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**Agrément Certificate**

**19/5677**

Product Sheet 1

## SOKÓŁKA DOOR SYSTEMS

### THERMO HS AND HS ALU TIMBER LIFT/SLIDE DOOR SYSTEMS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to the THERMO HS and THERMO HS ALU timber lift/slide door systems, for external use as secondary access doors in walls of new and existing dwellings, light commercial premises and similar habitable applications.

(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 transmittance** — the thermal transmittance value (U value) of a door from within the range was calculated as  $1.0 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  (see section 6).

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

**Ventilation** — the lift/slide doors can provide rapid ventilation (see section 8).

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

**Durability** — the doors will continue to function satisfactorily for a period in excess of 25 years subject to the necessary maintenance being performed (see sections 15 and 16).

The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 22 July 2019

John Albon  
Chief Scientific Officer

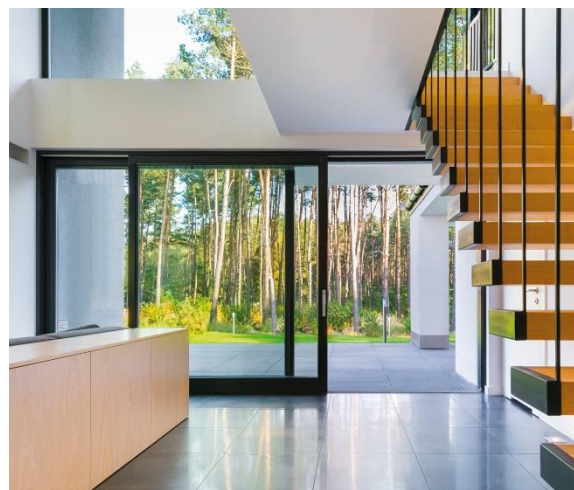
Claire Curtis-Thomas  
Chief Executive

*Certificate amended on 11 November 2019 to update reference to NHBC Standards.*

*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](http://www.bbacerts.co.uk)  
Readers MUST check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*

*Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*



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In the opinion of the BBA, the THERMO HS and THEMRO HS ALU timber lift/slide door systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the 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)

<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:		The systems have adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards satisfying this Requirement. See section 7.2 of this Certificate.
<b>Requirement:</b>	<b>C2(c)</b>	<b>Resistance to moisture</b>
Comment:		The systems will not constitute a significant condensation risk and so can contribute towards satisfying this Requirement. See section 11.1 of this Certificate.
<b>Requirement:</b>	<b>F1(1)</b>	<b>Means of ventilation</b>
Comment:		The systems can contribute to natural purge ventilation. See section 8.1 of this Certificate.
<b>Requirement:</b>	<b>K4 (a)(b)</b>	<b>Protection against impact with glazing (applicable to England only)</b>
Comment:		Lift/slide doors fitted with safety glass can satisfy this Requirement. See section 12.1 of this Certificate.
<b>Requirement:</b>	<b>K5.2</b>	<b>Manifestation of glazing (applicable to England only)</b>
Comment:		Lift/slide doors used in non-dwellings can satisfy this Requirement, when glazing incorporates features which make it apparent. See section 12.2 of this Certificate.
<b>Requirement:</b>	<b>L1(a)(i)</b>	<b>Conservation of fuel and power</b>
Comment:		The systems can contribute to satisfying this Requirement. See section 6.1 of this Certificate.
<b>Requirement:</b>	<b>N1</b>	<b>Protection against impact with glazing (applicable to Wales only)</b>
Comment:		Lift/slide doors fitted with safety glass can satisfy this Requirement. See section 12.1 of this Certificate.
<b>Requirement:</b>	<b>N2</b>	<b>Manifestation of glazing (applicable to Wales only)</b>
Comment:		Lift/slide doors used in non-dwellings can satisfy this Requirement when glazing incorporates features which make it apparent. See section 12.2 of this Certificate.
<b>Requirement:</b>	<b>Q1</b>	<b>Unauthorised access</b>
Comment:		The doors, as described in the Enhanced Security Sheet (ES1) for this Product Sheet, can satisfy this Requirement for new dwellings. See section 9.3 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship (applicable to Wales only)</b>
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship (applicable to England only)</b>
Comment:		The systems are acceptable. See sections 16.1 and 16.2 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>26</b>	<b>CO<sub>2</sub> emission rates for new buildings</b>
<b>Regulation:</b>	<b>26A</b>	<b>Fabric energy efficiency rates for new dwellings (applicable to England only)</b>
<b>Regulation:</b>	<b>26A</b>	<b>Primary energy consumption rates for new buildings (applicable to Wales only)</b>
<b>Regulation:</b>	<b>26B</b>	<b>Fabric performance values for new dwellings (applicable to Wales only)</b>
Comment:		The systems can contribute to satisfying these Regulations. See section 6.1 of this Certificate.



