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Agrément Certificate
07/4476
Product Sheet 4

NORDAN TIMBER DOOR RANGE

NTECH SECURITY ENTRANCE DOORSETS

This Agrément Certificate Product Sheet⁽¹⁾ relates to the NTech Security Entrance Doorsets, single-leaf inward and outward opening doorsets for use as primary access doors in new and existing dwellings or similar habitable applications. The doors are also suitable for external use in light commercial 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 properties — doors from within the range can contribute to meeting the national Building Regulations (see section 6).

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

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

Access — doors fitted with a low threshold that have an appropriate clear opening width will satisfy the requirements of the national Building Regulations (see section 11).

Durability — the doorsets will continue to function satisfactorily for a period in excess of 25 years subject to the necessary maintenance (see sections 17 and 18).

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: 9 May 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

Certificate amended on 5 August 2019 to update British 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
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.
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, NTech Security Entrance Doorsets, 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 doors have adequate resistance to the ingress of rain and wind-driven spray and so can contribute towards satisfying this Requirement. See section 7.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The doors 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 doors can contribute to natural purge ventilation. See section 8.1 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:	L1(a)(i)	Conservation of fuel and power
Comment:		The doors can contribute to satisfying this Requirement. See sections 6.1 to 6.3 of this Certificate.
Requirement:	M4(1)	Visitable dwelling – Access and use [applicable to England (dwellings only)]
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement subject to the required clear opening width. See section 11 of this Certificate.
Requirement:	M4(2)	Accessible and adaptable dwellings (optional requirement) [applicable to England (dwellings only)]
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement subject to the required clear opening width. See section 11 of this Certificate.
Requirement:	M4(3)	Wheelchair user dwellings (optional requirement) [applicable to England (dwellings only)]
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement subject to the required clear opening width. See section 11 of this Certificate.
Requirement:	M1	Access and use [applicable to Wales and England (buildings other than dwellings)]
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement subject to the required clear opening width. See section 11 of this Certificate.
Requirement:	M2	Access to extensions to buildings other than dwellings (applicable to Wales and England)
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Requirement subject to the required clear opening width. See section 11 of this Certificate.
Requirement:	Q1	Unauthorised access (applicable to England only)
Comment:		The doors, as described in the Enhanced Security Sheet (ES4) for Product Sheet 4, can satisfy this Requirement for new dwellings (see section 9.1 of this Certificate).

Requirement:		Materials and workmanship
Comment:	7	The doors are acceptable. See sections 18.1 to 18.4 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 (applicable to England only)
Regulation:	26A	Primary energy consumption rates for new buildings (applicable to Wales only)
Regulation:	26B	Fabric performance values for new dwellings (applicable to Wales only)
Comment:		The doors can contribute to satisfying these Regulations. See sections 6.2 and 6.3 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The doors satisfy the requirements of this Regulation. See sections 17.1 to 17.3 and 18.1 to 18.4 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	2.9	Escape
Comment:		Doors fitted with a thumb-turn lock can satisfy this Standard with reference to clause 2.9.18 ⁽²⁾ . See section 13.2 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The doors have 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⁾⁽²⁾ . See section 7.1 of this Certificate.
Standard:	3.14	Ventilation
Comment:		The doors 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:	3.15	Condensation
Comment:		The doors will not constitute a significant condensation risk and so can contribute towards 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:	3.16	Natural lighting
Comment:		In calculating the contribution of the doors to natural lighting, with reference to clause 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:	4.1	Access to buildings
Comment:		Doors fitted with accessible (low) thresholds will contribute to satisfying this Standard subject to the required clear opening width with reference to clauses 4.1.7 ⁽¹⁾⁽²⁾ and 4.1.9 ⁽¹⁾⁽²⁾ . See section 11 of this Certificate.
Standard:	4.8(a)(b)	Danger from accidents
Comment:		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:	4.13	Security
Comment:		The doors, as described in the additional Enhanced Security Sheet (ES4) for Product Sheet 4, can satisfy this Standard with reference to clause 4.13.1 (c) ⁽¹⁾ . See section 9.2 of this Certificate.
Standard:	6.1(b)	Carbon dioxide emissions
Standard:	6.2	Building insulation envelope
Comment:		The doors 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 to 6.3 of this Certificate.

Standard: 7.1(a)(b) **Statement of sustainability**
Comment: The system can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the system can contribute to a construction meeting a higher level of sustainability as defined in this Standard, with reference to clauses 7.1.4⁽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 to 6.3 of this Certificate.

Regulation: 12 **Building standards applicable to conversions**
Comment: All comments given for the system under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1⁽¹⁾ and Schedule 6⁽¹⁾.

