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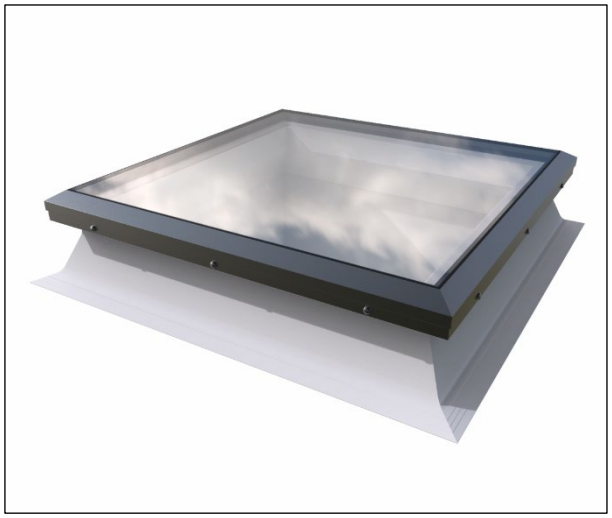
**Agrément Certificate**
**06/4385**
Product Sheet 5 Issue 1

# BRETT MARTIN MARDOME ROOFLIGHTS AND KERBS

# BRETT MARTIN FLAT GLASS ROOFLIGHT

This Agrément Certificate Product Sheet(1) relates to Brett Martin Flat Glass Rooflight, for use on flat roofs to admit natural light and ventilation to new and existing domestic and non-domestic buildings.

(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 product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of issue: 22 May 2024

Hardy Giesler
Chief Executive Officer

*Certificate amended on 27 May 2025 to update Table 5.*



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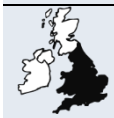
## SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Brett Martin Flat Glass Rooflight, 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)

| | | |
|---|---|---|
| **Requirement:** | **A1** | **Loading** |
| Comment: | | The product can contribute to satisfying this Requirement. See section 1 of this Certificate. |
| **Requirement:** | **B2(1)** | **Internal fire spread (linings)** |
| Comment: | | The product is unrestricted by this Requirement. See section 2 of this Certificate. |
| **Requirement:** | **B4(2)** | **External fire spread** |
| Comment: | | The product can contribute to satisfying this Requirement. See section 2 of this Certificate. |
| **Requirement:** | **C2(b)** | **Resistance to moisture** |
| Comment: | | The product will contribute to satisfying this Requirement. See section 3 of this Certificate. |
| **Requirement:** | **F1(1)** | **Means of ventilation** |
| Comment: | | Opening rooflights and, when fitted, ventilators incorporated in the kerbs, can contribute to satisfying this Requirement. See section 3 of this Certificate. |
| **Requirement:** | **K5.3** | **Safe opening and closing of windows etc (applicable to England only)** |
| Comment: | | Opening rooflights can satisfy this Requirement. See section 4 of this Certificate. |
| **Requirement:** | **L1(a)(i)** | **Conservation of fuel and power** |
| Comment: | | The product can contribute to satisfying this Requirement although compensating fabric measures may be required. See section 6 of this Certificate. |
| **Requirement:** | **N3** | **Safe opening and closing of windows, skylights and ventilators (applicable to Wales only)** |
| Comment: | | Opening rooflights can satisfy this Requirement. See section 4 of this Certificate. |
| **Requirement:** | **O1(1)** | **Overheating mitigation** |
| Comment: | | The product can contribute to satisfying this Requirement. See section 6 of this Certificate. |
| **Requirement:** | **Q1** | **Unauthorised access** |
| Comment: | | Non-opening rooflights can satisfy this Requirement for new dwellings. See section 4 of this Certificate. |
| **Regulation:** | **7(1)** | **Materials and workmanship** |
| Comment: | | The product is acceptable. See sections 8 and 9 of this Certificate. |

| | | |
|---|---|---|
| **Regulation:** | **25B** | **Nearly zero-energy requirements for new buildings** |
| **Regulation:** | **26** | **$CO_2$ emission rates for new buildings** |
| **Regulation:** | **26A** | **Primary energy consumption rates for new buildings** |
| **Regulation:** | **26B** | **Fabric performance values for new dwellings (applicable to Wales only)** |
| **Regulation:** | **26C** | **Target primary energy rates for new buildings (applicable to England only)** |
| **Regulation:** | **26C** | **Energy efficiency rating (applicable to Wales only)** |
| Comment: | | The product can contribute to satisfying these Regulations when appropriate compensating fabric and/or services measures are taken. See section 6 of this Certificate. |

