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BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate
08/4540
Product Sheet 1

DURAFLEX PVC-U DOOR SYSTEMS

DURAFLEX DIAMOND SUITE SLIDING PATIO DOOR SYSTEM

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to the Duraflex Diamond Suite Sliding Patio Door System for use in replacement and new-build applications, for external use as secondary access doors in dwellings or similar applications.

AGRÉMENT 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 insulation — the thermal transmittance value (U value) of the patio doors can be taken as 2.0 $Wm^{-2}K^{-1}$ (see section 5).

Weathertightness — the system can be used in the exposure situations described in this Certificate (see section 6).

Ventilation — the patio doors can provide rapid ventilation, and background ventilation can be provided by the incorporation in the patio door of a suitably-sized trickle ventilator (see section 7).

Basic security against intrusion — the system meets the basic requirements of NHBC and Zurich (see section 8).

Durability — the PVC-U frames will have a life of at least 35 years (see section 15).

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

On behalf of the British Board of Agrément

Date of First issue: 11 August 2008

Chris Hunt
Head of Approvals — Physics

Greg Cooper
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, the Duraflex Diamond Suite Sliding Patio Door System, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:

The Building Regulations 2000 (as amended) (England and Wales)

Requirement:	B1	Means of warning and escape
Comment:		When the patio door is fitted in an escape route, in relation to locking mechanisms to clauses 6.11 and 6.12 of Approved Document B, Volume 2, *Buildings other than dwellinghouses*, reference should be made to section 9.1 of this Certificate. Patio doors with a minimum sliding sash width of 690 mm will satisfy the requirements of clauses 2.11 and 2.12 of Approved Document B, Volume 1 *Dwellinghouses* and Volume 2 *Buildings other than dwellinghouses* (see section 9.2).
Requirement:	F1	Means of ventilation
Comment:		In calculating the contribution of the system to natural purge ventilation, the area of opening should be calculated in accordance with section 7.1 of this Certificate and related to floor area as set out in Approved Document F1. Background ventilation can be provided by the methods described in section 7 of this Certificate.
Requirement:	L1(a)(i)	Conservation of fuel and power
Comment:		In calculating the heat loss through doors, the indicative U values shown in SAP 2005 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Table 6e, can be used. When available, a certified U value by measurement or calculation, in accordance with the relevant Standards, should be used. In new work, the guidance given in the Approved Document L regarding positioning a door in the reveal must be taken into account. In replacement work or new doors in extensions, an average elemental U value of 2.2 $Wm^{-2}K^{-1}$ is required for doors with more than 50% glass area. This can be met by the use of 4/16/4 mm double-glazed units with a low-E coating of emissivity 0.15 or better. See sections 5.1 and 5.2 of this Certificate.
Requirement:	N1	Protection against impact
Requirement:	N2	Manifestation of glazing
Comment:		Glazing less than 1500 mm above floor or ground level in doors should meet the requirements of N1. Except where only small panes are fitted, glass which satisfies the test requirements of BS 6206 : 1981 should be used to meet the requirements of N1. See section 11 of this Certificate. To meet the requirements of N2, it may be necessary to incorporate features into glazing in non-domestic buildings to make its existence apparent to people using the doors.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The system is acceptable. See sections 15.1 to 15.3 and the *Installation* part of this Certificate.

In addition to the contribution which the system can make to meeting the relevant requirements, the following should be noted:

Requirement:	B3(2)(3)	Internal fire spread (structure)
Comment:		The system does not have an established fire resistance rating and should not be used where fire resistance requirements apply.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Regulation:	9	Building standards — construction
Standard:	2.9	Escape
Comment:		When the system is fitted in an escape route with reference to clauses 2.9.8[1][2] and 2.9.9[2], the unobstructed height and width can be calculated as indicated in section 9.2 of this Certificate. When the system is fitted in an escape route, in relation to locking mechanisms with reference to clauses 2.9.14[1] and 2.9.15[2], reference should be made to section 9.1 of this Certificate.
Standard:	3.10	Precipitation
Comment:		Walls incorporating the system, installed and used in accordance with the provisions of this Certificate, can meet this Standard, with reference to clause 3.10.1[1][2]. See Table 3 in section 6.1 of this Certificate.
Standard:	3.14	Ventilation
Comment:		In calculating the contribution of the system to natural ventilation, with reference to clauses 3.14.2[1][2] and 3.14.3[1] to this Standard, the area of opening can be calculated in accordance with section 7 of this Certificate. Trickle ventilation, with reference to clauses 3.14.3[2] and 3.14.5[1], can be provided also as described in section 7 of this Certificate.
Standard:	3.15	Condensation
Comment:		The system can contribute to satisfying this Standard, with reference to clause 3.15.1[1] and 3.15.2[1]. See section 10 of this Certificate.
Standard:	4.8(a)(b)	Danger from accidents
Comment:		Glazing must comply with the details in BS 6262-1 : 2005 where accidental collision with it is likely, with reference to clause 4.8.2[1][2]. See section 11 of this Certificate.