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

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
<b>Comment:</b>		The systems satisfy this Regulation. See sections 15.1 to 15.4 and 16.1 to 16.3 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
<b>Standard:</b>	<b>2.9</b>	<b>Escape</b>
<b>Comment:</b>		Lift/slide doors fitted with a thumb-turn lock can satisfy this Standard, with reference to clauses 2.9.0 <sup>(1)</sup> and 2.9.18 <sup>(2)</sup> . See section 12.4 of this Certificate.
<b>Standard:</b>	<b>3.10</b>	<b>Precipitation</b>
<b>Comment:</b>		The lift/slide door 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 <sup>(1)</sup> . See section 7.2 of this Certificate.
<b>Standard:</b>	<b>3.14</b>	<b>Ventilation</b>
<b>Comment:</b>		The lift/slide door can contribute to natural ventilation with reference to clauses 3.14.2 <sup>(1)</sup> and 3.14.3 <sup>(1)</sup> of this Standard. See section 8.1 of this Certificate.
<b>Standard:</b>	<b>3.15</b>	<b>Condensation</b>
<b>Comment:</b>		The systems will not constitute a significant condensation risk and so can contribute towards the wall satisfying this Standard, with reference to clauses 3.15.1 <sup>(1)</sup> , 3.15.4 <sup>(1)</sup> and 3.15.5 <sup>(1)</sup> . See section 11.1 of this Certificate.
<b>Standard:</b>	<b>3.16</b>	<b>Natural lighting</b>
<b>Comment:</b>		In calculating the contribution of the systems to natural lighting, with reference to clauses 3.16.1 <sup>(1)</sup> and 3.16.3 <sup>(1)</sup> of this Standard, the area of glazing can be calculated in accordance with section 10 of this Certificate.
<b>Standard:</b>	<b>4.8(a)(b)</b>	<b>Danger from accidents</b>
<b>Comment:</b>		Lift/slide doors fitted with safety glass can satisfy this Standard, with reference to clause 4.8.2 <sup>(1)</sup> . See section 12.1 of this Certificate. For non-domestic applications, large glazed areas should feature some sort of manifestation (marking) to make it apparent. See section 12.2 of this Certificate.
<b>Standard:</b>	<b>4.13</b>	<b>Security</b>
<b>Comment:</b>		The doors, as described in the Enhanced Security Sheet (ES1) for this Product Sheet, can satisfy this Standard with reference to clause 4.13.1(c) <sup>(1)</sup> . See section 9.3 of this Certificate.
<b>Standard:</b>	<b>6.1(b)</b>	<b>Carbon dioxide emissions</b>
<b>Standard:</b>	<b>6.2</b>	<b>Building insulation envelope</b>
<b>Comment:</b>		The systems can contribute to satisfying these Standards, with reference to clauses 6.1.1 <sup>(1)</sup> , 6.1.2 <sup>(1)</sup> , 6.1.4 <sup>(2)</sup> , 6.1.6 <sup>(1)</sup> , 6.1.7 <sup>(1)</sup> , 6.2.1 <sup>(1)(2)</sup> , 6.2.4 <sup>(2)</sup> , 6.2.6 <sup>(1)</sup> , 6.2.7 <sup>(1)</sup> , 6.2.8 <sup>(2)</sup> , 6.2.9 <sup>(1)(2)</sup> , 6.2.11 <sup>(1)(2)</sup> and 6.2.13 <sup>(1)(2)</sup> . See section 6.1 of this Certificate.
<b>Standard:</b>	<b>7.1(a)(b)</b>	<b>Statement of sustainability</b>
<b>Comment:</b>		The systems can contribute to satisfying the relevant Requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the systems can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ], 7.1.6 <sup>(1)(2)</sup> [Aspects 1 <sup>(1)(2)</sup> and 2 <sup>(1)</sup> ] and 7.1.7 <sup>(1)(2)</sup> [Aspect 1 <sup>(1)(2)</sup> ]. See section 6.1 of this Certificate.