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

| | | |
|---|---|---|
| **Regulation:** | **8(1)(2)** | **Fitness and durability of materials and workmanship** |
| Comment: | | The product can contribute to a construction satisfying this Regulation. See sections 8 and 9 of this Certificate. |
| **Regulation:** | **9** | **Building standards - construction** |
| Standard: | 1.1 | Structure |
| Comment: | | The product can contribute to satisfying this Standard, with reference to clause 1.1.1[(1)(2)]. See section 1 of this Certificate. |
| Standard: | 2.5 | Internal linings |
| Comment: | | The glazing, as part of the ceiling lining, is non-combustible with reference to clause 2.5.1[(1)(2)] of this Standard. See section 2 of this Certificate. |
| Standard: | 2.8 | Spread from neighbouring buildings |
| Comment: | | The product can contribute to satisfying this Standard, with reference to clause 2.8.1[(1)(2)]. See section 2 of this Certificate. |
| Standard: | 3.10 | Precipitation |
| Comment: | | The product will contribute to satisfying this Standard, with reference to clause 3.10.1[(1)(2)]. See section 3 of this Certificate. |
| Standard: | 3.14 | Ventilation |
| Comment: | | The product can contribute to satisfying this Standard, with reference to clauses 3.14.2[(2)] 3.14.3[(1)(2)] and 3.14.6[(1)]. See section 3 of this Certificate. |
| Standard: | 3.15 | Condensation |
| Comment: | | The product can contribute to satisfying this Standard with reference to clauses 3.15.1[(1)(2)] and 3.15.4[(1)(2)]. See section 3 of this Certificate. |
| Standard: | 3.16 | Natural lighting |
| Comment: | | In calculating the contribution of the product to natural lighting, with reference to clauses 3.16.1[(1)] and 3.16.3[(1)] of this Standard, the area of rooflights can be used. |
| Standard: | 3.28(a)(b) | Overheating risk |
| Comment: | | The product can contribute to satisfying this Standard with reference to clauses 3.28.1[(1)(2)], 3.28.2[(1)(2)] and 3.28.3[(1)(2)]. See section 6 of this Certificate. |
| Standard: | 4.8(e) | Danger from accidents |
| Comment: | | When fitted, manual or powered actuators incorporated in the kerbs can satisfy or contribute to satisfying this Standard, with reference to clauses 4.8.5[(1)] and 4.8.6[(2)]. See section 4 of this Certificate. |
| Standard: | 4.13 | Security |
| Comment: | | Non-opening rooflights can satisfy this Standard for new and existing dwellings. See section 4 of this Certificate. |

| | | |
|---|---|---|
| Standard: | 6.1(b)(c) | Energy demand and carbon dioxide emissions |
| Comment: | (d) | The product can contribute to satisfying these Standards when appropriate compensatory fabric and/or service measures are taken, with reference to clauses 6.1.1[(1)] and 6.1.2[(2)]. See section 6 of this Certificate. |
| Standard: | 6.2 | Building insulation envelope |
| Comment: | | The product can contribute to satisfying these Standards when appropriate compensatory fabric measures are taken, with reference to clauses 6.2.1[(2)], 6.2.2[(1)], 6.2.8[(2)] 6.2.9[(2)], 6.2.10[(1)] 6.2.11[(1)(2)] and 6.2.12[(1)]. See section 6 of this Certificate. |
| Standard: | 7.1(a)(b) | Statement of sustainability |
| Comment: | | The product 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 8 of this Certificate. |
| **Regulation:** | **12** | **Building standards - conversions** |
| 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[(1)(2)] and Schedule 6[(1)(2)]. |

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

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

| | | |
|---|---|---|
| **Regulation:** | **23(1)(a)(i)** | **Fitness of materials and workmanship** |
| Comment: | **(iii)(b)(i)(ii)** | The product is acceptable. See sections 8 and 9 of this Certificate. |
| **Regulation:** | **28(b)** | **Resistance to moisture and weather** |
| Comment: | | The product can contribute to satisfying this Regulation. See section 3 of this Certificate. |
| **Regulation:** | **30** | **Stability** |
| Comment: | | The product can contribute to satisfying this Regulation. See section 1 of this Certificate. |
| **Regulation:** | **34(a)(b)** | **Internal fire spread — Linings** |
| Comment: | | The product can contribute to satisfying this Regulation. See section 2 of this Certificate. |
| **Regulation:** | **36(b)** | **External fire spread** |
| Comment: | | The product can contribute to satisfying this Regulation. See section 2 of this Certificate. |
| **Regulation:** | **39(a)(i)** | **Conservation measures** |
| Comment: | | The product can contribute to satisfying this Regulation although compensatory fabric measures may be required. See section 6 of this Certificate. |
| **Regulation:** | **40(1)(2)** | **Target carbon dioxide emission rate** |
| **Regulation:** | **41(a)** | **Consequential improvements** |
| **Regulation:** | **43** | **Renovation of thermal elements** |
| Comment: | | The product can contribute to satisfying these Regulations although compensatory fabric and/or services measures may be required. See section 6 of this Certificate. |
| **Regulation:** | **65(1)** | **Means of ventilation** |
| Comment: | | The product can contribute to satisfying this Regulation. See section 3 of this Certificate. |
| **Regulation:** | **98** | **Safe opening and closing of windows, skylights and ventilators** |
| Comment: | | Opening rooflights can satisfy the requirements of this Regulation. See section 4 of this Certificate. |

## Fulfilment of Requirements

The BBA has judged Brett Martin Flat Glass Rooflight to be satisfactory for use as described in this Certificate. The product has been assessed as a glazed rooflight for use on flat roofs.

