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**Agrément Certificate**

**14/5155**

Product Sheet 1 Issue 4

## PRO CLIMA INTELLIGENT VAPOUR CONTROL AND AIRTIGHT SYSTEMS

### INTELLO AND INTELLO PLUS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Intello and Intello Plus, humidity-variable air and vapour control layers (AVCLs), for use in roofs, walls and suspended floors and as part of the Pro Clima Intelligent Airtight System, in domestic and non-domestic buildings up to and including humidity class 4.

(1) Hereinafter referred to as 'Certificate'.

#### 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 Fourth issue: 8 August 2024

Originally certified on 22 January 2015

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.*

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## 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 Intello and Intello Plus, 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>B4(1)</b>	<b>External fire spread</b>
Comment:		The products are restricted by this Requirement. See section 2 of this Certificate.
<b>Requirement:</b>	<b>C2(c)</b>	<b>Resistance to moisture</b>
Comment:		The products can contribute to limiting the risk of interstitial condensation. See sections 3 and 9 of this Certificate.
<b>Requirement:</b>	<b>L1(a)(i)</b>	<b>Conservation of fuel and power</b>
Comment:		The products can contribute to satisfying this Requirement. See section 6 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.
<b>Regulation:</b>	<b>25B</b>	<b>Nearly zero-energy requirements for new buildings</b>
<b>Regulation:</b>	<b>26</b>	<b>CO<sub>2</sub> emission rates for new buildings</b>
<b>Regulation:</b>	<b>26A</b>	<b>Fabric energy efficiency rates (applicable to England only)</b>
<b>Regulation:</b>	<b>26A</b>	<b>Primary energy rates for new buildings (applicable to Wales only)</b>
<b>Regulation:</b>	<b>26B</b>	<b>Fabric performance values for new dwellings (applicable to Wales only)</b>
<b>Regulation:</b>	<b>26C</b>	<b>Target primary energy rates for new buildings (applicable to England only)</b>
<b>Regulation:</b>	<b>26C</b>	<b>Energy efficiency rating (applicable to Wales only)</b>
Comment:		The products can contribute to satisfying these Regulations. See section 6 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:	<b>2.4</b>	<b>Cavities</b>
Comment:		The products can contribute to satisfying this Standard with respect to clause 2.4.2 <sup>(1)(2)</sup> . See section 2 of this Certificate.
Standard:	<b>3.15</b>	<b>Condensation</b>
Comment:		The products can contribute to limiting the risk of interstitial condensation, with reference to clauses 3.15.1 <sup>(1)(2)</sup> and 3.15.5 <sup>(1)(2)</sup> of this Standard. See sections 3 and 9 of this Certificate.

Standard:	6.1(b)(c)	Energy demand
Standard:	6.2	Building insulation envelope
Comment:	The products can contribute to satisfying these Standards, with reference to clauses 6.1.1 <sup>(1)</sup> , 6.1.2 <sup>(2)</sup> , 6.2.4 <sup>(1)</sup> and 6.2.5 <sup>(2)</sup> . See section 6 of this Certificate.	
Standard:	7.1(a)(b)	Statement of sustainability
Comment:	The products 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. In addition, the products can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 <sup>(1)(2)</sup> , 7.1.6 <sup>(1)(2)</sup> and 7.1.7 <sup>(1)(2)</sup> . See section 3 of this Certificate.	
<b>Regulation:</b>	<b>12</b>	<b>Building standards – conversion</b>
Comment:	All comments given for the products 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)

<b>Regulation:</b>	<b>23(1)(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The products are acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>29</b>	<b>Condensation</b>
Comment:	The products can contribute to limiting the risk of interstitial condensation. See sections 3 and 9 of this Certificate.	
<b>Regulation:</b>	<b>35(4)</b>	<b>Internal fire spread - structure</b>
Comment:	The products can contribute to satisfying this Regulation. See section 2 of this Certificate.	
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
Comment:	The products are restricted by this Regulation. See section 2 of this Certificate.	
<b>Regulation:</b>	<b>39(a)(i)</b>	<b>Conservation measures</b>
<b>Regulation:</b>	<b>40(2)</b>	<b>Target carbon dioxide emission rate</b>
<b>Regulation:</b>	<b>43(1)(2)</b>	<b>Renovation of thermal elements</b>
<b>Regulation:</b>	<b>43B</b>	<b>Nearly zero-energy requirements for new buildings</b>
Comment:	The products can contribute to satisfying these Regulations. See section 6 of this Certificate.	

