

Eurocell Profiles Ltd

Fairbrook House
Clover Nook Road
Alfreton
Derbyshire DE55 4RF

Tel: 01773 842100 Fax: 01773 842199

e-mail: info@eurocell.co.uk

website: www.eurocell.co.uk



Agrément Certificate

14/5150

Product Sheet 2

EUROCELL PVC-U DOOR SYSTEMS

MODUS SINGLE LEAF AND DOUBLE LEAF DOOR SYSTEM

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Modus Single Leaf and Double Leaf Door System, glazed in white, cream or woodgrain finish, for use in replacement and new-build applications, for external use as primary and secondary access doors in walls of domestic and non-domestic buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

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

KEY FACTORS ASSESSED

Thermal properties — the thermal transmittance values (U value) of a single leaf and a double leaf door from within the range were calculated as $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ (see section 6).

Weathertightness — the doors can be used in the exposure situations described in the *Weathertightness* section of this Certificate (see section 7).

Ventilation — the doors can provide rapid ventilation (see section 8).

Unauthorised access — doors from within this range can contribute to preventing unauthorised access to dwellings and similar habitable applications (see section 9).

Access — the doors can be fitted with a low threshold that meets the national Building Regulations (see section 11).

Durability — the PVC-U extruded profiles will continue to function satisfactorily for a period in excess of 35 years (see section 17).



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: 23 March 2016

A stylized signature of John Albon.

John Albon – Head of Approvals
Construction Products

A stylized signature of Claire Curtis-Thomas.

Claire Curtis-Thomas
Chief Executive

Certificate amended 6 April 2016 to insert England/Scotland map.

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.*

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

©2016

tel: 01923 665300
fax: 01923 665301
clientservices@bba.star.co.uk
www.bbacerts.co.uk

In the opinion of the BBA, the Modus Single Leaf and Double Leaf Door System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