## ASSESSMENT

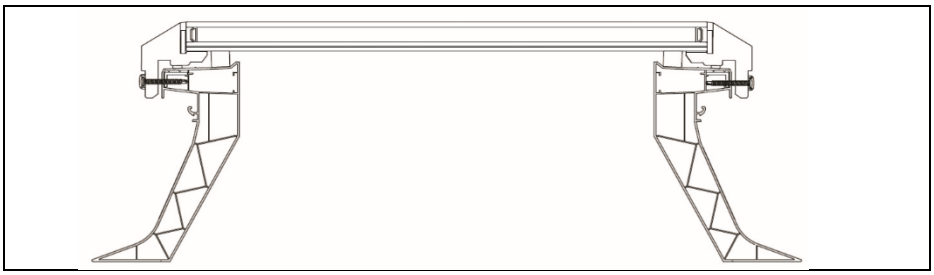
## Product description and intended use

The Certificate holder provided the following description for the product under assessment. Brett Martin Flat Glass Rooflight comprises:

- sealed double-glazed unit
- linking profiles
- opening frames
- fixed frames
- kerb adaptors
- 150 mm PVC-U kerbs
- 300 mm PVC-U kerbs.

Brett Martin Flat Glass Rooflight is designed with a double-glazed glass unit as the glazing section, framed with an extruded aluminium powder-coated frame and feature, as an option, a PVC-U multi-walled kerb (see Figure 1). PVC-U Kerbs are manufactured from rigid, white PVC-U profiles and rooflights are available within the size limitations listed in Table 1.

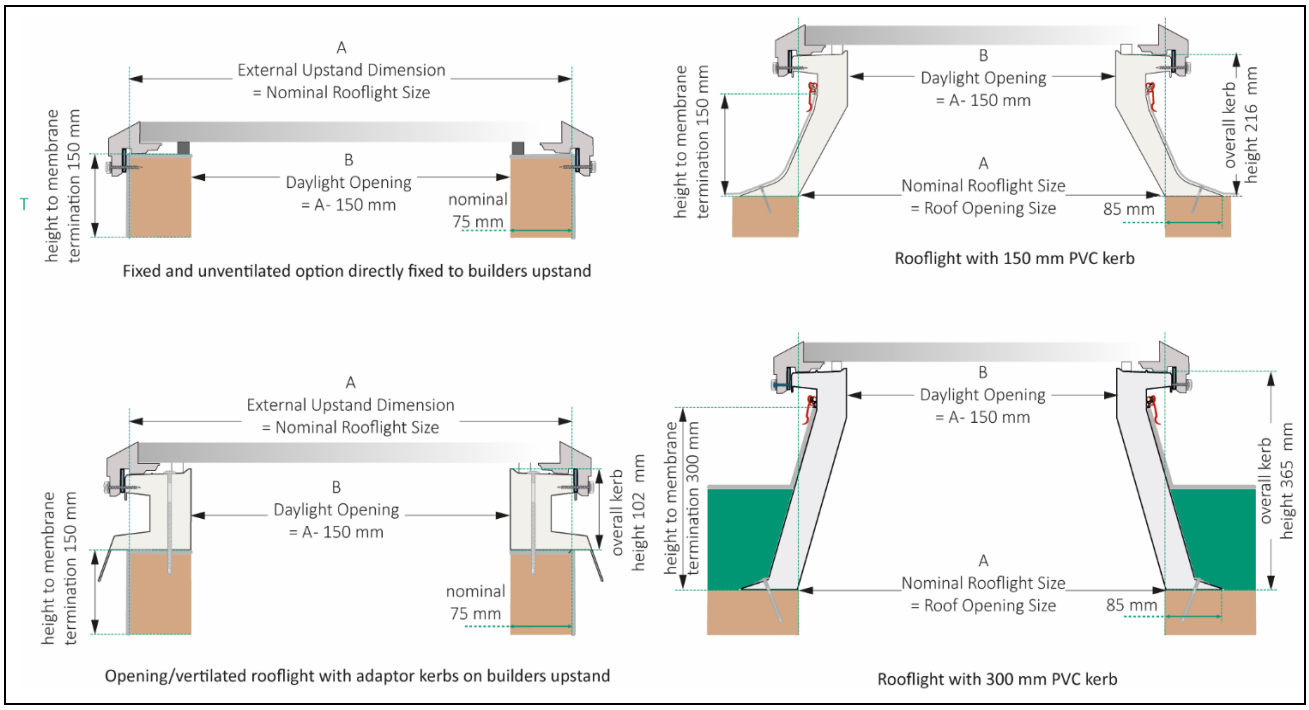
*Figure 1 Brett Martin Flat Glass Rooflight*



The glass unit is manufactured in accordance with the relevant parts of BS EN 1279-2 : 2018 and BS EN 1279-3 : 2018 and consists of a 6 mm toughened outer pane, 90% argon filled cavity and a 6.8 to 11.5 mm laminated inner pane, depending on size, each with a low emissivity coating.

The rooflights have different kerb options depending on project specification. When the rooflight is to be fitted to an existing upstand, fixed unventilated rooflights are fitted directly, and opening or ventilated options are supplied with a PVC-U adapter kerb (see Figure 2). Where no upstand exists, the rooflight is supplied with a 150 mm PVC-U Kerb (for mounting at roof surface level) or a 300 mm PVC-U Kerb (for mounting below insulation), see Figure 2.

*Figure 2 Brett Martin Flat Glass Rooflight – different kerb options*




Rooflight kerbs may be unvented or can incorporate vents [either hit-and-miss manually controlled, or automatic humidity controlled(1)].

(1) Outside the scope of this Certificate.