## Additional Information

### NHBC Standards 2024

In the opinion of the BBA, Intello and Intello Plus, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry walls*, 6.2 *External timber framed walls*, 6.9 *Curtain walling and cladding*, 6.10 *Light steel framed walls and floors*, 7.1 *Flat roofs, terraces and balconies*, 7.2 *Pitched roofs* and 9.2 *Wall and ceiling finishes*.

In NHBC projects where Intello and Intello Plus are used in conjunction with a vapour-closed insulation, a diffusion open membrane must be used on the cold side of the insulation.

## Fulfilment of Requirements

The BBA has judged Intello and Intello Plus to be satisfactory for use as described in this Certificate. The products have been assessed as humidity-variable AVCLs, for use in roofs, walls and suspended floors and as part of the Pro Clima Intelligent Airtight System, in domestic and non-domestic buildings up to and including humidity class 4 and air barriers.

## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the product under assessment. Intello and Intello Plus are AVCLs with a resistance to vapour diffusion that depends on the moisture content of the air adjacent to the product. In summer conditions, and in winter conditions where solar radiation is incident on the element, the vapour resistance reduces and facilitates the inward diffusion/escape of accumulated moisture.

Intello consists of a polyethylene copolymer coating on a polypropylene fleece and Intello Plus includes an additional reinforcing net.

The products have the nominal characteristics given in Table 1.

*Table 1 Nominal characteristics of Intello and Intello Plus*

Characteristic (unit)	Product	
	Intello	Intello Plus
Thickness (mm)	0.25	0.40
Mass per unit area (g·m <sup>-2</sup> )	85	110
Widths (m)	1.5 or 3.0	1.5 or 3.0
Lengths (m)	20 <sup>(1)</sup> or 50	20 <sup>(1)</sup> or 50
Colour	White	White

(1) Available only in 1.5 m width.

### Ancillary Items

The Certificate holder recommends the following ancillary items for use with the products, as part of the Pro Clima Airtight System, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- Orcon Classic and Orcon F Acrylate — adhesives for use in bonding the products to other building materials
- Tescon Vana — an adhesive tape for bonding overlaps in the products
- Tescon No 1 — the same adhesive tape as Tescon Vana with a single-part release paper, for use as a multi-purpose tape for overlaps, service penetrations and repairing damaged areas
- Tescon Profil — an adhesive tape with a two- or three-part release paper, for use in areas where application is difficult, eg windows, doors, corners
- Tescon Profect — pre-folded corner adhesive tape for interior and exterior use
- Contega PV — an adhesive tape with PET netting attached, for use as a plaster bond tape to help form and airtight joint between the vapour control layer and the plaster
- Contega SL — a double-layer plaster sealing tape with vapour control properties. The tape is bonded using Orcon F
- Contega Solido SL-D — full-surface adhesive plaster sealing tape for interior use
- Uni Tape — a paper adhesive tape with release paper, for bonding overlaps in the AVCL
- Tescon Vana Patch — for patching or repairing the products, eg for sealing injection holes indoors
- Duplex — a double-sided adhesive tape for sealing the products to metal surfaces
- Kaflex Mono, Duo, Post and Multi Airtight Grommet — EPDM grommets for cables
- Reflex 20 to Reflex 300 Airtight Grommet — a range of EPDM grommets for pipes
- Reflex 20 Multi Airtight Grommet — an EPDM grommet for multiple cables
- Intello connex — a humidity-variable polypropylene vapour check and airtight sealing strip with a polypropylene protective fleece
- Tescon Primer RP — a primer for preparing substrates including wood, wood-fibre boards, blocks and concrete
- Stoppa — sealing grommets for service tubes
- Instaabox — an installation box for sealing services, such as sockets, when a service void is not available behind dry lining.

