

#### Hambleside Danelaw Limited

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03/3996
Product Sheet 3

#### **IN-PLANE GRP ROOFLIGHTS**

#### ZENON FACTORY ASSEMBLED INSULATED ROOFLIGHTS (FAIRS)

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Zenon Factory Assembled Insulated Rooflights (FAIRS) for use in pitched roofs of profiled sheet composite panels to admit natural daylight into non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

#### **CERTIFICATION INCLUDES:**

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

#### **KEY FACTORS ASSESSED**

**Light transmittance** — the system provides natural lighting to the interior of a building. See section 6 of this Certificate. **Properties in relation to fire** — the system, when used as part of a complete roof, will not affect the fire rating of the roof construction. See section 7 of this Certificate.

**Strength and stability** — the system will resist imposed snow and wind loads and hard body impact. See section 8 of this Certificate.

Thermal properties — rooflights from within the range have thermal transmittances (U values) of up to  $0.8~\rm W\cdot m^{-2}\cdot K^{-1}$ , depending on the panel weight and construction of the Insulated honeycomb panel. See section 9 of this Certificate.

**Weathertightness** — the system is weathertight. See section 10 of this Certificate.

**Safety** — the system is resistant to soft body impact and is classified as a Category B non-fragile assembly. See section 11 of this Certificate.

**Durability** — the GRP material should have a life of at least 25 years for Zenon Pro GRP top sheet and at least 30 years for Zenon Evolution top sheet. See section 13 of this Certificate.

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 30 June 2015

Originally certificated on 31 March 2003

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John Albon — Head of Approvals

Construction Products

Claire Curtis-Thomas

Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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## Regulations

In the opinion of the BBA, Zenon Factory Assembled Insulated Rooflights (FAIRS), if installed, used and maintained in accordance with this Certificate, will satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):

# The Building Regulations 2010 (England and Wales) (as amended)

Requirement: A1 Loading

Comment: The system will have sufficient strength and stiffness to sustain the design load. See sections 8.1, 8.2 and

11 of this Certificate.

Requirement: B2 Internal fire spread (linings)

Comment: The system must not be used where it is below the level of an existing fire escape or protected stairway.

See section 7.3 of this Certificate.

Requirement: B4(2) External fire spread

Comment: The system, when used as part of a complete roof, will not affect the fire rating of the roof construction.

See sections 7.1 and 7.2 of this Certificate.

Requirement: C2(b) Resistance to moisture

Comment: The system will not adversely affect the resistance of the roof to the passage of moisture. See section 10.1

of this Certificate.

Requirement: L1(a)(i) Conservation of fuel and power

Comment: The system can contribute to satisfying this Requirement. See section 9 of this Certificate.

Regulation: 7 Materials and workmanship

Comment: The system is acceptable. See section 13.1 and the *Installation* part of this Certificate.

Regulation: 26 CO<sub>2</sub> emission rates for new buildings

Comment: See section 9 of this Certificate. The system can also contribute to light transmittance as referenced in

section 6 of this Certificate.

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

Regulation: 8(1)(2) Durability, workmanship and fitness of materials

Comment: The use of the system satisfies the requirements of this Regulation. See sections 12.1, 13.1 and the

Installation part of this Certificate.

Regulation: 9 Building standards applicable to construction

Standard: 1.1(b) Structure

Comment: The system will have sufficient strength and stiffness to sustain design loads with reference to clause

 $1.1.1^{(2)}$ . See sections 8.1, 8.2 and 11 of this Certificate.

Standard: 2.5 Internal linings

Comment: The system must not be used below the level of an existing fire escape, protected zone or a fire-fighting

shaft. See section 7.3 of this Certificate.

Standard: 2.8 Spread from neighbouring buildings

Comment: The system can be regarded as having a low vulnerability with reference to clause 2.8.1<sup>[2]</sup>, and will not

affect the fire rating of the roof construction. See sections 7.1 and 7.2 of this Certificate.

