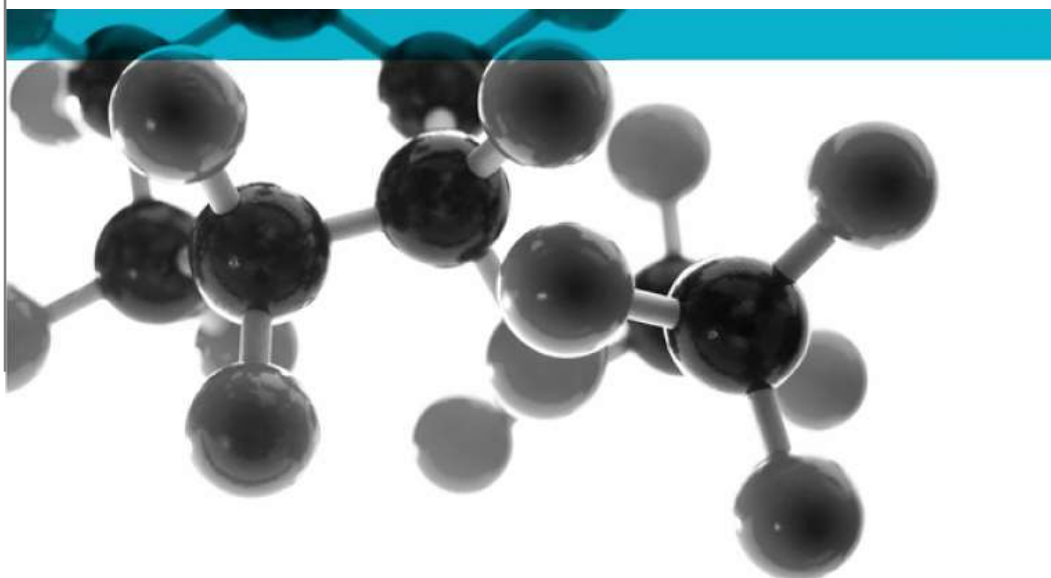


Testing, calibrating, advising.

EN 1634: 2004

Smoke control test for door and shutter assemblies



Test of: Single Leaf, Single Acting Timber Doorset

Sponsor: Future Products Ltd

Enterprise Road Millennium Business Park
Mansfield,
Nottinghamshire,
NG19 7JX

Document Reference: WYC404906

Date of Test: 24/09/18

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Results of Test:

WYC/404906

Future Products Ltd

Enterprise Road Millennium Business Park
Mansfield,
Nottinghamshire,
NG19 7JX

This document confirms that performance testing was conducted on 24th September 2018. Testing was conducted to BS EN 1634-3: 2004 Incorporating corrigendum no. 1 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 3: Smoke control test for door and shutter assemblies.

The following results were achieved:

Product tested	Single leaf, Single acting timber Doorset		
Test Detail	Latched with threshold not sealed		
Summary of testing procedure			Result
BS EN 1634-3: 2004	Pressure (Pa)	Leakage (m³/h)	Leakage (m³/m/h)
Results under positive chamber (door leaf opening away from chamber)	50	25.55	4.31
	25	16.92	2.85
	10	10.27	1.73
Results under negative chamber (door leaf opening away from chamber)	50	25.93	4.37
	25	14.54	2.45
	10	9.52	1.61

Testing was carried out at ambient temperature only: temperature of the test chamber was measured using a calibrated digital thermometer before and after testing. From approved document B Fire Safety, doors should have a leakage rate not exceeding 3m³/m/hour (head and jamb only) when tested at 25Pa.

The perimeter length of gap was 5.93

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1. Introduction

Performance testing to BS EN 1634-3:2004 incorporating corrigendum no. 1 was conducted on the doorset on 24th September 2018. The specimen was configured as a single leaf, single acting timber doorset. The specimen was installed opening out of the test chamber. In accordance with BS EN 1634-3: 2004 section 10.1.1, the leaf was pre-cycled before the smoke leakage test (See section 5.1 for further details).

2. Specimen verification

The specimen was delivered to Exova on 18th September 2018. The component parts of the specimen were identified based on nominal information provided by the sponsor. These details are outlined in the specimen construction section of this report (section 4).

2.1. Conditioning

The specimen was made from hygroscopic materials and was conditioned for a minimum of 72 hours at an average temperature between 15°C - 25°C and 40% - 60% relative humidity.

2.2 Sampling

The relevant materials used in the construction of the doorset detailed in this report are held on file by Exova Warrington Certification under job ref. 404610.

