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**Agrément Certificate**

**96/3261**

Product Sheet 2 Issue 1

### ULTRAFRAME CONSERVATORY ROOF SYSTEM

### QUANTAL CLASSIC CONSERVATORY ROOF SYSTEMS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Quantal Classic Conservatory Roof Systems, for ground level conservatories with a maximum floor area of 30 m<sup>2</sup>, in new or existing dwellings.

(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 systems described herein. These systems 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 issue: 1 August 2023

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.*

#### British Board of Agrément

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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 Quantal Classic Conservatory Roof Systems, 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)

In the opinion of the BBA, Quantal Classic Conservatory Roof Systems, if installed, used and maintained in accordance with the provisions of this Certificate, are not subject to these Regulations. Users should however refer to the detailed criteria in Regulations 9 and 21 and Schedule 2, Class 7.



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

In the opinion of the BBA, Quantal Classic Conservatory Roof Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations. Conservatories with a floor area not exceeding 8 m<sup>2</sup> and meeting the relevant exemption criteria, are not subject to these Regulations.

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Fitness and durability of materials and workmanship</b>
<b>Comment:</b>		The use of the systems satisfies the requirements of this Regulation. See sections 8 and 9 and Annex A of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
<b>Standard:</b>	<b>1.1</b>	<b>Structure</b>
<b>Comment:</b>		The systems can contribute to satisfying this Standard, with reference to clauses 1.1.1 <sup>(1)</sup> and 1.1.3 <sup>(1)</sup> . See sections 1 and 9 of this Certificate.
<b>Standard:</b>	<b>2.5</b>	<b>Internal lining</b>
<b>Comment:</b>		The systems can contribute to satisfying this Standard, with reference to clauses 2.5.1 <sup>(1)</sup> , 2.5.2 <sup>(1)</sup> and 2.5.3 <sup>(1)</sup> . See section 2 of this Certificate.
<b>Standard:</b>	<b>2.8</b>	<b>Spread from neighbouring buildings</b>
<b>Comment:</b>		The systems can contribute to satisfying this Standard, with reference to clause 2.8.1 <sup>(1)</sup> and Annex 2.C.3 <sup>(1)</sup> . See section 2 of this Certificate.
<b>Standard:</b>	<b>3.10</b>	<b>Precipitation</b>
<b>Comment:</b>		The systems can contribute to satisfying this Standard, with reference to clause 3.10.1 <sup>(1)</sup> . See section 3 of this Certificate.
<b>Standard:</b>	<b>3.15</b>	<b>Condensation</b>
<b>Comment:</b>		The systems may be restricted by this Standard, with reference to clauses 3.15.1 <sup>(1)</sup> , 3.15.4 <sup>(1)</sup> and 3.15.5 <sup>(1)</sup> . See section 3 of this Certificate.
<b>Standard:</b>	<b>6.2</b>	<b>Building insulation envelope</b>
<b>Comment:</b>		The systems can contribute to satisfying this Standard, with reference to clause 6.2.12 <sup>(1)</sup> . See section 6 of this Certificate.

**Standard:** 7.1(a)(b) **Statement of sustainability**  
**Comment:** The systems 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. See section 6 of this Certificate.

**Regulation:** 12 **Building standards applicable to conversions**  
**Comment:** All comments given for the systems under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1<sup>(1)</sup> and Schedule 6<sup>(1)</sup>.

(1) Technical Handbook (Domestic).



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

A conservatory constructed as an annex to an existing building, with a floor area not exceeding 30 m<sup>2</sup> and less than one metre from any boundary, is exempt from these Regulations provided that the conditions described in A5 Exemptions are met.

## Additional Information

### NHBC Standards 2023

In the opinion of the BBA, Quantal Classic Conservatory Roof Systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 2.1 *The Standards and Technical Requirements*, R2 *Design requirement* and R3 *Materials requirement*.

## Fulfilment of Requirements

The BBA has judged Quantal Classic Conservatory Roof Systems, to be satisfactory for use as described in this Certificate. The systems have been assessed as conservatory roof systems for ground level conservatories with a maximum floor area of 30 m<sup>2</sup> which are thermally separate from new or existing dwellings and where the dwelling heating system is not extended into the conservatory.







## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the systems under assessment. Not all components listed will be required for each conservatory style. The combination of components will vary depending on the configuration required.

Quantal Classic Conservatory Roof Systems consist of aluminium construction with white- or woodgrain-coated aluminium external capping (grade 6063 T6), in the configurations shown in Table 1.

**Table 1 Conservatory configuration**

Conservatory configuration <sup>(1)</sup>	Description
	<p>Victorian style</p> <p>A 'faceted'-style end, with 3 or 5 facets available. Roof pitches for this style are certified between 15 and 40°.</p>
	<p>Edwardian/Georgian style</p> <p>A square base design with all three roof elevations sloping. Roof pitches for this style are certified between 15 and 40°.</p>
	<p>Gable style</p> <p>Square-fronted floor plan containing a gable and sloped roof, with roof pitches between 15 and 40°.</p>
	<p>Lean-to style</p> <p>A mono pitched design with a roof pitch available between 2.5 and 30°.</p>
  	<p>Combination style (P-shape and T-shape)</p> <p>A combination of Victorian, Georgian and Gable styles used to form shapes on plan such as 'P', 'T' or 'L'.</p>

(1) The conservatory walls are shown for clarity but are not covered by this Certificate.

