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### Agrément Certificate

21/5873

Product Sheet 1

## PETRARCH CLADDING SYSTEMS

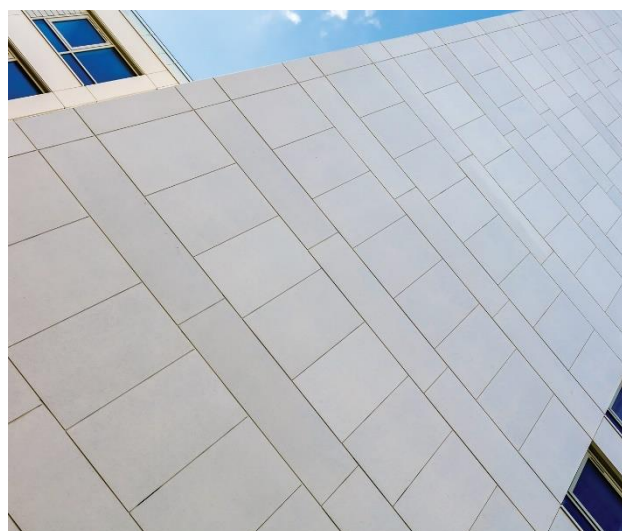
### PETRARCH A2 RAINSCREEN CLADDING PANEL SYSTEM

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the Petrarch A2 Rainscreen Cladding Panel System, available in a range of finishes. The panels are fixed to a suitable aluminium, steel or timber sub-frame, and are for use as a protective/decorative panel over external and internal walls of timber stud, masonry or steel framework of new or existing domestic and non-domestic buildings.

(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

**Strength and stability** — the system can safely resist wind and impact actions normally encountered in the UK (see section 6).

**Behaviour in relation to fire** — the system has A2-s1, d0 reaction to fire classification in accordance with BS EN 13501-1 : 2018 and may be restricted in some cases (see section 7).

**Air and water penetration** — the system is suitable for use as a drained and back-ventilated cladding system, provided additional ventilation and vapour permeable membranes are incorporated where necessary (see section 8).

**Durability** — in normal UK conditions, the product can be expected to have a service life in excess of 30 years (see section 10).



The BBA has awarded this Certificate to the company named above for the system described herein. This system 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: 11 March 2021

Hardy Giesler  
Chief Executive Officer

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 MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.**

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

#### British Board of Agrément

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## Regulations

In the opinion of the BBA, the Petrarch A2 Rainscreen Cladding Panel System, 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)

<b>Requirement:</b>	<b>A1</b>	<b>Loading</b>
Comment:	The system can satisfy this Requirement when the cladding is fixed to a suitably designed sub-frame and substrate wall structure. See sections 6.1 to 6.9 of this Certificate.	
<b>Requirement:</b>	<b>B2(1)</b>	<b>Internal fire spread (linings)</b>
Comment:	The system may be restricted under this Requirement. See sections 7.1 and 7.4 of this Certificate.	
<b>Requirement:</b>	<b>B3(4)</b>	<b>Internal fire spread (Structure)</b>
Comment:	The system can contribute to satisfying this Requirement. See section 7.2 of this Certificate	
<b>Requirement:</b>	<b>B4(1)</b>	<b>External fire spread</b>
Comment:	The system can contribute to satisfying this Requirement. See sections 7.1, 7.3, 7.5 and 7.6 of this Certificate.	
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:	The system does not provide a watertight or airtight facing but will resist the passage of rainwater to the supporting structure. See section 8 of this Certificate.	
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
Comment:	The system is acceptable. See section 10.1 and the <i>Installation</i> part of this Certificate.	
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship</b>
Comment:	The system can contribute to satisfying this Regulation. See sections 7.1 to 7.3 of this Certificate.	



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:	The system can contribute to a construction satisfying this Regulation. See sections 9 and 10.1 and the <i>Installation</i> part of this Certificate.	
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	<b>1.1(a)(b)</b>	<b>Structure</b>
Comment:	The system can satisfy this requirement when the cladding is fixed to a suitably designed sub-frame and substrate wall structure, with reference to clause 1.1.1 <sup>(1)(2)</sup> of this Standard. See sections 6.1 to 6.9 of this Certificate.	
Standard:	<b>2.4</b>	<b>Cavities</b>
Comment:	The system can contribute to satisfying this Standard, with reference to clauses 2.4.2 <sup>(1)(2)</sup> and 2.4.4 <sup>(1)</sup> . See sections 7.2, 7.5 and 7.6 of this Certificate.	
Standard:	<b>2.5</b>	<b>Internal linings</b>
Comment:	The system may be restricted by this Standard, with reference to clause 2.5.1 <sup>(1)(2)</sup> . See sections 7.1 and 7.4 of this Certificate.	