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

Requirement:	C2(b)	Resistance to moisture
Comment:		The system has adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards satisfying this Requirement. See Table 3 (section 7) of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The system will not constitute a significant condensation risk and so can contribute towards satisfying this Requirement. See section 12.1 of this Certificate.
Requirement:	F1	Means of ventilation
Comment:		The system can contribute to natural purge ventilation. See section 8.1 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		The system can contribute to satisfying this Requirement. See sections 6.1 and 6.2 of this Certificate.
Requirement:	M1	Access and use
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement. See section 11 of this Certificate.
Requirement:	M2	Access to extensions to buildings other than dwellings
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement. See section 11 of this Certificate.
Requirement:	K4(a)(b)	Protection against impact with glazing (applicable to England only)
Comment:		Doors fitted with safety glass can satisfy this Requirement. See section 13.1 of this Certificate
Requirement:	N1	Protection against impact with glazing (applicable to Wales only)
Comment:		Doors fitted with safety glass can satisfy this Requirement. See section 13.1 of this Certificate
Requirement:	Q1	Unauthorised access (applicable to England only)
Comment:		The doors, as described in the additional Enhanced Security Sheet (ES2) for Product Sheet 2, can satisfy this Requirement for new dwellings (see section 9.1 of this Certificate).
Regulation:	7	Materials and workmanship
Comment:		The system is acceptable. See section 17.1 and 17.2 and the <i>Installation</i> part of this Certificate.
Regulation:	26	CO₂ emission rates for new buildings
Regulation:	26A	Fabric energy efficiency rates for new dwellings (application to England only)
Regulation:	26A	Primary energy consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (application to Wales only)
Comment:		The system can contribute to satisfying these Regulations. See sections 6.1 and 6.2 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: Comment:	8(1)(2)	Durability, workmanship and fitness of materials The system satisfies this Regulation. See sections 16.1, 16.2, 16.3, 16.4, 17.1 and 17.2 and the <i>Installation</i> part of this Certificate.
Regulation: Standard: Comment:	9 2.9	Building standards applicable to construction Escape Doors fitted with a thumb turn lock can satisfy this Standard, with reference to clause 2.9.18 ⁽²⁾ . See section 13.3 of this Certificate.
Standard: Comment:	3.10	Precipitation The system has adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards satisfying this Standard, with reference to clause 3.10.1 ⁽¹⁾ . See Table 3 (section 7) of this Certificate.
Standard: Comment:	3.14	Ventilation The system can contribute to natural ventilation, with reference to clauses 3.14.2 ⁽¹⁾ and 3.14.3 ⁽¹⁾ of this Standard. See section 8.1 of this Certificate.
Standard: Comment:	3.15	Condensation The system will not constitute a significant condensation risk and so can contribute towards the wall satisfying this Standard with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.4 ⁽¹⁾ and 3.15.5 ⁽¹⁾ . See section 12.1 of this Certificate.
Standard: Comment:	3.16	Natural lighting In calculating the contribution of the system to natural lighting, with reference to clauses 3.16.1 ⁽¹⁾ and 3.16.3 ⁽¹⁾ of this Standard, the area of glazing can be calculated in accordance with section 10 of this Certificate.
Standard: Comment:	4.1	Access to buildings Doors fitted with accessible (low) thresholds will contribute to satisfying this Standard, with reference to clause 4.1.9 ⁽¹⁾⁽²⁾ . See section 11 of this Certificate.
Standard: Comment:	4.8(a)(b)	Danger from accidents Doors fitted with safety glass can satisfy this Standard, with reference to clause 4.8.2 ⁽¹⁾ . See section 13.1 of this Certificate.
Standard: Comment:	4.13	Security The doors, as described in the additional Enhanced Security Sheet (ES2) for Product Sheet 2, can satisfy this Standard with reference to clause 4.13.1 (c) ⁽¹⁾ (see section 9.1 of this Certificate).
Standard: Standard: Comment:	6.1(b) 6.2	Carbon dioxide emissions Building insulation envelope The system can contribute to satisfying these Standards, with reference to clauses 6.1.1 ⁽¹⁾ , 6.1.2 ⁽¹⁾ , 6.1.4 ⁽²⁾ , 6.1.6 ⁽¹⁾ , 6.1.7 ⁽¹⁾ , 6.2.1 ⁽¹⁾⁽²⁾ , 6.2.4 ⁽²⁾ , 6.2.6 ⁽¹⁾ , 6.2.7 ⁽¹⁾ , 6.2.8 ⁽²⁾ , 6.2.9 ⁽¹⁾⁽²⁾ , 6.2.11 ⁽¹⁾⁽²⁾ and 6.2.13 ⁽¹⁾⁽²⁾ . See sections 6.1 and 6.2 of this Certificate.
Standard: Comment:	7.1(a)(b)	Statement of sustainability The system can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the system can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 ⁽¹⁾⁽²⁾ [Aspects 1 ⁽¹⁾⁽²⁾ and 2 ⁽¹⁾], 7.1.6 ⁽¹⁾⁽²⁾ [Aspects 1 ⁽¹⁾⁽²⁾ and 2 ⁽¹⁾] and 7.1.7 ⁽¹⁾⁽²⁾ [Aspect 1 ⁽¹⁾⁽²⁾]. See sections 6.1 and 6.2 of this Certificate.

Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to the system 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	Fitness of materials and workmanship
Comment:		The system is acceptable. See sections 17.1 and 17.2 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The doors have adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards the wall satisfying this Regulation. See Table 3 (section 7) of this Certificate.
Regulation:	33	Means of escape
Comment:		Doors fitted with a thumb turn lock can meet this Regulation with reference to Technical Booklet E, clause 2.87. See section 13.3 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 Regulations. See sections 6.1 and 6.2 of this Certificate.
Regulation:	65(1)	Means of ventilation
Comment:		When calculating the area of door openings for rapid ventilation purposes, see section 8.1 of this Certificate.
Regulation:	91	Access and use
Regulation:	92	Access to extensions
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying these Regulations. See section 11 of this Certificate.
Regulation:	96	Impact with glazing
Comment:		Doors fitted with safety glass can satisfy this Regulation. See section 13.1 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.

See section: *3 Delivery and site handling (3.3) and Safety (13.4)* of this Certificate.

Additional Information

NHBC Standards 2016

NHBC accepts the use of the Modus Single Leaf and Double Leaf Door System, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.7 *Doors, windows and glazing*.

General

The Certificate holder is a system supplier, supplying bar length of window/door profile. The door systems detailed within this Certificate are manufactured by BBA-approved window/door fabricators. Details of currently approved window/door fabricators can be found on the BBA website.