Components of the Quantal Classic Conservatory Roof Systems consist of:

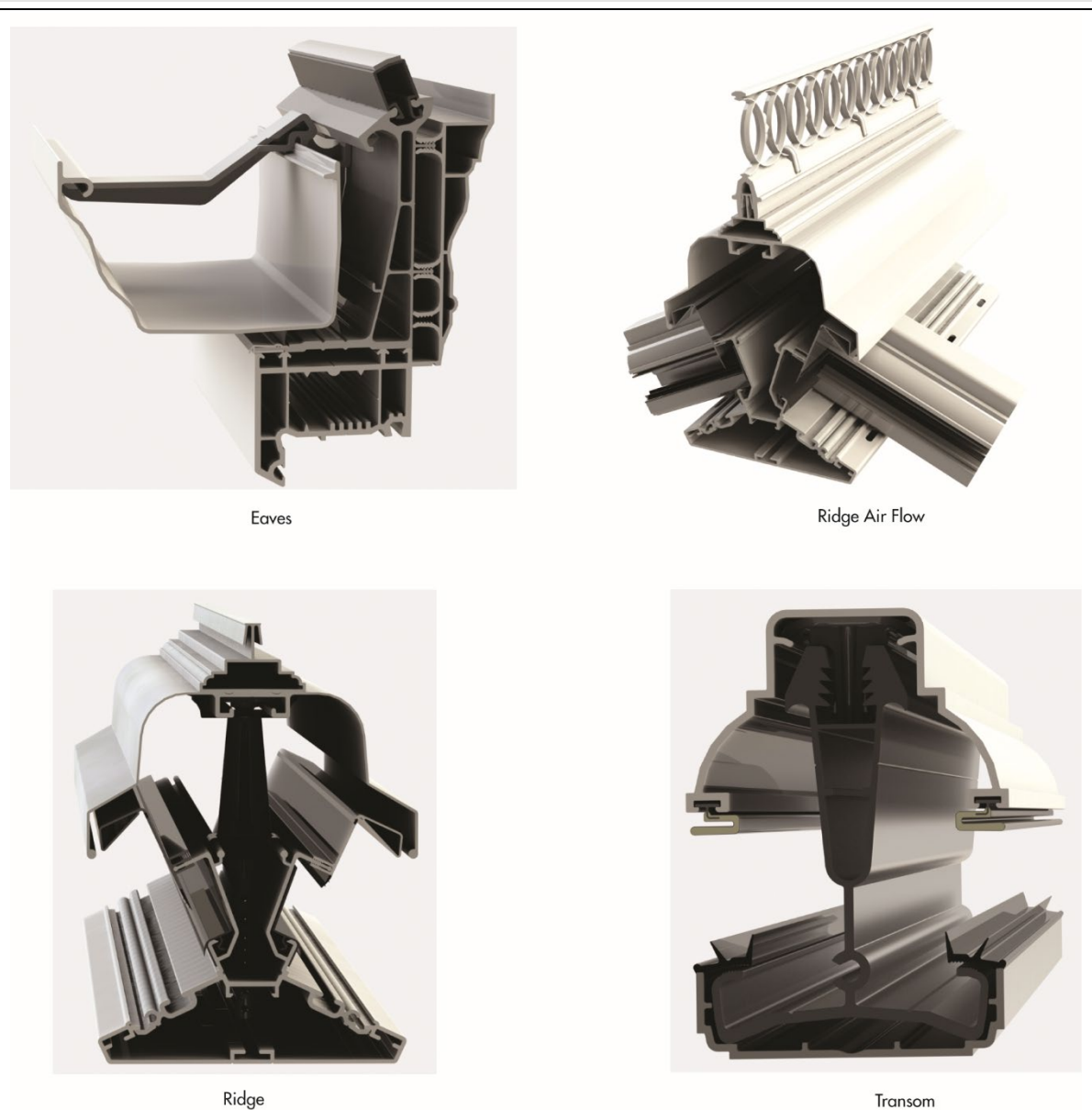
#### **Beams, bars and brackets**

- the structural sections of the beams, bars and brackets (see Figure 1) — manufactured from aluminium to BS EN 755-9 : 2016, grade designation EN AW 6063-T6

Other components associated with the beams, bars and brackets include:

- ridge beam member incorporating trickle ventilation
- glazing bar sections (light and heavy duty steel, reinforced or unreinforced)
- eaves ring beam (light and heavy duty)
- gable beam (steel, reinforced or unreinforced)
- hip and valley beam
- starter bars (light and heavy duty)
- wall plates
- die cast radius end
- corner joint cleats
- TPE co-extruded gaskets
- SpeedLok connection system
- tie bars