<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
<b>Comment:</b>		All comments given for these systems under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .
		(1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



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

<b>Regulation:</b>	<b>23</b>	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>		The systems are acceptable. See sections 16.1 and 16.2 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
<b>Comment:</b>		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 section 7.2 of this Certificate.
<b>Regulation:</b>	<b>33(c)</b>	<b>Means of escape</b>
<b>Comment:</b>		Lift/slide doors fitted with a thumb-turn lock can satisfy this Regulation with reference to Technical Booklet E, clause 2.87. See section 12.4 of this Certificate.
<b>Regulation:</b>	<b>39(a)(i)</b>	<b>Conservation measures</b>
<b>Regulation:</b>	<b>40(2)</b>	<b>Target carbon dioxide emission rate</b>
<b>Comment:</b>		The systems can contribute to satisfying these Regulations. See section 6.1 of this Certificate.
<b>Regulation:</b>	<b>65(1)</b>	<b>Means of ventilation</b>
<b>Comment:</b>		When calculating the area of door openings for rapid ventilation purposes, see section 8.1 of this Certificate.
<b>Regulation:</b>	<b>96</b>	<b>Impact with glazing</b>
<b>Comment:</b>		Lift/slide doors fitted with safety glass can satisfy this Regulation. See section 12.1 of this Certificate.
<b>Regulation:</b>	<b>97</b>	<b>Transparent glazing</b>
<b>Comment:</b>		Lift/slide doors used in non-dwellings can satisfy this Regulation when glazing incorporates features which make it apparent. See section 12.2 of this Certificate.

## Construction (Design and Management) Regulations 2015

## Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: *Delivery and site handling* (3.3) and *12 Safety* (12.5) of this Certificate.

## Additional Information

### NHBC Standards 2019

In the opinion of the BBA, the THERMO HS and THERMO HS ALU timber lift/slide door systems, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.7 *Doors, windows and glazing*.

## General

The Certificate holder is a system supplier as well as a door fabricator, supplying frame sections of door profiles and also manufacturing doors.

## CE Marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 14351-1 : 2006. An asterisk (\*) appearing in this Certificate indicated that data shown is given in the manufacturer's Declaration of Performance.

## Technical Specification

### 1 Description

1.1 The THERMO HS and HS ALU timber lift/slide door systems comprise a lift and slide patio door system, factory finished painted or externally clad in aluminium (THERMO HS ALU) with a polyester-powder coating in any standard RAL, NCS opaque colour, and glazed internally with sealed double- or triple-glazed units<sup>(1)</sup>. The doors are also available in a range of stained finishes, but these are outside of the scope of this Certificate.

(1) Outside the scope of this Certificate.

1.2 The doors are available in a range of approved colours and comprise a sliding and a fixed leaf mechanically jointed to the timber frame as shown in Figures 1 and 2, and are subject to the size restrictions given in Table 1.

Figure 1 THERMO HS lift/slide door vertical section (all dimensions in mm)