3 Description of supporting construction

The partition was constructed of nominal 90mm x 45mm timber studs at 600mm centres with one layer of 12.5mm plasterboard on each face. The stud wall cavities were filled with 100mm thick Rockwool insulation and is taken to be of a standard wall construction.

The specimen was fixed to the supporting construction using 5mm x 150mm positioned 150mm from all vertical corners and 600mm centres.

4. Test Equipment

Description
Scientific Ambient Monitor
Tape measure
Callipers
Laminar Flow element:
Mass Flow Meter
Force Gauge

5. Description of Specimen Construction

The specimen was identified as a single leaf, single acting timber doorset. The overall frame dimensions were 1016mm wide by 2130mm high x 70mm deep. The leaf dimensions were 892mm wide by 2060mm high x 48mm thick. The specimen was latched with locks disengaged.

Door frame

	Manufacturer/Material/type/reference	Dimensions (mm)
Head and jambs	Liniair (Ref. LSW016W)* PVC-U profile	70 x 77
Reinforcement	Kerto* timber reinforcement insert	37 x 38
Rebate	Single type	57 x 24
Threshold	Stormguard (Ref. AM3EX)* aluminium threshold please confirm	80 x 20
Joints	Mitred with 2No. Steel "L" brackets – 70 x 70 and fixed with 4No. 4 x 25 screws per bracket	-

* Stated by sponsor, not verified by laboratory

Door Leaf

		Material/type/reference	Dimensions (mm)	Density (kg/m ³)
Core		Solid Kerto® cross bonded, veneered and laminated timber*	45	480-510#
Facings		PVC-U skin*	1.5	-
Lippings		ABS Edgebanding to all edges (Ref. 100.09125.66.52x2)*	2 thick	-
Adhesive	Facing	Tensorgrip L17 Hi-Temp contact spray adhesive 85Kg (Ref. DSJ41722G)*	-	-
	Core	Tensorgrip L17 Hi-Temp contact spray adhesive 85Kg (Ref. DSJ41722G)*	-	-
	Lipping	Tensorgrip L17 Hi-Temp contact spray adhesive 85Kg (Ref. DSJ41722G)*	-	-

* Stated by sponsor, not verified by laboratory #Nominal density

Hardware

	Material/type/reference	Size (mm)	Fixing details (dimensions in mm)
Hinges	3No. Union (Ref. JH603BUFR-M-BZP)* Steel butt hinges (positioned relative to the top edge of the door leaf at 175mm, 480mm and 1730mm)	100 x 35 x 3	5No. 4 x 40 screws into frame 5No. 4 x 40 screws into leaf
Locking mechanism	GU Secury automatic VDS Klasse A M101313* (See photo 2)	1770 x 20	10No. 4 x 40 screws
Centre keep	Gretsch Unitas– (Ref. IGU1005)* (Engage point relative to the top edge of the door leaf is 1055mm)	210 x 24	3No. 4 x 25 screws
Upper & lower keeps	Gretsch Unitas – (Ref. IGU1006)* (Engage points relative to the top edge of the door leaf are 260mm & 1845mm)	140 x 24	2No. 4 x 25 screws
Handle	ERA (Ref. 1D001)*	120 lever length	2No. M5 x 55 machine screws
Cylinder	Union (Ref. DCBSU3535DT)* With thumbturn	70 length	1No. M5 x 50 machine screw
Letterbox	ERA (Ref. 3C001)*	310 x 78	2No. M5 x 50 machine screws

* Stated by sponsor, not verified by laboratory

Intumescent and Perimeter sealing details

		Material/type/reference	Size (mm)	Location
Door Leaf Edges		None present	-	-
Frame reveal	Head & jambs	Linier extruded teardrop gasket	11 wide	On rebate upstand
		Linier (Ref. 138.017)* Brush seal (see photo 4)	12 wide	On rebate platform
		Pyroplex (Ref. 3008516)* Intumescent graphite to rebate platform (see Photos 3, 4 & 5)	15 x 2	On rebate platform
		Pyroplex (Ref. 8492-TH30)* Intumescent graphite to rebate platform (see Photos 3, 4 & 5)	10 x 2.5	On rebate platform
	Threshold	Fitted and supplied with Stormguard threshold	-	On rebate platform of threshold
		Fitted and supplied with Stormguard threshold	-	On rebate upstand of threshold