*Figure 1 Beams and bars*



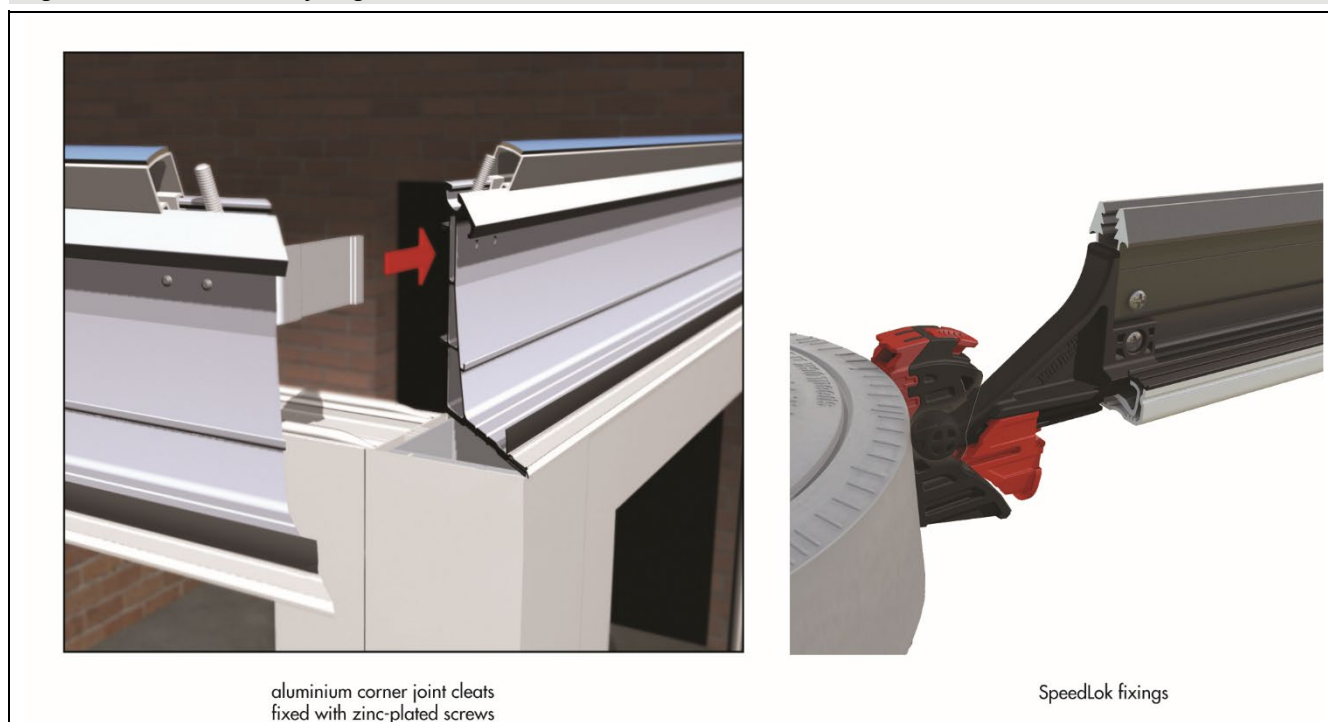


## Glazing components<sup>(1)</sup>

- polycarbonate multi-wall (seven-wall) panels — in thicknesses of 25 or 35 mm
- 24 mm thick (4-16-4) low emissivity/argon filled double-glazed sealed units — in accordance with BS EN 1279-1 : 2018, incorporating toughened safety glass Kitemarked to BS 6206 : 1981, or laminated glass
- Transom glazing bars — with PVC-U internal cladding and TPE co-extruded gaskets, are attached to the eaves beam and ridge beam member with zinc-plated steel bolts (captive in slots in the ridge and eaves beam aluminium extrusions). Hip bars are clamped onto the die-cast ridge end with SpeedLok fixings. Starter glazing bars are attached to the ridge and eaves beams in the same manner as the transom glazing bars. The starter glazing bars are fixed directly to the existing building wall using appropriate fixings (see Figure 2)
- Glazing panels or units — supported by the glazing bars and located into the ridge assembly through a PVC-U rain baffle and a co-extruded gasket, to provide a seal against ingress of moisture. External PVC-U caps with TPE co-extruded gaskets snap into position on the glazing bars and hold down the roof panels or units, forming a seal between the internal and external gaskets
- a closed-cell foam bung — positioned at the ridge end at the intersection of the hip bars and a silicone seal is applied to the joints, to prevent the ingress of moisture
- an external PVC-U ridge cap with integral ridge flashing trim — positioned on top of the ridge body and clamped in position from the inside with nylon fixing rods. The internal face of the ridge beam is clad with PVC-U cladding
- a PVC-U gutter system — attached on site to the aluminium eaves beam around the full perimeter of the roof via push-fit integral brackets. The underside of the eaves beam is finished off with a PVC-U trim. The internal face of the eaves beam is clad with an internal PVC-U cladding

(1) Not all components will be required for each conservatory style. The combination of components will vary depending on the configuration required.

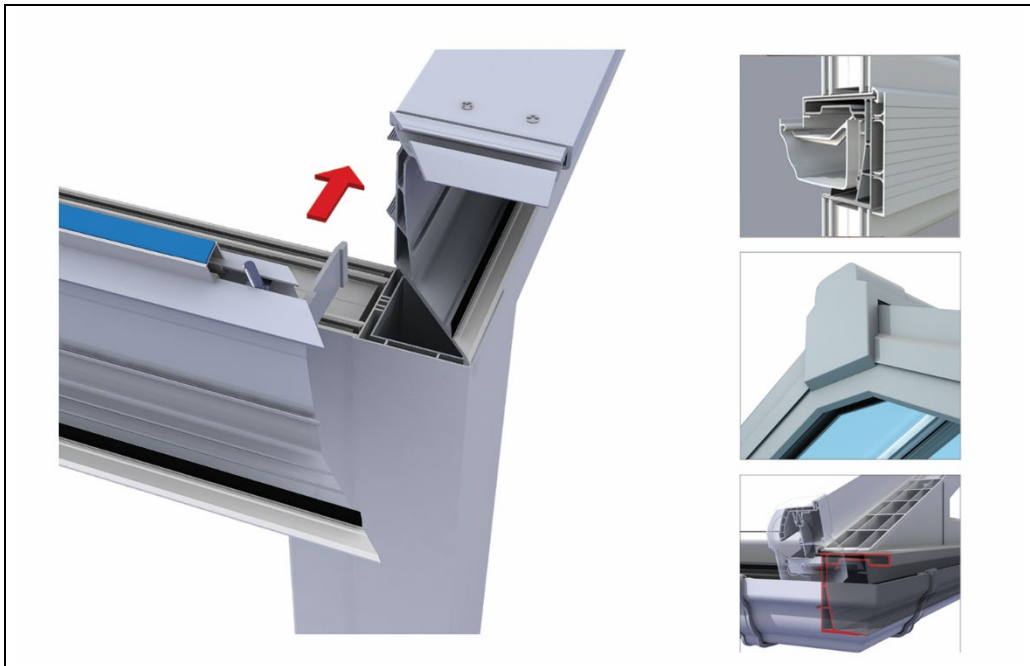
Figure 2 Connections and fixings



## Gable support system

- The gable support system (see Figure 3) — suitable for Lean-to and Gable style conservatories and comprises a steel-reinforced aluminium extruded lintel. The lintel is installed across either end of a Lean-to or to the front of a Gable style conservatory to give increased structural stability and integrity, particularly in designs where double doors are featured in the same elevation
- The gable support beam — for 10 to 30° lean-to roofs and 15 to 40° gable roof pitches, supplied with infill wedges, aluminium cladding, PVC-U guttering and aluminium corner cleats to connect the gable beam to the eaves beam