(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 doors are acceptable. See sections 18.1 to 18.4 and the *Installation* 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 satisfying this Regulation. See section 7.1 of this Certificate.

Regulation: 33 **Means of escape**
Doors fitted with a thumb-turn lock can contribute to satisfying this Regulation with reference to Technical Booklet E, clause 2.87. See section 13.2 of this Certificate.

Regulation: 39(a)(i) **Conservation measures**
Regulation: 40(2) **Target carbon dioxide emission rate**
Comment: The doors can contribute to satisfying these Regulations. See sections 6.1 to 6.3 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 subject to the required clear opening width. 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) 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: 3 *Delivery and site handling* (3.3) and 13 *Safety* (13.3) of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, NTech Security Entrance Doorsets, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards, Part 6.7 Doors, windows and glazing*.

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 + A2 : 2016. An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 The NTech Security Entrance Doorsets (see Figure 1) comprise single-leaf inward and outward opening doorsets and are supplied painted with a polyurethane coating in any standard RAL colour.

1.2 The doorsets are mechanically jointed to the timber frame, and are subject to the size restrictions given in Table 1.

Table 1 Size restriction of doorsets (with or without glazing)

	Dimension (mm)	
	Width	Height
Maximum overall size	1088	2388

1.3 The doorsets are provided with an aluminium low threshold, to provide access according to the national Building Regulations (see Figure 5 and section 11.1 of this Certificate).

1.4 When glazed, the doorsets are internally glazed with timber glazing beads available in the same range of standard RAL colours.

1.5 The doorsets are available in a range of glazing styles (see Figure 1).

1.6 Framing members comprise profiled, North European Redwood sections formed by cutting the required profiles from engineered timber. The timber is preservative treated using a vacuum-impregnation technique to BS EN 351-1:2007.

1.7 When glazed, doorsets are factory-glazed using sealed double-glazed units⁽¹⁾ (see Figures 2 and 3).

(1) Outside the scope of this Certificate

Figure 1 Examples of glazing styles



Alnwick



Balmoral



Buckingham



Trafalgar



Windsor

Figure 2 Typical vertical section

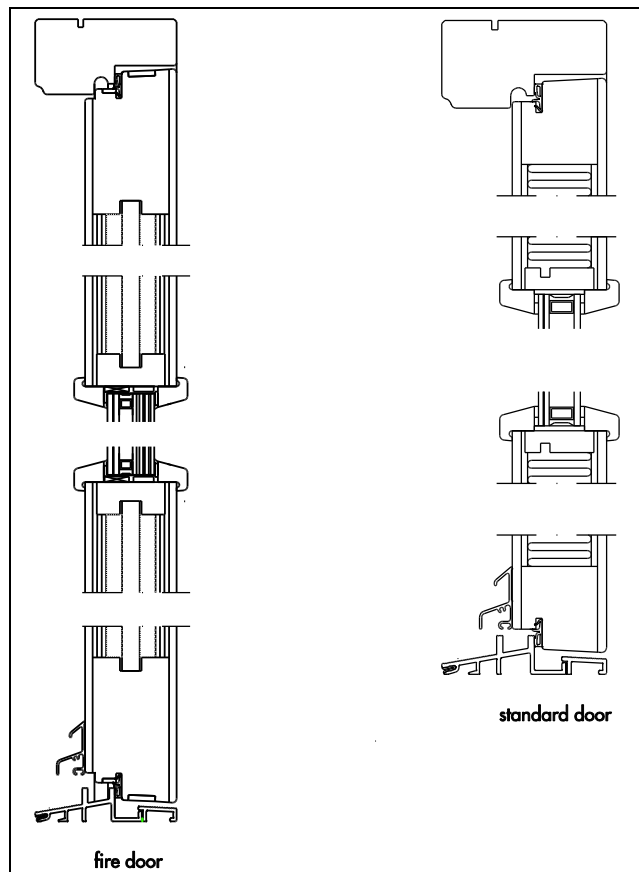
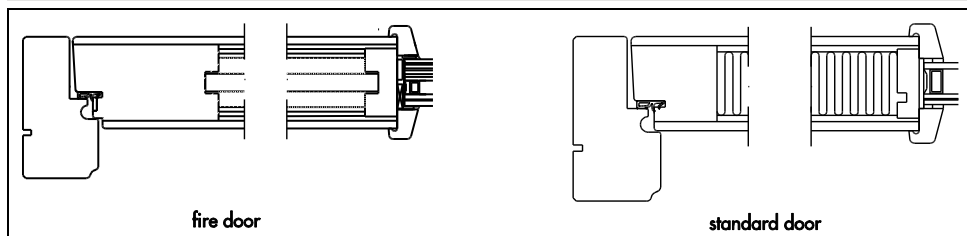


Figure 3 Typical horizontal section



Furniture and fittings

1.8 All doors covered by this Certificate are hung on three rising butt hinges, each fixed to the frame and door leaf with corrosion-resistant security screws and an allen bolt.