Technical Specification

1 Description

1.1 The Modus Single Leaf and Double Leaf Door System comprises inward- and outward-opening leaves framed in white, cream or woodgrain finish unplasticised polyvinyl chloride (PVC-U) profiles complying with BS EN 12608 :2003 and glazed internally with sealed double-glazed units⁽¹⁾. The inner core sections of the PVC-U profiles are extruded from RM_b⁽²⁾ recycled PVC-U and have virgin PVC-U external and internal faces.

(1) Outside the scope of this Certificate.

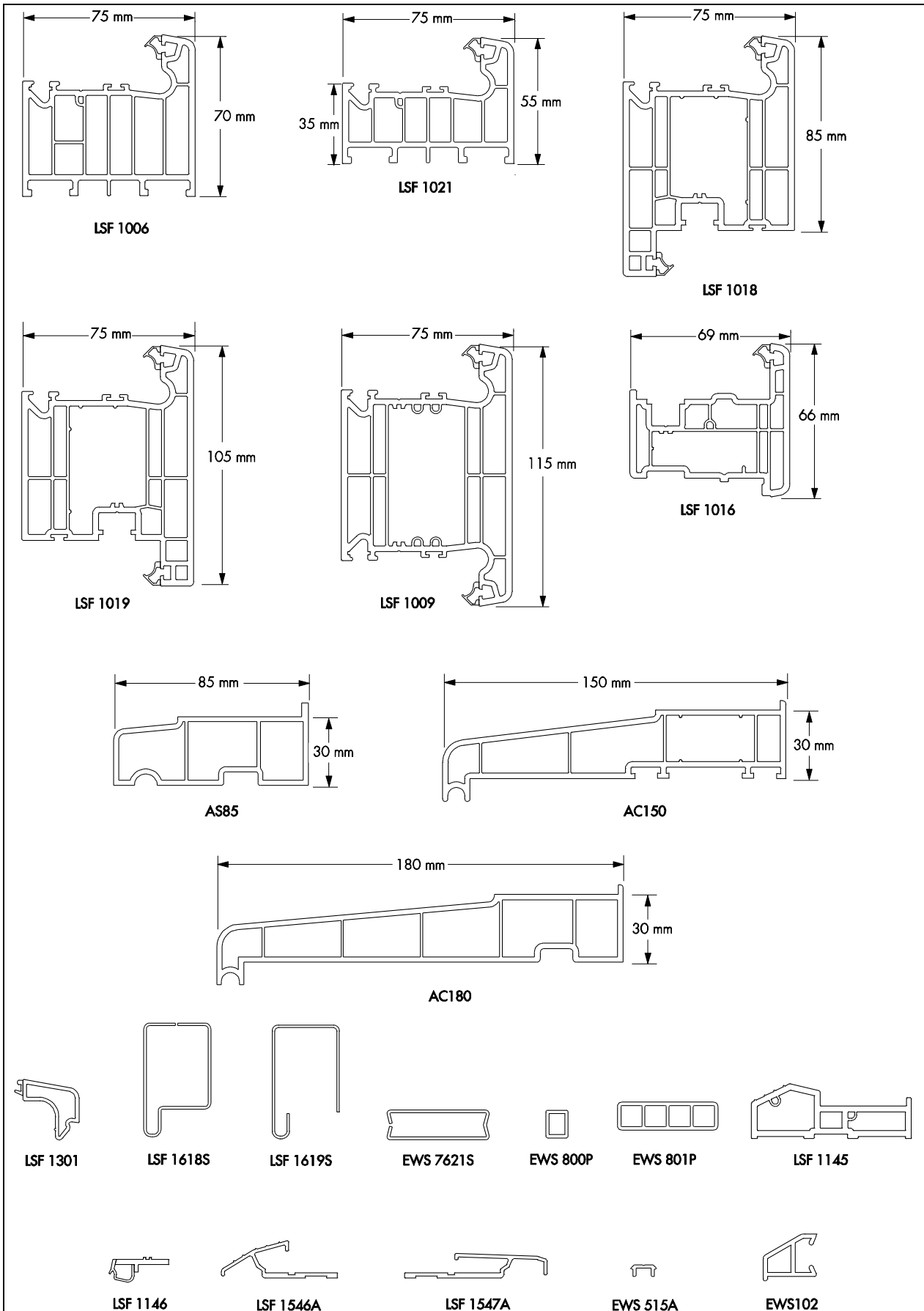
(2) Material made from used PVC-U products other than window profiles or a mixture of PVC-U products with PVC-U window profiles.