Standard: 3.10 Precipitation

Comment: The system provides adequate resistance to the ingress of precipitation with reference to clause 3.10.1(2).

See section 10.1 of this Certificate.

Standard: 6.1(b) Carbon dioxide emissions<sup>(2)</sup>
Standard: 6.2 Building insulation envelope<sup>(2)</sup>

Comment: The system can contribute to satisfying these Standards, with reference to clauses 6.1.4<sup>[2]</sup>, 6.2.1<sup>[2]</sup>,

 $6.2.4^{(2)}$ ,  $6.2.8^{(2)}$ ,  $6.2.9^{(2)}$ ,  $6.2.11^{(2)}$  and  $6.2.13^{(2)}$ . See section 9 of this Certificate.

Standard: 7.1(a)(b) Statement of sustainability

Comment: The system can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6,

and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the system can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4<sup>[2]</sup> [Aspect 1<sup>[2]</sup>], 7.1.6<sup>[2]</sup> [Aspect 1<sup>[2]</sup>] and 7.1.7<sup>[2]</sup>

[Aspect 1<sup>(2)</sup>]. See section 9 of this Certificate.

Regulation: 12 Building standards applicable to conversions

Comment: All comments given for this system under Regulation 9, Standards 1 to 6, also apply to this Regulation,

with reference to clause  $0.12.1^{(2)}$  and Schedule  $6^{(2)}$ .

(2) Technical Handbook (Non-Domestic).

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

Regulation: 23 Fitness of materials and workmanship

Comment: The system is acceptable. See section 13.1 and the *Installation* part of this Certificate.

Regulation:	28(b)	Resistance to ground moisture and weather
Comment:		The system will not adversely affect the resistance of the roof to the passage of moisture. See section 10.1 of this Certificate.
Regulation:	30	Stability
Comment:		The system has sufficient strength and stiffness to sustain the design loads. See sections 8.1, 8.2 and 11 of this Certificate.
Regulation:	34	Internal fire spread — Linings
Comment:		The system must not be used where it is below the level of an existing fire escape or protected stairway. See section 7.3 of this Certificate.
Regulation:	36(b)	External fire spread
Comment:		The system, when used as part of a complete roof construction, will not affect the fire rating of the roof construction. See sections 7.1 and 7.2 of this Certificate.
Regulation:	39(a)(i)	Conservation measures
Regulation:	40(2)	Target carbon dioxide emission rate
Comment:		The system can contribute to satisfying these Requirements. See section 9 of this Certificate.

#### Construction (Design and Management) Regulations 2015 Construction (Design and Management) Regulations (Northern Ireland) 2007

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

14.2 Installation of this Certificate.

## Additional Information

#### NHBC Standards 2014

In the opinion of the BBA, the use of Zenon Factory Assembled Insulated Rooflights (FAIRS), in relation to this Certificate, is not subject to the requirements of these Standards.

#### **CE** marking

The Certificate holder has taken the responsibility of CE marking the system in relation to the outer sheet, in accordance with harmonised European Standard BS EN 1013: 2012.

## Technical Specification

## 1 Description

1.1 Zenon Factory Assembled Insulated Rooflights (FAIRS) are used in conjunction with composite panels and with roofing systems utilising profiled sheet materials. Rooflights are at least double skinned with an internal transparent honeycombed insulating core element to reduce heat loss and minimise condensation. These rooflights will always be factory assembled (see Figure 1).



Figure 1 Illustration of FAIRS rooflight showing

- 1.2 The system comprises two skins of translucent GRP sheet separated by closed-cell foam fillers, the external sheet to conform to the roof sheet profile, made from Zenon Pro material (Product Sheet 1 of this Certificate) or Zenon Evolution material (Product Sheet 2 of this Certificate) and a separate inner liner sheet.
- 1.3 Flat or profiled liners with an upstand to form a box are bonded to the underside of the external sheet. The cavity created may contain either a third translucent sheet or a transparent sheet or a transparent honeycomb insulation material (Insulator) for improved thermal performance.
- 1.4 Top sheets are manufactured in sinusoidal, trapezoidal, or ribbed trapezoidal formats to match the fibre-cement, aluminium, and steel profiles.
- 1.5 FAIRS are supplied in lengths to suit customer requirements. Widths conform to those of the metal profile sheets to be matched.