## Applications

The products are intended for use as AVCLs in new-build and refurbishments in domestic and non-domestic buildings up to and including humidity class 4, on the warm side of the insulation as part of the Pro Clima Intelligent Airtight System, and an alternative to traditional materials, in the following roof, wall and floor specifications:

- at the rafter line in slated or tiled pitched warm roof constructions in conjunction with an HR or LR underlay
- at ceiling level in warm pitched roof constructions
- at ceiling level in slated or tiled pitched cold roof constructions
- in walls in timber, masonry and steel-frame constructions
- suspended floors
- conventional flat roofs.

## Definitions for products and applications inspected

Pitched roofs are defined for the purpose of this Certificate as those having a fall in excess of 1:6.

## **Product assessment – key factors**

The product was assessed for the following key factors, and the outcome of the assessment is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

### **1 Mechanical resistance and stability**

Not applicable.

### **2 Safety in case of fire**

Data were assessed for the following characteristic.

#### 2.1 Reaction to fire

2.1.1 The results of a reaction to fire test are given in Table 2.

*Table 2 Reaction to fire test*

Product assessed	Assessment method	Requirement	Result
Intello and Intello Plus	Reaction to fire classification in accordance with EN 13501-1 : 2009 tested in accordance with DIN EN ISO 11925-2 : 2010	Value achieved	Class E <sup>(1)(2)(3)</sup>

(1) Classification reports KB 3.1/11-139-4, Intello, and KB 3.1/11-139-6, Intello Plus, issued by MFPA Leipzig GmbH. A copy of the report is available from the Certificate holder on request.

(2) The classification applies to use in direct contact with mineral wool (density  $\geq 30 \text{ kg}\cdot\text{m}^{-3}$ )

(3) The classification applies to use as a vapour barrier and airtight barrier on the outside of vapour-permeable constructions.

2.1.2 On the basis of data assessed, the product will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.1.3 In England, Wales and Northern Ireland, the product must not be used on external walls of buildings that have a storey at least 18 m above ground level and which contain one or more dwellings, an institution, a room for residential purposes (excluding, in Wales and Northern Ireland only, any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools and, additionally in Northern Ireland, nursing homes and places of lawful detention.

2.1.4 In Scotland, the use of the products is unrestricted with respect to building height and proximity to a relevant boundary. However, restrictions on the overall construction may apply, depending on the reaction to fire classification achieved by the build-up, which must be established on a case-by-case basis.

2.1.5 Designers must refer to the relevant national Building Regulations and guidance for alternative approaches and detailed conditions of use, particularly in respect of requirements for cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction.

2.1.6 When the products are used unsupported, there is a risk that fire can spread if they are 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 ignition.

### 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

#### 3.1 Resistance to water and water vapour

3.1.1 Results of water vapour resistance tests are given in Table 3.

Product assessed	Assessment method	Requirement	Result <sup>(1)</sup>
Intello with Tescon Vana tape	Resistance to water penetration on the joints to BS EN 1928 : 2000 (A) with amendments to BS EN 13859-1 : 2001	No leakage	Pass
Intello and Intello Plus	Water vapour diffusion - equivalent air layer thickness ( $s_d$ ) (m) to EN ISO 12572 : 2016 at 23°C	Declared values	Pass
	RH 0/50% (25%)	34	
	RH 50/93% (71.5%)	1.7	
	RH 85/95% (90%)	0.3	

(1) Water vapour resistance may be taken as  $5 \times s_d$  value.

3.1.2 A condensation risk analysis was carried out based on the result given in Table 3 and satisfactory conclusions were drawn.

3.1.3 On the basis of data assessed, the products provide an effective control to the passage of liquid water and water vapour and will contribute to limiting the risk of interstitial condensation. They are suitable for use as an AVCL in roofs, ceilings and floors and can contribute to satisfying the relevant requirements of the national Building Regulations.

3.1.4 The products are variable AVCLs that have a vapour resistance between a  $s_d$  of 0.3 and 34 m according to the direction of heat flow and the relative humidity between both sides of the products. In summer, the products' vapour resistance decreases, allowing moisture to pass through the products back into the room. In winter, the products' vapour resistance increases to minimise vapour transfer into the construction.

3.1.5 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.