Standard: Comment:	2.6	Spread to neighbouring buildings The system can contribute to satisfying this Standard, with reference to clauses 2.6.4 <sup>(1)(2)</sup> , 2.6.5 <sup>(1)</sup> and 2.6.6 <sup>(2)</sup> . See sections 7.1, 7.3, 7.5 and 7.6 of this Certificate.
Standard: Comment:	2.7	Spread on external walls The system can contribute to satisfying this Standard, with reference to clause 2.7.1 <sup>(1)(2)</sup> . See sections 7.1 and 7.3 of this Certificate.
Standard: Comment:	3.10	Precipitation The system does not form a watertight or airtight facing but will resist the passage of rainwater to the supporting structure, with reference to clause 3.10.5 <sup>(1)(2)</sup> of this Standard. See section 8 of this Certificate.
Standard: Comment:	7.1(a)	Statement of sustainability The system 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: Comment:	12	<b>Building standards applicable to conversions</b> All comments given for the 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: Comment:	23(a)(i) (iii)(b)(i)	<b>Fitness of materials and workmanship</b> The system is acceptable. See section 10.1 and the <i>Installation</i> part of this Certificate.
Regulation: Comment:	28(b)	<b>Resistance to moisture and weather</b> The product does not form a watertight or airtight facing but will resist the passage of rainwater to the supporting structure. See section 8 of this Certificate.
Regulation: Comment:	30	<b>Stability</b> The system will satisfy this Regulation when the cladding is fixed to a suitably designed sub-frame and substrate wall structure. See sections 6.1 to 6.9 of this Certificate.
Regulation: Comment:	34(a)(b)	<b>Internal fire spread - Linings</b> The system may be restricted by this Regulation. See sections 7.1 and 7.4 of this Certificate.
Regulation: Comment:	35(4)	<b>Internal fire spread — Structure</b> The system can contribute to satisfying this Regulation. See section 7.2 of this Certificate.
Regulation: Comment:	36(a)	<b>External fire spread</b> The system can contribute to satisfying this Regulation. See sections 7.1, 7.3, 7.5 and 7.6 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 sections: 1 *Description* (1.2) and 3 *Delivery and site handling* (3.1, 3.2 and 3.4) of this Certificate.

### NHBC Standards 2021

In the opinion of the BBA, the Petrarch A2 Rainscreen Cladding Panel System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 6 Superstructure (excluding roofs)*, Chapter 6.9 *Curtain walling and cladding* (see section 1.1 of this Certificate).

## Technical Specification

### 1 Description

1.1 The Petrarch A2 Rainscreen Cladding Panel consists of crushed stone with a resin binder and a glass fibre reinforcement cured at a high temperature and pressure. The panels are fixed to the supporting wall using the Downer Rainscreen Cladding Support System (as covered by BBA Certificate 20/5792) or equivalent, or on timber battens, as described in section 1.3 of this Certificate.

1.2 The characteristics and dimensions of the panels are shown in Table 1, below.

*Table 1 Panel characteristic and dimensions*

Characteristic	Technical details	
Nominal thickness (mm)	7	10
Sizes (mm)	2430 x 1210 3040 x 1210	2430 x 1210 3040 x 1210
Nominal weight (kg.m <sup>-2</sup> )	15.7	22
Nominal density (kg.m <sup>-3</sup> )	2200	2200
Texture finish <sup>(1)</sup>	Riven, smooth or matt	Riven, smooth or matt
Colours <sup>(2)</sup>	Various	Various

(1) Other surface finishes are available on request from the Certificate holder (outside the scope of the Certificate)  
 (2) Panels are through-coloured, not painted

1.3 The Petrarch A2 Rainscreen Cladding Panel System can be used in conjunction with prefabricated corner elements made of the same cladding material. Prefabricated corner elements are formed together using an aluminium angle as shown in section 11 (figure 4). Downer Rainscreen Cladding Support Systems are attached to the external or internal walls of structures<sup>(1)</sup> of new or existing buildings and consist of the following four types:

- Downer DCS 021 (Omega and ZED) System — an aluminium framing system comprising Omega and Zed rails fixed directly to the substrate, with a minimum cavity width of 25 mm<sup>(2)</sup>. The rails are manufactured from aluminium grade EN AW 6005A T6 to BS EN 573-3 : 2019. The rails can be installed in a single layer or a combination of both vertical and horizontal rails
- Downer DCS 031 (HELPING HAND<sup>(3)</sup>) System — an aluminium framing system comprising L and T carrier rails/timber batten holders and wall brackets. They are installed in vertical alignments and provide cavity widths ranging from 49 to 442 mm. The single and double wall brackets (including double Helping Hand brackets and folded double Helping Hand brackets), carrier rails and timber batten holders are made of aluminium with a minimum grade of EN AW 6063 T6 to BS EN 573-3 : 2019, except for 310F to 400F double brackets and timber batten holders which are manufactured from aluminium alloy to a minimum grade of EN AW 5251/H22 to BS EN 573-3 : 2019. The thermal isolation pads are Foamalux FES PVC foam sheets
- Downer DCS 041 (Floor-to-floor Spanning) System — an adjustable support system to form cavity widths ranging from 86 to 223 mm, comprising wall brackets and carrier rails. The components are manufactured from aluminium grade EN AW 6005A T6 to BS EN 573-3 : 2019 and thermal isolation pads are manufactured from Foamalux FES PVC foam sheets
- Downer DCS 004 (Mechanical Secret Fix) System — where specifications dictate a clear facade unobstructed by visible fixings, the DCS 004 (Mechanical Secret Fix) System is used. Panel hangers fixed to the rear face of the panels hook on to horizontal cladding rails, which in turn are fixed to one of the vertical carrier rail systems DCS 021, 031 or 041. The components are manufactured from aluminium grade EN AW 6005A T6 to BS EN 573-3 : 2019. The fixings used to attach the horizontal rails to the vertical rails are 5.5 x 25 mm low profile stainless steel self-drilling, self-tapping tek screws.

- (1) For walls in timber frame and steel frame structures, the rails must always be positioned on the sheathing board such that they align with the structural frame behind.
- (2) The minimum cavity width must comply with the requirements in *NHBC Standards 2021*, Chapter 6.9, based on the cladding joint type. If DCS 021 is used in isolation and not as a component part of the other systems, it won't be compliant with *NHBC Standards 2021*, Chapter 6.9.
- (3) HELPING HAND is a registered trademark.