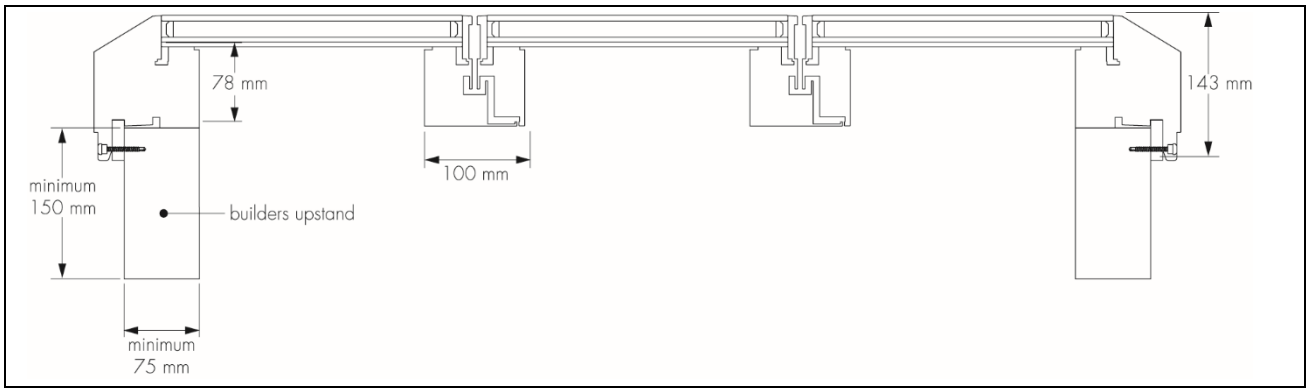
A foam glazing tape is fitted between the PVC-U kerb and the aluminium frame to provide a weather seal.

55 or 125 mm fixing screws are used to fix the kerb to the roof.

Rooflights are also available as an opening variant to allow opening on concealed hinges using actuators (manual or powered) to create a large ventilation area.

The rooflights can be linked together to form a continuous length design, as shown in Figure 3. The sizes of these continuous rooflights are defined in Table 1.

*Figure 3 Brett Martin Glass Link Rooflight*




Glass Link Rooflights are glazed in the same way as Flat Glass rooflights.

Glass Link Rooflights are designed for installation at a longitudinal pitch of 0 - 15°, and a lateral pitch (across span) of 2 - 35° to prevent water ponding on the glass, preventing dirt build up and to ensure drainage between modules. Some larger rooflights will require a minimum pitch of up to 5° across the span. The Certificate holder can advise on suitable specifications for individual installations, but such advice is outside the scope of this Certificate.

Flat Glass Rooflights are designed for installation at a pitch of 2 - 15° to prevent water ponding on the glass and dirt build up. Some larger rooflights will require a minimum pitch of up to 5°. The Certificate holder can advise on suitable specifications for individual installations, but such advice is outside the scope of this Certificate.

All rooflights are either fixed or hinged opening, and for opening rooflights the glazed upper section is opened either by a manual or powered actuator.

*Table 1 Typical product overall minimum/maximum size, height and weight*

| Rooflight variant | Nominal size (mm) | Height (mm) | Weight (kg) |
|---|---|---|---|
| Flat Glass rooflight (fixed) on Builder's upstand | Min 600 x 600<br>Max 3600 x 1650 | 82 | 18<br>264 |
| Flat Glass rooflight (opening) on Builder's upstand | Min 600 x 600<br>Max 2850 x 1650 | 185 | 23<br>210 |
| Flat Glass Rooflight with 150 mm Kerb | Min 600 x 600<br>Max 2850 x 1650 | 259 | 25<br>220 |
| Flat glass Rooflight with 300 mm Kerb | Min 600 x 600<br>Max 2850 x 1650 | 407 | 28<br>228 |
| Glass Link rooflight (Fixed) | Min 600 x 600<br>Max 3800 x 1750 | 145 | 22<br>315 |
| Glass Link rooflight (opening) | Min 600 x 600<br>Max 2800 x 1300 | 205 | 61<br>193 |

Ancillary Items

A chaingear actuator is essential to use with the product and has been assessed with the product.

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

- hit-and-miss manually controlled ventilators
- automatic humidity controlled ventilators.

## Product assessment – key factors

The product was assessed for the following key factors, and the outcomes of the assessments is 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 Resistance to imposed wind loads by the rooflight is dependent on size. As a guide, small rooflights are more resistant to imposed loads. Rooflight sizes, therefore, should be selected according to the loads expected for a particular location and use. The loads must be determined by a suitably competent and experienced individual in accordance with the requirements of the national Building Regulations and Standards.

1.1.2 The product can be selected to have adequate resistance to wind loads calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex.

1.1.3 For snow loading, the magnitude of the actual snow load imposed will depend upon a number of factors, such as height above sea level, geographical location, roof arrangement and size. BS EN 1991-1-3 : 2003 and its UK National Annex should be used to calculate the actual snow load. The appropriate safety factors must be applied by the building designer.

1.2 Resistance to impact

1.2.1 The PVC-U kerb of the rooflight was tested according to BS EN 12608-1 : 2016 using a falling mass of 1 kg and a falling height of 1 m and the results of this test are given in Table 2 of this Certificate.