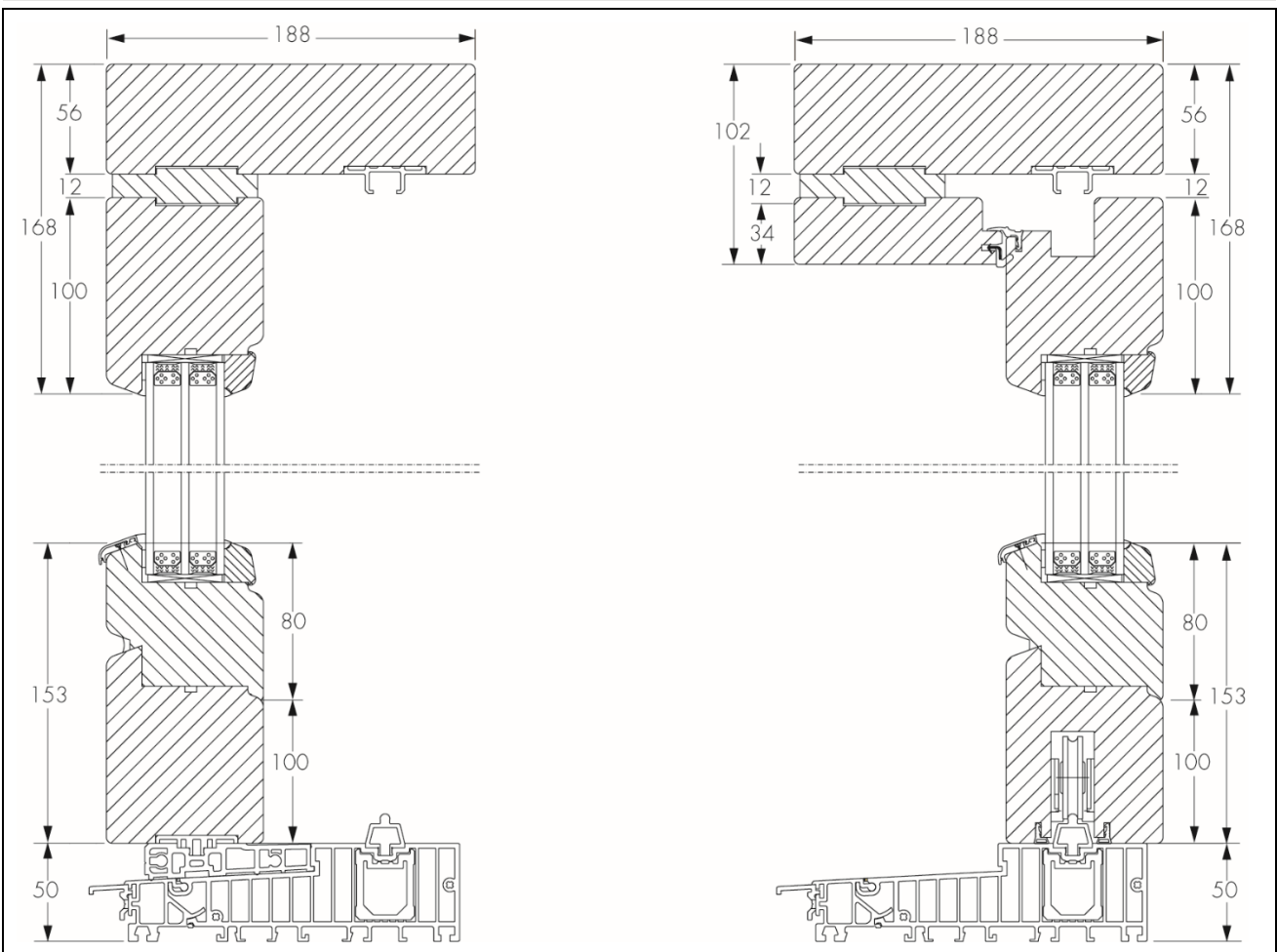


Figure 2 THERMO HS ALU lift/slide door vertical section (dimensions in mm)