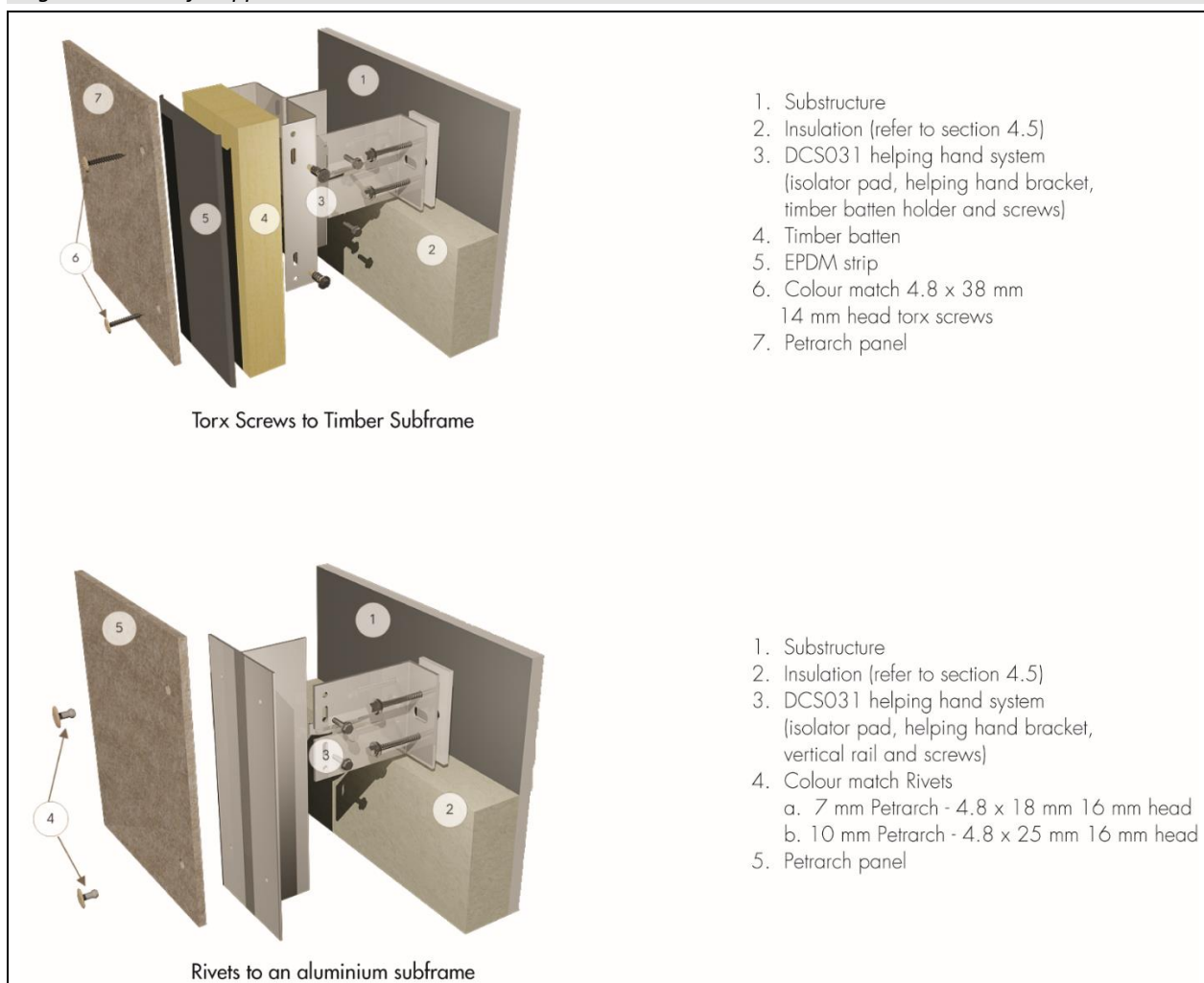
1.4 The specification of the fixings is shown in Table 2.

**Table 2 Panel fixing requirements**

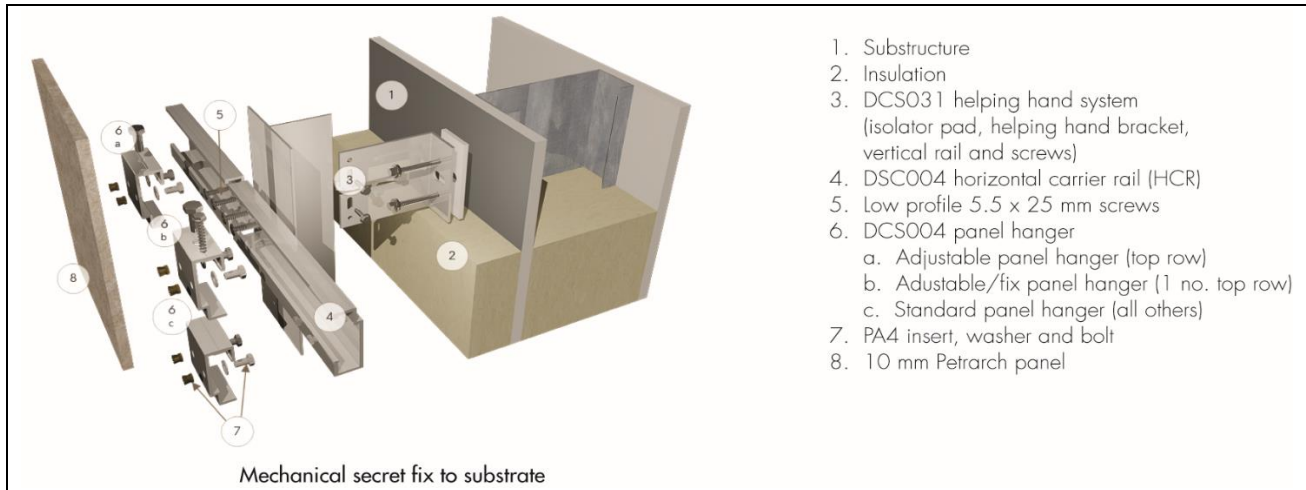
Panel thickness (mm)	Fixing type	Fixing specification
<b>Visible Fix (see Figure 1)</b>		
<b>7, 10</b>	Torx screws <sup>(1)</sup>	4.8 x 38 mm with 14 mm Head Low profile A2 for use with timber
<b>7</b>	Rivets	Aluminium/stainless steel 4.8 x 18 mm (grip range 6.5 -12.5 mm) with 16 mm head diameter, for use with aluminium subframe
<b>10</b>	Rivets	Aluminium/stainless steel 4.8 x 25 mm (grip range 11 - 19.5 mm) with 16 mm head diameter, for use with aluminium subframe
<b>Mechanical Secret Fix (see Figure 2)</b>		
<b>10</b>	Insert, washer and bolt set	Factory fitted PA4 Insert, 1 mm A2 SS washer and A2 SS M6x12 bolt-fastened at the correct torque load (9.0 - 10.0 Nm) setting, used in conjunction with DCS004 Panel Hanger and Horizontal Carrier Rail

