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Agrément Certificate
No 08/4548

TYVEK ROOF LINING SYSTEMS

PRODUCT SHEET 3 — TYVEK SD2 AIR LEAKAGE BARRIER/VAPOUR CONTROL LAYER

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate partially replaces Certificate No 01/3808 and relates to TYVEK SD2 Air Leakage Barrier/Vapour Control Layer for use in roofs.

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

Risk of condensation — the product has a low resistance to water vapour transmission and will reduce the risk of interstitial condensation (see section 5).

Strength — the product has adequate strength to resist damage during the construction of the roof (see section 6).

Durability — the product will have a service life comparable to other similar elements of construction, eg vapour control layers (see section 9).

The BBA has awarded this Agrément Certificate for TYVEK SD2 Air Leakage Barrier/Vapour Control Layer to DuPont de Nemours (Luxembourg) S.à r.l as fit for its intended use provided it is installed, used and maintained as set out in this Agrément Certificate.

On behalf of the British Board of Agrément

Head of Approvals
— Materials

Chief Executive

Date of First issue: 8 April 2008

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, TYVEK SD2 Air Leakage Barrier/Vapour Control Layer, 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(c)	Resistance to moisture
Comment:		The product can contribute to a roof meeting this Requirement with respect to interstitial condensation. See section 5.2 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a roof satisfying this Regulation. See sections 8, 9 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards – construction
Standard:	3.15	Condensation
Comment:		The product can contribute to a roof satisfying clauses 3.15.1 ⁽¹⁾ and 3.15.5 ⁽¹⁾ of this Standard with respect to interstitial condensation. See section 5.2 of this Certificate.
Regulation:	12	Building standards – conversions
Comment:		All comments given for this product 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 product is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The product is acceptable. See section 8 of this Certificate.
Regulation:	C5	Condensation
Comment:		The product can contribute to a roof to satisfying this Regulation. See section 5.2 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 obligations under these Regulations.

See section: 1 *Description* (1.2).

Non-regulatory Information

NHBC Standards 2007

NHBC accepts the use, as an air leakage barrier, of TYVEK SD2 Air Leakage Barrier/Vapour Control Layer, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies*, 7.2 *Pitched roofs* and 8.2 *Wall and ceiling finishes*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, TYVEK SD2 Air Leakage Barrier/Vapour Control Layer, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-sections *Pitched Roofs* and *Flat Roofs* and Section 5 *Internal/external works, services & finishes*, Sub-section – *Ceiling*.

General

This Certificate partially replaces Certificate No 01/3808 and relates to TYVEK SD2 Air Leakage Barrier/Vapour Control Layer for use in flat and pitched roofs and ceilings.

Tyvek is a registered trademark of DuPont de Nemours (Luxembourg) S.à r.l.

Technical Specification

1 Description

1.1 TYVEK SD2 Air Leakage Barrier/Vapour Control Layer consists of a spunbonded polypropylene substrate coated with a polyolefin-copolymer.

1.2 The finished rolls are available with nominal characteristics of:

roll width (m)	1.5
roll length (m)	50
thickness (mm)	0.25
weight per unit area (gm ⁻²)	108

1.3 The product is secured in place by nails and all laps are sealed with a double-sided acrylic adhesive tape.

2 Delivery and site handling

2.1 Rolls are delivered to site packaged. Each package carries a label bearing the BBA identification mark incorporating the number of this Certificate.

2.2 Rolls should be stored on their sides, on a smooth, clean surface under cover and protected from direct sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on TYVEK SD2 Air Leakage Barrier/Vapour Control Layer.

Design Considerations

3 General

3.1 TYVEK SD2 Air Leakage Barrier/Vapour Control Layer is satisfactory for use as an alternative to traditional vapour control layers/air barriers:

- at ceiling level in slated or tiled pitched cold roof constructions
- at the rafter line in slated or tiled pitched warm roof constructions
- at ceiling level in warm flat or pitched roofs, waterproofed using a membrane.

3.2 Further information is given in BRE Guidance Report No 262 *Thermal insulation : avoiding the risks*.

3.3 Where constructions need to comply with *NHBC Standards 2007* or *Zurich Building Guarantee Technical Manual 2007*, specifiers should observe the requirements of these documents.

3.4 It is essential that proper care and attention be given to maintaining the vapour control layer's integrity and continuity.

3.5 In ceilings the product is placed directly between the underside of the rafters and the ceiling lining to cover the insulation on the warm side as an integrated vapour control layer/air barrier.

3.6 Slated and tiled pitched roofs should be designed and constructed in accordance with BS 5534 : 2003.

3.7 Flat roofs should be designed and constructed in accordance with BS 6229 : 2003.

4 Practicability of installation

Installation can be carried out easily by slaters/tilers experienced with this type of product.

5 Risk of condensation

5.1 The risk of condensation occurring 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 product's installation.



5.2 The product can contribute to meeting the relevant requirements of the national Building Regulations:

England and Wales — Requirement C2(c)

Scotland — Mandatory Standard 3.15, clauses 3.15.1⁽¹⁾ and 3.15.5⁽¹⁾

(1) Technical Handbook (Domestic).

Northern Ireland — Regulation C5.

5.3 Consideration must be given in the overall installation to minimising penetrations by services. Joints at ceiling/wall must be sealed to offer significant resistance to water vapour transmission. Sealing should also be carried out in accordance with the Certificate holder's instructions.

5.4 The membrane has a nominal vapour resistance of not less than 10 MNsg^{-1} .

5.5 Constructions should be in accordance with the nominal recommendations of BS 5250 : 2002 and favourably assessed in accordance with Appendix D.