#### 3.2 Airtightness

3.2.1 Results of airtightness tests are given in Table 4.

Product assessed	Assessment method	Requirement	Result
Intello with Tescon Vana tape (on steel frame)	Air permeability of joints to EN 12114 : 2000 at 50 Pa	No leakage	Pass
Intello Plus with Tescon Vana tape (on steel frame)	Air permeability of joints to EN 12114 : 2000 at 50 Pa	No leakage	Pass

3.2.2 On the basis of data assessed, products' joints can have a satisfactory resistance to air movement.

3.2.3 The products are an air barrier and, when lapped, fixed and taped correctly, can contribute to elements and junctions minimising heat loss by unplanned air infiltration. Guidance in this respect can be found in the relevant supporting documents to the National Building Regulations.

3.2.4 When the products are installed on the warm side of the construction with a diffusion-tight layer on the outer face (eg waterproofing membranes, green roofs, HR underlay as defined in BS 5250 : 2021, a dynamic condensation assessment in accordance with BS EN 15026 : 2023 should be carried out for each particular situation, using an appropriate dynamic modelling package and considering parameters of:

- vapour diffusion resistance values of Intello given in section 3.1
- hygrothermal properties of all other materials in the construction, in particular vapour resistances in the cold side
- type of insulation
- 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.

### 3.3 Resistance to mechanical damage

3.3.1 Results of resistance to mechanical damage tests are given in Table 5.

<i>Table 5 Resistance to mechanical damage</i>				
Product assessed	Assessment method	Requirement	Result	
Intello	Nail tear to DIN EN 12310-1 : 2000	Declared values		
		Longitudinal direction	60 N	Pass
		Transverse direction	60 N	Pass
	Tensile strength to DIN EN 12311-2 : 2000	Declared values		
		Longitudinal direction	110 N·(50 mm) <sup>-1</sup>	Pass
		Transverse direction	80 N·(50 mm) <sup>-1</sup>	Pass
	Elongation at maximum load to DIN EN 12311-2 : 2000	Declared values		
		Longitudinal direction	40%	Pass
		Transverse direction	35%	Pass
	Intello Plus	Nail tear to DIN EN 13589-1 : 2000 method B	Declared values	
Longitudinal direction			200 N	Pass
		Transverse direction	200 N	Pass
Tensile strength to DIN EN 13589-1 : 2000 method A		Declared values		
		Longitudinal direction	340 N·(50 mm) <sup>-1</sup>	Pass
		Transverse direction	220 N·(50 mm) <sup>-1</sup>	Pass
Elongation at maximum load to DIN EN 13589-1 : 2000		Declared values		
		Longitudinal direction	15%	Pass
		Transverse direction	15%	Pass

3.3.2 On the basis of data assessed, the product has adequate strength to resist the loads associated with installation and service.

## 4 Safety and accessibility in use

Not applicable.

## 5 Protection against noise

Not applicable.

## 6 Energy economy and heat retention

Not applicable.

## 7 Sustainable use of natural resources

Not applicable.