(1) Outside the scope of this Certificate.

**Figure 1 Visible fix application**



**Figure 2 Mechanical Secret Fix application (DCS 004 Framing System)**



1.5 Ancillary components specified for use with the system recommended by the Certificate holder but outside the scope of this Certificate, include:

- Torx screws — dome-headed, stainless steel, 4.8 mm diameter used in timber stud applications
- sub-frames, support brackets/rails — aluminium or steel, for use on masonry or steel framework
- proprietary joint details — used between sheets to ensure weathertightness/gap uniformity and including bird beak profile section, top hat, chair section, EPDM joint strip and solvent-free sealant
- insulation within the cavity
- wall breather membrane
- timber battens
- cavity barriers.

## 2 Manufacture

2.1 During manufacture the basic components, comprising crushed stone, resin and glass fibre strands, are weighed and thoroughly mixed into a dough. The dough is levelled and compressed to a standard width and thickness. Standard lengths are cut, transferred to a mould and heat-cured under pressure.

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 systems of the manufacturer have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Lloyd's Register Group Limited (Certificate 10171826) and ISO 14001 : 2015 by QMS International Ltd (Certificate 327662020).

## 3 Delivery and site handling

3.1 The cladding panels are delivered to site shrink-wrapped packed on pallets and sheets, with individual panels separated by soft foam layers. Packaging bears the pallet identification, weight and manufacturer's name.

3.2 The pallets should be stored off the ground on a firm, dry, flat and level surface, suitably protected from the weather. Pallets containing flat panels can be stacked to a maximum of two pallets high. Pallets containing panels with



pre-installed fastening elements, such as panel hangers, or preformed corners, must not be stacked on top of each other.

3.3 The polythene sheet must be replaced when individual sheets of Petrarch A2 are removed, to protect the remaining sheets from surface damage or contamination by cement or other materials which may affect their appearance.

3.4 Each panel should be carried on edge and handled with care by operatives wearing suitable protective clothing.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Petrarch A2 Rainscreen Cladding Panel System.

## Design Considerations

### 4 Use

4.1 The Petrarch A2 Rainscreen Cladding Panel System is satisfactory for use as an exterior decorative and protective vertical cladding or infill panelling or, internally, as decorative panelling, fixed to a timber or aluminium sub-frame over external walls of timber frame, masonry or steel frame, in new or existing domestic and non-domestic buildings.

4.2 The substrate wall and the support system to which the cladding panels are fixed must be structurally sound and watertight and satisfy the requirements of the relevant national Building Regulations and European or national Standards. It is important for designers, planners, contractors and/or installers to ensure that the systems and the substrate wall have adequate structural capacity to support cladding panels in accordance with the design and installation requirements of the cladding panel supplier.

4.3 For substrate walls, the designer must ensure:

- Brickwork or blockwork walls are constructed in accordance with the relevant sections of BS EN 1996-1-1 : 2005, BS EN 1996-1-2 : 2005, BS EN 1996-2 : 2006 and BS EN 1996-3 : 2006 and their UK National Annexes, and PD 6697 : 2010, or one of the technical specifications given in the relevant national Building Regulations
- Timber or timber-frame walls are constructed in accordance with the relevant sections of BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative-treated in accordance with BS 8417 : 2011. Guidance on recommended wood preservation is also given in *NHBC Standards 2021*, Part 3 *General*, Chapter 3.3 *Timber preservation (natural solid timber)*. Timber battens must be aligned vertically at maximum 600 mm centres (or less in exposed locations)
- Metal framework walls are constructed in accordance with the relevant sections of BS EN 1993-1-1 : 2005 and its UK National Annex. The installation of vertical timber battens or metal support rails must be aligned and fixed directly through to the vertical structural metal framework.

4.4 As the rainscreen is not watertight, ventilation and drainage must be provided behind the cladding. All ventilation openings around the periphery of the system should be suitably protected with mesh to prevent the ingress of birds, vermin and insects. The ventilation pathway behind the cladding must not be allowed to become blocked or the insulation dislodged where it may be vulnerable to wetting.

4.5 Any insulation installed behind the cladding panels must be suitably fixed to the supporting wall at a minimum cavity width of 50 mm and protected to resist the forces of wind suction. Additional guidance on minimum recommended cavity widths is given in *NHBC Standards 2021*, Chapters 6.2, 6.9 (6.9.8) and 6.10 (see also section 8.2 of this Certificate). Insulation should be of a rigid type (eg mineral wool boards or batts) and, where its performance could be diminished by moisture, a breather membrane should be provided over its outer face.

4.6 For timber-frame constructions, joints can be protected by a neoprene gasket at the joint positions. Typical joint details are shown in the *Installation* part of this Certificate.

4.7 The panels should be fixed to the sub-frame, with an opening joint of 10 mm minimum between the ends of the horizontal and vertical joints of adjacent panels.

## 5 Practicability of installation

The system is designed to be installed by cladding contractors who are experienced in such installations. Further advice can be provided by the Certificate holder.