6 Strength

The product can resist the normal stresses associated with installation.

7 Properties in relation to fire

The product has properties in relation to fire similar to those of other polyolefinic sheets tending to melt and shrink away from a heat source but will burn in the presence of an ignition source. Therefore the product is unclassifiable in terms of the national Building Regulations and Standards. This should be considered when assessing the overall fire risk.

8 Maintenance



As the product is confined within a roof structure and has suitable durability (see section 9), maintenance is not required.

9 Durability



The product is rot proof, does not tear easily and will have a life equal to that of the building in which it is installed.

Installation

10 General

10.1 Installation of TYVEK SD2 Air Leakage Barrier/Vapour Control Layer should be in accordance with Certificate holder's instructions and good building practice (see Figures 1 to 3).

Figure 1 Ceiling — cold pitched roof

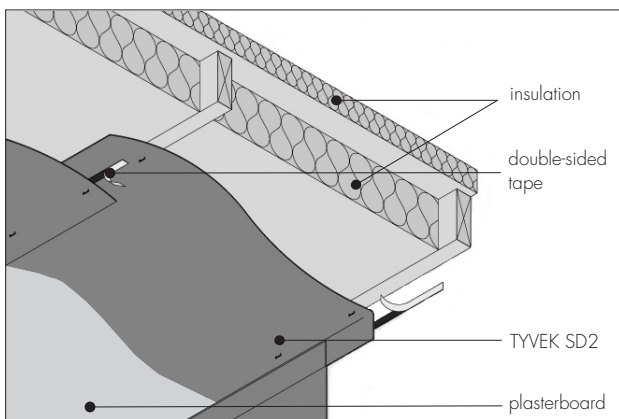


Figure 2 Warm pitched roof — rafter line

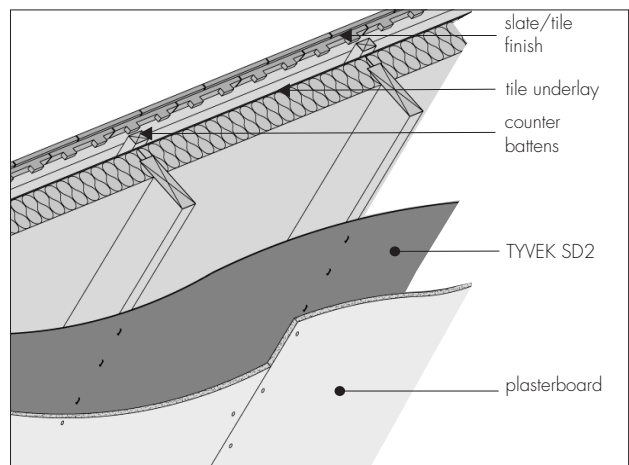
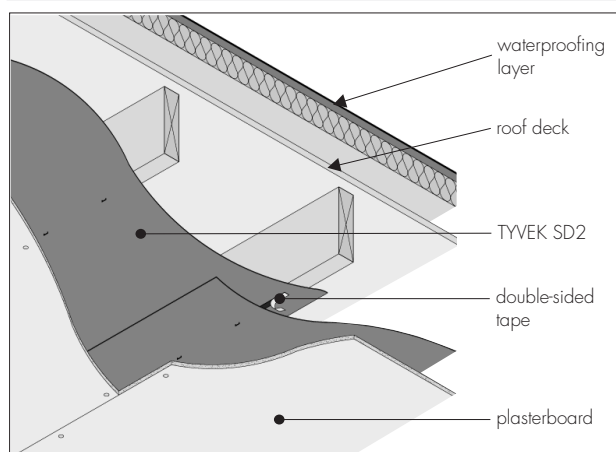


Figure 3 Flat roof



10.2 Where wood preservatives and damp-proofing treatments containing solvents have been applied, sufficient time must be allowed for solvents to disperse before the product is installed.

11 Procedure

11.1 The product should be positioned on the warm side of the thermal insulation and held in place if required by suitable fasteners to the background structure. Joints between adjacent sheets of the material should be lapped 150 mm over a support and be sealed with a strip of double-sided acrylic adhesive tape.

11.2 At all penetrations and abutments the product should be cut neatly to fit as closely as possible and the joint sealed with a strip of double-sided acrylic adhesive tape.

11.3 Internal linings can be applied directly onto the product and fixed through it in the normal manner. Alternatively the internal lining may be set on spacer battens, leaving a gap behind the lining which can accommodate wiring and other services and reduce the need for penetrations of the vapour control layer/air leakage barrier.

12 Repair

Damage to the vapour control layer can be made good by overlaying the damaged area with a new sheet sealed in place with double-sided acrylic adhesive tape.

Technical Investigations

13 Tests

Tests were carried out by the BBA to determine:

- nail tear strength
- leakage at joints
- water vapour permeability
- air permeability.

14 Investigations

14.1 An examination was made of data relating to:

- water vapour permeability
- flammability (B2 to DIN 4102-1 : 1998)
- tensile strength
- hydrostatic head
- nail tear strength
- elongation.

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

14.3 Calculations on the risks of interstitial condensation occurring in various constructions were carried out.

Bibliography

BS 5250 : 2002 *Code of practice for control of condensation in buildings*

BS 5534 : 2003 *Code of practice for slating and tiling (including shingles)*

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

DIN 4102-1 : 1998 *Fire behaviour of building materials and building components; Building materials; concepts, requirements and tests*

15 Conditions

15.1 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.

15.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

15.3 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.

15.4 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.

15.5 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.