1.9 Doors are secured by a multi-point lock available as an autolock or manual lock. The autolock features a pressure-sensitive latch that operates hookbolts when the door is closed. The manual lock is operated by a lever-type handle and features the same hookbolts engaging into striker keeps screwed into the frame. Each lock features a central deadlock operated by a cylinder engaging into a central latch/deadbolt keep screwed to the frame.

1.10 Handles are available with a satin chrome anodised alloy finish and feature a security cowl for the cylinder.

1.11 The doorsets can be supplied with a letterplate; the weathertightness of such doors has been assessed.

Glazing and panelling

1.12 Glazed units⁽¹⁾ are sealed into the timber leaf using a polyurethane adhesive sealant and internally beaded using a timber glazing bead secured into place with security screws.

(1) Outside the scope of this Certificate

1.13 The doors are available with a choice of glazing options (see Figure 1), ranging from half-glazed to fully panelled. Where glass is to be used, doors are supplied factory-glazed as standard, using sealed 28 mm double-glazed units in accordance with BS 6262-1 : 2005 or, if required by the national Building Regulations, with toughened or laminated glass in accordance with BS EN 12600 : 2002. Glass is positioned using polyethylene setting blocks and packing pieces.

1.14 Insulated timber panels consist of painted, heavy duty High Density Fibreboard (HDF) as the external face, two sheets of aluminium, an insulation central core consisting of a timber frame with expanded polystyrene (EPS) foam insulation inserted between framing members, and an interior face of heavy-duty HDF or timber-veneered plywood (see Figure 4).

1.15 All glazing is argon-filled, with a warm-edge spacer bar and low emissivity glass.

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

1.17 NHBC requires⁽¹⁾ that compliance to the standards referred to in sections 1.13 and 1.16 of this Certificate is confirmed by an appropriate independent technical approvals authority.

(1) *NHBC Standards 2018, Chapter 6.7.7 Glazing, Insulating Glass Units.*

Figure 4 Insulation panel central core



Weatherstripping and gaskets

1.18 Silicone weatherstripping is located in grooves around the periphery of the door leaf and the fixed frame.

1.19 The doors are fitted with silicone gaskets between the frame and the double-glazed unit. The unit is secured by timber glazing beads with an integral EPDM gasket forcing the glass against the internally fitted gasket.

1.20 Timber glazing beads are polyester-powder-coated to match the coloured door leaf. Timber glazing beads are factory-finished-painted in any standard RAL colour.

2 Manufacture

2.1 The doors are manufactured by NorDan Sp. Z o.o., ul. Powodowo 54, 64-200 Wolsztyn, Poland.

2.2 The door outer frame members are profiled from North European Redwood. After all machining has taken place, each wooden component is treated with a vacuum-impregnation preservative to BS EN 351-1 : 2007. Doors are supplied with a polyurethane coating in colours according to standard RAL colour scales.

2.3 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.

2.4 The management system of NorDan Sp. Z o.o., has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by NEMKO (Certificate 800003).

3 Delivery and site handling

3.1 The doorsets are delivered to site fully glazed. For transportation they are suitably protected to avoid damage, and packed onto pallets which are bound with plastic binding straps. Care must be taken during all handling processes to avoid the risk of damage. Each door is marked with the customer's reference, production serial number and glass size and make-up for easy identification on site.

3.2 The doorsets should be stored in accordance with the Certificate holder's recommendations.

3.3 The weight of the door 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 NTech Security Entrance Doorsets.

Design Considerations

4 Use

NTech Security Entrance Doorsets are satisfactory for use as primary access doors in non-loadbearing applications where doors are installed vertically into the external walls of buildings as primary access doors, in new and existing dwellings, light commercial premises or similar habitable applications.

5 Practicability of installation

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

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

6 Thermal properties



6.1 When considering doorset requirements, designers should refer to the detailed guidance contained in the documents supporting the national Building Regulations. The U value derived in accordance with 6.2 of this Certificate indicates that typical design U values referred to in those supporting documents can be met.