## 6 Strength and stability

### Wind actions



6.1 The design wind actions should be calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex. Due consideration should be given to higher pressure coefficients applicable to corners of the building as recommended in this Standard. In accordance with BS EN 1990 : 2002 and its UK National Annex, it is recommended that a wind load factor of 1.5 is used to determine the ultimate wind load to be resisted by the cladding system.

6.2 The supporting wall must be able to resist the gravity load from the self-weight of the cladding panels, the wind actions and any racking loads, on its own. No contribution from the cladding system may be assumed in this respect.

6.3 For design purposes, the following panel mechanical properties as listed in Table 3 may be adopted.

*Table 3 Panel mechanical characteristics*

Panel type	Panel thickness (mm)	Design flexural resistance (MPa) <sup>(1)</sup>	Design flexural modulus (MPa)
Petrarch A2	7	25	11,000
	10	25	11,000

(1) Obtained after applying a partial material factor of 1.2 to the characteristic flexural properties obtained from testing.

6.4 A suitably competent and qualified structural engineer must check the design and installation of the cladding panels, to ensure that:

- the design of sub-frame and the support rails limit mid-span deflections to Span (L)/200 and limit cantilever deflections to Span (L)/150 in accordance with the relevant codes and standards
- the cladding panels are fixed to the sub-frame using the specified fixing mechanism (see section 1.3) and that the specified fixings have adequate tensile and pull-out strength to resist the applied actions
- the fixing of the support brackets to the supporting wall must have adequate tensile, shear and pull-out strength (outside the scope of this Certificate). An appropriate number of site-specific pull-out tests must be conducted on the substrate wall to determine the minimum pull-out resistance to failure of the fixings. The characteristic pull-out resistance should be determined in accordance with the guidance given in EOTA TR055 : 2016, using 50% of the mean value of the five smallest measured values at the ultimate load.

6.5 The design pull-through values of the Petrarch A2 (7 mm) panels are obtained from the characteristic pull-through resistance determined via testing in accordance with EAD 090062-00-0404 : 2018. Tests were carried out for the aluminium / stainless steel rivets as described in section 1.3, at an edge distance of 25 mm; the results are given in Table 4.

*Table 4 Design pull-through resistances of Petrarch A2 (7mm) Panel (N)*

Position	Design pull-through resistance of fixings (N) <sup>(1)</sup>
Centre	405
Edge	260
Corner	124

(1) A partial load factor of 3.0 has been applied to the characteristic resistances calculated from test values.

6.6 The pull-out axial resistances of the PA4 insert (see section 1.4) from the Petrarch A2 (10 mm) panel deduced from characteristic pull-out failure values (determined by tests), is to be taken as 0.76 kN, with a partial load factor of 3.0.

6.7 The design wind resistances of the Petrarch A2 panel for the fixing specifications in section 1.3 are shown in Table 5 (the panel dimensions are as described in Table 1).



**Table 5 Petrarch A2 (7 mm & 10 mm) Panel fixings – design wind resistances (kN.m<sup>-2</sup>)**

Fixing type	Fixing vertical spacing (max) mm	Design wind load (kN.m <sup>-2</sup> ) <sup>(1)(2)</sup>			
		Fixing horizontal spacing (max) mm			
		300	400	500	600
Visible Fix (Rivets) <sup>(3)</sup>	300	6.75	5.05	4.04	3.36
	400	-	3.80	3.03	2.52
	500	-	-	2.42	2.01
	600	-	-	-	1.68
Mechanical PA4 Secret fix	400	-	7.11	5.69	4.74
	500	-	-	4.55	3.78
	600	-	-	-	3.15

(1) Wind load based only on fixing's tested resistance in accordance with EAD 090062-00-0404 : 2018. The design resistances have been calculated with the appropriate partial load factor 1.5 for the ultimate limit states in accordance with BS EN 1991-1-4 : 2005, BS EN 1990 : 2002 and BS EN 1999-1-1 : 2007.

(2) Petrarch panels tested to 2.4 kN.m<sup>-2</sup> serviceability and 3.6 kN.m<sup>-2</sup> safety according to CWCT guidelines.

(3) As the worst-case scenario was evaluated, the design wind resistances of the rivets may be applicable to the torx screws.

## Impact resistance

6.8 When tested for soft and hard body impact resistance in accordance with CWCT test specifications on the horizontal carrier rails at 600 mm and the vertical profiles at maximum 600 mm and mounted rigid test rig with support steelwork, the 10 mm panel fixed at 600 mm centres achieved adequate resistance for use in Exposure Category B as defined in CWCT TN 75 : 2012, Table 3 (reproduced in Table 6 of this Certificate). The system achieved a serviceability "Class 1" and safety "Negligible Risk".

6.9 The 7 mm panels at 600 mm centres supported on vertical profiles, when tested for hard and soft body impacts, achieved a serviceability "Class 1", hard body safety "Negligible Risk" and soft body safety "Moderate Risk" for use in Exposure Category B as defined in CWCT TN75:2012, Table 3 (reproduced in Table 6 of this Certificate).

**Table 6 Definition of Use Categories from CWCT TN 75, Table 3**

Exposure Category	Description	Examples
Areas within 1.5 m of the ground		
A	Readily accessible to the public and others with little incentive to exercise care. Prone to vandalism and abnormally rough use.	External walls in vandal prone areas.
B	Readily accessible to the public and others with little incentive to exercise care. Chance of accident occurring and of misuse.	Walls adjacent to pedestrian thoroughfares when not in Category A.
C	Accessible primarily to those with some incentive to exercise care. Some chance of accident occurring or of misuse.	Walls adjacent to private open gardens. Back walls of balconies.
D	Only accessible, but not near a common route, to those with a high incentive to exercise care. Small chance of accident occurring or of misuse.	Walls adjacent to small fenced decorative garden with no through paths.
Areas more than 1.5 m off the ground		
E	Above zone of normal impacts from people but liable to impacts from thrown or kicked objects. May also be subject to impact during maintenance.	1.5 to 6 m above pedestrian level in location categories A and B.
F	Above zone of normal impacts from people and not liable to impacts from thrown or kicked objects. May also be subject to impact during maintenance.	Wall surfaces at higher positions than those defined in E above.