## 8 Durability

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

8.2 Specific test data were assessed as given in Table 6.

<i>Table 6 Results of durability tests</i>				
Product assessed	Assessment method	Requirement	Result	
Intello	Dimensional stability to BS EN 1107-2 : 2001	$\leq \pm 2\%$	Pass	
	Longitudinal direction			
	Transverse direction			
	Water vapour diffusion - equivalent air layer thickness ( $s_d$ ) (m) to EN ISO 12572 : 2016, aged to DIN EN 1296 : 2001 at 80°C for 24 weeks, measured	Declared values		
	at 23°C RH 0/50% (25%)	55	Pass	
	at 23°C RH 50/93% (71.5%)	2	Pass	
	at 23°C RH 85/95% (90%)	0.3	Pass	
	Tensile strength to DIN EN 12311-2 : 2000	Declared values		
	UV aged to DIN EN 1297 : 2004 and DIN EN 1296 : 2001 336 hours UV at 50°C followed by 24 weeks at 80°C			
	Longitudinal direction	$100 \text{ N} \cdot (50 \text{ mm})^{-1}$	Pass	
Transverse direction	$70 \text{ N} \cdot (50 \text{ mm})^{-1}$	Pass		
Intello Plus	Elongation at maximum load to DIN EN 12311-2 : 2000, UV aged to DIN EN 1297 : 2004 and DIN EN 1296 : 2001 336 hours UV at 50°C followed by 24 weeks at 80°C	Declared values		
	Longitudinal direction	25%	Pass	
	Transverse direction	25%	Pass	
	Water vapour diffusion - equivalent air layer thickness ( $s_d$ ) (m) to EN ISO 12572 : 2016, aged to DIN EN 1296 : 2001 at 80°C for 24 weeks, measured	Declared values		
	at 23°C RH 0/50% (25%)	55	Pass	
	at 23°C RH 50/93% (71.5%)	2	Pass	
	at 23°C RH 85/95% (90%)	0.3	Pass	
	Tensile strength to DIN EN 12311-2 : 2000	Declared values		
	UV aged to DIN EN 1297 : 2004 and DIN EN 1296 : 2001 336 hours UV at 50°C followed by 24 weeks at 80°C			
	Longitudinal	$330 \text{ N} \cdot (50 \text{ mm})^{-1}$	Pass	
Transverse	$210 \text{ N} \cdot (50 \text{ mm})^{-1}$	Pass		
Intello Plus	Elongation at maximum load to DIN EN 12311-2 : 2000, UV aged to DIN EN 1297 : 2004 and DIN EN 1296 : 2001 336 hours UV at 50°C followed by 24 weeks at 80°C	Declared values		
	Longitudinal	13%	Pass	
	Transverse	13%	Pass	

### 8.3 Service life



Under normal service conditions, the products will have a life equivalent to the structure in which they are incorporated, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

## 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 Where constructions need to comply with *NHBC Standards 2024*, specifiers must observe the requirements given in Chapters 6.1, 6.2, 6.9, 6.10, 7.1, 7.2 and 9.2 of that document.

9.1.3 It is essential that proper care and attention is given to maintaining the products' integrity and continuity.

9.1.4 New elements must incorporate the products on the warm side of the insulation, and the overall construction must be designed and constructed in accordance with the relevant good practice, statutory Regulations and Standards.

9.1.5 Existing elements must be in a good state of repair without evidence of rain penetration, damp or frost damage.

9.1.6 Roofs, walls and floors must be designed and constructed in accordance with BS 5250 : 2021. Additional information for roofs can be found in BS 5534 : 2014.

9.1.7 Walls in new buildings must be designed and constructed in accordance with the relevant recommendations of BS EN 1996-1-1 : 2022 and BS EN 1996-2 : 2006, and their UK National Annexes.

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

9.1.9 NHBC will only accept the use of the products as variable resistance AVCLs when used in conjunction with vapour open insulations such as mineral wool. When used in conjunction with a vapour closed insulation, a diffusion open membrane must be used on the cold side of the insulation.

9.1.10 Where incidence of solar radiation is low, such as in the Highlands of Scotland or north of Inverness, the potential for back drying is reduced and the advice of the Certificate holder must be sought. Such advice is outside the scope of this Certificate.

#### 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. A summary of instructions and guidance is provided in Annex A of this Certificate.

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

9.2.4 Surfaces to which the products are adhered must be sound, dry, frost-free, smooth and free from dust, silicone and grease.

9.2.5 The products must be installed with the printed side facing the installer on the warm side of the insulation.

9.2.6 The products must be rolled out either horizontally or vertically on the warm side of the insulation, as far as possible without creasing, and stapled to the timber studs/rafters/joists. On rafter line and wall applications, installing horizontally normally leads to less waste.

9.2.7 Corrosion-resistant staples must be a minimum of 10 mm wide and 8 mm long and located between 100 and 150 mm apart when used in conjunction with insulation boards, and from 50 and 100 mm when blown insulation is used.

9.2.8 Adjacent membranes must be overlapped by 100 mm. Joints in the products, sealing to other materials and detailing must be carried out as described in the jointing, sealing and detailing section.

9.2.9 Internal linings must be set on spacer battens, leaving a minimum gap of 25 mm behind the lining which can accommodate wiring and other services and reduce the need for penetration of the AVCL.

9.2.10 Where required, cross battens are installed at 500 mm spacings to support the weight of the insulation. Internal linings are applied and fixed to the cross battens, as in normal practise.

9.2.11 When installing in suspended floors, the products must be rolled out loose over the floor insulation with adjacent membranes overlapped by 100 mm.