- 1.6 Surface protection against UV light is provided to the weather sheets by a proprietary polyethylene terephthalate (PET) surface film.
- 1.7 The rooflights are mechanically fixed to the roof construction using fastener types<sup>(1)</sup> as recommended by the Certificate holder.
- (1) Outside the scope of this Certificate.
- 1.8 Ancillary items, not covered by this Product Sheet, but required for use with the system include:
- sealing tape a butyl sealant tape for creating a waterproof seal.
- 1.9 The system is manufactured from a thermosetting material, rather than thermoplastic. Fire rating identification is by means of a coloured thread inserted into the sheet during manufacture (see Table 1).

Table 1	Identification thread colours according to fire rating
BS 476-3 :	2004 Identification thread
S.AA	Blue
S.AA	Green
S.AB	Red

- 1.10 Standard fixings and flashing accessories<sup>[1]</sup> are available from the Certificate holder's nominated stockists.
- (1) Outside the scope of this Certificate.

#### Primary fixings (not covered by this Certificate)

- 1.11 Primary fixings should have an adequate strength to resist the design load, imposed load and wind loading and maintain weathertightness. Also, where required by the cladding and support design, to provide adequate lateral restraint to substructure elements such as purlins and spacers. In addition, they may be required to accommodate some thermal movement in the direction of the profiles. This can be achieved by oversizing fixing holes, by elastic displacement, or purlins and spacers. Primary fixings are divided into two groups, rigid fixings and non-rigid fixings.
- 1.12 It is essential that the watertightness of fixings with fasteners penetrating the sheeting should remain effective when the sheeting is subjected to the maximum inward imposed loading including wind. Under such loads, the sheeting and any insulating substrate will compress and thereby tend to loosen the seal in the fastener, increasing the risk of water penetration. It is therefore important to ensure that the sheeting, substrate, and fastener including sealing washer, can provide adequate performance under these conditions.
- 1.13 Additional security can be obtained by the use of fasteners, which secure the sheeting against inward movement as well as against outward loads.

#### Secondary fixings (not covered by this Certificate)

- 1.14 The main function of secondary fixings is to maintain a tight lap and seal, but they are also required to transfer concentrated load to adjacent sheets.
- 1.15 When required, fasteners for secondary fixings, or stitch fasteners should be positioned at side laps on the crown for roof cladding, depending on the profile. The fastener and method of installation should be able to accommodate and compress a seal in the lap joint where a seal is used. The spacing of stitch fasteners depends on the thickness and the presence, or otherwise, of a sealant in the joint, but should generally be not more than 300 mm centres and not exceeding 450 mm.
- 1.16 When fixing into steel or non-metallic materials, all fixings should be of stainless steel. When fixing into or through aluminium, the Certificate holder recommends obtaining specialist advice from either the fastener supplier or manufacturer.

#### 2 Manufacture

- 2.1 The Zenon Pro and Zenon Evolution GRP top sheets are manufactured in a continuous process using thermosetting polyester resins, containing curing agents, light stabilisers and glassfibre rovings or glassfibre mat.
- 2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:
- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.
- 2.3 The management system of Hambleside Danelaw Limited has been assessed and registered as meeting the requirements of BS EN ISO 9001: 2008 (Certificate FM 23063) and BS EN ISO 14001: 2004 (Certificate EMS 500154) by BSI.

