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Agrément Certificate

**15/5226**

Product Sheet 1

### AMPACK VAPOUR CONTROL LAYERS

#### AMPATEX DB 90 VAPOUR CONTROL LAYER

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Ampatex DB 90 Vapour Control Layer, a two-layer membrane incorporating a range of thermoset polypropylene fibres and a polypropylene filling layer, for use in roofs and walls.

(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

**Risk of condensation** — the product will reduce the risk of interstitial condensation within the roof or wall construction (see section 6).

**Strength** — the product has adequate strength to resist the normal stresses associated with construction and installation (see section 7).

**Durability** — the product will have a service life comparable to other similar elements of construction (see section 10).

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 First issue: 15 July 2015

John Albon — Head of Approvals  
Construction Products

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](http://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, Ampatex DB 90 Vapour Control Layer, 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(c)	Resistance to moisture
Comment:		The product can contribute towards enabling a roof or wall to meet this Requirement. See sections 6.5 and 6.6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The product is acceptable. See section 10 and the <i>Installation</i> 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 construction satisfying this Regulation. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.15	Condensation
Comment:		The product can contribute towards enabling a roof or wall to satisfy this Standard, with reference to clauses 3.15.1 <sup>(1)(2)</sup> , 3.15.3 <sup>(1)(2)</sup> , 3.15.5 <sup>(1)(2)</sup> and 3.15.6 <sup>(1)(2)</sup> . See sections 6.5 and 6.6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product can contribute to meeting 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:		All comments given for this product under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



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

Regulation:	23(a)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:		The product is acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	29	Condensation
Comment:		The product can contribute towards enabling a roof or wall to satisfy this Regulation. See sections 6.5 and 6.6 of this Certificate.

## Construction (Design and Management) Regulations 2015

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

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

See section: 1 *Description* (1.2) of this Certificate.

# Additional Information

## NHBC Standards 2014

NHBC accepts the use of Ampatex DB 90 Vapour Control Layer, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapters 6.2 *External timber framed walls*, 6.9 *Curtain walling and cladding* and 7.1 *Flat roofs and balconies*.

## CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard EN 13984 : 2013. An asterisk (\*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

## 1 Description

1.1 Ampatex DB 90 Vapour Control Layer is a two-layer membrane made out of a range of thermoset polypropylene fibres with a polypropylene filling layer. Installation details are shown in Figures 1 to 7.

1.2 The product has the following nominal characteristics:

Thickness (mm)	0.33
Width (m)	1.5 and 3.0
Length (m)	50 and 100
Mass per unit area* ( $\text{g}\cdot\text{m}^{-2}$ )	90
Tensile strength (N per 50 mm)	
longitudinal	160
transverse	160
Elongation* (%)	
longitudinal	30
transverse	30
Nail tear resistance* (N)	
longitudinal	200
transverse	200
Watertightness	Pass
$s_d$ value* (m)	20.

1.3 Ancillary items for use with the product include:

- Ampacoll FE — adhesive tape for sealing around window and door frames
- Ampacoll INT — adhesive tape for internal use to seal overlaps
- Ampacoll RA — liquid adhesive used for edge connections
- Ampacoll BK 535 — butyl rubber adhesive tape for sealing around penetrations
- Ampacoll XT — acrylic adhesive tape for external use to seal joints of the underlay.