1.2 Woodgrain finish profiles are surface-covered with PVC which incorporates a clear acrylic protective lacquer. Profiles are available with the foil applied to both visible faces of a brown or tan PVC-U substrate, or to the exterior face only of a white or cream PVC-U substrate. The profiles covered by this Certificate (listed in Table 1 and shown in Figure 1) are supplied with integral gaskets made from black TPE material, thus eliminating the need for separate weatherseals and glazing gaskets.

Table 1 Profiles

Manufacturer's designation	Profile type	Application
LSF 1006	L-section	outer frame (70 mm) (head, jambs and threshold)
LSF 1021	L-section	outer frame (55 mm) (threshold)
LSF 1018	Z-section	leaf
LSF 1019	T-section	leaf
LSF 1016	T-section	French mullion
LSF 1009	T-section	midrail
LSF 1301	—	post calibration co-extruded (PCE) glazing bead
LSF 1618S	—	galvanized steel reinforcement (LSF1018, LSF1019, hinge side)
LSF 1619S	—	galvanized steel reinforcement (LSF1018, LSF1019, lock side)
EWS 7621S	—	galvanized steel reinforcement (LSF1016)
EWS 800P	—	PVC-U thermal reinforcement (LSF 1006)
EWS 801P	—	PVC-U thermal reinforcement (LSF 1016)
LSF 1145	—	low threshold
LSF 1146	—	low threshold seal
LSF1546A	—	threshold ramp A
LSF 1547A	—	threshold ramp B
AS85	—	sill (85 mm)
AC150	—	sill (150 mm)
AC180	—	sill (180 mm)
EWS 515A	—	drip bar fixing rail
EWS102	—	drip bar

Figure 1 Profiles (all dimensions in mm)



1.3 The Certificate holder must adhere to the methods of selection, machining and assembly of frame components as detailed in the fabrication instructions and this Certificate.

1.4 The outer frame and leaf frames are connected with welded joints.

1.5 Drainage is provided by a series of slots (5 mm by 30 mm), positioned in accordance with the fabrication instructions and this Certificate.

1.6 Inward opening doors are fitted with a weather bar at threshold level.

Reinforcement

1.7 Outer frame members are not normally reinforced unless specifically required in accordance with the fabrication instructions, where PVC-U reinforcing is used.

1.8 The jambs of door leaves are reinforced with galvanized steel, in accordance with the fabrication instructions and this Certificate.

1.9 French mullions are not normally reinforced unless specifically required in accordance with the fabrication instructions, where galvanized steel or PVC-U reinforcing is used.

1.10 Galvanized steel reinforcement is roll-formed from material with a Z275N coating complying with BS EN 10346 : 2009.

1.11 PVC-U reinforcing is extruded from ERM_a⁽¹⁾ or RM_a⁽²⁾ material as defined in BS EN 12608 : 2003.

(1) Material free from contamination and degradation, made from unused PVC-U window profiles including off cuts, which has been originally processed by a manufacturer other than that carrying out the reprocessing.

(2) Material made from used PVC-U window profiles which is free from contamination.

Size range

1.12 This Certificate covers the Modus Single Leaf and Double Leaf Door system within the limitations shown in Table 2.

Table 2 Size restrictions

	Dimension (mm)	
	Width	Height
<i>Double leaf doors</i> Maximum overall size	1800	2100
<i>Single leaf doors</i> Maximum overall size	1000	2100
Maximum leaf size	920	2040

Furniture and fittings

1.13 BBA-approved hardware must be used with this system.

1.14 Door leaves are hung on three hinges fixed to the frame and door leaf with screws penetrating the reinforcement.

1.15 Doors are secured by a multi-point locking mechanism operated by a lever type handle on both sides. The locks are supplied with a one-piece keep and are fitted with a security cylinder mechanism designed to resist picking. The slave leaf incorporates shootbolts at the top and bottom. Handles are available in a variety of finishes.

Glazing

1.16 The doors are supplied factory-glazed or ready for glazing using sealed, double-glazed units⁽¹⁾. The glass thicknesses are in accordance with BS 6262-1 : 2005 or, if required by the Building Regulations, the glazing units are supplied with toughened or laminated glass in accordance with BS EN 12600 : 2002. All glass used is positioned by plastic setting blocks and packing pieces.

(1) Outside the scope of this Certificate.

