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Agrément Certificate
15/5274
Product Sheet 1

WRAPTITE BREATHER MEMBRANE

FOR USE IN WARM NON-VENTILATED ROOFS IN SUPPORTED APPLICATIONS

This Agrément Certificate Product Sheet(1) relates to Wraptite Breather Membrane, a self-adhesive, vapour permeable, airtight membrane consisting of a triple-layer polypropylene micro-porous film laminate, with a proprietary acrylic moisture vapour permeable adhesive and silicon-coated PET release liner, for use as a roof tile underlay in warm non-ventilated roofs in supported applications.

(1) Hereinafter referred to as 'Certificate'.

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 — as part of a complete roof, the product will resist the passage of water and wind-blown rain and dust into the interior of the building (see section 6).
Risk of condensation — the product is a low water vapour resistance (Type LR) underlay and can be used as part of warm non-ventilated roof system (see section 7).
Wind loading — when installed in fully supported applications, the product's physical properties are adequate to resist the wind loads imposed on the underlay. The product will reduce the wind uplift forces acting on the roof covering (see section 8).
Strength — the product has adequate strength to resist the loads associated with the installation of the roof (see section 9).
Durability — under the normal conditions found in a roof space, the product will have a service life comparable to a traditional roof tile underlay (see section 12).

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 Third issue: 23 September 2019

Originally certificated on 16 November 2015

John Albon
Chief Scientific Officer

Claire Curtis-Thomas
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.
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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Regulations

In the opinion of the BBA, Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications, 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 presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):

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

Requirement:	**C2(b)**	**Resistance to moisture**
Comment:		The product will contribute to a roof satisfying this Requirement. See section 6.1 of this Certificate.
Regulation:	**7**	**Materials and workmanship (applicable to Wales only)**
Regulation:	**7(1)**	**Materials and workmanship (applicable to England only)**
Comment:		The product is acceptable. See section 12 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)**	**Durability, workmanship and fitness of materials**
Comment:		The product can contribute to a roof satisfying this Regulation. See section 12 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	3.10	Precipitation
Comment:		The product will contribute to a roof satisfying clauses 3.10.1[(1)(2)] and 3.10.8[(1)(2)] of this Standard. See section 6.1 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 applicable to 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)(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(a)(i)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)**	The product is acceptable. See section 12 and the *Installation* part of this Certificate.
Regulation:	**28(b)**	**Resistance to moisture and weather**
Comment:		The product will contribute to a roof satisfying this Regulation. See section 6.1 of this 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.

See section: 1 *Description* of this Certificate.

Additional Information

NHBC Standards 2019

In the opinion of the BBA, Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications, 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.*

CE marking

The Certificate holder has taken the responsibility of CE marking the product in accordance with harmonised European Standard BS EN 13859-1 : 2014. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications is a self-adhesive, vapour permeable, airtight membrane consisting of a triple-layer polypropylene micro-porous film laminate, with a proprietary acrylic moisture vapour permeable adhesive and silicon-coated PET release liner. The membrane has the following nominal characteristics:

Thickness (mm)	0.65
Mass per unit area* ($g \cdot m^{-2}$)	292
Roll length (m)	50
Roll width (m)	1.5
Roll weight (kg)	24
Equivalent air layer thickness S_d* (m)	0.039
Water vapour transmission($g \cdot m^2 \cdot 24hr$)	893
Resistance to penetration of air ($m^3 m^{-2} \cdot h^{-1} \cdot 50\ Pa^{-1}$)	0.01
Watertightness*	
unaged	Class W1
aged(1)	Class W1
Tensile strength* (N per 50 mm)	
longitudinal	417
transverse	252
Nail tear* (N)	
longitudinal	412
transverse	286
Colour	
upper	red
lower	white.

(1) Aged in accordance with EN 13859-1 : 2014, Annex C.

2 Manufacture

2.1 The membrane is manufactured by a lamination process, in which a polypropylene non-woven membrane with a breathable film is laminated onto an acrylic moisture vapour permeable adhesive and silicon-coated PET release liner. The product is then cut to the required lengths and packed ready for despatch.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated

- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control being operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 Rolls are delivered to site individually wrapped in polythene with a label bearing the BBA logo incorporating the number of this Certificate.

3.2 The rolls should be stored flat 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 Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications.

Design Considerations

4 Use

Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications is satisfactory for use as a fully supported underlay in tiled and slated warm non-ventilated pitched roof systems, including metal roof applications constructed in accordance with the relevant clauses of BS 5534 : 2014.

5 Practicability of installation

The product is designed to be installed by competent roofing contractors experienced with this type of product.

6 Weathertightness

6.1 The product is 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.

6.2 The product resists penetration of liquid water and consequently may be used as temporary waterproofing prior to the installation of slates or tiles. The period of such use should, however, be kept to a minimum. Further information is given in BBA Information Bulletin 2 *Permeable Roof Tile Underlay — Guide to Good Site Practice.*

7 Risk of condensation

7.1 For design purposes, the product's water vapour resistance may be taken as not more than 0.25 $MN \cdot s \cdot g^{-1}$ and for roofs designed in accordance with BS 5534 : 2014 or BS 5250 : 2011 Annex H, it may be regarded as a Type LR membrane.