Standard:	6.1(a)(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		In satisfying these Standards, with reference to clauses 6.1.3[1][2], 6.2.1[1][2], 6.2.2[1][2], 6.2.3[1][2], 6.2.7[1], 6.2.8[2], 6.2.9[1] and 6.2.10[2], the indicative U values shown in SAP 2005 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Table 6e, can be used. However, when available, a certified U value should be used in preference to the tabulated data. See sections 5.1 and 5.2 of this Certificate. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The system is acceptable. See sections 15.1 to 15.3 and the *Installation* part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The system is acceptable. See sections 14.1 and 14.2 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The system is weathertight when installed and used in accordance with the provisions of this Certificate and can thus contribute to the ability of the wall to meet this Regulation. See Table 3 in section 6.1 of this Certificate.
Regulation:	E2(c)	Means of escape
Comment:		When the system is fitted in an escape route, the actual width between door jamb and central meeting stile can be determined as indicated in section 9.2 of this Certificate. These doors do not have an established fire resistance rating and, therefore, are not for use in any of the situations given in Technical Booklet E *Fire Safety* [June 1994 (as amended)], Table 3.5 *Fire doors*.
Regulation:	F2(a)(i)	Conservation measures
Regulation:	F3	Target carbon dioxide Emissions Rate
Comment:		In calculating the heat loss through doors, the indicative U values shown in SAP 2005 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Table 6e, can be used. When available, a certified U value by measurement or calculation, in accordance with the relevant Standards, should be used. In new work, the guidance given in the Technical Booklets F1 and F2 regarding positioning a door in the reveal must be taken into account. In replacement work or new doors in extensions, an average elemental U value of 2.2 $Wm^{-2}K^{-1}$ is required for doors with more than 50% glass area. This can be met by the use of 4/16/4 mm double-glazed units with a low-E coating of emissivity 0.15 or better. See sections 5.1 and 5.2 of this Certificate.
Regulation:	K2	Means of ventilation
Comment:		When calculating the area of openings for ventilation purposes, see section 7 of this Certificate. Trickle ventilation can also be provided by the methods described in section 7 of this Certificate.
Regulation:	V2	Impact with glazing
Comment:		Where people are likely to come into contact with glazing in a building, the requirements of these Regulations shall be deemed to be satisfied if the glazing complies with Technical Booklet V, Section 2, December 2000. See section 11 of this Certificate.
Regulation:	V3	Transparent glazing
Comment:		In a building other than in a dwelling, transparent glazing, of which people may be unaware and with which they are likely to collide, shall incorporate features which make it apparent. The requirements of these Regulations shall be deemed to be satisfied if the glazing complies with Technical Booklet V, Section 3, December 2000. See section 11 of this Certificate.

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

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

See section: 2 *Delivery and site handling* (2.3 and 2.4).

Non-regulatory Information

NHBC Standards 2007

NHBC accepts the use of the Duraflex Diamond Suite Sliding Patio Door System, when installed and used in accordance with this Certificate in relation to *NHBC Standards*, Chapter 6.7 *Doors, windows and glazing*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, the Duraflex Diamond Suite Sliding Patio Door System, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *External walls — doors, windows and roof lights* (pages 172, 174 and 175).

General

This Certificate relates to the Duraflex Diamond Suite Sliding Patio Door System for use as replacement and new-build patio doors.

The patio doors are for external use as secondary access doors in dwellings or similar applications and are suitable for use in the exposure situations described in section 6.

Technical Specification

1 Description

1.1 The Duraflex Diamond Suite Sliding Patio Door System comprises a sliding and a fixed leaf (sliding leaf on the inside or outside), all framed in white or woodgrain PVC-U and glazed internally with sealed double-glazed units[1].

(1) Outside the scope of this Certificate.