1.17 The glazing units must meet the requirements of BS EN 1279-2 : 2002 and (if relevant) BS EN 1279-3 : 2002.

1.18 NHBC requires⁽¹⁾ that compliance to the standards referred to in sections 1.16 and 1.17 of this Certificate is confirmed by an appropriate independent technical approvals authority.

(1) *NHBC Standards 2016, Chapter 6.7.7 Glazing, Insulating Glass Units.*

Weatherstripping and gaskets

1.19 The integral black gaskets and weatherstripping are incorporated into the profiles by post-calibration co-extrusion (PCE) (see Figure 1). The double-glazed units are secured by post calibration co-extruded bead.

2 Manufacture

2.1 The systems are fabricated using conventional production processes for PVC-U windows/doors. The doors are fabricated from white, cream or woodgrain finish PVC-U profiles, produced by conventional extrusion techniques from material complying with BS EN 12608 : 2003. The inner core sections of the PVC-U profiles are extruded from RM_b recycled PVC-U and have virgin PVC-U external and internal faces. See also sections 1.3 to 1.19 of this Certificate.

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 being operated by the manufacturer are being maintained.

2.3 The management system of Eurocell Profiles Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 (Certificate FM 45551) and BS EN ISO 14001 : 2004 (Certificate 25110/A/0001/UK/En) by BSI.

3 Delivery and site handling

3.1 The doors are delivered to site glazed or ready for glazing. For transportation, they are suitably protected to avoid damage. Particular care is needed to avoid damaging woodgrain finishes, as it may be impossible to restore the finish.

3.2 The doors should be stored under cover in a clean area, on edge and suitably supported to avoid distortion or damage.

3.3 The weight of the unglazed frame and of the glazing (which can be obtained from the Certificate holder) and their ease of handling, particularly by one person, must be taken into account when planning site operations.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Modus Single Leaf and Double Leaf Door System.

Design Considerations

4 Use

The Modus Single Leaf and Double Leaf Door System is satisfactory for use in non-loadbearing applications where doors are installed vertically into the external walls of new and existing dwellings, light commercial premises or similar habitable applications.

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 Thermal properties



6.1 The following Modus Single Leaf Door, 1230 mm wide by 2180 mm high, achieved a U value, U_w , of $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$, when assessed to BS EN ISO 10077-1 : 2006 and BS EN ISO 10077-2 : 2012:

- LSF 1006 outer frame (reinforced with EWS 800P)
- LSF 1018 leaf (reinforced with EWS 1618S)
- LSF 1009 midrail (unreinforced)
- LSF 1301 glazing bead
- 4/20/4 mm sealed double-glazed unit
- 20 mm argon-filled cavity (90%)
- external pane: 4 mm 4 mm SG Diamant, Saint Gobain
- internal pane 4 mm SG Planitherm One, Saint Gobain, (ϵ_n) = 0.01)
- spacer: Edgetech Super Spacer.

6.2 The following Modus Double Leaf door, 2000 mm wide by 2180 mm high, achieved a U value, U_w , of $1.2 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$, when assessed to BS EN ISO 10077-1 : 2006 and BS EN ISO 10077-2 : 2012:

- LSF 1006 outer frame (reinforced with EWS 800P)
- LSF 1018 leaf (reinforced with EWS 1618S)
- LSF 1016 French mullion (reinforced with EWS 7621S)
- LSF 1301 glazing bead
- 4/20/4 mm sealed double-glazed unit
- 20 mm argon-filled cavity (90%)
- external pane: 4 mm 4 mm SG Diamant, Saint Gobain
- internal pane 4 mm SG Planitherm One, Saint Gobain, (ϵ_n) = 0.01)
- spacer: Edgetech Super Spacer.

6.3 The overall thermal transmittance of the doors will be dependent on the performance of the double-glazed units. For units other than those described above, the indicative U values shown in Table 6e of SAP 2012 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings* can be used. When available, a certified U value by measurement to BS EN ISO 12567-1 : 2010, or calculation to BS EN ISO 10077-1 : 2006 and BS EN ISO 10077-2 : 2012, should be used in preference. Alternatively, door energy ratings may be available for specific frame and glazing combinations on the BFRC website (www.bfrc.org).