*Table 2 Resistance to impact of PVC-U kerb*

| Product assessed | Assessment method | Requirement | Result |
|---|---|---|---|
| 150 mm PVC-U multi-walled kerb | BS EN 12608-1 : 2016 | No more than one test specimen shall show rupture in the wall | Pass |

1.2.2 On the basis of data assessed, the quality of the PVC-U extrusion is satisfactory for use as the PVC-U kerb.

1.3 Plastic shrinkage

1.3.1 The PVC-U kerb of the rooflight was tested according to BS EN 12608-1 : 2016, clause 5.5 and the results of this test are shown in Table 3 of this Certificate.

*Table 3 Heat Reversion test*

| Product assessed | Assessment method | Requirement | Result |
|---|---|---|---|
| 172 mm PVC-U multi-walled kerb | BS EN 12608-1 : 2016 | Maximum shrinkage 2% | Pass |

1.3.2 On the basis of the data assessed, the quality of the PVC-U extrusion is satisfactory for use as the PVC-U kerb.

## 2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 External fire spread

2.1.1 When used, unwired glass at least 4 mm thick can be regarded as having an AA or BROOF(t4) designation.

2.2 Reaction to fire

2.2.1 The glazing in the rooflight is classified as A1 by reference to commission Decision 96/603/EC.

2.3 On the basis of the data assessed, the products will be unrestricted under the documents supporting the national Building Regulations as internal linings. The external fire exposure classification and permissible areas of use of the kerb will depend on the performance of the roof waterproofing system covering it. The performance of individual roof weatherproofing systems is outside the scope of this Certificate.

## 3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Resistance to moisture

3.1.1 On the basis of data assessed, when correctly installed in accordance with the Certificate holder's instructions and this Certificate, the product adequately resist the passage of moisture to the inside of the building and so satisfies the requirements of the national Building Regulations.

3.1.2 Particular attention must be paid to the correct fitting of all components and to the detailing of sealants and roofing materials. The roof waterproofing system must be carefully dressed up the kerb to provide a watertight joint between the kerb and the roof deck, taking care not to cover or block any ventilators.

3.2 Ventilation

3.2.1 Opening rooflights feature manual or powered actuators that can be operated from ground level, allowing the rooflight to be opened for ventilation.

3.2.2 Opening rooflights can provide purge (natural) ventilation. This contribution will depend on the daylight area of the rooflight (see Figure 2), the accessibility of the actuator and the floor area of the ventilated space.

3.3 Condensation

3.3.1 The minimum temperature factor can be calculated in accordance with BS EN ISO 13788 : 2012.

3.3.2 Where the minimum temperature factors are less than the minimum values indicated in BRE Information Paper IP 1/06 for the relevant building type, there is a risk of surface condensation forming. However, limited intermittent condensation, appearing initially on the kerb, frame or glazing, will not be detrimental to the rooflight. By way of comparison, the minimum temperature factors for typical PVC-U windows are between 0.50 and 0.65.

3.3.3 The risk of condensation forming on an internal surface of the rooflight is dependent on its temperature, and the temperature and humidity of the adjacent air inside the building.

3.3.4 In all cases, the risk of surface condensation can be reduced by limiting activities which produce large amounts of moisture and providing means for adequate ventilation; in particular, air flow from kerb-mounted ventilators can alleviate localised surface condensation.

## 4 Safety and accessibility in use

Data was assessed for the following characteristics.

4.1 Security

4.1.1 Non-opening rooflights were tested for enhanced security and the results are given in Table 4.

*Table 4 Enhanced security tests*

| Product assessed | Assessment method generally to PAS 24 : 2022, Annex C (1) | Requirement | Result |
|---|---|---|---|
| Flat Glass non-opening Rooflight 1200 x 1200 mm | Manipulation test | No entry gained | Pass |
| | Mechanical Loading test | No entry gained | Pass |
| | Manual Check test | No entry gained | Pass |

(1) Rooflights are not covered by the scope of PAS 24 : 2022 but the test samples were tested as if they were windows.

4.1.2 Non-opening Brett Martin Flat Glass Rooflights up to maximum size meet the requirements of PAS 24 : 2022.

4.1.3 On the basis of data assessed, the product can contribute to satisfying the regulatory requirements for unauthorised access in new dwellings in England and Wales and new and existing dwellings in Scotland.

4.2 Safety in use

The inner glass pane of the rooflight is laminated and will prevent injury to those immediately below the rooflight should this inner pane break as covered by The Rooflight Association(1) Technical Document NTD14 : 2018.

(1) Formerly known as NARM (National Association of Rooflight Manufacturers).

## 5 Protection against noise

Not applicable.

## 6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Light and solar transmittance

6.1.2 For design purposes, the approximate light and solar transmittance characteristics of the glazing can be taken from SAP 2013.

6.1.2 The methods outlined in CIBSE Guide A (2015) Environmental design, Sections 5.7 and 5.8 and Appendix 5 must be used if the total solar gain of the building incorporating the product presents a significant heat input.

6.2 Thermal performance

6.2.1 The thermal performance of the product was calculated in the horizontal orientation to BS EN ISO 10077-1 : 2017, BS EN ISO 10077-2 : 2017, BRE Report BR 497 : 2016 and The Rooflight Association(1) document NTD02.1 : 2022 in the horizontal orientation.

(1) Formerly known as NARM (National Association of Rooflight Manufacturers).