6.2 The thermal transmittance value (U value) of a single-leaf NTech Security Entrance door, 1230 mm wide by 2180 mm high, achieved a U value (U_w) of $1.1 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$ when calculated by computer simulation in accordance with BS EN ISO 10077-2 : 2017. The door featured an upper-glazed section consisting of a 26.8 mm double-glazed unit with laminated safety glass as the outer pane, 90% argon, Chromatech Ultra F spacer bar, low emissivity (0.01 emissivity) glass as the inner pane and a lower panelled section consisting of a 40.6 mm expanded polystyrene insulation ($\lambda = 0.04 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$), sandwiched between 5.7 mm plywood veneer panels ($\lambda = 0.13 \text{ W}\cdot\text{m}^{-2}\cdot\text{K}^{-1}$) incorporating a 0.3 mm aluminium skin.

6.3 The overall thermal insulation of a door will be dependent on the performance of the double-glazed units, when fitted. For units other than those described above, the indicative U values shown in SAP 2009 *The Government's Standard Assessment Procedure for Energy Rating of Dwellings*, Table 6e can be used. When available, a certified U value by measurement to BS EN ISO 12567-1 : 2010, or by calculation to BS EN ISO 10077-1 : 2017 or BS EN ISO 10077-2 : 2017, should be used in preference.

7 Weathertightness



7.1 Selected samples of the doors were tested in accordance with BS EN 14351-1 : 2006 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 in Table 2 is required, it should be tested in accordance with BS EN 14351-1 : 2006.

Table 2 Weathertightness classifications

	Tested according to BS EN 14351-1 : 2006 Classification according to:			
	Resistance to wind load BS EN 12210	Watertightness BS EN 12208	Air permeability BS EN 12207	Overall UK exposure category (BS 6375-1)
Single-leaf doors up to maximum size (with letterplate)	Class CE2400 * (2400Pa)	Class 4A * (150Pa)	Class 4 * (600Pa)	1200
Single-leaf doors up to maximum size (without letterplate) latched and unlocked	Class CE2400 * (2400Pa)	Class E1200 (1200Pa)	Class 4 * (600Pa)	1200
Single-leaf doors up to maximum size (without letterplate) locked	Class CE2400 * (2400Pa)	Class E2400 (2400Pa)	Class 4 * (600Pa)	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 81 mm from the height and 112 mm from the width, for single-leaf doors.

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 Doors as described in the Enhanced Security Sheet (ES4) for Product Sheet 4 have been tested in accordance with PAS 24 : 2016, Annexes A and B, and can contribute to preventing unauthorised access to new dwellings.



9.2 Doors as described in the Enhanced Security Sheet (ES4) for Product Sheet 4 have been tested in accordance with PAS 24 : 2016, Annexes A and B, and can contribute to preventing unauthorised access to dwellings.

9.3 Doors are fitted with the locking mechanisms and features described in sections 1.9 and 1.10 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 2018, Part 6.7 Doors, windows and glazing*.

9.4 Attention should be paid to the 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 the outside is extremely difficult, as all beads are fitted internally.

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.

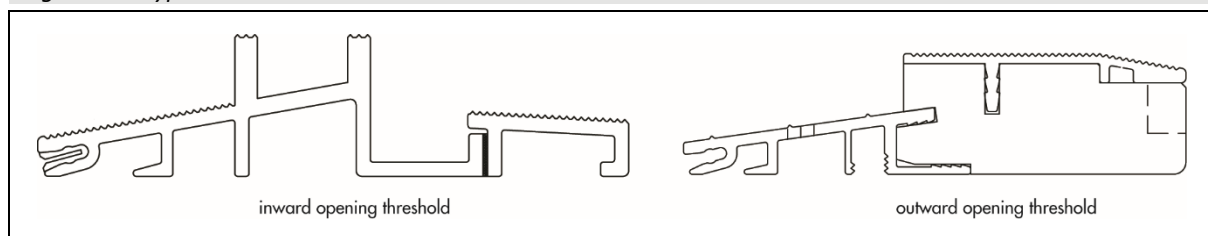
11 Access



11.1 Doors are fitted with an aluminium low threshold designed to meet the requirements of the relevant national Building Regulations when suitably installed (see Figure 5).

11.2 When an external residential door has the minimum required clear opening width according to the documents supporting the national Building Regulations, it will provide access for all persons, including those with disabilities.

Figure 5 — typical aluminium low-threshold section



12 Condensation risk



12.1 In normal domestic or similar applications, timber 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 Glazed doors, where required, are fitted 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 glazing.



13.2 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. H1 NTech Security Entrance Doorsets are fitted with a key/thumbturn cylinder which allow this escape.

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

14 Resistance to impact

14.1 The doorsets will be unaffected by the soft 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 normally cause damage to the door leaf or frame.