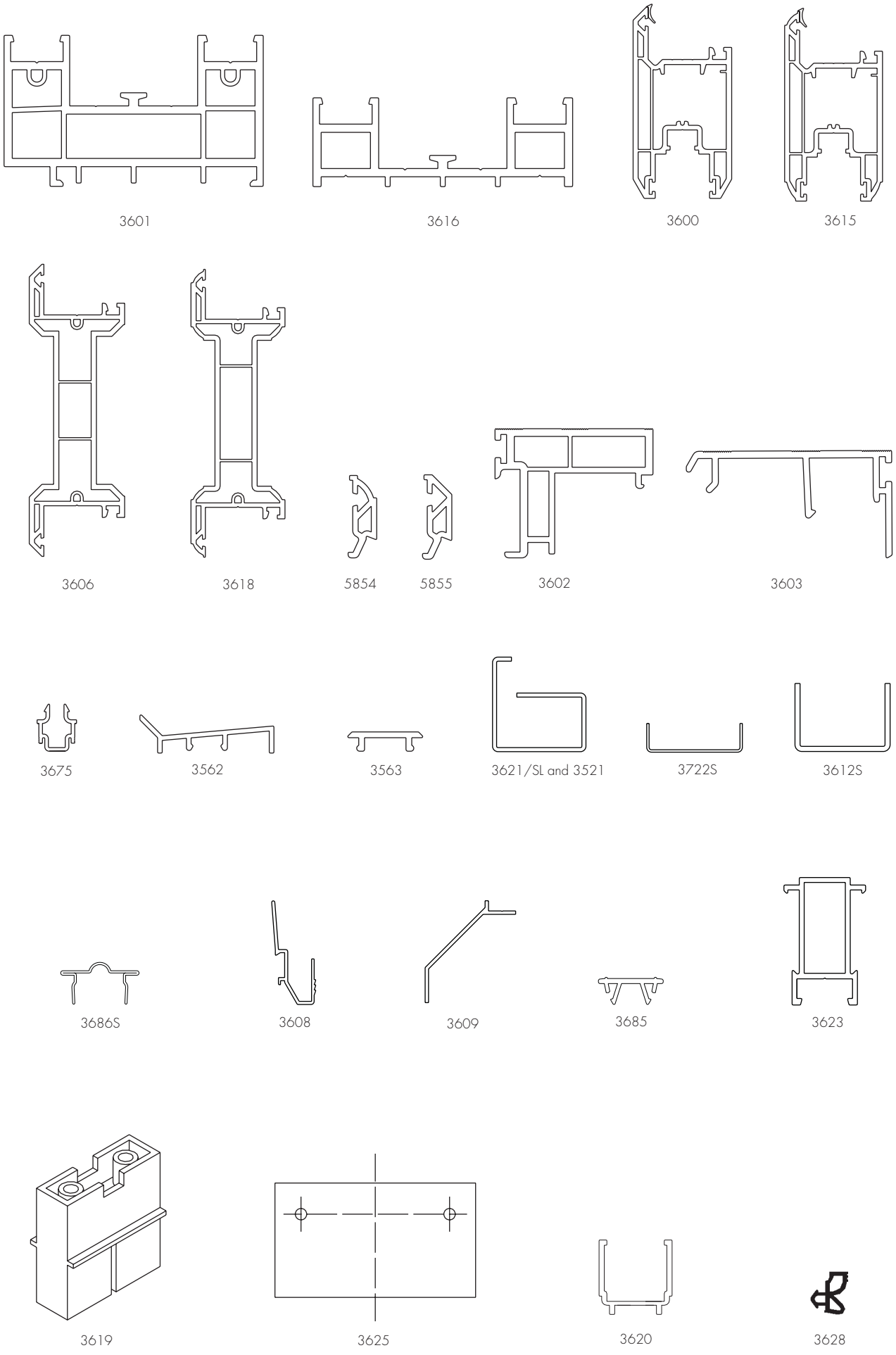
1.2 The patio doors are fabricated from white or woodgrain finish, unplasticised polyvinyl chloride (PVC-U) profiles, produced by conventional extrusion techniques from material complying with MOAT No 17:1990. Woodgrain profiles are surface covered with PVC which incorporates a clear acrylic protective lacquer. Profiles are available with the foil applied to both visible faces of a brown PVC-U substrate or to the exterior face only of a white PVC-U substrate. The profiles covered by this Certificate are those listed in Table 1 and shown in Figure 1. The sash profile incorporates 'rolled-in' Q-Lon gaskets, eliminating the need for separate glazing gaskets.