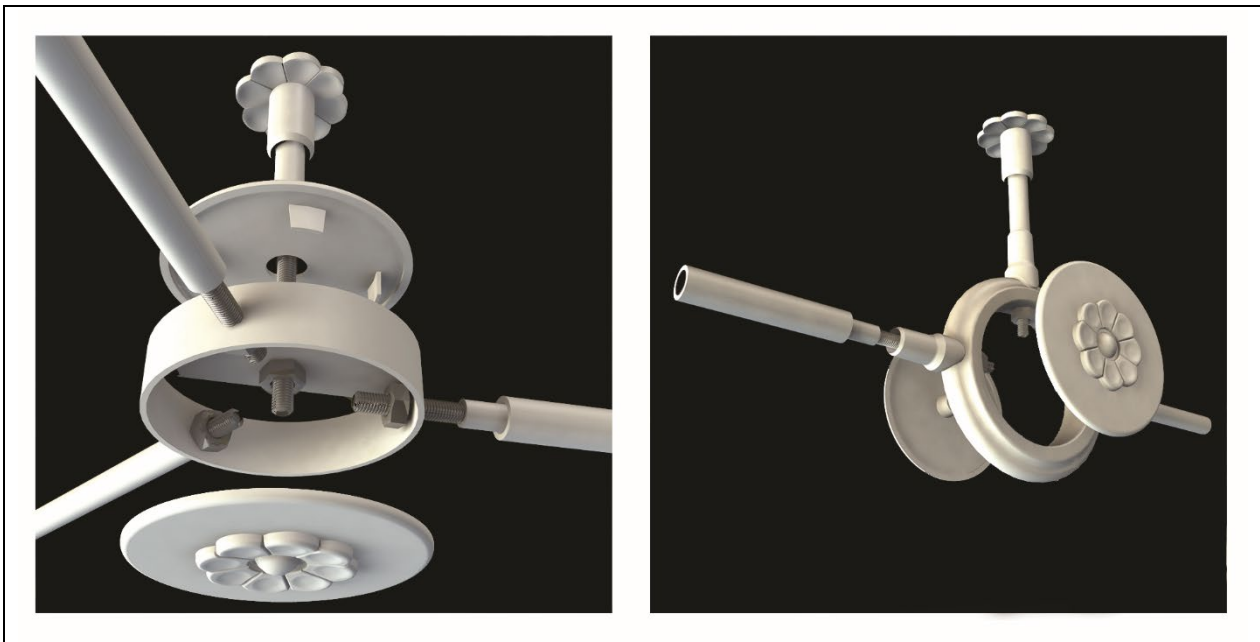
*Figure 3 Gable support system*



#### **Tie bars**

- Tie bars (see Figure 4) — necessary on some sizes and shapes of conservatory roof and consist of steel threaded rods, 10 mm diameter, which connect via brackets to the transom bars or to the ridge at one end and to a cast steel collar at the other. The components of the tie bar assembly are trimmed with PVC-U or are powder-coated to match the colour of the other conservatory components

*Figure 4 Tie bars*



#### **Roof vent**

- a manually or motorised opening aluminium Quantal Roof Vent — designed to match the glazing bar sections, if required (see Figure 5)

Figure 5 Roof vent



### Conservaflash<sup>(1)</sup> flashing system

- The Conservaflash preformed PVC-U flashing system — consists of a range of moulded components (see Figure 7)
- stepped flashing panels (left and right) — for duo-pitched roofs, to slot into a preformed soaker which is pre-clipped into the starter bar of the roof (see Figures 7 and 8). A saddle apron panel and horizontal flashing are used at the apex
- horizontal flashing panels — for lean-to roofs, to overlap each other and overhang the lean-to half ridge/wall bracket PVC-U top cladding (see Figure 9).

(1) Conservaflash is a Registered trade mark.

### Ancillary items

The Certificate holder recommends the following ancillary items for use with the systems, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- gutters and brackets
- UPVC trim and cladding, manufactured from material to BS EN 12608 : 2016
- capping and endcaps
- flashing
- gaskets
- sealant
- eaves trickle ventilators.



## Product assessment – key factors

The systems were assessed for the following key factors, and the outcomes of the assessments are shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

### 1 Mechanical resistance and stability

Data were assessed for the following characteristics.

#### 1.1 Strength and stability

1.1.1 Computer aided structural calculations<sup>(1)</sup> and designs assisted by full-scale testing have been used to confirm the adequacy of the connections between structural members and tie bar systems. The tests were carried out to justify the predicted performance based on the Certificate holder's design methodology.

(1) The software package is used to input the size and design of the conservatory, and the package produces a structural design based on the criteria.

1.1.2 The results were analysed for a range of typical structural designs and confirmed that the assumptions made by the software are appropriate, that the section properties are accurately determined to BS EN 1999-1-1 : 2007 and that an adequate range of loading cases, together with relevant load and material factors, are computed (see section 9 of this Certificate).

1.2 On the basis of the data assessed, the systems will have adequate strength and stiffness to sustain the ultimate uniformly distributed working loads expected in the UK, subject to the following conditions and will be unrestricted under the documents supporting the Building (Scotland) Regulations:

1.2.1 The load on the roof from the self-weight of the roof components is calculated in accordance with BS EN 1999-1-1 : 2007, with an allowance for roof access established from the National Annex to BS EN 1991-1-1 : 2002, Table NA7. Load combinations are determined in accordance with BS EN 1990 : 2002 and the worst case is used to verify the adequacy of the roof.