1.4 Also for use with the product but outside the scope of the Certificate is Ampacoll ND.Band, used to seal nails.

Figure 1 Connection of vapour check

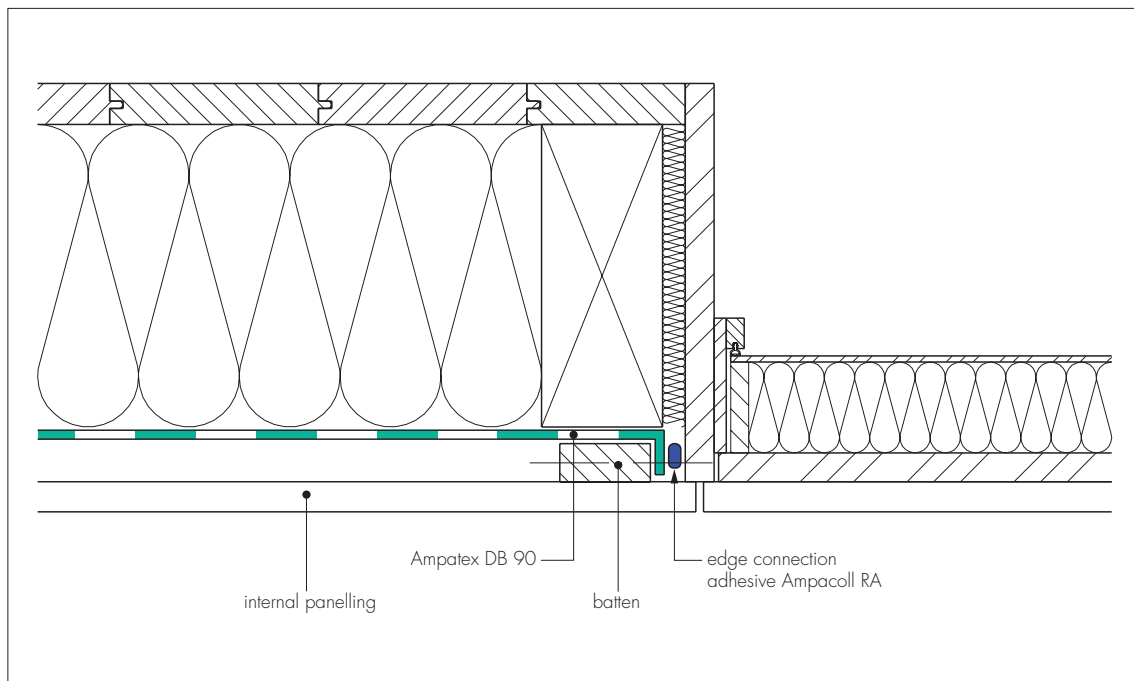