7.2 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.

7.3 The risk of condensation is highest in a 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)

7.4 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. Ventilation may be required if specified by the tile manufacturer

or where the roof covering is airtight, as described in BS 5250 : 2011.

Partially inclined ceiling and insulation (warm and cold roof)

7.5 Where an insulated ceiling spans only part of the roof line, the resulting cold roof spaces should be installed in accordance with BS 5250 : 2011, Annex H.

8 Wind loading

8.1 Project design wind speeds for the roof in which the product is installed should 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.

8.2 The product, when fully supported, has adequate resistance to wind uplift forces.

8.4 The product may be used at any batten gauge in all wind zones when laid over nominally airtight sheet sarking, for example OSB, plywood, chipboard and insulation for warm-roof design. It may also be used in applications where slates are nailed directly onto sarking boards.

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

9 Strength

The product will resist the loads associated with installation of the roof.

10 Properties in relation to fire

10.1 The product is classified as Class B s1 d0*(1) in accordance with BS EN 13501-1 : 2007.

(1) Report reference 27/04289/07/17, issued by BTTG. Report is available from the Certificate holder upon request.

10.2 When the product is used in a fully supported situation, the reaction to fire will be primarily determined by the support.

11 Maintenance

As the product is confined within a roof structure and have suitable durability (see section 12), maintenance is not required. However, any damage occurring before enclosure must be repaired (see section 16).

12 Durability

The product will be virtually unaffected by the normal conditions found in a roof space and will have a life comparable with that of a traditional roof tile underlay, provided they are not exposed to sunlight for long periods (see section 13.6). Advice regarding exposure can be obtained from the Certificate holder.

Installation

13 General

13.1 Wraptite Breather Membrane for use in warm non-ventilated roofs in supported applications must be installed and fixed in accordance with the Certificate holder's instructions, the provisions of this Certificate and the relevant recommendations of BS 5534 : 2014, BS 8000-0 : 2014 and BS 8000-6 : 2013.

13.2 Installation can be carried out under all conditions normal to roofing work. The minimum air and surface temperature at which installation can take place is -6°C.

13.3 The product is installed with the red face uppermost, and lapped to shed water out and down the slope.

13.4 The product has a high coefficient of friction, either wet or dry, giving a slip-resistant surface for increased safety during the installation of the tiles or slates.

13.5 Overlaps must be provided with the minimum dimensions given in Table 1.

Table 1 Minimum overlaps

Roof pitch (°)	Horizontal Lap (mm) – fully supported	Vertical laps (mm)
12.5 < 15	75	75
≥15	75	75

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

14 Procedure

14.1 The product may be used over sarking boards of softwood, C4 grade chipboard or water-resistant grade OSB, and with either continuous insulation or insulation placed between the rafters.

14.2 The substrate must be clean, dry and free from contaminants, sharp protrusions, or other matter that may hinder the adhesion of the membrane installation. Any loose dust or dirt must be removed by wiping with a dry cloth or brush.

14.3 The product is installed from the original packaging which functions as a dispenser. The membrane is applied by peeling back the release paper by approximately 150 mm. The release paper is folded back and, using a hand roller or a stiff brush, the glue surface is lightly applied to the prepared substrate.

14.4 The hand roller or stiff brush is used to smooth out any air bubbles, releasing any trapped air. Curing time is approximately six hours. Time for full adhesion may vary depending on local conditions.

14.5 The product is self-adhered to the support, with counterbattens at least 12 mm thick to create an air space between the product and the tiles for drainage and vapour dispersal.

14.6 Care must be taken to minimise the risk of interstitial condensation as described in section 7.5, particularly for timber sarking which may be below the dew-point for extended periods during winter months.

15 Finishing

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

15.2 Tiling and slating must be carried out in accordance with the relevant clauses of BS 5534 : 2014, BS 8000-0 : 2014, BS 8000-6 : 2013 and the Certificate holder's instructions, especially when using tightly jointed slates or tiles.

16 Repair

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

Technical Investigations

17 Tests

17.1 Tests were carried out on the product and the results assessed to determine:

- thickness and mass
- width and straightness
- hydrostatic head
- Mullen burst strength
- watertightness of seams

- slip resistance
- resistance to streaming water.

17.2 An assessment was made of data to BS EN 13859-1 : 2014 in relation to:

- tensile strength and elongation
- resistance to tear
- dimensional stability
- resistance to penetration of air
- resistance to water penetration
- resistance to artificial ageing
- water vapour transmission
- reaction to fire.

18 Investigations

18.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 The condensation risk in warm roof constructions, and specifically those containing sarking boards, incorporating the product was assessed.

Bibliography

BS 5250 : 2011 + A1 : 2016 *Code of practice for control of condensation in buildings*

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 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*

19 Conditions

19.1 This Certificate:

- relates only to the product/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.

19.2 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.

19.3 This Certificate will remain valid for an unlimited period provided that the product/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.

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

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

19.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal 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, 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.