1.2.2 The structural resistance properties of the systems components are determined in accordance with BS EN 1991-1-1 : 2002. In addition to the normal design checks (ie bending, shear, axial load combined stresses, flexural buckling, lateral buckling and combined stresses), the deflections of the members are limited under worst case loading to span/175 for glazed roofs and to span/115 for polycarbonate roofs.

### 2 Safety in case of fire

Data were assessed for the following characteristics.

#### 2.1 Reaction to fire

2.1.1 Glass is classified as A1 by reference to commission Decision 96/603/EC.

2.1.2 The Certificate holder has not declared a reaction to fire classification to BS EN 13501-1 : 2018 for the polycarbonate glazing.

2.1.3 On the basis of the data assessed, the systems are unrestricted by the documents supporting the Building (Scotland) Regulations with the exception of the polycarbonate glazing which must not be used in conservatories exceeding 8 m<sup>2</sup> floor area.

#### 2.2 External fire spread

2.2.1 Glass at least 4 mm thick and multi-skin polycarbonate sheet at least 10 mm thick can be regarded as having a Low Vulnerability or B<sub>ROOF</sub> (t4) designation as defined in Annex 2.C.3 of the Scottish Domestic Technical Handbook.

2.2.2 On the basis of the data assessed, the systems are unrestricted in terms of proximity to a boundary by the documents supporting the Building (Scotland) Regulations.

### 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

#### 3.1 Condensation

3.1.1 Condensation risk assessment modelling of the roof components in accordance with BS EN 10211 : 2017 indicates the minimum temperature factors in Table 2 of this Certificate.

*Table 2 Minimum temperature factors for frame components*

Component assessed	Assessment method	Requirements	Results
			Minimum temperature factor ( $f_{Rsi}$ )
Wall plate	BS EN 10211 : 2017	Value achieved	0.25
Standard capping		Value achieved	0.43
Ring beam (eaves)		Value achieved	0.30
Ridge beam		value achieved	0.45
Rafter (starter bar) to wall		Value achieved	0.44
Rafter (starter bar) to gable		Value achieved	0.37

3.1.2 On the basis of data assessed, the risk will be minimal when the conservatory roof minimum temperature factor shown in Table 2 exceeds that shown in Table 3 for the relevant building occupancy type.

3.1.3 The risk of condensation forming on an internal surface of the conservatory roof is dependent on:

- the external temperature
- the components' minimum temperature factor
- the temperature and humidity of the adjacent air in the conservatory.

*Table 3 Minimum temperature factors<sup>(1)</sup> to minimise the risk of surface condensation*

Humidity class	Building type	Minimum temperature factor ( $f_{Rsi}$ )
1	Storage areas	$\leq 0.20$
2	Dwellings with low occupancy, office, shops	0.21 - 0.40
3	Dwellings with high occupancy	0.41 - 0.57
4	Sports halls, kitchens, canteens, buildings heated with unflued gas heaters	0.58 - 0.71
5	Special buildings, eg laundry, brewery, swimming pools	$\geq 0.72$

(1) The ratio of temperature difference between the internal roof surface and the external environment, and the total temperature difference between internal and external environments.

3.1.4 Where the temperature factors given in Table 2 are less than those given in Table 3 for the relevant occupancy type, there is a risk of surface condensation forming. However, limited intermittent condensation, appearing initially on the glazing immediately adjacent to the frames or on the frames themselves, should not be detrimental to the conservatory roof. By way of comparison, minimum temperature factors for typical PVCu windows are between 0.50 and 0.65.

#### 3.2 Weathertightness

3.2.1 Selected samples of the systems were tested for weathertightness and the results are given in Table 4.

**Table 4 Weathertightness<sup>(1)</sup>**

Product assessed	Assessment method <sup>(3)</sup>	Requirement	Result
Quantal Classic Conservatory Roof Systems (watertightness)	BS 6375-1 : 2015 Test pressure class (Pa) MOAT No 1 : 1974 Grading <sup>(2)(4)</sup>	Value achieved	300 Pa (Class 7A)    <i>E<sub>3</sub></i>

(1) A value for air permeability is not given as it will vary depending on the nature of the supporting walling structure.

(2) *E<sub>3</sub>* indicates water leakage occurring between 300 and <500 Pa.

(3) There are no Standards or guides applicable to conservatory roofs, hence the use of assessments in accordance with BS 6375-1 : 2015 and MOAT No 1 : 1974

(4) The gradings are based on the assumption that the conservatory is installed in accordance with the *Quantal Conservatory Technical Manuals*.

3.2.2 The weathertightness performance of the Quantal Roof Vent was tested and the results classified in accordance with BS EN 14351-1 : 2016 as shown in Table 5 of this Certificate.

**Table 5 Weathertightness performance of the Quantal Roof Vent**

Product assessed	Assessment method	Requirement	Result
Quantal Roof Vent <sup>(1)</sup>	Air permeability (before gusting) to BS EN 1026 : 2016	Value achieved	150 Pa (Class 1)
	Watertightness at 25° to BS EN 1027 : 2016	Value achieved	1200 Pa (AE1200)
	Resistance to wind load to BS EN 12211 : 2016	Value achieved	800 Pa (Class A2)
	Air permeability (after gusting) to BS EN 1026 : 2016	Value achieved	150 Pa (Class 1)

(1) The specimen was a white PVC-u, conservatory, open-out, roof vent, 980 mm wide by 1000 mm high.

3.3 On the basis of data assessed, Quantal Classic Conservatory Roof Systems will adequately resist the passage of moisture to the inside of the building in use.

3.4 To achieve the gradings given in Tables 4 and 5, particular attention must be paid to the correct fitting of all gaskets and weatherseals, and to the detailing of sealants and flashings.