Table 1 Profiles

Manufacturer's designation	Profile type	Application
3601	C-section	outer frame
3616	C-section	outer frame (low threshold)
3600	Z-section	bevelled sash
3615	–	feature sash
3606	L-section	bevelled midrail
3618	L-section	feature midrail
5854	–	28 mm featured glazing bead
5855	–	28 mm bevelled glazing bead
3602	–	threshold frame cover
3603	–	meeting style cover
3675	–	panel spacer
3562	–	36 mm frame cover strip
3563	–	19 mm frame cover strip
3621/SL	–	steel reinforcing — lock style (3600, 3615)
3521	–	steel reinforcing — interlocks (3600, 3615)
3722	–	steel reinforcing (3601)
3612	–	steel reinforcing (3601, 3616)
3686	–	stainless steel track
3608	–	meeting claw (3600, 3603, 3615)
3609	–	weather bar (3601)
3685	–	security strip
3623	–	patio roller
3619	–	mechanical frame joint (3601, 3616)
3625	–	frame end cap (3601)
3620	–	midrail end packer
PO 4490[1]	–	patio stop
3628	–	bubble glazing seal
3629[1]	–	pile weather seal

(1) Not illustrated.

Figure 1 Profiles



1.3 The methods of selection, machining and assembly of frame components are detailed in the *Duraflex Diamond Suite Sliding Patio Door Manual*.

1.4 The PVC-U extrusions are cut to length, and all holes routed or drilled. Where required, galvanized steel reinforcement sections are inserted in the PVC-U sections before they are welded together. The welded connections are cleaned up by polishing, knifing or using a purpose-made machine which also forms a groove or raised pyramid at the weld. The door is completed by fitting the weatherstripping and securing the fittings in position with screws.

1.5 Drainage is provided by a series of slots (5 mm by 30 mm) positioned in accordance with the *Duraflex Diamond Suite Sliding Patio Door Manual*. Woodgrain-finished sills are vented, as described in the *Duraflex Diamond Suite Sliding Patio Door Manual* to prevent pressure changes causing distortion.

Reinforcement

1.6 All Outer frames are fully reinforced with galvanized steel to satisfy the requirements of PAS23-1:1999.

1.7 All members of sliding door leaves and interlock jamb members of fixed leaves are reinforced with galvanized steel in accordance with the *Duraflex Diamond Suite Sliding Patio Door Manual*. Doors with a woodgrain finish are fully reinforced.

1.8 Galvanized steel reinforcement is roll-formed from material with a Z275N coating complying with BS EN 10327 : 2004.

Size range

1.9 This Certificate covers Duraflex Diamond Suite Sliding Patio Doors with two leaves within the limitations shown in Table 2.

Table 2 Size restriction

	Dimension (mm)	
	Width	Height
Glazed patio doors		
Maximum overall size	2400	2100

Furniture and fittings

1.10 Sliding door leaves have two adjustable height rollers fitted at either end of the bottom rail.

1.11 Doors are secured with multi-point locking systems (see Figure 2), comprising six hooks in three opposing action pairs and an anti-lift strip fitted to the outerframe. The test doors were fitted with security handles which feature a cylinder guard and are available in white, gold and chrome (see section 8.1). Handles of other colours are available from the Certificate holder but these have not been included in the assessment.

Figure 2 Multi-point locking system and cylinder guard

1.12 Details of currently approved locks and other fittings can be obtained from the BBA.

Glazing

1.13 Patio doors are supplied factory glazed or ready for glazing using sealed double-glazed units with glass thicknesses in accordance with BS 6262-1 : 2005 or, if required by the Building Regulations, with toughened or laminated glass in accordance with BS 6206 : 1981. All glass used is safety glass and is positioned by plastic setting blocks and packing pieces. The double glazed unit is secured with beads and rolled-in Q-Lon glazing gaskets.

Weatherstripping and gaskets

1.14 Weatherstripping, made from polypropylene pile is located in grooves around the periphery of each door leaf.

1.15 Gaskets are rolled-in Q-Lon gaskets inserted into the sash profiles (see Figure 1). The double-glazed unit is secured by a co-extruded bead.