9.2.12 Joints in the products, sealing to other materials and detailing must be carried out as described in the sections 9.2.13 to 9.2.17.

9.2.13 The screed or floorboards are applied over the products as in normal practise.

9.2.14 When jointing the products, overlaps must be sealed without strain or load using Tescon No 1, Tescon Vana or Uni Tape. Creases in the overlap area must be cut off and sealed. The tape is placed centrally over the edge of the overlap and pressed down firmly.

9.2.15 Sealing to other construction material is carried out in accordance with the Certificate holder's installation instructions, using the appropriate tape or adhesive. In cases of doubt, the advice of the Certificate holder or their UK representative must be sought.

9.2.16 Penetrations through the products must be sealed. A range of EPDM grommets is available for sealing around pipes and cables. When a service void is not available behind dry lining, services such as sockets are sealed using Instaabox.

9.2.17 The sealing of corners is achieved by the use of Tescon Profil. The tape has either a two- or three-part release paper allowing a single part of the adhesive to be exposed at a time during installation process.

9.2.18 It is recommended by the Certificate holder that installations of the Pro Clima Airtight System are tested for airtightness on completion of work using a blower door.

### 9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, the product 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 within the roof/wall/floor structure and have suitable durability, maintenance is not required.

9.4.2 Damage to the products must be repaired with Tescon Vana or Tescon Vana Patch. Extensively damaged areas must be made good by overlaying a new sheet and sealing as described in the installation section.

## **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 products are delivered to site in rolls packaged on pallets, 42 rolls per pallet for the 20 m length, and 20 rolls per pallet for the 50 m length. Each pallet with a label bearing the product name, product type, dimensions, production order number and production date. The products are printed with the product name, CE marking and the BBA logo incorporating the number of this Certificate.

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 smooth, clean dry surface under cover and protected from direct 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.

### CLP Regulations

The Certificate holder has taken the responsibility of classifying and labelling the products under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

### CE marking

The Certificate holder has taken the responsibility of CE marking the products, in accordance with EAD 030271-00-0605.

### Additional information on installation

A.1 Further information on the use of AVCLs in new-build and refurbishments, in domestic and non-domestic buildings up to and including humidity class 4, can be found in BRE Report BR 262 : 2002.

## Bibliography

- BRE Report BR 262 : 2002 *Thermal insulation: avoiding risks*
- BS 5250 : 2021 *Management of moisture in buildings — Code of Practice*
- BS 5534 : 2014 *Slating and tiling for pitched roofs and vertical cladding — Code of practice*
- BS EN 1107-2 : 2001 *Flexible sheets for waterproofing — Determination of dimensional stability — Part 2: 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 1996-1-1 : 2022 *Eurocode 6 — Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- NA to BS EN 1996-1-1 : 2022 *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 — Part 2: 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 — Part 2: Design considerations, selection of materials and execution of masonry*
- BS EN 13859-1 : 2001 *Flexible sheets for waterproofing — Definitions and characteristics of underlays Part 1: Underlays for discontinuous roofing*
- BS EN 15026 : 2023 *Hygrothermal performance of building components and building elements — Assessment of moisture transfer by numerical simulation*
- DIN EN 1931 : 2001 *Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*
- DIN EN 1296 : 2001 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roofing — Method of artificial ageing by long term exposure to elevated temperature*
- DIN EN 1297 : 2004 *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water*
- DIN EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Bitumen sheets for roof waterproofing*
- DIN EN 12311-2 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Part 2: Plastic and rubber sheets for roof waterproofing*
- DIN EN 13589-1 : 2000 *Bitumen and bituminous binders - Determination of the tensile properties of modified bitumen by the force ductility method; German version EN 13589:2018*
- DIN EN ISO 11925-2 : 2010 *Reaction to fire tests. Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test*
- EAD 030271-00-0605 *Humidity-dependent vapour control layers*
- EN 12114 : 2000 *Thermal performance of buildings. Air permeability of building components and building elements. Laboratory test methods*
- EN 13501-1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*
- EN ISO 12572 : 2016 *Hygrothermal performance of building materials and products — Determination of water vapour transmission properties — Cup method*

## Conditions of Certificate

### 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.

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