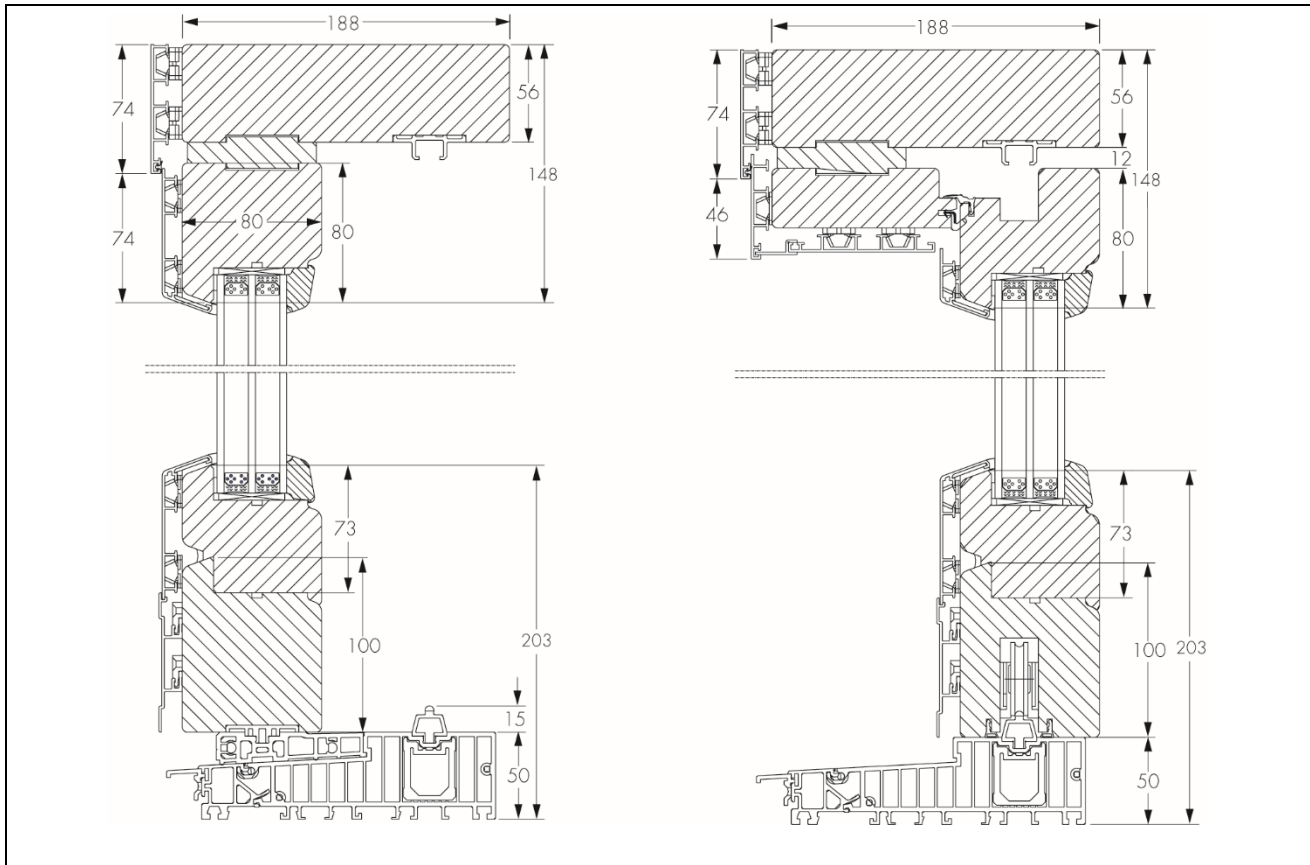


Table 1 Size restriction

	Dimension (mm)	
	Width	Height
Glazed lift/slide doors Maximum overall size <sup>(1)</sup>	4000	2800

(1) Maximum weight of sliding leaf = 400 kg

1.3 The doors are glazed with internal timber glazing beads and are available in the same range of approved colours.

1.4 Framing members comprise profiled pine or oak sections. The timber is coated with an aqueous wood preservative in accordance with BS EN 335 : 2013 and a liquid-applied coloured coating. The THERMO HS ALU frames are supplied with polyester powder-coated aluminium cladding on the external face (see Figure 2).

#### Furniture and fittings

1.5 The door leaves have two low-friction rollers fitted at the end of each bottom rail.

1.6 The doors are secured with a multi-point locking mechanism, comprising slots in the door leaf that locate into locking cams fitted to the frame. As the sliding leaf is operated by the handle in the open/close operation the sliding leaf drops into the closed position engaging the locking cams into the locking slots. An internal cylinder then locks the leaf into position with a key.

#### Glazing

1.7 The doors are supplied factory-glazed using sealed double- or triple-glazed units<sup>(1)</sup>. The glass thicknesses are in accordance with BS 6262-1 : 2017 or, if required by the national Building Regulations, the glazing units are supplied with toughened or laminated glass in accordance with BS EN 12600 : 2002. All glass used is safety glass and is positioned by polyethylene setting blocks and packing pieces.

(1) Glass units were not tested and are outside the scope of this Certificate.



1.8 The glazing units must satisfy the requirements of BS EN 1279-2 : 2018 and (if relevant) BS EN 1279-3 : 2018.

1.9 NHBC requires<sup>(1)</sup> that compliance to the Standards referred to in sections 1.7 and 1.8 of this Certificate is confirmed by an appropriate independent technical approvals authority.