Figure 2 Integration of internal wall into ceiling structure

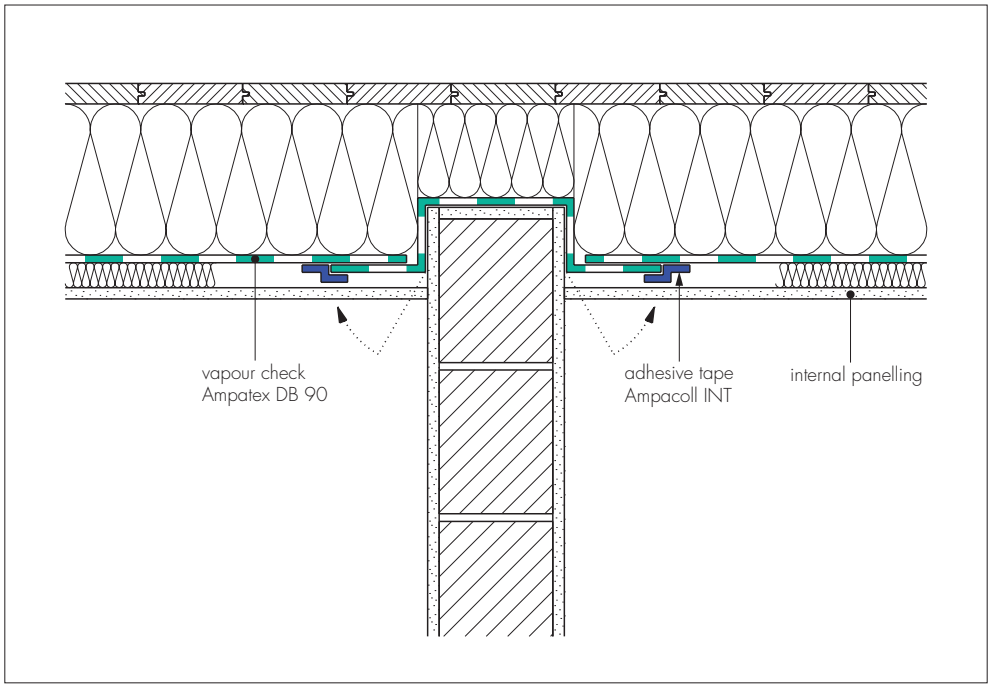


Figure 3 Connection between internal and external wall