* Stated by sponsor, not verified by laboratory

Intumescent interruptions and additional hardware protection

	Make/type	Size (mm)	Location
Around hinges	Fully interrupts 15 x 2 intumescent and brush seal only	-	All hinges
Under hinge blade	Norseal 1mm Intumescent hinge pads (Ref. NOR910-100x30/R)* (See photo 7)	To fit hinge blades – 1mm thick	Adhered to the back of the hinge blade
Around centre lock/ latch body	Norseal (Ref. NOR910)*		To cheeks of latch body
Around top and bottom lock bodies	Norseal (Ref. NOR910)*		To cheeks of latch body (See photo 13)
Under locking mechanism	None fitted	-	-
Around keeps	Fully interrupts 15 x 2 intumescent and brush seal only	-	(See photo 3 & 4)
Under keeps	Norseal (Ref. INT(1)1000X500)* Intumescent	-	(See photo 8, 9 & 10)
Glass	Pyroplex (Ref. 3007501)* intumescent strip	15 x 2	Around the perimeter of glass
Letter plate	ERA (Ref. NX9B002)*	40 wide	Lining the outside perimeter of internal letter box body # (see photo 12)

* Stated by sponsor, not verified by laboratory

Glazing

	Make/type	Size (mm)	Location
Glass type	Pyrodur clear	7 thick	Internal face
	Steel spacer	14 thick	Fitted between the glass
	Laminated clear	6.8 thick	External face
Aperture size	-	1029 wide x 2146 high*	-
Sight size	-	525 wide x 885 high	-
Glass size	-	558 wide x 912 high	-
Expansion allowance	-	10 all round*	-
Beading (see photograph below)	ODL (Ref. TS02236WH)* cassette comprising: - Exposed bead - Inner frame - Unexposed bead	28 high x 48 deep (outer profile)	Fitted around the perimeter of the glass on both faces – inner frame screwed to unexposed face outer frame. Exposed face outer frame clipped to inner frame
Beading fixings	16No. ODL cassette screws*	4.3 x 48mm	In all corners and at 180mm centres*
Glazing clips	F1 Sheet metal - 28MM glazing clip Fixed with 1No. 4.3 x 25 screws*	28 wide*	125 from all corners*

* Stated by sponsor, not verified by laboratory

6. Pre-test measurements

6.1 Operational check

Operability test of 10 manual cycles was completed on the leaf in accordance with BS EN 1634-3: 2004 section 10.1.1.

Minimum angle of opening	30°
Number of operation cycles completed	10

6.2 Retention forces

Measured in accordance with BS EN 1634-3: 2004 section 10.1.2.

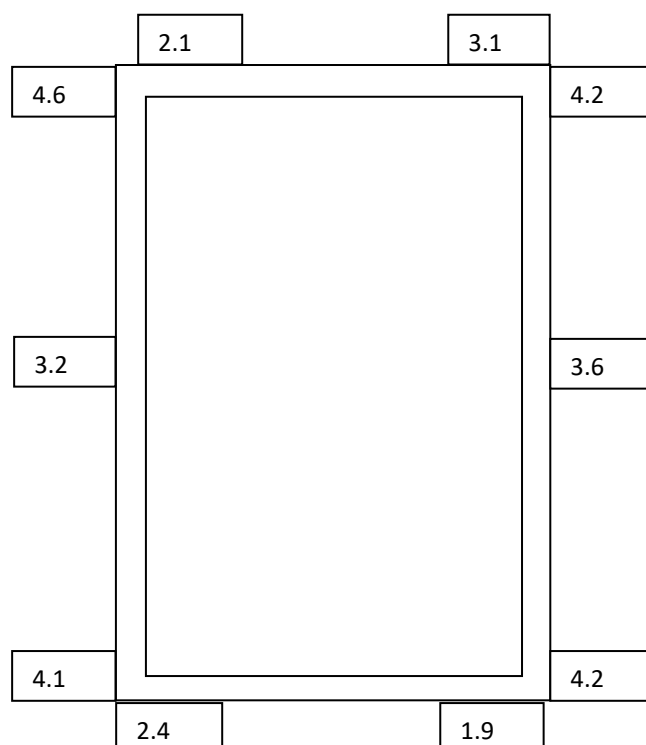
Opening Forces
47.3@ handle position

6.3 Leaf/frame gaps

The gaps were measured before testing commenced – See diagram below (Gaps were measured within 20mm from corners and at the centre of stiles) – All measurements given in mm.

Lock Side

Hinge side



Photos

1) Glazing sticker (details configuration)



2) Locking mechanism



3) Centre keep seal interruption



4) Top keep seal interruption
(identical to bottom keep)



5) Hinge blade seal interruption



6) Hinge



7) Hinge showing intumescent backing and fixings



8) Centre keep and fixings



**9) Centre latch/lock keep showing intumescent
Position**



**10) Top keep (identical to bottom keep)
showing intumescent**



**11) Top keep (identical to bottom keep)
Front view**



12) Letter box with intumescent surround



13) Intumescent to cheeks of lock body