## 4 Safety and accessibility in use

Not applicable.

## 5 Protection against noise

Not applicable.

## 6 Energy economy and heat retention

Data were assessed for the following characteristics.

### 6.1 Thermal performance

6.1.1 The U-values of the glazing and the linear thermal transmittance of the beams and glazing bars are given in Tables 6 and 7 respectively.

**Table 6 U-values of glazing**

Product assessed	Assessment method	Requirements	Results
			U value ( $\text{W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ ) horizontal (vertical)
24 mm doubled-glazed sealed units	BS EN 673 : 2011	value achieved	1.72 (1.05)
25 mm polycarbonate panels	BS EN 10211 : 2017 and	Value achieved	1.60 (1.53)
35 mm polycarbonate panels	BS EN ISO 6946 : 2017	Value achieved	1.23 (1.18)

**Table 7 Linear thermal transmittance**

Components assessed	Assessment method	Requirements	Results
			Linear thermal transmittance <sup>(1)(2)</sup> ( $\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$ )
Wall plate		value achieved	0.53
Standard capping (glazing rafter)		value achieved	0.39
Ring beam (eaves)		value achieved	0.42
Ridge beam	BS EN 10211 : 2017	value achieved	0.94
Rafter to wall		value achieved	0.30
Rafter to gable		value achieved	0.19

(1) These values are achieved with the 24 mm glazing unit.

(2) Thermal transmittance values for profiles incorporating the polycarbonate glazing will be equal or better.

6.1.2 In Scotland, for conservatories exceeding  $8 \text{ m}^2$  in area, roof systems that can achieve an area weighted average U value not exceeding  $1.8 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  can adequately limit excessive heat loss. This U-value is for vertical orientation and should be adjusted for slope in accordance with BRE Report BR 443 : 2019.

## 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 these systems were assessed.

Specific test data were assessed for the following.

### 8.2 Durability

8.2.1 Evidence from UK sites indicated polycarbonate roof sheets, aluminium glazing bars and other components, will have similar durability. Where conservatory roofs are to be installed in areas subject to particularly aggressive conditions (for example, in coastal locations or near sources of industrial pollutants), replacement of components may be necessary within the life of the conservatory roof. Polycarbonate roof sheet replacement may be necessary where prolonged exposure to direct sunlight causes degradation.

8.2.2 The gaskets and sealant may need to be replaced within the life of the conservatory roof.

8.2.3 Any slight colour change or surface dulling that might occur will be uniform over the visible surfaces of the windows. See section 9.4 this Certificate.

### 8.3 Service life

8.3.1 Under normal service conditions, the systems will have a service life of at least 25 years, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.3.2 Slight colour change or surface dulling due to exposure to sunlight and heat may occur within the overall service life of the roof. In addition, the external surface temperature will be dependent upon a number of factors including:

- orientation — south facing and ‘sun-trap’ locations with restricted air movement
- finishes — dark woodgrain finishes will reach a higher temperature than lighter shades
- shading by trees or other buildings.

## 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 assessed in this Certificate.

9.1.2 A suitably qualified and experienced individual must check the design of the systems by determining the loading on the members and connections, and the resultant forces in the members, and specify the components required to ensure adequate resistance to the worst case of ultimate and service loads.

9.1.3 Site-specific information must be provided to enable such calculations to be performed including:

- style, roof pitch, glazing type and dimensions of the conservatory
- the location and elevation/altitude of the roof to establish wind and snow loading
- the orientation of the conservatory
- anchors specified (as designated by the designers) to secure the profiles to the host wall.

9.1.4 Computer software is used to establish the wind and snow loading, including snow drift loads where appropriate, relevant to each site in accordance with BS EN 1991-1-3 : 2003 and BS EN 1991-1-4 : 2005 and their UK National Annexes. The Certificate holder must ensure that the design by the computer software is in accordance with the relevant Eurocodes.

9.1.5 The design software creates nodes at each connection point with the supporting structure and assigns fixity to such nodes in accordance with normal design practice. Connections between structural components of the roof system are generally assumed to be pinned at each end and restrained in position in the other two planes. Fixings to the wall and support frame are assumed to have partial fixity. Failure to comply with the design assumptions with respect to fixity will cause increased deflections and possible distortion of the roof. It is therefore essential that a suitably qualified and experienced individual is entrusted to establish the suitability of the supporting wall fixings and that appropriate fixities are used in the design.

#### *Thermal performance*

9.1.6 Where there is no thermal separation (outside the scope of this Certificate), from the main dwelling, or it is to be removed as part of the new conservatory/extension or as part of the transformation of an existing conservatory, additional thermal assessment must be undertaken to demonstrate overall compliance with the relevant national Building Regulations requirements.

#### *Ventilation and solar heat gain*

9.1.7 Trickle ventilation is provided through the ventilated ridge (see Figure 6) and ventilated eaves (when fitted). Additional background ventilation can be provided through trickle ventilators in the head of the window and door units; however, this is outside the scope of this Certificate.

9.1.8 Opening roof vents can be included where required to provide greater levels of ventilation.

9.1.9 Solar heat gain through glazings may provide a useful additional heat input during winter conditions; however, summertime internal temperatures will also be raised. To limit the latter effect, the following design factors should be considered:

- orientation, with respect to south facing
- aspect ratio of the floor plan of the conservatory
- area of opening lights and doors to area of floor expressed as a percentage
- solar transmittance of glazing used.

9.1.10 As an approximate guide, northerly facing conservatories should have opening lights or doors of not less than 15% of the floor area, rising to not less than 25% with roof blinds for those of a southerly aspect. This should limit the solar gain temperature rise to less than 12°C for most situations in summertime, using only natural ventilation. Where lower temperature rises are desired, consideration can be given to mechanical forced ventilation. More precise methods of design and solar data are given in Chartered Institution of Building Services Engineers (CIBSE) Guide A (2015), Section 4 and Appendix 5.A11.