#### 3 Delivery and site handling

- 3.1 The system should be stacked horizontally on a continuous, non-abrasive, flat, dry surface, or on 100 mm timber bearers, spaced at intervals not exceeding 1 m. The stack height should also not exceed 1 m. Different lengths of FAIRS should not be placed on top of each other.
- 3.2 If stored in outside conditions the panels should be protected from the weather by covering with waterproof covers. Panels stored outside without protection could be damaged, and entrapped water will cause the sheets to discolour in prolonged sunlight. The panels should be checked regularly whilst stored to ensure that moisture has not penetrated the protective cover.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Zenon Factory Assembled Insulated Rooflights (FAIRS).

## Design Considerations

#### 4 General

The system is for use on pitched roofs of profiled sheet composite panels to admit natural daylight into non-domestic buildings.

#### 5 Practicability of installation

The system is designed to be installed by a competent general builder, or a contractor, experienced with this type of system.

#### 6 Light transmittance

The light transmittance for individual sheets varies depending upon sheet weight. Assemblies containing intermediate insulating layers can vary depending upon the combination of sheet weights and insulating layer used. For design purposes, the total luminous transmittance of new material at normal incidence for the 5.4 kg·m<sup>-2</sup> glass weight GRP sheet is  $70.4\% \pm 2.6\%$  when measured generally in accordance with EN ISO 13468-2: 2006.

### 7 Properties in relation to fire



- 🦅 7.1 The system can be classified as Class F according to BS EN 13501-1 : 2007.
  - 27.2~ In the opinion of the BBA, the system can be classified as  $B_{ROOF}(t4)$  in accordance with BS EN 13501-5 : 2005.
- 7.3 The system must not be used where the original roof surface is used as an escape route in case of a fire, or is below the level of an existing fire escape.

## 8 Strength and stability



- 🗶 8.1 The system is designed to have adequate resistance to wind loads calculated in accordance with BS EN 1991-1-4 : 2005.
- 8.2 The system is designed to support a distributed load of 1.5 kN·m<sup>-2</sup>. 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, type and configuration of rooflights. Therefore, it is recommended that BS EN 1991-1-3: 2003 is used to calculate actual snow load when the rooflight is used in situations where a load greater than 1.5 kN·m<sup>-2</sup> can be
- 8.3 The system has a good resistance to impact from hard bodies, such as hailstones, or impacts due to vandalism. Tests on typical rooflight samples showed that an impact energy of 5 Joules caused no damage when applied at various points on the rooflights.

## 9 Thermal properties



- 🖢 9.1 The following factory-assembled Zenon Pro GRP Insulated Rooflight (FAIR), 1005 mm wide by 2002 mm high, incorporating:
- SAB Class 3, 2.4 kg·m² outer sheet
- 4 layers of 20 mm Insulated honeycomb core
- 5 layers of polyester film capping sheet
- SAA Class 1, 1.8 kg·m² inner sheet.

With a total panel thickness of 95.3 mm achieves a U value of 0.8 W·m<sup>-2</sup>·K<sup>-1</sup> when tested in accordance with BS EN ISO 12567-1: 2000.

9.2 Calculations show that double-skinned rooflights without a honeycomb inner layer are likely to achieve an indicative U value of 3.3 W·m<sup>-2</sup>·K<sup>-1</sup>.

#### 10 Weathertightness



- 10.1 The system will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the national Building Regulations.
- 10.2 To achieve weathertightness it is essential that the joints and fittings are correctly installed as described in the manufacturer's literature.
- 10.3 The system is capable of accepting minor structural movements without damage or affecting the weathertightness.

### 11 Safety

The system has a good resistance to impact from soft bodies, such as a person slipping on the roof. Tests on Zenon Pro 1.8 kg·m $^{-2}$  top sheet FAIRS showed that an impactor bag with an impact energy of 530 Joules gave a category B non-fragile rating according to document ACR(M)001: 2014. In the opinion of the BBA, higher weight sheets will achieve at least Category B non-fragile assembly.