6.4 Design U values are detailed in the documents supporting the national building Regulations.

7 Weathertightness

7.1 Selected samples of the system were tested in accordance with BS EN 14351-1 : 2006 (BS EN 1026 : 2000, BS EN 1027 : 2000 and BS EN 12211 : 2000) and are suitable for use as indicated in Table 3 of this Certificate. The classifications are based on the assumption that the outer frame is supported on all four sides in accordance with the manufacturer's instructions. If classification of a door not covered within Table 3 is required, it should be tested in accordance with BS EN 14351-1 : 2006.

Table 3 Weathertightness classifications

	Classification according to:			
	Air permeability according to BS EN 12207 : 2000	Watertightness according to BS EN 12208 : 2000	Resistance to wind load according to BS EN 12210 : 2000	Overall UK exposure to BS 6375-1 : 2009
Single and double leaf doors Outward opening, fully glazed, low threshold	Class 4 (max test pressure 600 Pa)	Class 9A (max test pressure 600 Pa)	Class A3 (1200 Pa)	1200
Inward opening, with welded midrail, low threshold	Class 4 (max test pressure 600 Pa)	Class 4A (max test pressure 150 Pa)	Class A3 (1200 Pa)	1200
Outward opening, with welded midrail, standard threshold	Class 4 (max test pressure 600 Pa)	Class E1050 (max test pressure 1050 Pa)	Class A3 (1200 Pa)	1200
Single leaf doors Inward opening, with welded midrail, standard threshold	Class 4 (max test pressure 600 Pa)	Class E750 (max test pressure 750 Pa)	Class A3 (1200 Pa)	1200
Double leaf doors Inward opening, with welded midrail, standard threshold	Class 4 (max test pressure 600 Pa)	Class 7A (max test pressure 300 Pa)	Class A3 (1200 Pa)	1200

7.2 For unusual building layouts, building shapes or ground topography, the designer will need to give particular consideration to the prevailing exposure conditions.

8 Ventilation



8.1 The opening area for natural ventilation may be calculated by subtracting 140 mm (for standard threshold) or 95.62 mm (for low threshold) from the height, and 140 mm from the width, for single leaf doors or for double leaf French doors when both leaves are opened.

8.2 The background ventilation requirements of the various national Building Regulations can be met by the incorporation in the door of a suitably-sized trickle ventilator⁽¹⁾.

(1) Outside the scope of this Certificate.

9 Unauthorised access



9.1 The doors specified in Enhanced Security Sheet (ES2) for Product Sheet 2 have been tested in accordance with PAS 24 : 2012, Annexes A and B, and can contribute to preventing unauthorised access to dwellings and similar habitable applications.

9.2 Doors are fitted with the locking mechanisms and features described in section 1.15 of this Certificate and provide adequate security against unauthorised entry by the opportunist intruder, when judged against BS 6375-3 : 2009. Where relevant, reference should be made to *NHBC Standards 2016, Part 6.7 Doors, windows and glazing*.

9.3 Attention should be paid to packing of glazing units adjacent to all locking points. In addition, frame fixings should coincide with the locating points of the locking system, with suitable packing installed between the frame and the fabric of the building.

9.4 The design of the glazing is such that the removal of the glazing from outside is extremely difficult, as all beads are fitted internally.

10 Glass area



The appropriate unobstructed glass area of the doors is determined by deducting from the overall width and height the appropriate profile dimensions. Typical profile dimensions are given in Table 4.