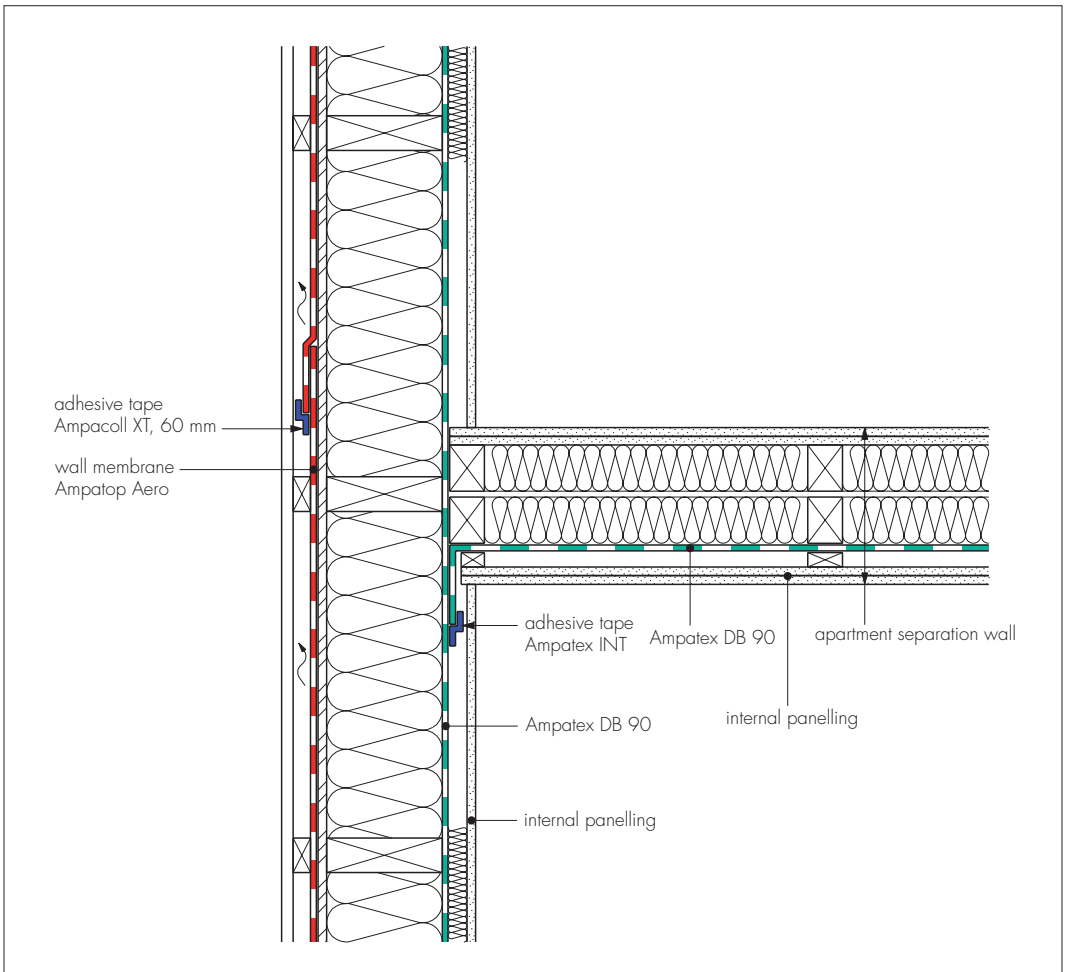


Figure 4 Connection between internal wall and roof pitch

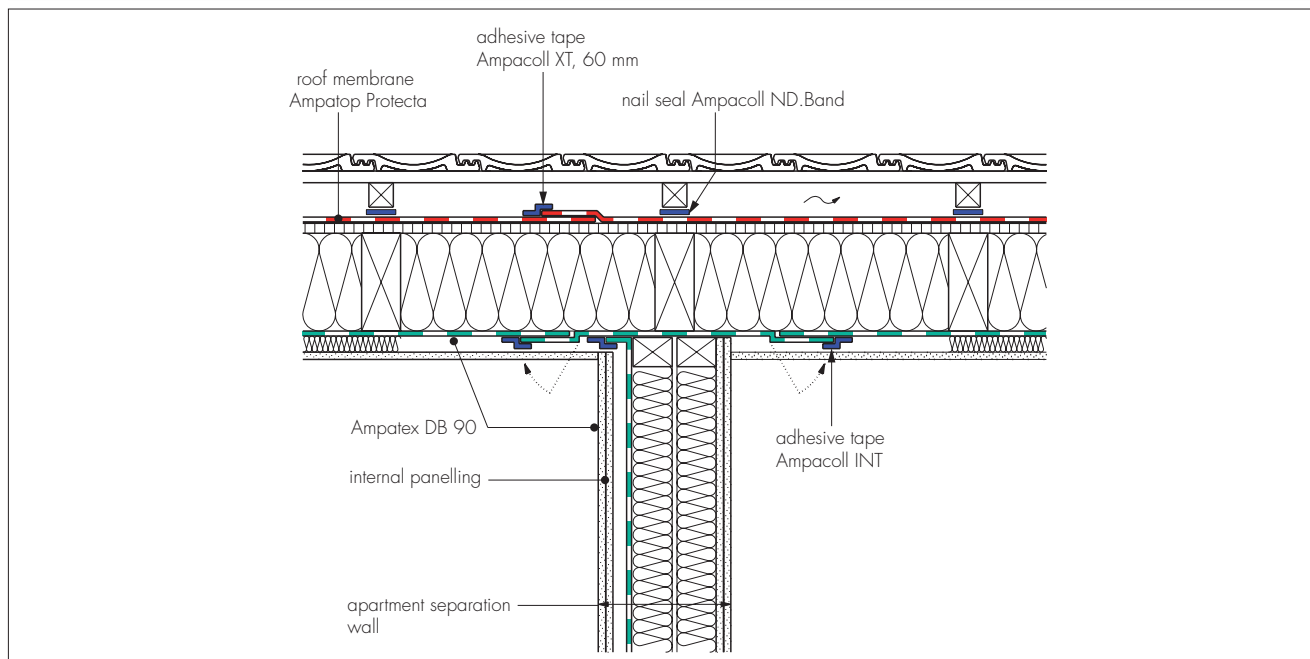


Figure 5 Connection between ceiling and masonry