(1) *NHBC Standards 2019, Chapter 6.7.7 Glazing, Insulating Glass Units.*

### **Weatherstripping and gaskets**

1.10 Silicone weatherstripping is located in grooves around the periphery of the door leaf.

1.11 Lift/slide doors are fitted with an EPDM gasket between the frame and the double- or triple-glazed unit. The glazing unit is secured by an internal timber bead.

## **2 Manufacture**

2.1 The door framing members are profiled from pine or oak. After machining, each timber component is coated with an aqueous timber preservative to BS EN 335 : 2013 and a factory applied polyester-powder coating. Doors with or without aluminium cladding can be supplied in colours according to the RAL, NCS opaque colour scale.

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 Inwido Production S.A. has been assessed and registered as meeting the requirements of EN ISO 9001 : 2015 (Certificate 04 100 980055) by TUV NORD CERT GmbH.

## **3 Delivery and site handling**

3.1 The doors are delivered to site glazed. The doors are generally transported complete but can be delivered in separate leaves for assembly on site. During transportation, the leaves are suitably protected to avoid damage.

3.2 The doors should be stored under cover in a clean area, on edge and suitably supported to avoid distortion or damage in accordance with the Certificate holder's recommendations.

3.3 The weight of the frame and of the leaves can be obtained from the Certificate holder. The lifting of the sliding leaf/door requires at least two people.

## **Assessment and Technical Investigations**

The following is a summary of the assessment and technical investigations carried out on the THERMO HS and THERMO HS ALU timber lift/slide door systems.

## **Design Considerations**

## **4 Use**

The THERMO HS and THERMO HS ALU timber lift/slide door systems are satisfactory for use in non-loadbearing applications where doors are installed into the external walls of new and existing dwellings, light commercial premises and similar habitable applications, as secondary access doors.

## 5 Practicability of installation

The systems are designed to be installed by a competent general builder, or a contractor, experienced with these types of systems.

## 6 Thermal transmittance



6.1 The following aluminium-clad THERMO HS ALU timber lift/slide door, 2180 mm high by 2000 mm wide, achieved a U value of  $1.0 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$  when calculated in accordance with BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017:

- 4/14/4/14/4 triple-glazed unit
- 14 mm argon-filled cavities (90%)
- external pane: 4 mm float glass with a low-E coating ( $\epsilon$ ) of 0.05, on face 2
- centre pane: 4 mm float glass
- internal pane: 4 mm float glass with a low-E coating ( $\epsilon$ ) of 0.05, on face 5
- spacer : TGI Spacer M.

6.2 The overall thermal insulation of the door will be dependent on the performance of the double- or triple-glazed units. For units other than that 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 : 2017 and BS EN ISO 10077-2 : 2017, should be used in preference.

6.3 Design U values are detailed in the documents supporting the national Building Regulations.

## 7 Weathertightness

7.1 Selected samples from the range were tested in accordance with BS EN 14351-1 : 2006 BS EN 1026 : 2016, BS EN 1027 : 2016 and BS EN 12211 : 2016, and are suitable for use as indicated in Table 2 of this Certificate. The classifications are based on the assumption that the outer frame is supported on all four sides in accordance with the Certificate holder's instructions. If classification of a door not covered within Table 2 is required, it should be tested in accordance with BS EN 14351-1 : 2006.



7.2 The classifications in Table 2 can be used to determine suitability when selecting exposure category, in conjunction with Annex A of BS 6375-1 : 2015.

Table 2 Indicative weathertightness classifications

	Classification according to:			UK exposure category to (BS 6375-1 : 2015)
	Resistance to wind loading (BS EN 12210 : 2016)	Watertightness (BS EN 12208 : 2000)	Air permeability (BS EN 12207 : 2016)	
Lift/slide door up to maximum size <sup>(1)</sup>	Class C5 (2000 Pa)	Class 9A (600 Pa)	Class 4* (600 Pa)	2000

(1) The width of the test sample was restricted by test rig size.

7.3 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 199 mm for aluminium-clad timber, or 190 mm for timber frames, from half the overall width, and 185 mm for aluminium-clad timber and 167 mm for timber frames from the height of the sliding leaf.



8.2 The background ventilation requirements of the documents supporting the various national Building Regulations can be satisfied by the incorporation in the lift/slide door of a suitably sized trickle ventilator<sup>(1)</sup>.