Table 4 Typical dimensions for determining unobstructed glass area

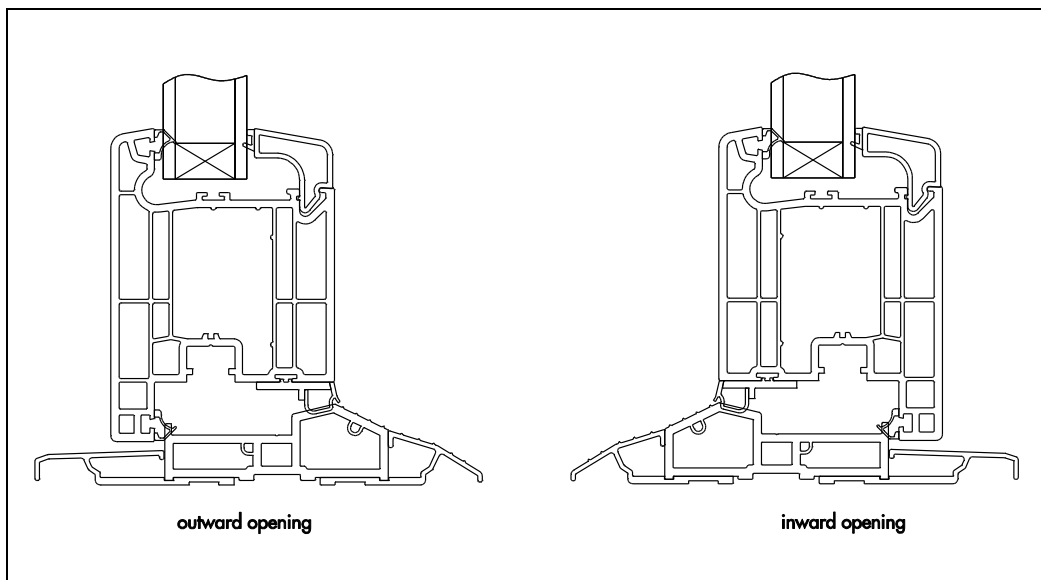
Feature	Deduction from overall height and width (mm)
Outer frame and door leaf	147
Midrail	115
Low threshold and door leaf	119.50
Double door meeting stile	220

11 Access



11.1 Doors can be fitted a low threshold designed to meet the requirements of the relevant national Building Regulations when suitably installed (see Figure 2).

Figure 2 Typical threshold sections



11.2 When an external residential door has a minimum clear opening of 775 mm, it will provide access for all persons, including those with disabilities.

12 Condensation risk



12.1 In normal domestic or similar applications, PVC-U doors will not constitute a significant condensation risk when correctly installed.

12.2 Guidance on some satisfactory design details is given in *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*, TSO 2002 and the Accredited Construction Details. Further information is contained in BRE Report (BR 262 : 2002).

13 Safety



13.1 The doors are fitted, where required, with safety glass complying with BS EN 12600 : 2002, and therefore meet the safety recommendations given in BS 6262-4 : 2005⁽¹⁾.

(1) Dealing with the safety of people upon impact with the glazing.

13.2 The fire resistance of the doors has not been assessed by the BBA.



13.3 When the doors are fitted in an escape route, they should be fitted only with a lock or fastening which is readily operated, without a key, from the side approached by people making an escape; such devices have not been included in this assessment.

13.4 When selecting means of access during the period of installation, for example use of scaffolding, the safety of the operatives, occupants and passers-by should be considered.

14 Resistance to impact

14.1 The doors will be unaffected by the soft body or hard body impacts likely to be encountered in dwellings or similar applications.

14.2 Slamming of the door leaf, such as could occur in high winds, will not cause damage to the door leaf or frame.

15 Ease of operation

The doors can be operated without difficulty when correctly installed.

16 Maintenance



16.1 The doors can be re-glazed, but if the integral gasket is damaged it must be replaced by conventional gaskets and weatherstripping. The use of conventional gaskets and weatherstripping with the Modus system is outside the scope of this Certificate.

16.2 If the gasket of the post calibration co-extruded glazing bead is damaged, for example during re-glazing, it may be necessary to replace the complete bead. Replacements are available from the Certificate holder. These operations should be carried out by specialist operatives using the materials recommended by the Certificate holder.

16.3 If damage occurs, the furniture and fittings can be readily replaced.

16.4 The hinges and locking mechanism should be cleaned and lubricated periodically to minimise wear and to ensure smooth operation. More frequent lubrication may be required depending on the environmental conditions.

16.5 The seal to the building structure may need to be replaced within the life of the doors.

16.6 The PVC-U frame members can be cleaned using a soft sponge and soapy water. Solvent-based, corrosive or abrasive cleaners should not be used, particularly on woodgrain finishes, as the loss of the acrylic lacquer will have a serious effect on durability. If dirt is allowed to build up on the members over long periods it may become more difficult to restore the surface appearance.

16.7 Care should be taken when using proprietary materials for cleaning the glass, to ensure that deposits are not allowed to remain on the PVC-U where they may cause discoloration and damage to the surface. In addition, care must be taken to avoid damage to, or discoloration of, the member when stripping paint from adjacent timber, for example, by means of a blowlamp or paint stripper.

16.8 Repair of the woodgrain foil is outside the scope of this Certificate.

17 Durability



17.1 The PVC-U extruded profiles will continue to function satisfactorily for a period in excess of 35 years.

17.2 The co-extruded glazing beads, gaskets and furniture and fittings, as described in this Certificate, may need to be replaced within the life of the doors, particularly when furniture and fittings are exposed to aggressive environments, such as coastal or industrial locations.