6.2.2 The results of thermal transmission calculations are given in Table 5.

*Table 5 Thermal Transmission results*

| Product assessed | Assessment method | Requirement | Result ($U_d$) |
|---|---|---|---|
| 1200 x 1200 mm Brett Martin Flat Glass rooflight fitted to a 150 mm PVC kerb. Glass unit consisted of 6 mm/18 mm argon filled cavity/7.5 mm low emissivity (0.03) laminated glass with a Swisspacer Ultimate spacer bar | BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017 | Approved Document L (England) U value 2.2 $W \cdot m^{-2} \cdot K^{-1}$ | 1.8 $W \cdot m^{-2} \cdot K^{-1}$ |
| | BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017 | Approved Document L (Wales) U value 2.2 $W \cdot m^{-2} \cdot K^{-1}$ | |
| | BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017 | Technical Handbook 2022: domestic (Scotland) U value 2.1 $W \cdot m^{-2} \cdot K^{-1}$ | |
| | | Technical Handbook 2022:non-domestic (Scotland) U value 2.2 $W \cdot m^{-2} \cdot K^{-1}$ | |
| | BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017 | Technical Booklet F1 (dwellings) (Northern Ireland) U value 1.9 $W \cdot m^{-2} \cdot K^{-1}$ | |
| | | Technical Booklet F2 (buildings other than dwellings) (Northern Ireland) U value 2.1 $W \cdot m^{-2} \cdot K^{-1}$ | |

6.2.3 On the basis of the data assessed, the product can contribute to satisfying the limit U values for new and existing buildings. For improved carbon or energy savings, designers must consider appropriate fabric and/or services measures.

6.2.4 The U value of this rooflight configuration with other lengths and widths can be calculated to The Rooflight Association(1) document NTD02.1 : 2022 using the formula below and the data in Table 6. The U value of other rooflight or kerb configurations should be determined in accordance with the documents supporting the national Building Regulations.

(1) Formerly known as NARM (National Association of Rooflight Manufacturers).

$$U_{rooflight} = \frac{(\phi_{kerb} \cdot l_{kerb} + U_{glazing} \cdot A_{glazing} + \phi_{interaction} \cdot l_{interaction})}{A_{external}}$$

*Table 6 Example U value calculation – developed area*

| Symbol | Unit | Definition | Example |
|---|---|---|---|
| $\phi_{kerb}$ | $W \cdot m^{-1} \cdot K^{-1}$ | Linear thermal transmittance (psi value) of the kerb | 0.496(1) |
| $l_{kerb}$ | m | Length of the kerb = 2 x (nominal length – 0.075 m + nominal width – 0.075 m) | 4.8(1) |
| $U_{glazing}$ | $W \cdot m^{-2} \cdot K^{-1}$ | Glazing U value | 1.7 |
| $A_{glazing}$ | $m^2$ | Area of glazing = (nominal length – 0.15 + 2 x 0.001) x (nominal width – 0.15 + 2 x 0.001). | 1.1025(1) |
| $\phi_{interaction}$ | $W \cdot m^{-1} \cdot K^{-1}$ | Linear thermal transmittance of the junction between the glass and the kerb | 0.0626(1)(2) |
| $l_{interaction}$ | m | Length of the junction between the glass and the kerb = 2 x (nominal length – 0.15 + nominal width – 0.15 +4 x 0.1001) | 4.2(1) |
| $A_{external}$ | $m^2$ | External developed area, including kerb | 2.501(1) |
| $U_{rooflight}$ | $W \cdot m^{-2} \cdot K^{-1}$ | A 1.2 by 1.2 m fixed rooflight in a horizontal orientation | 1.8(1)(2) |

(1) This value is specific to the 150 mm PVC-U kerb.
(2) This value is specific to the 6/18/7.5 mm glazing unit.

## 7 Sustainable use of natural resources

7.1 Reuse and recyclability

7.1.1 The products comprise of aluminium, glass and PVC-U, all of which can be recycled.

## 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 shown in Table 7.

*Table 7 Durability tests*

| Product assessed | Assessment method | Requirement | Result |
|---|---|---|---|
| Powder-coated aluminium frame section (white) | Cross-cut adhesion to BS EN ISO 2409 : 2020 | Value achieved | Classification 0 |
| Chaingear actuator | Salt spray corrosion to BS EN 1670 : 2007 | Minimum Grade 3 | Grade 3 |

8.3 The coloured coating system adheres well to the substrate and will retain its integrity for at least 20 years. The coating, however, may need to be repainted within this period using coatings recommended by the Certificate holder. Such advice and materials are outside the scope of this Certificate.

8.4 Any slight external colour change or surface dulling of the frame that might occur will be uniform over the visible surfaces of the frame.

8.5 Service life

8.5.1 Under normal service conditions, the product will have a life of at least 20 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

8.5.2 The double-glazed unit will have a service life of approximately 10 years and may have to be replaced within the service life of the rooflight.

8.5.3 Fittings, as described in this Certificate, may need to be replaced within the life of the rooflight, particularly when exposed to corrosive environments, such as coastal or industrial locations.

## 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 The product is suitable for use on most existing roofs but it is essential that the roof structure is checked by a suitably competent and experienced individual to ensure that the possible removal of roof-supporting members will not cause undue weakening of the structure and that it can bear any possible additional loads imposed upon it by the installation of the product.