Quality control

1.16 Quality control checks are carried out on the incoming materials during production and on the finished products.

2 Delivery and site handling

2.1 The patio 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 appearance.

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

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

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

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Duraflex Diamond Suite Sliding Patio Door System.

Design Considerations

3 Use

The Duraflex Diamond Suite Sliding Patio Door System is satisfactory for use when installed into the external walls of buildings as secondary access doors in dwellings or similar applications.

4 Practicability of installation

4.1 Installation does not present undue difficulty when fitting the patio doors in openings in new or existing walls provided the installation instructions are followed.

4.2 In common with other types of patio doors fitted to prepared openings, Duraflex Diamond Suite patio doors must be correctly positioned in relation to vertical damp-proof courses to prevent water penetration to the internal reveal.

5 Thermal transmittance

5.1 Indicative thermal transmittance values (U values) for doors are given in SAP 2005 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Table 6e. For a PVC-U door incorporating 4/16/4 mm double glazing with a low-E coating of emissivity (ε_n) = 0.15, an indicative U value of 2.0 $Wm^{-2}K^{-1}$ may be used when demonstrating compliance with the requirements of Part L1B (England and Wales) for replacement doors.

5.2 The overall thermal insulation of the door will be dependent on the performance of the double-glazed units. When available, a certified U value by measurement to BS EN ISO 12567-1 : 2000, or calculation to BS EN ISO 10077-1 : 2000 and BS EN ISO 10077-2 : 2003 should be used in preference to the data given in SAP 2005, Table 6e.

5.3 It is recommended that glazing units which meet the requirements of BS EN 1279-2 : 2002 and BS EN 1279-3 : 2002 (if relevant) are specified.

6 Weathertightness

6.1 Selected samples from the Duraflex Diamond Suite Sliding Patio Door System were tested generally in accordance with PAS 23-1 : 1999. Assessment of the results shows that the products, within the range described in section 1.9, are suitable for use where the test pressure classes defined in PAS 23-1 : 1999 and where the exposure categories and classifications defined in BS 6375-1 : 1989 and indicated in Table 3 are applicable. The gradings are based on the assumption that the outer frame is supported on all four sides in accordance with the manufacturer's instructions.

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

Table 3 Test pressure class, exposure categories and classification

	BS 6375-1 Classification	PAS 23-1 Exposure category
Strength and stability/Resistance to wind loading		
Patio doors up to maximum size (external slider)	900	900 special
Patio doors up to maximum size (internal slider)	900	800 special
Watertightness		
Patio doors up to maximum size (external slider)	200	–
Patio doors up to maximum size (internal slider)	150	–
Air permeability		
Patio doors up to maximum size (external slider)	600	–
Patio doors up to maximum size (internal slider)	300	–

7 Ventilation

The opening area for natural ventilation may be calculated by subtracting 275 mm from half of the overall width. The background ventilation requirements of the various building regulations can be met by the incorporation in the patio door of a suitably-sized trickle ventilator. The ventilator may be glazed in, fitted in a supplementary head member or fitted by another method approved by the BBA for use with the system. Details of any such approved fitting methods can be obtained from the BBA. The weathertightness of particular ventilators has not been assessed. Details of ventilators covered by an Agrément Certificate can be found on the BBA website.

8 Security against intrusion

8.1 The patio doors are fitted with locking mechanisms and features as described in sections 1.10 and 1.11. They provide adequate security against unauthorised entry by the opportunist intruder, when tested generally in accordance with Clause 6.14 of PAS 23-1 : 1999, (basic security test). Where relevant, reference should be made to *NHBC Standards* 2007, Part 6.7 *Doors, windows and glazing and the Zurich Building Guarantee Technical Manual* 2007, Section 4 *Superstructure*, Sub-section, *External walls — doors, windows and roof lights* (pages 172, 174 and 175).

8.2 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.

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

8.4 An anti-lift section is fitted to the outerframe over the full width of the sliding sash.

9 Unobstructed opening area

9.1 When a patio door is fitted in an escape route, it 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.

9.2 When a patio door is fitted in an escape route, the unobstructed width and height can be calculated by subtracting 275 mm from half of the overall width. The minimum width of a two-pane patio door set suitable for an escape route is 1450 mm.

10 Condensation risk

Experience of PVC-U patio doors similar to these PVC-U patio doors has shown that, in normal domestic or similar applications, PVC-U patio doors do not constitute a significant condensation risk when correctly installed. 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. Further information is contained in BRE report (BR 262 : 2002) *Thermal insulation : avoiding risks*.