15 Performance in relation to fire

15.1 The fire resistance of an NTech Security Entrance door up to maximum size according to BS EN 1634-1 : 2014 is defined in Table 3. Details of doors tested can be found in Test reports LBO-939/17E and LBO-940/17E copies of which can be obtained from the Certificate holder.

Table 3 Fire resistance classification according to BS EN 1634-1 : 2014

Door type	Classification
H1 inward opening NTech Security Entrance door (glazed) with letterplate	Class EI ₁ 30
H1 inward opening NTech Security Entrance door (unglazed) with spy-hole	Class EI ₁ 45

16 Ease of operation

The doors can be operated without difficulty when correctly installed.

17 Maintenance



17.1 The doors can be re-glazed and the gaskets and weatherstripping replaced. Should damage occur to the glazing unit, the damaged unit should be removed by cutting through the polyurethane adhesive sealant with a sharp knife. This process should only be carried out by specialist operatives using the materials recommended by the Certificate holder and approved by the BBA. Details of replacement units are available from the Certificate holder.

17.2 If the gasket is damaged on a glazing bead, for example during re-glazing, the gasket may be replaced. Replacements are available from the Certificate holder. This operation should be carried out by specialist operatives using the materials recommended by the Certificate holder and approved by the BBA.

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

17.4 The 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.

17.5 If damage occurs to the coating, repairs should be carried out as described in the Certificate holder's instructions, using paints as recommended by the Certificate holder.

17.6 The handle, hinges and locking system should be periodically cleaned and lubricated in accordance with the manufacturer's instructions to minimise wear and to ensure smooth operation. More frequent lubrication may be required depending on the environmental conditions.

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

18 Durability



18.1 The timber doorsets will continue to function satisfactorily for a period in excess of 25 years subject to necessary maintenance (as described in section 17 of this Certificate).

18.2 The timber members of the frame are preservative pre-treated with an effective fungicide to BS EN 351-1 : 2007.

18.3 Fittings, including the locking mechanism 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 replacement of fittings may be necessary within the life of the door.

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

18.5 The coloured coating system on the timber surfaces has good chemical resistance and colour stability, and will retain its appearance for at least 10 years without redecoration.

18.6 Any slight colour change or surface dulling of the coating which might occur will be uniform over the visible surfaces of the doors.

19 Reuse and recyclability

The timber frame members, timber leaf panel and aluminium threshold and drip-trim can be recycled.

Installation

20 General

20.1 The NTech Security Entrance Doorsets must be fixed into the opening, in accordance with the Certificate holder's installation instructions and BS 8213-4 : 2016.

20.2 Openings in new walls should be formed using a suitable template, making 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.

20.3 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.

20.4 The provision of a cavity closer and/or cavity barrier around the door opening, prior to the installation, may be required.

21 Tests

21.1 Tests were carried out to determine:

- operating forces
- air permeability
- watertightness
- wind resistance
- resistance to vertical loads
- resistance to static torsion
- resistance to soft and heavy body impact
- resistance to hard body impact
- resistance to repeated opening and closing
- thermal cycling
- basic security
- effectiveness of wood preservation.

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

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

21.3 Tests to determine the durability of the coating were carried out including:

- Cross-cut adhesion
- Colour stability after UV ageing
- Water absorption.

22 Investigations

22.1 An assessment was made of tests carried out on doors, generally in accordance with BS EN 14351-1 : 2006.

22.2 The thermal transmittance value of a single-leaf NTech Security Entrance Doorset was determined using computer simulation in accordance with BS EN ISO 10077-2 : 2017.

22.3 An assessment was made of the fire resistance of NTech Security Entrance Doorset, generally in accordance with BS EN 1634-1 : 2014.

22.4 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

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- BS 8213-4 : 2016 *Windows and doors — Code of practice for the survey and installation of windows and external doorsets*
- BS EN 351-1 : 2007 *Durability of wood and wood-based products — Preservative-treated solid wood — Classification of preservative penetration and retention*
- BS EN 1279-2 : 2002 *Glass in building — Insulating glass units — Long term test method and requirements for moisture penetration*
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- BS EN 1634-1 : 2014 *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Fire resistance test for door and shutter assemblies and openable windows*
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- BS EN 14351-1 : 2006 + A2 : 2016 *Windows and doors — Product standard, performance characteristics — Windows and external pedestrian doorsets*
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- 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*
- BRE Report 262 : 2002 *Thermal insulation: avoiding risks*
- TSO 2002 *Limiting thermal bridging and air leakage : Robust construction details for dwellings and similar buildings*

23 Conditions

23.1 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
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23.2 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.

23.3 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.

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

23.5 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:

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