#### 12 Maintenance



- 12.1 If damage occurs, the rooflights and the fixings can be replaced, but these operations should be carried 55 yout using the materials approved by the BBA.
- 12.2 Cleaning of the FAIRS rooflights should be carried out using water containing non-abrasive soap. To avoid scratching the surface, only soft cloths should be used.
- 12.3 The external surface of the rooflights 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 rooflights although the rooflights will have sufficient resistance in the event of an accidental fall. For ways of complying with the requirements of the Building Regulations see:

England — Approved Document K5.4

Wales — Approved Document N4

**Scotland** — Standard 4.8(c), clauses  $4.8.3^{(2)}$  and  $4.8.4^{(2)}$ 

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Technical Booklet V, Section 5.

### 13 Durability



- 13.1 The GRP material component of the system will perform satisfactorily for a period of at least 30 years for a Zenon Evolution GRP top sheet and 25 years for a Zenon Pro GRP top sheet.
- 13.2 Some slight colour change of the GRP material may occur over the life of the product but this should not adversely affect the transmission of light in most applications.

#### Installation

#### 14 General

- 14.1 Application must be carried out in strict accordance with the relevant clauses of the Certificate holder's instructions and this Certificate (see Figures 2 and 3).
- 14.2 For safety reasons, the system should not be installed in high winds.

Figure 2 Fixing detail for factory-assembled rooflights (along section)

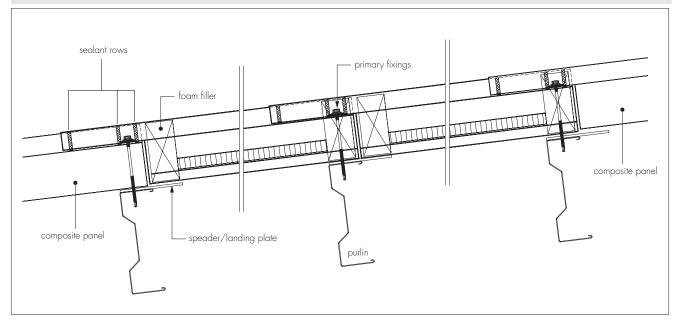
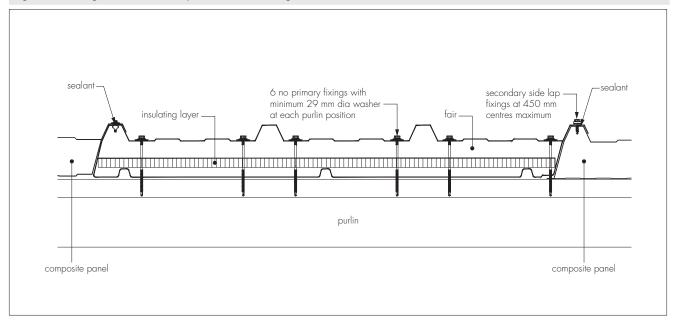


Figure 3 Fixing detail for factory-assembled rooflights (cross section)



14.3 The GRP sheets have different properties to fibre cement, steel and aluminium sheets and they do not necessarily have the same span capabilities (see Table 2).

Table 2 Maximum span between purlins for Zenon Evolution and Zenon Pro top sheets

Depth of profile	Sheet weights								
(mm)	Pro 18	Pro 24	Pro 30	Pro 36	Pro 54	Evolution LC1	Evolution LC2		
Perlin Centres (m)									
15 to 20	1.25	1.50	1.60	1.65	1.80	1.75	1.80		
21 to 25	1.50	1.75	1.80	1.90	2.40	2.25	2.40		
26 to 30	1.60	1.85	2.00	2.10	2.80	2.60	2.80		
31 to 35	1.80	2.05	2.20	2.35	2.90	2.70	2.90		
Over 35	2.00	2.25	2.40	2.50	3.00	2.80	3.00		

- 14.4 Although FAIRS are more rigid than single-skin applications, recommended purlin centres should not be exceeded, as any excessive deflection could strain or weaken bonding joints.
- 14.5 Where there is a head or tail lap condition it is recommended that a landing/spreader plate, which should be a minimum of 100 mm wide, should be used. The thickness should be the same as the purlin section already in place.