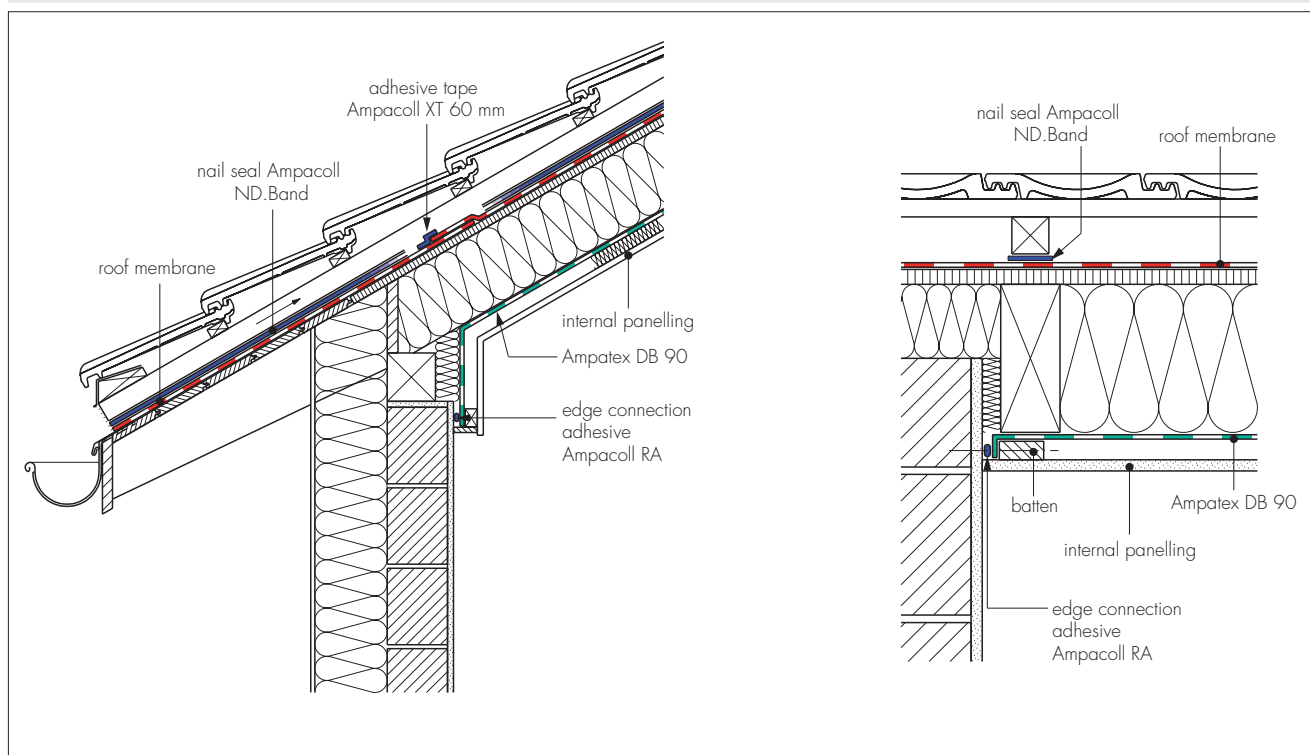


Figure 6 Chimney construction detail

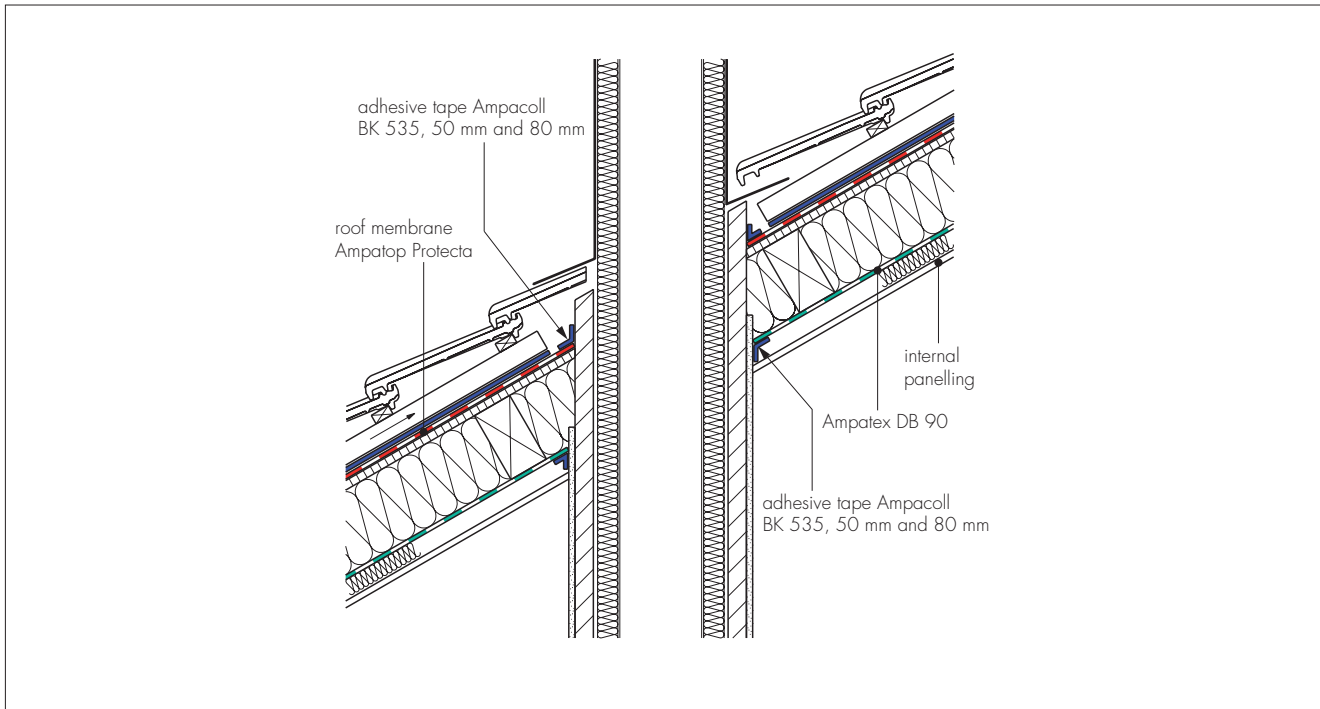
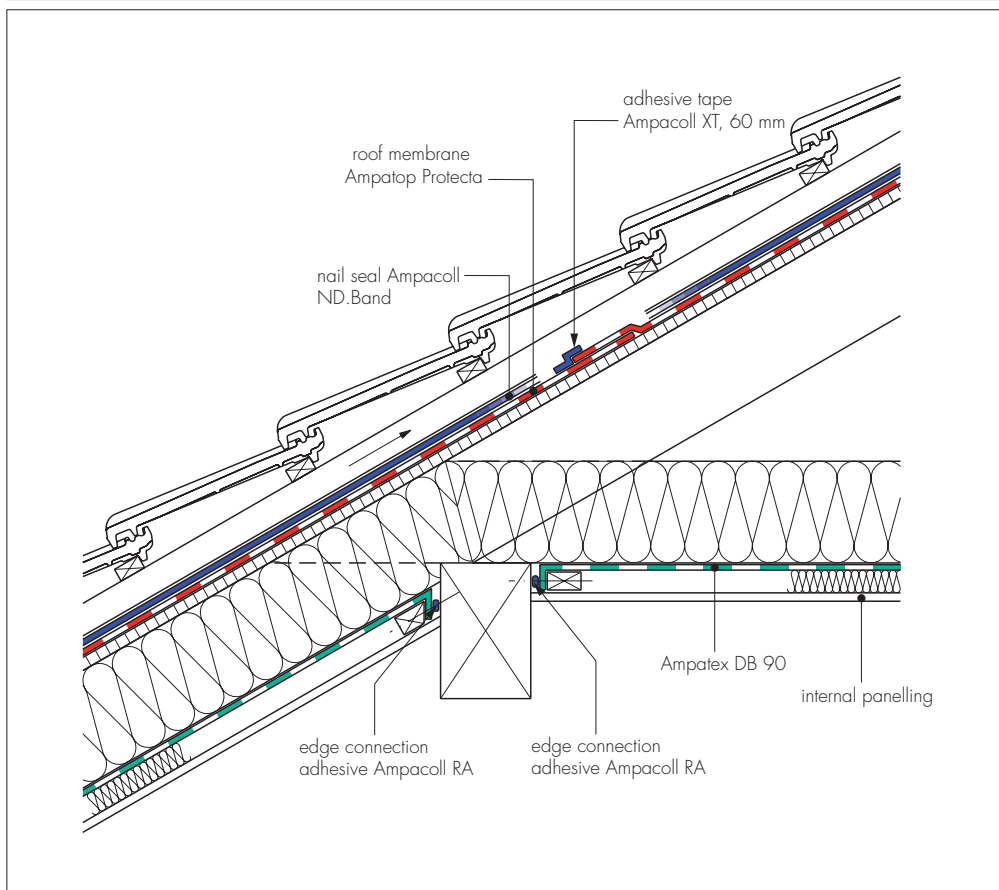