6.10 For installations with a sub-frame other than those described in this Certificate<sup>(1)</sup>, impact resistance tests must be carried out in accordance with EAD 090062-00-0404 : 2018 by a UKAS-accredited laboratory, and appropriate impact

Use Categories determined in accordance with this Standard. The classification determined from the tests will depend on the distance between the centres of support and will establish the areas where the cladding system can be used.

(1) Use of other sub-frames has not been assessed by the BBA and is outside the scope of this Certificate

## 7 Behaviour in relation to fire



7.1 The cladding panels achieved a reaction to fire classification in accordance with BS EN 13501-1 : 2018 as shown in Table 7 of this Certificate. This relates to the thickness, density, panel composition and colour range referred to in section 1 of this Certificate. The reaction to fire classification of other build-ups may be different and must be confirmed by an appropriately qualified fire expert, or by testing at a laboratory accredited by the United Kingdom Accreditation Service (UKAS) or other mutually recognised accreditation scheme.

7.2 The reverse side of the panels have the reaction to fire classification shown in Table 7 of this Certificate. Cavity barriers should be provided in accordance with the requirements of the documents supporting the national Building Regulations.

7.3 The fixings, brackets and carrier rails are classified as A1 in accordance with the national Building Regulations.

*Table 7 Reaction to fire classification of panels to BS EN 13501-1 : 2018*

Petrarch cladding fire performance <sup>(1)</sup>	Thicknesses	
	7 mm	10 mm
Fire classification <sup>(2)</sup>	A2-s1, d0	A2-s1, d0
Reaction to fire classification report reference <sup>(3)</sup>	WF 424739 issue no:1, 22 July 2020	WF 424739, issue no:1, 22 July 2020

(1) The fire performance relates to all colours.

(2) This classification is valid for: mechanically fixed systems with a minimum airspace of 40 mm over any substrate with a minimum thickness of 12 mm, a minimum density of 870 kg.m<sup>-3</sup> and a fire performance of A2-s1,d0 or better.

(3) Copies of fire report are available from the Certificate holder on request.

### Internal lining

7.4 The system is unrestricted, subject to the conditions in section 7.1 of this Certificate.

### External wall cladding

7.5 The system is not subject to any restriction on building height or proximity to a boundary. See also sections 7.1 and 7.6 of this Certificate.

7.6 In England, Wales and Northern Ireland, where timber battens are used in support frames, the use of the system is restricted to buildings with no storey 18 m or more in height above the ground, or above 11 m in Scotland. In addition, in Scotland such constructions may not be used 1 m or less from a boundary.

7.7 Designers should refer to the relevant national Building Regulations and guidance for detailed conditions of use, particularly in respect of requirements for substrate fire performance, cavity barriers, service penetrations and combustibility limitations for other materials and components used in the overall construction (for example, thermal insulation).

## 8 Air and water penetration



8.1 The panels are suitable for use in back-ventilated and drained cladding systems.

8.2 To satisfy NHBC requirements (see *NHBC Standards* 2021, Chapters 6.2, and 6.9.18), panels must satisfy the minimum open joint of 10 mm required between panels, when baffle jointed (ie used in conjunction with horizontal joint profiles) or open jointed, and the minimum drained and ventilated cavity gap behind the cladding must be maintained.

8.3 The panels with open joints should have a cavity gap behind the panelling with a minimum width of 50 mm. The cavity drainage and ventilation gap should provide effective openings at the base and head of any rainscreen wall. Any water collecting in the cavity due to rain or condensation will be removed by ventilation and drainage.

8.4 The panels are not weathertight and when used on timber or steel frame walls must be backed by a wall breather membrane (see section 1.5) acting as a vapour-permeable water barrier, incorporated behind the cladding under the supporting battens. Additional guidance on minimum recommended cavity widths is given in *NHBC Standards 2021*, Chapters 6.2, 6.9 (6.9.8) and 6.10 (see also section 8.2 of this Certificate).

## 9 Maintenance



9.1 Maintenance will not normally be required but, when necessary, stains or marks can be removed with a damp cloth and household detergent or, in the case of obstinate stains, mild abrasive cleaner. Where paint, varnish or similar materials are to be removed, the advice of the Certificate holder should be sought.

9.2 Periodic inspections should be carried out to ensure that ventilation and drainage pathways remain clear and elements such as fixings, seals and flashing are in place and secure.

9.3 Damaged panels should be replaced as soon as is practicable, following the Certificate holder's instructions and observing all necessary health and safety precautions.

## 10 Durability



10.1 The durability and service life of the cladding panels will depend upon the building location and height, intended use of the building and the immediate environmental conditions to which they are exposed. Providing regular maintenance is carried out as described in section 9 and in accordance with the Certificate holder's instructions, the panels should have a service life in excess of 30 years.

10.2 After natural weathering, slight initial dulling of the surface and slight change in colour shade may occur, particularly on the dark coloured material. However, this process is not likely to be progressive.

## Installation

### 11 General

11.1 Petrarch A2 cladding panels must be installed in accordance with the Certificate holder's instructions. Typical installation details are given in Figures 1, 2 and 5.