17.3 Any slight colour change or surface dulling of the PVC-U profiles that might occur will be uniform over the visible surfaces of the doors for the white, cream and woodgrain finish, assuming in the latter case that the acrylic lacquer is undamaged.

17.4 Paint can adversely affect the impact strength of the PVC-U frame members and the application of dark colours of white profiles could lead to a risk of thermal distortion. Therefore, paint should not be applied.

18 Reuse and recyclability

The PVC-U profiles of the system can be recycled.

Installation

19 General

19.1 The Modus Single Leaf and Double Leaf Door System must be fixed into the opening, in accordance with the recommendations in BS 8213-4 : 2016, using proprietary expanding anchors through the frame or galvanized steel fixing lugs.

19.2 For white and cream doors, openings in new walls should be formed using a suitable template 10 mm wider and higher than the door to be installed. This should be increased to 15 mm wider and higher for non-white doors. The door should not be built-in at the construction stage.

19.3 In common with other types of doors fitted to prepared openings, the system must be correctly positioned in relation to vertical damp proof courses to prevent water penetration to the internal reveal.

19.4 The provision of a cavity closer and/or cavity barrier around the door opening, prior to installation, may be required. Details of products covered by an Agrément Certificate can be found on the BBA website (www.bbacerts.co.uk).

Technical Investigations

20 Tests

20.1 Tests were carried out to determine:

- operating forces
- air permeability
- watertightness
- wind resistance
- resistance to vertical loads
- resistance to static torsion
- slamming resistance
- closure against obstruction
- abusive forces on handles
- resistance to soft and heavy duty impact
- resistance to hard body impact
- cyclic operation
- basic security.

20.2 BBA-approved hardware has been tested to BS EN 1670 : 2007 for resistance to salt spray corrosion.

21 Investigations

21.1 An assessment was made of tests carried out on doors, generally in accordance with BS 7412 : 2007, and on the PVC-U extrusions and woodgrain finish profiles in accordance with BS EN 12608 : 2003 and BS 7722 : 2010.

21.2 The thermal transmittance values of doors were determined using computer simulation in accordance with BS EN ISO 10077-2 : 2012.

21.3 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.

Bibliography

BS 6262-1 : 2005 *Glazing for buildings — General methodology for the selection of glazing*

BS 6262-4 : 2005 *Glazing for buildings — Code of practice for safety related to human impact*

BS 6375-1 : 2009 *Performance of windows and doors — Classification for additional performance characteristics and guidance on selection and specification*

BS 7412 : 2007 *Specification for windows and doorsets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles*

BS 7722 : 2010 *Surface covered PVC-U profiles for windows and doorsets — Specification*

BS 8213-4 : 2016 *Windows and doors — Code of practice for the survey and installation of windows and external doorsets*

BS EN 1279-2 : 2002 *Glass in building — Insulating glass units — Long term test method and requirements for moisture penetration*

BS EN 1279-3 : 2002 *Glass in building — Insulating glass units — Long term test method and requirements for gas leakage rate and for gas concentration tolerances*

BS EN 1026 : 2000 *Windows and doors — Air permeability — Test method*

BS EN 1027 : 2000 *Windows and doors — Watertightness — Test method*

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

BS EN 12211 : 2000 *Windows and doors — Resistance to wind load — Test method*

BS EN 10346 : 2009 *Continuously hot-dip coated steel flat products — Technical delivery conditions*

BS EN 12207 : 2000 *Windows and doors — Air permeability — Classification*

BS EN 12208 : 2000 *Windows and doors — Watertightness — Classification*

BS EN 12210 : 2000 *Windows and doors — Resistance to wind load — Classification*

BS EN 12600 : 2002 *Glass in building — Pendulum test — Impact test method and classification for flat glass*

BS EN 12608 : 2003 *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Classification, requirements and test methods*

BS EN 14351-1 : 2006 *Windows and doors — Product standard, performance characteristics — Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

BS EN ISO 10077-1 : 2006 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — General*

BS EN ISO 10077-2 : 2012 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Numerical method for frames*

BS EN ISO 12567-1 : 2010 *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*

Conditions of Certification

22 Conditions

22.1 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 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.

22.2 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.

22.3 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.

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

21.5 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.

22.6 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.