Figure 7 Membrane bonded to purlin



1.5 Also for use with the product, but outside the scope of this Certificate, is Ampacoll DT, a double-sided adhesive tape for internal use where Ampatex DB 90 cannot be nailed.

## 2 Manufacture

2.1 The product is manufactured by thermally bonding a non-woven polypropylene spunbond to produce a fleece. Polypropylene is extruded to form a coating, which is applied to the spunbond and penetrates into the fleece. The product is finished through a calendering process.

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 operated by the manufacturer are being maintained.

2.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008.

### 3 Delivery and site handling

3.1 The membrane is delivered to site in rolls wrapped in polythene film, with an insert sheet bearing technical information, installation instructions, the CE marking symbol and the BBA logo incorporating the number of this Certificate.

3.2 Rolls should be stored on their side, on a smooth, clean surface, undercover and protected from sunlight.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ampatex DB 90 Vapour Control Layer.

## Design Considerations

### 4 Use

4.1 Ampatex DB 90 Vapour Control Layer is satisfactory for use in roofs and walls of new build constructions and renovations, as an alternative to more traditional materials.

4.2 Walls in new buildings should be designed and constructed in accordance with the relevant recommendations of the UK National Annexes of BS EN 1996-1-1 : 2005 and BS EN 1996-2 : 2006.

4.3 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.

4.4 Slated and tiled pitched roofs should be designed and constructed in accordance with BS 5534 : 2014.

4.5 Existing walls must be in a good state of repair with no evidence of rain penetration, damp or frost damage.

4.6 It is essential that proper care and attention is given to maintaining the product's integrity and continuity.

4.7 New elements should incorporate the product on the warm side of the insulation, and the overall construction must be designed and constructed in accordance with the relevant good practice.

4.8 Existing elements must be in a good state of repair with no evidence of rain, damp or frost damage.

### 5 Practicability of installation

The product is designed to be installed by competent installers who have experience with this type of product.