9.1.11 To reduce the effects of solar heat gain on the internal temperature of the conservatory, blinds can be fitted, but their performance has not been assessed by the BBA and is outside the scope of this Certificate.

*Figure 6 Ventilated ridge*



9.1.12 In all cases in section 3.1, the risk of surface condensation can be reduced by limiting activities which produce large amounts of moisture and by providing means for adequate ventilation; in particular, air flow from trickle ventilators in conservatory windows, when fitted (outside the scope of this Certificate) can alleviate localised surface condensation. In addition, background heating of the conservatory will help to maintain the internal surface temperatures above the dew-point temperature.

9.1.13 The ridge and eaves trickle ventilators will help to equalise the internal and external air pressures.

#### *Security against intrusion*

9.1.14 It is recommended that a conservatory to an existing dwelling retains a lockable exterior type door to the main building.

9.1.15 Glazing sheets are retained by glazing bar top cappings. Removal of glazing bar top cappings is extremely difficult without the use of a special tool.

9.1.16 The roof light is fitted with a screw-closing mechanism and provides reasonable security against unauthorised entry by the opportunist intruder.



## *Safety*

9.1.17 Where a glass roof is specified, either sealed double-glazed units incorporating toughened safety glass Kitemarked to BS 6206 : 1981, or laminated glass, is used.

9.1.18 The positioning of hand-operated controls for the opening vent should comply with the recommendations of BS 8213-1 : 2004.

## *Supporting structure*

9.1.19 All supporting side frames incorporating window profile material, ie PVC, timber or aluminium, must be designed in accordance with the relevant British Standards for imposed loadings. The side frames/walls must provide conservatories with overall lateral stability and resistance to axial loading.

## 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 the conservatory roof abuts a masonry wall, a stepped cavity tray should be provided and linked to the flashing to prevent water penetrating the enclosed area.

## 9.3 Workmanship

Practicability of installation was assessed on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, the systems are designed to be installed by a competent general builder, or a contractor, experienced with these types of systems. An approved list of installers is also available from the Certificate holder.

## 9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the systems in use requires that they are suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA, and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 The conservatory roof can be re-glazed and the gaskets replaced, but these operations should be carried out using the materials supplied by Ultraframe (UK) Ltd and approved by the BBA.

9.4.2.2 If damage occurs to a roof vent, the furniture and fittings can be readily replaced by releasing the fixing screws and changing the fitting.

9.4.2.3 Internal and external aluminium cladding can be cleaned using water containing household detergent. To avoid scratching of the surface, only soft cloths should be used when cleaning. If dirt is allowed to build up on the members over long periods, it may become more difficult to restore the surface appearance.

9.4.2.4 Care should be taken when using proprietary materials for cleaning the glazing to ensure that deposits are not allowed to remain on the aluminium, where they may cause discolouration and damage to the surface. In addition, care must be taken to avoid damage to, or discolouration of, the members when stripping paint from adjacent surfaces (eg by means of a blowlamp, paint stripper or mechanical stripper).

9.4.2.5 Paint can be used to recolour the aluminium cladding, ensuring the primer is compatible with the polyester-power-coated finish on the aluminium. The Certificate holder can advise on suitable overcoating systems.

9.4.2.6 The roof vent locking mechanisms and hinges should be lubricated periodically as recommended by the Certificate holder, to minimise wear and to ensure smooth operation.

9.4.2.7 Roof panels can be readily replaced, if damaged, by removal of the glazing bar top capping using a special tool.

9.4.2.8 Low pitch roofs are likely to require more frequent cleaning than those with a higher pitch; a greater pitch aids removal of dirt and debris by rainwater.

## **10 Manufacture**

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The systems are manufactured from a wide range of materials and manufacturing processes, and bought-in components. Conventional manufacturing processes such as extrusion of aluminium sections, injection moulding and die casting are utilised as well as cutting, drilling and fabrication. Quality control includes checks on all materials and components; in particular, extruded aluminium profiles, fabrication of roof system, extrusions and components (visual inspection) and overall dimensions.

10.1.2 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.3 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.4 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.5 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.6 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.

†10.1.7 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 product is delivered to site in packaging bearing the product name, company name, and weight of contents in kilograms, 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 The roof components should be stored under cover in a clean area, and be suitably protected to avoid distortion or damage.

11.2.2 The weight of glazing can be calculated, where required for manual handling operations, by reference to the information contained in BS 952-1 : 1995. The weight of the unglazed frame, and its ease of handling, particularly by one person, must also be taken into account when planning site operations.

11.2.3 When selecting means of access during the period of installation (eg use of scaffolding), the safety of the operatives, occupants and persons in or about the house should be considered.

Supporting information in this Annex is relevant to the systems 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.

### CE marking

The Certificate holder has taken the responsibility of CE marking the structural components of the product in accordance with harmonised European Standard EN 1090-1 : 2009.

### Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by the British Standards Institution (Certificate FM23560).

### Additional information on installation

#### General

- A.1 Design and manufacture of the conservatory roof systems are undertaken by the Certificate holder .
- A.2 Cavity trays are required where the conservatory roof abuts a masonry cavity wall.
- A.3 When the pitch of the building roof adjacent to the conservatory is steeper than 30°, consideration should be given to the inclusion of snow guards to minimise the worst effects of snow slides and dropping debris.