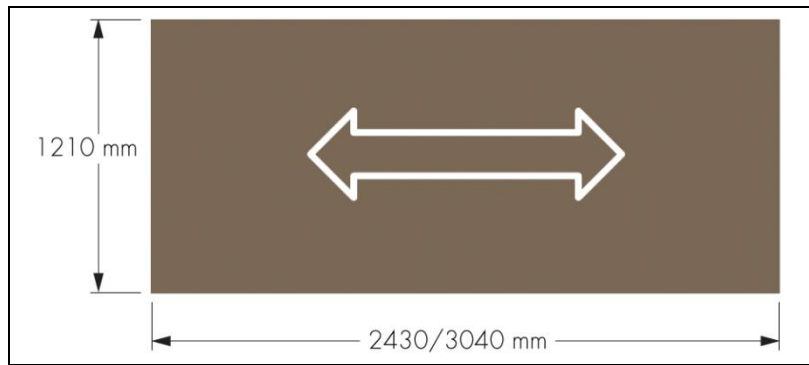
11.2 The system can be mechanically fixed via a visible or secret fix (as described in 1.3 of this Certificate) to a sub-frame made of timber battens or aluminium support profiles. The spacing of the supports should be chosen in accordance with the local structural requirements but should be no more than 600 mm centres.

11.3 Panels can be installed with open or baffled joints and corners can be left open. Mitred or factory formed units can be supplied (see Figure 4). The opening between panels should be a minimum of 10 mm.

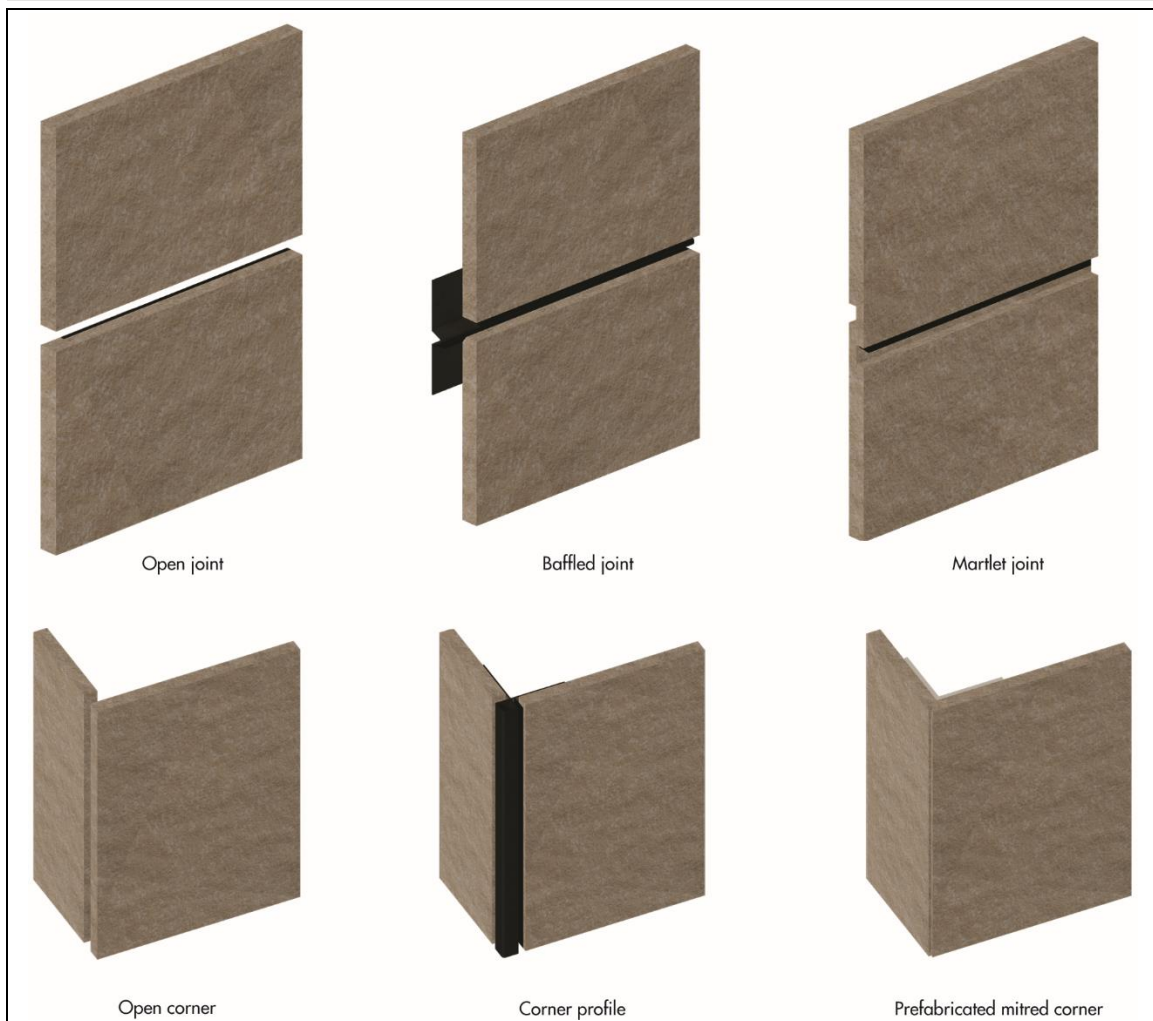
11.4 Cladding panels must not be fixed to two adjacent rails across the expansion gap. Structural expansion joints in the supporting wall must be applied to the sub-framing and cladding in the identical position and to the same extent.

11.5 Riven finish panels are directional. Orientation must be taken into account when designing, fabricating and installing the panels.

*Figure 3 Riven finish panel (directional)*



*Figure 4 Joint and corner options*



## 12 Procedure

12.1 Based on the design and method of panel attachment, the structure is prepared, and the appropriate type of support system installed.