(1) Outside the scope of this Certificate.

## 9 Unauthorised access

9.1 The doors (fitted with locking mechanisms and features as described in section 1.6) when fastened in the closed position, cannot be opened by manipulation from the outside (for example, by the insertion of a thin blade) and can contribute to offering security against intrusion.

9.2 The doors 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 2019, Part 6.7.8 Doors, windows and glazing*.



9.3 The doors described in the Enhanced Security Sheet ES1 for this Product Sheet have been tested in accordance with PAS 24 : 2016, Annexes A and B, and can contribute to satisfying the regulatory requirements for unauthorised access in new dwellings in England and Wales and new and existing dwellings in Scotland.

9.4 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.

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

9.6 Anti-lift devices are fitted to the top of the sliding door leaf.

## 10 Glass area



The approximate unobstructed glass area of the doors is determined by deducting from the overall width and height the appropriate profile dimensions. Typical profile dimensions can be obtained from the Certificate holder. Alternatively, the glazed area of the door can be measured.

## 11 Condensation risk



11.1 In normal domestic or similar applications, the doors will not constitute a significant condensation risk when correctly installed.

11.2 Guidance on 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.

## 12 Safety



12.1 The doors are fitted with safety glass complying with BS EN 12600 : 2002 and, therefore, satisfy the safety recommendations given in BS 6262-4 : 2018<sup>(1)</sup>.

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

12.2 In buildings other than dwellings, the glazing must incorporate features that make it apparent and therefore prevent people who are unaware of the doors or who are visually impaired, from colliding with the glass.

12.3 The doors do not have an established fire-resistance rating and should not be used where fire-resistance requirements apply.



12.4 When the door is 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; a thumb-turn option is available from the Certificate holder that satisfies this requirement.

## 13 Resistance to impact

Without considering the glass, lift/slide doors will be unaffected by the soft or hard body impacts likely to be encountered in dwellings or similar applications.

## 14 Ease of operation

14.1 The doors achieve Class 2 — Light duty when classified according to BS EN 12400 : 2002.

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

## 15 Maintenance



15.1 The doors can be re-glazed and the flexible 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.

15.2 If the gasket of the glazing bead is damaged (for example, during re-glazing), it can be replaced. This operation should be carried out by specialist operatives using materials recommended by the Certificate holder and approved by the BBA.

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

15.4 The rollers, handle, locking mechanism and lower track should be cleaned and lubricated periodically in accordance with the Certificate holder's instructions to minimise wear and to ensure smooth operation. More frequent lubrication may be required depending on the environmental conditions.

15.5 The seal to the building structure will need to be replaced within the life of the door.

15.6 The coloured coating can be cleaned using a soft sponge and soapy water. Solvent-based, corrosive or abrasive cleaners must not be used. If dirt is allowed to build up on the coating over long periods, it may become more difficult to restore the surface appearance.

15.7 If damage occurs to the coating, repairs should be carried out as described in the Certificate holder's instructions, using paints<sup>(1)</sup> as recommended by the Certificate holder.

(1) Outside the scope of this Certificate.

## 16 Durability



16.1 The doors will continue to function satisfactorily for a period in excess of 25 years subject to the necessary maintenance being performed (as described in section 15 of this Certificate).

16.2 Fittings, including the locking mechanism, rollers and operating handles, as described in this Certificate, may have to be replaced within the life of the doors, particularly when exposed to aggressive environments, such as coastal or industrial locations.



16.3 The gaskets, weatherstripping and fittings may need to be replaced within the life of the door.

16.4 The liquid-applied coating system used on the Thermo HS lift/slide door system has a good chemical resistance and colour stability and will retain its appearance for at least 10 years. The coating adheres well to the substrate and will retain its integrity for a similar period. The coating system used on timber surfaces has good chemical resistance and colour stability. However, the coating may need to be repainted within this period using paints <sup>(1)</sup> recommended by the Certificate holder.

(1) Outside the scope of this Certificate.

16.5 Over time, some slight colour change or surface dulling of the coatings may occur, but this will be uniform over the visible surfaces of the doors.

## 17 Re-use and recyclability

The timber frame members and aluminium cladding sections of the systems can be recycled.