9.1.3 The product is suitable as a replacement for existing rooflights. The suitability of existing kerbs must be checked and replaced if necessary.

9.1.4 For electrical safety, the provision of an electrical supply and the connection of the unit to the supply must be carried out by a qualified electrician.

9.1.5 The product must be connected to a suitable mains electrical supply. The provision of the electrical supply must be in accordance with the IEE Wiring Regulations.

9.1.6 Care must be taken in the design and detailing of kerb/roof junctions to minimise excessive heat loss. Existing builders kerbs must not exceed a U value of 0.35 $W \cdot m^{-2} \cdot K^{-1}$.

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 are provided in Annex A of this Certificate.

9.2.3 The rooflight kerb should be checked dimensionally to ensure the fit, and the rooflight should be checked for size before the unit is lifted to the roof.

9.2.4 A rooflight must never be left in position without ensuring all of its fixings are present and fully tightened. Where the roof covering is dressed below the rooflight and on top of an existing upstand, precautions should be taken to prevent bitumen damaging internal finishes.

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, installation of the products must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the product in use requires that it is 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 If damage occurs, the rooflight frame, glass and the fixings can be replaced, but these operations must be carried out using the materials recommended by the Certificate holder and covered by this Certificate.

9.4.2.2 The sealant must be subject to regular inspection and maintenance and replaced if required.

9.4.2.3 Cleaning of the rooflight and frame must be carried out using water containing non-abrasive, neutral household detergent. To avoid scratching of the surface, only soft cloths must be used when cleaning.

9.4.2.4 The external surface of the rooflight cannot be cleaned from the inside of the building. For maintenance and cleaning purposes, special precautions must be taken such as the provision of a catwalk, to allow safe access and to prevent the possibility of falling onto the glazing unit.

9.4.2.5 Under no circumstances must anyone venture onto a rooflight. If the rooflight is located on a roof which is generally accessible to the public, provision must be made to prevent people falling onto the glazed part (for example by use of guard rails).

## 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 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 product is delivered to site in packaging bearing the product name, the Certificate holder's name, batch number, health and safety information and weight of contents in kilograms.

11.2 The glazing units, kerbs and frames are delivered to site ready for assembly, boxed or palletised.

11.3 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.3.1 If the glazing units are to be stored on site, they must be stored on a protected, dry, level surface under cover.

11.3.2 Before installation, the frames and kerbs must be laid on timber packers placed on a level surface, to avoid damage to finishes and accessories.

11.3.3 Smaller units may be manhandled to roof level, but larger units will require craning into position. The weight of specific rooflights can be obtained from the Certificate holder.

## ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product 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.

### The Electrical Equipment (Safety) Regulations 2016

The Electrical Equipment (Safety) Regulations 2016 implement Directive 2014/35/EU(1) of the European Parliament relating to the making available on the market electrical equipment designed for use within certain voltage limits. The BBA has not assessed the product for compliance with these Regulations.

(1) This Directive repeals and replaces Directive 2006/95/EC of the European parliament which was implemented in the United Kingdom by the *Electrical Equipment (Safety) Regulations* 1994 (S.I. 1994/3260). The Electrical Equipment (Safety) Regulations 2016 revoke and replace the 1994 Regulations.

### The Electromagnetic Compatibility Regulations 2016

The Electmagnetic Compatibility Regulations 2016 implement Directive 2014/30/EU(1) of the European Parliament relating to the electromagnetic compatibility. The BBA has not assessed the product for compliance with these Regulations.

(1) This Directive repeals and replaces Directive 2004/108/EC of the European parliament which was implemented in the United Kingdom by the *Electromagnetic Compatibility Regulations* 2006.

### 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 BBA (Certificate 20/Q066).

### Additional information on installation

A.1 Fixings for securing Brett Martin Flat Glass rooflights and kerbs onto the roof structure are supplied by the Certificate holder. The performance of these fixings is outside of the scope of this Certificate.

A.2 When installing opening or vented rooflights onto a builder's upstand, silicone sealant is used around the top inside edge of the upstand and the rooflight kerb is placed squarely onto the upstand.

A.3 125 mm fixing screws are used to fix the kerb onto the builders' upstand in accordance with the Certificate holder's instructions.

A.4 When installing fixed unvented rooflights onto a builder's upstand, silicone sealant is used 25 mm from the outside edge of the upstand and expanding foam tape is used around the top inside edge of the upstand in accordance with the manufacturer's instructions.