### 6 Risk of condensation

6.1 Roofs and walls incorporating the product will adequately limit the risk of interstitial condensation when designed and constructed in accordance with BS 5250 : 2011, Appendices G and H. The product acts as a vapour control layer and has a thickness equivalent to water vapour transmission of  $s_d$  20 m and a water vapour resistance of  $102.9 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$  in accordance with BS EN 1931 : 2000.

6.2 In new-build construction the risk of interstitial condensation is greatest when the building is drying out after construction. Guidance on preventing condensation from this and other sources is given in BRE Digest 369 : 1992 *Interstitial condensation and fabric degradation* and BRE Report (BR 262 : 2002).

6.3 The possibility of condensation occurring will depend upon the positioning, properties and vapour resistance of other materials used in conjunction with the product, the internal and external conditions and the effectiveness of the product's installation.

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

6.5 When the product is installed on the warm side of non-ventilated constructions with diffusion-open outer layers (eg LR underlay as defined in BS 5250 : 2011), or when constructions are back-ventilated, the risk of interstitial condensation is low.



6.6 When the product is installed on the warm side of the construction with diffusion-tight outer layer(s) (eg waterproofing membranes, green roofs or HR underlay as defined in BS 5250 : 2011), a dynamic condensation assessment in accordance with BS EN 15026 : 2007 should be carried out for each particular situation, using an appropriate dynamic modelling package and considering parameters of:

- vapour diffusion resistance values of Ampatex DB 90 in section 6.1 of this Certificate
- hygrothermal properties of all other materials in the construction, in particular vapour resistances in the cold side
- type of insulation
- building location, element location, orientation and pitch
- rainfall and water absorption coefficient of the outermost external layer
- shading and solar absorptivity
- internal humidity conditions
- degree of airtightness of the construction.

6.7 Where incidence of solar radiation is low, such as in Scotland, the potential for back drying is reduced and the advice of the Certificate holder should be sought.

## 7 Strength

The product has adequate strength to resist damage during installation and subsequent works.

## 8 Properties in relation to fire

8.1 The product will melt and shrink away from heat but will burn in the presence of naked flame. The product is Class E\* material in accordance with EN 13501-1 : 2007.

8.2 There is a risk that fire can spread if the product is accidentally ignited during building and maintenance works, eg by a roofer's or plumber's torch. As with all types of membrane, care should be taken during building and maintenance to avoid the material being ignited.

8.3 In walls, cavity barriers must be used to satisfy the requirements of the national Building Regulations.

## 9 Maintenance

As the product is confined within the roof/wall structure and has suitable durability (see section 10), maintenance is not required.

## 10 Durability



The product will be unaffected by the normal conditions found in a roof or wall and will have a service life equal to that of the building in which it is installed.

## 11 Reuse and recyclability

The product is made from polypropylene, which can be recycled.

# Installation

## 12 General

12.1 Ampatex DB 90 Vapour Control Layer must be installed in accordance with the Certificate holder's instructions and good building practice.

12.2 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.

12.3 The product is stapled to the sub-construction on the warm side of the insulation.

12.4 The product is installed with the branded side facing the installer.

12.5 All joints, gaps, overlaps, connections and openings must be carefully sealed.

12.6 Laying should be kept as free as possible of stretches or folds to prevent tension and stress effects on the adhesive and connection points.

12.7 All joints in the vapour control layer must be lapped, to a minimum of 100 mm. A tight seal can be achieved by compressing the lap with a wallpaper roller.

12.8 Porous and sanded surfaces must be pre-treated with a suitable primer.

12.9 The performance of a vapour control layer can be adversely affected by the poor fixing of through penetrations and roof lights and by poor detailing around them.