11 Safety

Patio doors are fitted with safety glass complying with BS 6206 : 1981 or 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.

12 Resistance to impact

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

13 Ease of operation

The patio doors can be operated without difficulty when correctly installed.

14 Maintenance

14.1 The patio doors can be re-glazed and the gaskets and weatherstripping replaced, but these operations should be carried out by specialist operatives using the materials recommended by the Certificate holder and approved by the BBA. If the post-calibration co-extruded gasket on the sash profile is damaged it must be replaced by conventional gaskets. If the gasket of the glazing bead is damaged, for example during re-glazing, it can be replaced(1).

(1) The gasket can be obtained from the Certificate holder.

14.2 If damage occurs, the furniture and fittings can be readily replaced by releasing the fixing screws and changing the fitting.

14.3 The PVC-U frame members can be cleaned using water containing household detergent. If dirt is allowed to build up on the members over long periods it may become more difficult to restore the surface appearance. Abrasive cleaners should not be used, particularly on woodgrain finishes as the loss of the acrylic lacquer will have a serious effect on durability.

14.4 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 members when stripping paint from adjacent timber, for example, by means of a blowlamp or paint stripper.

14.5 Paints can adversely affect the impact strength of the PVC-U frame members and the application of dark colours to white profiles could lead to a risk of thermal distortion. Therefore, painting is not recommended.

14.6 The 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.

15 Durability

15.1 Evidence is available on the performance in the UK of PVC-U similar to that used for the system over a period of 15 years for woodgrain doors and in excess of 20 years for white doors. Recent evidence contained in the BRE Green Guide for PVC-U windows indicate that the product will have a life expectancy of at least 35 years. This will also apply to patio doors.

15.2 Fittings, including the locking mechanism, rollers and operating handles, as described in this Certificate, will have similar durability except where doors are to be installed in areas subject to particularly aggressive conditions. These conditions can prevail in coastal locations or near sources of industrial pollutants and the replacement of fittings may be necessary within the life of the patio doors.

15.3 The gaskets and the mastic seal to the building structure may need to be replaced within the life of the patio door.

15.4 Any slight colour change or surface dulling that might occur will be uniform over the visible surfaces of the doors for both white and woodgrain finishes assuming, in the latter case, that the acrylic lacquer is undamaged.

Installation

16 General

16.1 The Duraflex Diamond Suite Sliding Patio Door System must be fixed into the opening, in accordance with the recommendations in the BS 8213-4 : 2007, using proprietary expanding anchors through the frame or galvanized steel fixing lugs.

16.2 Openings in new walls should be formed larger than the door to be installed using a suitable template 10 mm wider and higher for white doors and 15 mm wider and higher for non-white doors.. Doors should not be built in at the construction stage.

16.3 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.

Technical Investigations

17 Tests

17.1 Tests were carried out on the Duraflex Diamond Suite Sliding Patio Door System in accordance with the methods defined in BS 6375-1 : 1989 and generally to PAS 23-1 : 1999 to determine:

- operating forces
- wind resistance
- abusive forces on handles
- cyclic operation
- air permeability
- resistance to accidental loading
- resistance to soft and heavy duty impact
- basic security.
- watertightness
- closure against obstruction
- resistance to hard body impact.
- resistance to thermal cycling (woodgrain doors).

17.2 Tests were carried out on the PVC-U extrusions in accordance with MOAT No 17 : 1990.

Bibliography

BS 952-1 : 1995 *Glass for glazing — Classification*

BS 6206 : 1981 *Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings*

BS 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 : 1989 *Performance of windows — Classification for weathertightness (including guidance on selection and specification)*

BS 8213-4 : 2007 *Windows, doors and rooflights — 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 10327 : 2004 *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming — Technical delivery conditions*

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

BS EN ISO 10077-1 : 2000 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 1— Simplified method*
BS EN ISO 10077-2 : 2003 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 2— Numerical method for frames*

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

PAS 23-1 : 1999 *General performance requirements for doors assemblies. Single leaf, external door assemblies to dwellings*
MOAT No 17 : 1990 *UEAtc Technical Guide for the Agrément of windows in PVC-U*

19 Conditions

19.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

19.2 References in this Certificate to any Act of Parliament, Statutory Instrument, Directive or Regulation of the European Union, British, European or International Standard, Code of Practice, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

19.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

19.4 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

19.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.

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