#### Procedure

#### Victorian/Georgian, Lean-to Victorian and Combination 'P', 'T' and 'L' systems

- A.4 The eaves beam is positioned on top and in line with the supporting side frames and secured using the recommended fastener and fixing centres. The corner joints are spliced with aluminium cleats and fixing screws.
- A.5 The ridge beam is placed in position and located with the starter glazing bars, hip bars and transom bars. The hip bars with Speedlok fixings are clamped to the die-cast ridge end (see Figure 2), and to the eaves beam by captive bolts located in the eaves beam extrusion. Starter glazing bars and transom bars are attached to the ridge section and to the eaves beam by captive bolts located in the ridge and eaves beam extrusions.
- A.6 Starter glazing bars are fixed directly to the existing house wall, using appropriate fixings.
- A.7 The roof is glazed with polycarbonate sheets or sealed double-glazed units. Each panel is located into the ridge system between the PVC-U rain baffle and the co-extruded TPE gasket. External glazing caps with co-extruded TPE gaskets are snapped onto the glazing bars to form a seal against the glazing panel.
- A.8 A closed-cell foam bung is positioned at the ridge end of the intersection of the hip bars, and silicone sealant is applied to the joints. The PVC-U ridge cap is clamped into position from inside.
- A.9 The installation is completed by fitting items such as trims, ridge cresting, finials, gutters and downpipes. Rainwater is directed to a suitable soakaway or drain.

### Gable support system

A.10 The eaves beam and gable beam are positioned on top of the side frames. The corner joints are fixed with aluminium cleats and fixing screws.

A.11 The eaves beam and gable beam are fixed to the supporting frames using the recommended fasteners and fixing centres.

A.12 Gutter brackets are attached to gable/eaves beam at the recommended spacing and the gutter is clipped into position.

A.13 The gable beam top cladding is attached and the gable window frame is placed centrally on the gable beam and fixed into position with self-tapping screws or recommended fixings for the reinforced gable beam.

A.14 Gable infill wedges are fitted in place and the gable-frame furring top cap placed in position.

A.15 The ridge is centrally located to the gable frame and fixed to the starter bars, which are in turn fixed to the gable window frame.

A.16 The roof is fitted and glazed in the normal manner.

A.17 Finally, cappings, trims and end caps are fitted.

### Conservaflash flashing system

A.18 The mortar along the appropriate brick-line is chased out using a grinding wheel.

A.19 The flashing units are installed from the gutter end towards the ridge by slotting into the extruded soaker which is pre-clipped into the starter bar (see Figure 6).

A.20 For duo-pitched roofs, the saddle apron panel and horizontal flashing is installed at the ridge and the joints are sealed with silicone.

A.21 Silicone sealant is used to seal the flashing units to the wall where the mortar has been chased out.

*Figure 7 Conservaflash flashing system components*



*Figure 8 Duo-pitched roof stepped flashing panels into preformed soaker*



*Figure 9 Lean-to roof horizontal flashing panels*





## Bibliography

- BRE Report BR 443 : 2019 Conversions for U-value calculations
- BS 952-1 : 1995 *Glass for glazing — Classification*
- BS 6206 : 1981 *Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings*
- BS 6375-1 : 2015 + A1: 2016 *Performance of windows — Classification for weathertightness and guidance on selection and specification*
- BS 8213-1 : 2004 *Windows doors and rooflights — Design for safety in use and during cleaning of windows, including door-height windows and roof windows — Code of practice*
- BS EN 673 : 2011 *Glass in building — Determination of thermal transmittance (U value) — Calculation method*
- BS EN 755-9 : 2016 *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles — Profiles, tolerances on dimensions and form*
- BS EN 1027 : 2016 *Windows and doors. Water tightness. Test method*
- BS EN 1279-1 : 2018 *Glass in building. Insulating glass units. Generalities, system description, rules for substitution, tolerances and visual quality*
- BS EN 1990 : 2002 + A1 : 2005 *Eurocode — Basis of structural design*
- NA to BS EN 1990 : 2002 +A1: 2005 *UK National Annex for Eurocode — Basis of structural design*
- BS EN 1991-1-1 : 2002 *Eurocode 1 : Actions on structures —General actions — Densities, self-weight, imposed loads for buildings*
- NA BS EN 1991-1-1 : 2002 *UK National Annex to Eurocode 1 : Actions on structures —General actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1991-1-3 : 2003 + A1: 2015 *Eurocode 1 : Actions on structures — General actions — Snow loads*
- NA + A2 : 18 to BS EN 1991-1-3 : 2003 + A1: 2015 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Snow loads*
- BS EN 1991-1-4 : 2005 + A1: 2010 *Eurocode 1 : Actions on structures — General actions — Wind actions*
- NA to BS EN 1991-1-4 : 2005 + A1: 2010 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*
- BS EN 1999-1-1 : 2007 + A2: 2013 *Eurocode 9: Design of aluminium structures — General structural rules*
- NA to BS EN 1999-1-1 : 2007 + A1: 2009 *UK National Annex to Eurocode 9. Design of aluminium structures. General structural rules*
- BS EN 10211 : 2017 *Thermal bridges in building construction — Heat flows and surface temperatures. Detailed calculations*
- BS EN 12211 : 2016 *Windows and doors. Resistance to wind load. Test method*
- BS EN 12608 : 2016 + A1 : 2020 *Unplasticized poly(vinylchloride) (PVC-U) profiles for the fabrication of windows and doors — Classification, requirements and test methods. Non-coated PVC-U profiles with light coloured surfaces*
- BS EN 13501-1 : 2018 *Fire classification of construction products and building elements. Classification using data from reaction to fire tests*
- BS EN 14351-1 : 2006 + A2 : 2016 *Windows and doors. Product standard, performance characteristics. Windows and external pedestrian doorsets*
- BS EN ISO 6946 : 2017 *Building components and building elements — Thermal resistance and thermal transmittance — Calculation method*
- BS EN ISO 9001 : 2015 *Quality management systems — Requirements*
- EN 1090-1 : 2009 +A1 : 2011 *Execution of steel structures and aluminium structures. Requirements for conformity assessment of structural components*
- MOAT No 1 : 1974 *Directive for the Assessment of Windows*

## 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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