#### 15 Procedure

- 15.1 The system should be fastened to the steelwork structure in every trough of the profile using self-drilling and self-tapping fixings with minimum 29 mm self-sealing washers. Profile configurations with wide troughs will need two fixings per trough. Fixings are generally recommended to be manufactured in stainless steel.
- 15.2 Primary fixings should be positioned along and secured to the lines of purlins, sheeting rails or spacers. End laps in profiled sheeting should be arranged to occur over purlin, sheeting rail or spacer lines and secured by the same primary fixings.
- 15.3 Along the purlin, sheeting rail or spacer lines, the primary fixings should be spaced so as to maintain a tight end lap, resist the wind suction loads on the cladding and fasteners, in accordance with the manufacturer's instructions and avoid vibration of the sheeting.
- 15.4 Fasteners for primary fixings should preferably be fixed through the troughs, however for sinusoidal profiled sheets, the primary fixing is generally through the crown of the profile.
- 15.5 It is recommended that side laps be stitched at 300 mm centres but must not exceed 450 mm centres and should be sealed with one run of 6 mm by 5 mm cross-linked sealant (butyl type) or equivalent. The manufacturer can advise on suitable materials.
- 15.6 Head and tail laps should be sealed using two strips of 6 mm by 5 mm, cross-linked sealant (butyl type) 50 mm apart and either side of the line fasteners with an additional strip of sealant 6 mm by 5 mm or 8 mm diameter, 10 mm from the exposed edge of the sheet at both head and tail.

## Technical Investigations

The following is a summary of the technical investigations carried out on Zenon Factory Assembled Insulated Rooflights (FAIRS).

#### 16 Tests

- 16.1 Samples and components of the system were obtained from the manufacturer for the purpose of testing. Tests were performed by the BBA and other UKAS accredited laboratories on the GRP rooflight material:
- density
- hard body impact
- fixings pull-through strength
- light transmission
- ash content
- resistance to snow loading
- resistance to point loading
- resistance to staining.
- 16.2 Tests were carried out for thermal transmittance using a Guarded Hot Box.
- 16.3 Tests for soft body impact (fragility of roofing assemblies) to ACR(M)001: 2014 were not carried out on FAIRS, but results are expected to achieve at least Category B non-fragile assembly.

#### 17 Investigations

- 17.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- 17.2 Installation was examined in the preparation of test specimens to establish the practicability of the materials used.
- 17.3 An assessment was made of European fire data to BS EN 13501-1: 2007 and BS EN 13501-5: 2005.

## Bibliography

BS 476-3 : 2004 Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs

BS EN 1013-1 : 2012 Light transmitting single skin profiled plastic sheets for internal and external roofs, walls and ceilings — Requirements and test methods

BS EN 1991-1-3 : 2003 Eurocode 1 : Actions on structures — General actions — Snow loads BS EN 1991-1-4 : 2005 Eurocode 1 : Actions on structures — General actions — Wind actions

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

BS EN 13501-5 : 2005 Fire classification of construction products and building elements — Classification using data from external fire exposure to roof tests

BS EN ISO 9001: 2008 Quality management systems — Requirements

BS EN ISO 12567-1 : 2000 Thermal performance of windows and doors — Determination of thermal transmittance by the hot box method — Complete windows and doors

BS EN ISO 14001: 2004 Environmental Management systems — Requirements with guidance for use

EN ISO 13468-2 : 2006 Plastics — Determination of the total luminous transmittance of transparent materials — Double-beam instrument

Advisory Committee for Roofwork, ACR(M)001: 2014 Test for Non-fragility of Large Element Roofing Assemblies (fifth edition)

## Conditions of Certification

#### 18 Conditions

18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.
- 18.2 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.
- 18.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:
- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.
- 18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.
- 18.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:
- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

18.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.