### Visible fixing

12.2 The drill holes in the Petrarch panels should be one 4.9 mm diameter hole as the fixed point, positioned close to the panel centre, with the remaining drill holes 9.5 mm in diameter, which are sliding points for expansion. Drill holes should be positioned at a minimum of 25 mm from the vertical edge of the panels and 50 mm from the horizontal panel edge and at a maximum spacing of 600 mm for façade panels and 400 mm for soffit applications (outside the scope of Certificate).

12.3 Holes in the aluminium subframe to receive rivet fixings should be drilled using a centralising tool and rivets must be installed using a soft set nose piece. See section 1.4 for specification of rivets.

12.4 Riven surface panels require the fitting of a black rubber washer located under the rivet or screw head.

12.5 Horizontal joint flashing should be used to reduce the amount of water penetrating into the ventilation cavity when using timber battens. All battens at vertical joints and intermediate battens must be fully covered by EPDM backing strips. The strips should be used as a single piece top to bottom or lapped with a 40 mm overlap.

#### **Mechanical secret fixing (DCS 004 Panel Hangers and Horizontal Carrier Rail)**

12.6 When using the mechanically secret fixing, 10 mm thick panels are secured to the sub-frame using DCS 004 Aluminium Panel Hangers fixed to the back of the panels by means of a double PA4 insert, at maximum 600 mm centres.

12.7 The panels are then secured in place by hooking on to the DCS 004 Horizontal Carrier Rail previously fixed to vertical profiles at maximum 600 mm centres.

12.8 The Downer DCS 004 (Mechanical Secret Fix) System is a hook-on system (see section 1.3) with fine level adjustment required to the top row of panel hangers and, therefore, it must be installed in a standard sequence of left to right from the ground floor upwards (see Figures 5 and 6).

12.9 The load capacity of the PA4 inserts depends upon the precision of fabrication; therefore, panel hanger preparation (ie alignment of the panel hangers to the inserts at the back of the panels) is carried out in the factory.

Figure 5 Petrarch – DCS 004 installation sequence



Step 1 – DCS004 HCR installed



Step 2 – Bottom left or right first



Step 3 – Level, lock and continue 1st row installation



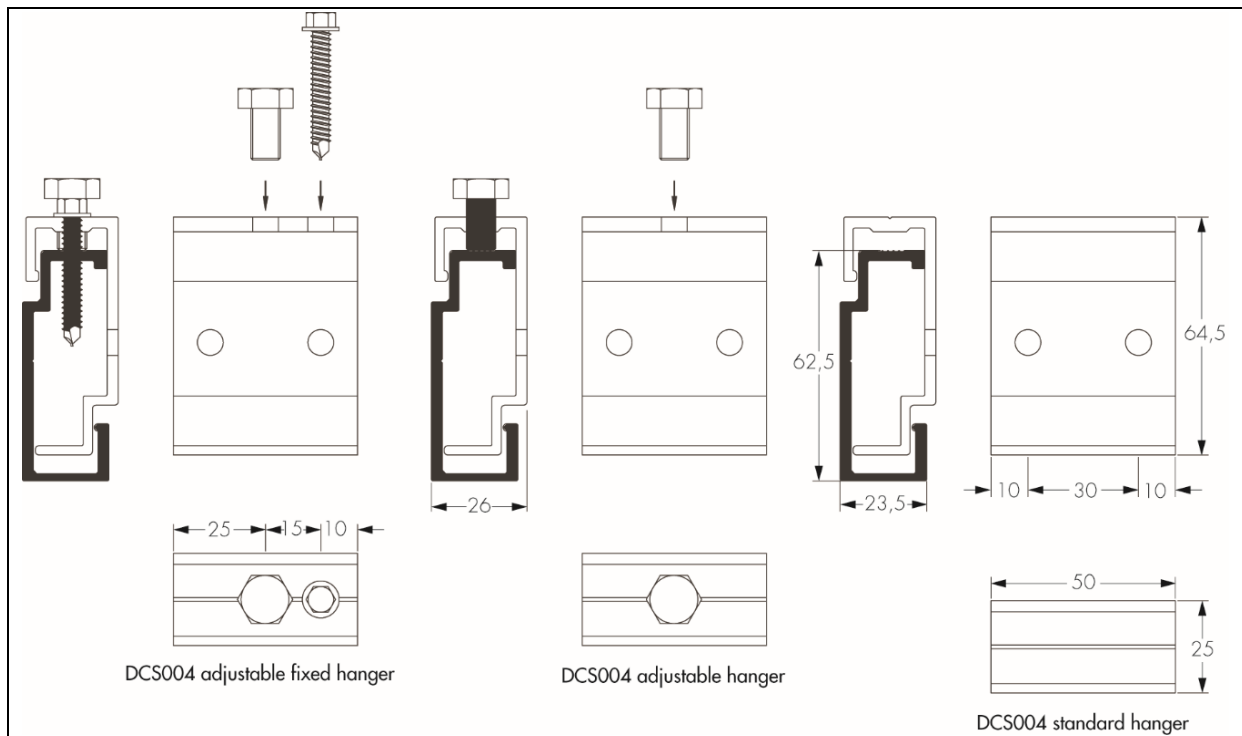
Step 4 – 1st row installed, continue with 2nd row



Step 5 – Installation completed



Figure 6 DCS 004 panel hanger and horizontal carrier rail details



## Technical Investigations

### 13 Tests

Tests were carried out by the BBA on the Petrarch A2 Rainscreen Cladding Panel System and the results assessed, to determine:

- pull through of fixings
- pull out of fixing (axial tension resistance).

### 14 Investigations

14.1 An evaluation was made of the external test reports, relating to:

- flexural (bending) strength and flexural modulus
- reaction to fire classification
- watertightness – static, dynamic and hose
- wind resistance – cyclic, serviceability and safety
- impact resistance – hard and soft body
- calculation of resistances to wind action.

14.2 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.

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### 15 Conditions

#### 15.1 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.

15.2 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.

15.3 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.

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

15.5 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.

15.6 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.