3137 : 1972 *Methods for determining the bursting strength of paper and board*
- BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS EN 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimension 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 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank)— Part 1 — Bitumen sheets for roof waterproofing*
- BS EN 12311-1 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Part 1 — Bitumen sheets for roof waterproofing*
- BS EN 13501-1 : 2002 *Fire classification of construction products and building elements. Classification using test data from reaction to fire tests*
- BS EN 13859-1 : 2005 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for discontinuous roofing*
- BS EN 13859-2 : 2004 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for walls*
- BS EN 20811 : 1992 *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

16.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

16.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

16.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.