## Installation

## 18 General

18.1 The THERMO HS and THERMO HS ALU timber lift/slide door systems must be fixed into the opening in accordance with the recommendations of BS 8213-4 : 2016, the Certificate holder's installation guide and this Certificate, using proprietary expanding anchors through the frame or galvanized steel fixing lugs.

18.2 Openings in new walls should be formed, making suitable allowances for fitting tolerances. As details may vary depending on the type of construction employed, tolerances should be discussed with the Certificate holder prior to establishing the manufacturing dimensions for the door. Doors should not be built-in at the construction stage.

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

18.4 The lifting of the sliding leaf must be carried out by at least two people.

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

18.6 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](http://www.bbacerts.co.uk)).

## 19 Procedure

19.1 After checking the dimensions of the doorset, the sliding leaf is lifted off its track and the frame positioned into the opening using fixing screws as recommended by the Certificate holder. The frame is fastened first at the fixed side at the top and bottom, and then the opening side.

19.2 The sliding leaf is lifted and into the frame and the door operation checked.

19.3 The installation is completed by spraying all surfaces with water and applying a low-expansion polyurethane foam in the gap between the wall and the door frame, whilst ensuring that the door frame is braced to resist overexpansion of the foam. This is followed by application of a silicone sealant to the door/wall junction as required.

## Technical Investigations

## 20 Tests

20.1 Tests were carried out on the THERMO HS and THERMO HS ALU timber lift/slide doors to determine:

- operating forces
- air permeability

- watertightness
- wind load resistance
- resistance to vertical load
- resistance to static torsion
- resistance to soft and heavy body impact
- resistance to hard body impact
- cyclic operation
- basic security
- enhanced security.

20.2 The durability of the painted coating and the timber frame sections was tested to determine:

- colourfastness and gloss after UV ageing
- fungal growth
- taber abrasion
- coating thickness
- cross-cut adhesion.

20.3 Additional test work in accordance with BS EN 1670 : 2007, BS EN ISO 2409 : 2013 and BS EN ISO 4892-3 : 2016 was carried out on the door hardware to determine:

- resistance to salt-spray corrosion
- cross-cut adhesion
- appearance after UV ageing.

## 21 Investigations

21.1 The thermal transmittance value of a lift/slide door was calculated in accordance with BS EN ISO 10077-1 : 2017 and BS EN ISO 10077-2 : 2017.

21.2 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

BRE Report BR 262 : 2002 *Thermal insulation : avoiding risks*

BS 6262-1 : 2017 *Glazing for buildings — General methodology for the selection of glazing*

BS 6262-4 : 2018 *Glazing for buildings — Code of practice for safety related to human impact*

BS 6375-1 : 2015 + A1 : 2016 *Performance of windows and doors — Classification for weathertightness and guidance on selection and specification*

BS 6375-3 : 2009 *Performance of windows and doors — Classification for additional performance characteristics and guidance on selection and specification*

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

BS EN 335 : 2013 *Durability of wood and wood-based products — Use classes: definitions, application to solid wood and wood-based products*

BS EN 1026 : 2016 *Windows and doors — Air permeability — Test method*

BS EN 1027 : 2016 *Windows and doors — Watertightness — Test method*

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

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

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

BS EN 12207 : 2016 *Windows and doors — Air permeability — Classification*

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

BS EN 12210 : 2016 *Windows and doors — Resistance to wind load — Classification*

BS EN 12211 : 2016 *Windows and doors — Resistance to wind load — Test method*

BS EN 12400 : 2002 *Windows and pedestrian doors — Mechanical durability — Requirements and classification*

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

BS EN 14351-1 : 2006 + A2 : 2016 *Windows and doors — Product standard, performance characteristics — Windows and external pedestrian doorsets*

BS EN ISO 2409 : 2013 *Paints and varnishes — Cross-cut test*

BS EN ISO 4892-3 : 2016 *Plastics — Methods of exposure to laboratory light sources — Fluorescent UV lamps*

BS EN ISO 10077-1 : 2017 *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — General*

BS EN ISO 10077-2 : 2017 *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*

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

PAS 24 : 2016 *Enhanced security performance requirements for doorsets and windows in the UK — Doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk*

TSO 2002 : *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*

### 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 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.

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.

22.5 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.