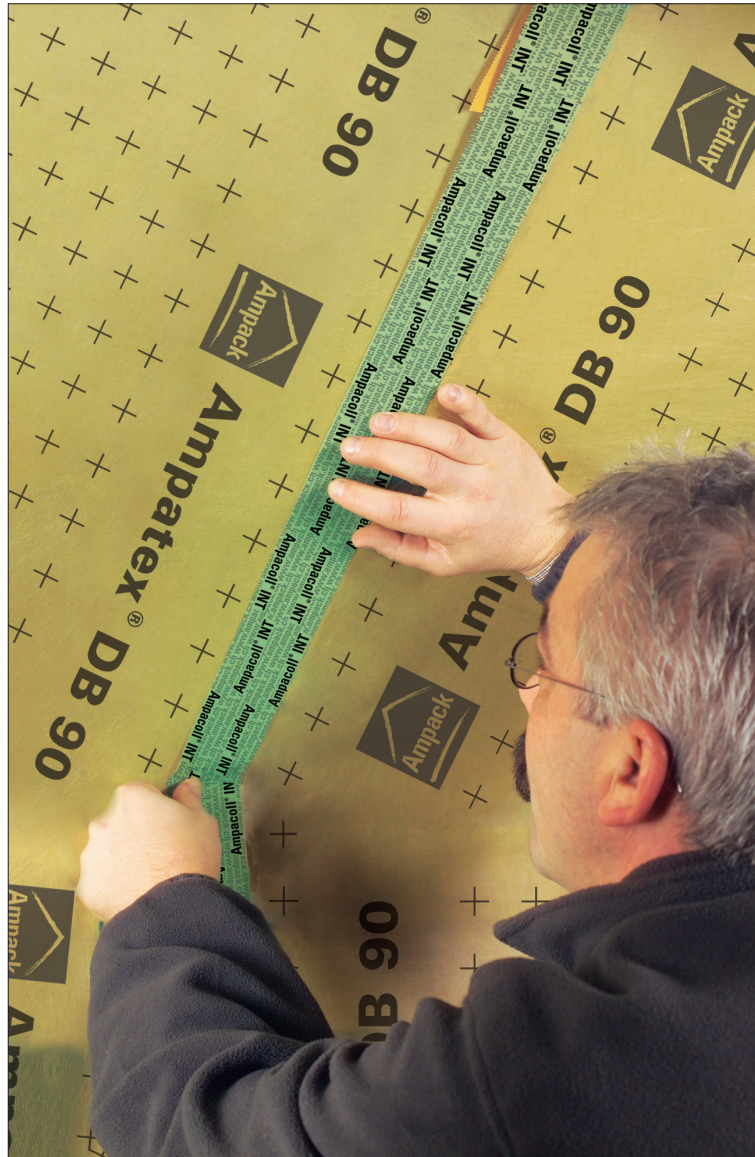
## 13 Procedure

13.1 Joints between adjacent sheets of the product are lapped by a minimum of 100 mm and sealed with Ampacoll INT tape (see Figure 7).



13.2 At all penetrations and abutments, the product is neatly cut to fit as closely as possible and the joint sealed with Ampacoll BK 535 (see Figure 8).

Figure 8 Sealing of laps with Ampacoll INT tape



13.3 Ampacoll FE is used for sealing at junctions and joints with roof windows (see Figure 9).

Figure 9 Sealing of a penetration with Ampacoll BK 535



13.4 Ampacoll FE tape is used for sealing around window and door frames (see Figure 10).

Figure 10 Sealing of a junction with Ampacoll FE



13.5 The edges of the product should be sealed with Ampacoll RA (see Figure 11). Once the sealant is applied, care should be taken when pressing the product, as excessive pressure may lead to poor bonding. A drying time of at least 2 days should be allowed.

Figure 11 Sealing edges of Ampatex DB 90 with Ampacoll RA



## 14 Repair

If repairs to the product are required, the Certificate holder's advice should be sought.

## Technical Investigations

### 15 Tests

15.1 An assessment was made of data to EN 13984 : 2013 in relation to:

- dimensions
- mass per unit area
- resistance to water penetration
- tensile strength and elongation
- effect of heat ageing
- resistance to tearing
- reaction to fire.

15.2 Tests were carried out to determine:

- shear and peel strength of joints
- water vapour properties.

## 16 Investigations

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.

## Bibliography

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

BS 5534 : 2014 *Slating and tiling for pitched roofs and vertical cladding — Code of practice*

BS EN 1931 :2000 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

BS EN 1996-1-1 : 2005 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

NA to BS EN 1996-1-1 : 2005 UK National Annex to *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

BS EN 1996-2 : 2006 *Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*

NA to BS EN 1996-2 : 2006 UK National Annex to *Eurocode 6 : Design of masonry structures — Design considerations, selection of materials and execution of masonry*

BS EN 15026 : 2007 *Hygrothermal performance of building components and building elements — Assessment of moisture transfer by numerical simulation*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

EN 13984 : 2013 *Flexible sheets for waterproofing — Plastic and rubber vapour control layers — Definitions and characteristics*



## 17 Conditions

17.1 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.

17.2 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.

17.3 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.

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

17.5 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.

17.6 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.