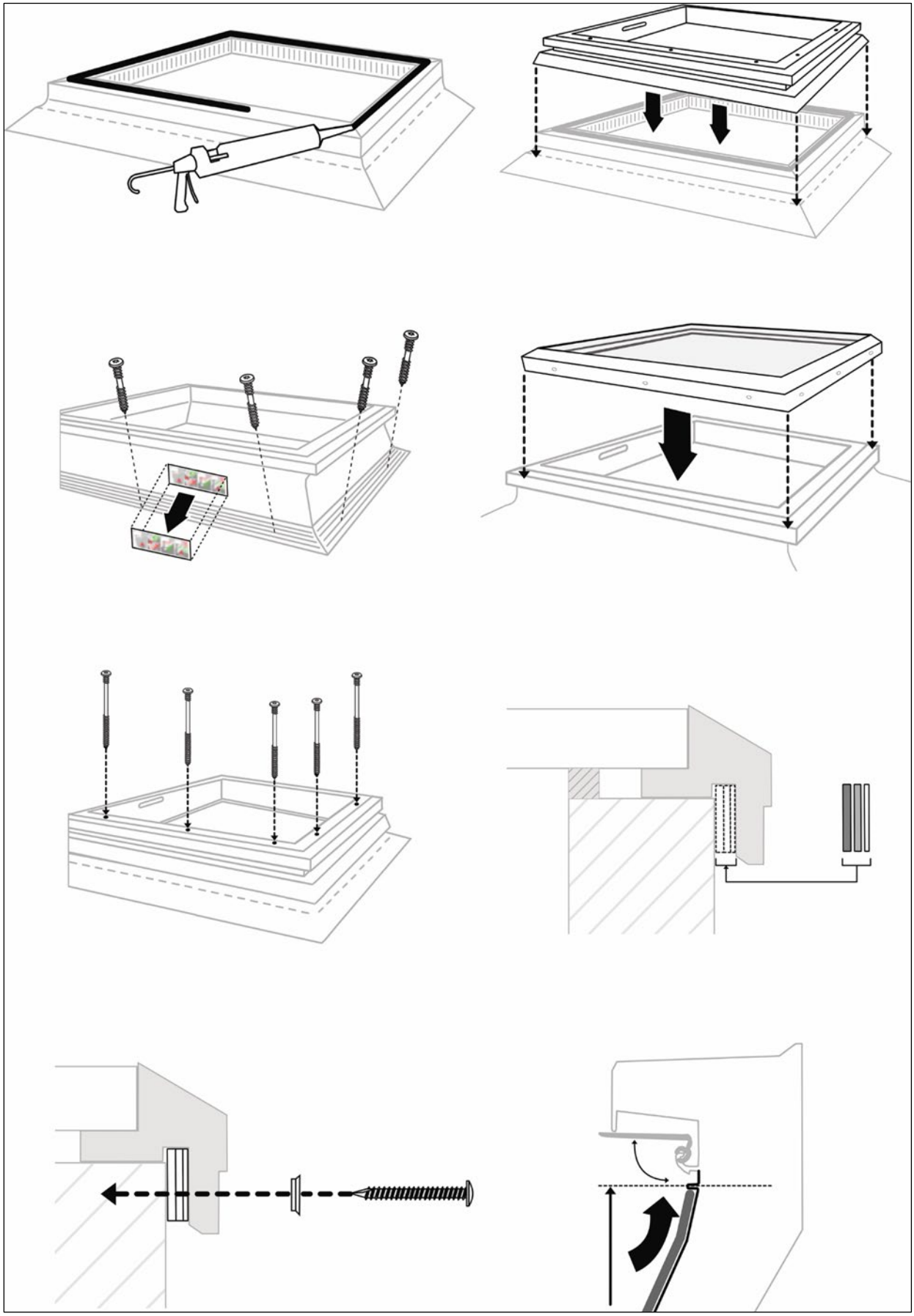
A.5 For rooflights with a PVC-U kerb, silicone sealant is applied to the roof opening and the kerb is placed squarely over the roof opening. The kerb is fixed to the roof using 55 mm kerb fasteners.

A.6 For fixed rooflights, the glazed section is placed squarely onto the kerb/upstand using plastic packers to fill any gaps between the frame and the kerb/upstand at fixing positions, and fasteners are used to secure the glazed section to the kerb/upstand in accordance with the manufacturer's instructions.

A.7 For opening/hinged rooflights on builders' upstands, the glazed section is connected to the opening mechanism.

A.8 The roofing membrane is installed as specified in the manufacturer's instructions.

*Figure 4 Typical installation detail*



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BRE Report BR 497 : 2016 *conventions for calculating linear thermal transmittance and temperature factors*

BS EN 479 : 1999 *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Determination of heat revision*

BS EN 1279-2 : 2018 *Glass in building — Insulating glass units — Long term test method and requirements for moisture penetration*
BS EN 1279-3 : 2018 *Glass in building — Insulating glass units — Long term test method and requirements for gas leakage rate and for gas concentration tolerances*

BS EN 1670 : 2007 *Building hardware — Corrosion resistance — Requirements and test methods*

BS EN 1991-1-3 : 2003 + A1 : 2015 Eurocode 1 — *Actions on structures — General Actions — Snow loads*
NA + A2 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 UK National Annex to Eurocode 1 — *Actions on structures — General actions — Wind actions*

BS EN 12608-1 : 2016 + A1 : 2020 *Unplasticised poly(vinyl chloride) (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 ISO 2409 : 2020 *Paints and varnishes — Cross-cut test*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

BS EN ISO 10077-1 : 2017 *Thermal performance of windows, doors and shutters – Calculation of thermal transmittance*
BS EN ISO 10077-2 : 2017 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Numerical method for frames*

BS EN ISO 13788 : 2012 *Hygrothermal performance of building components and building elements — Internal surface temperature to avoid critical surface humidity and interstitial condensation — Calculation methods*

NARM Technical Document NTD02.1 : November 2022 *Assessment of thermal performance of out-of-plane rooflights*

PAS 24 : 2022 *Enhanced security performance requirements for doorsets and windows in the UK — Doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk*

## 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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