
Title:

To the principles of BS EN 1026:
2016: Windows and doors ð Air
permeability ð Test method

Single leaf, single acting access
panel

Product tested: 51-FR120S-MD-
PF-3WL-40A Access Panel

Date Of Test:

30/11/2023

Issue Date:

09/05/2024

WYC Report No:

WYC 538749/02

Prepared for:

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Quality Management

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1 Introduction

Performance testing to the principles of BS EN 1026:2016 on 30th November 2023 at Warringtonfire High Wycombe. The specimen was configured as a single leaf, single acting access panel.

2 Specimen verification

The doorset was delivered to the Warringtonfire smoke leakage laboratory on 30th November 2023. 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 5).

2.1 Conditioning

The specimen was made from non-hygroscopic materials and was conditioned for at least 2 hours at an average temperature between 10°C and 11°C. Relative humidity was between 40% and 42%.

2.2 Sampling

Warringtonfire was not involved in factory sampling of the products and materials used for the test specimen described in this report, and as such the results apply to the sample as received.

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 is taken to be of a standard wall construction.

The specimen was fixed with 6mm x 120mm multi-purpose steel screws at 330mm centres on the vertical & 250mm horizontal.

4 Test Equipment

The following test equipment was used during the testing of the specimen(s).

Description
Scientific Monitor
Tape Measure
Callipers
Laminar Flow element
Mass Flow Meter
Pressure Transducer
Force Gauge

5 Test Method

- Specimen Installed into aperture as per manufacturer's instructions.
- Pre-measurements are taken including overall dimensions, temperature, atmospheric pressure and relative humidity.
- Determine the leakage through the test chamber only. All areas of the specimen that can potentially leak to be taped up. Leakage is recorded for both positive and negative pressure at the required pressure differentials.
- Determine the leakage of test chamber and specimen. Tape is removed from specimen and leakage is recorded as above
- With all the above data recorded, the overall leakage of specimen (m^3/hr), leakage per specimen area ($\text{m}^3/\text{hr}/\text{m}^2$) and leakage per linear length ($\text{m}^3/\text{hr}/\text{m}$) can be calculated. See Appendix 1 for more detail

6 Specimen Construction

Overall Dimensions:

Frame: 950mm wide x 2450mm high x 74mm thick

Panel Leaf: 895mm wide x 2385mm high x 44mm thick

Panels

	Material/type	Dimensions (mm)	Density (kg/m^3)
Door Tray	Folded Zintec Steel*	1.2 thick*	1.2 thick*
Core	Acoustic matting self-adhered to door tray Custom Audio Designs IsoBase R50 Under Floor Resilient Layer*	5 thick*	32*
	Rockwool RW3 Semi Rigid Slab*	40 thick*	80*
	Siniat GTEC dB board fixed to door tray using 3.5 x 25mm Bright Zinc Plated (BZP) Countersunk Pozi Bugle Head Cross Recess Self Drilling Drywall Screws Fixed into Top hats*	12.5 thick*	880*
Core Retainer	None present	-	-
Joints	Welded	-	-

* As stated by sponsor, not checked by laboratory

Frame

	Material/type	Dimensions (mm)
Stiles and rails	1.5mm folded Zintec steel*	75 x 25*
Rebate	Single type	26 x 20*
Joints	Mitred and welded	-

* As stated by sponsor, not checked by laboratory

Hardware

	Make/type	Size (mm)	Fixing details (dimensions in mm)
Hinges	Bagshaw Engineering (Ref. HINGE-RF-R51) electroplated Rapid Fit Spring Hinge*	19.1 x 19.1 x 40	Welded
Locking mechanism	C.R.A International (Ref. 18732) Bright Zinc Plated Mild Steel 3 Point Locking Mechanism	162 x 16 with 18 stroke	Bolted on by 2No. M5 x 25 Bright Zinc Plated 8.8 High Tensile Steel Hexagon head Bolts
Bung & Collar	C.R.A International (Ref. 18820-WHT)*	19Ø	Push fit
Keeps	All keeps are cut outs in frame/leaf	-	-

* As stated by sponsor, not checked by laboratory

Perimeter Sealing Details

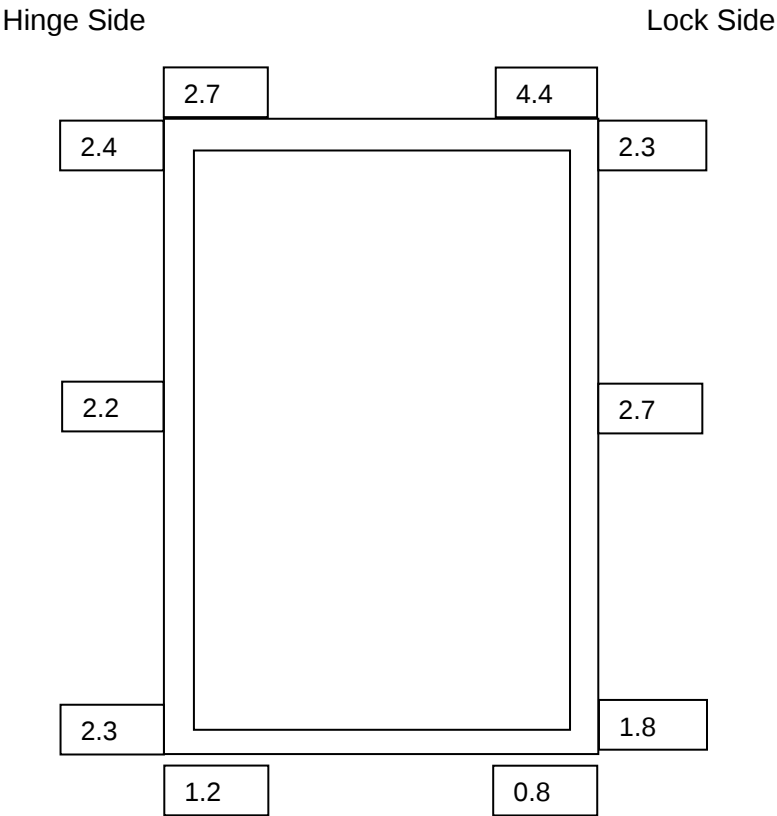
	Make/type	Size (mm)	Location
Door edges	1No. Envirograph G10/10 grey self-adhesive EPDM seal*	10 x 2*	Rebate platform
	1No. C.R.A International White 'P' Profile Compression Self Adhesive EDPM seal*	9 x 5.5*	Rebate platform
Frame reveal	None Present	-	-
Seal continuity	Uninterrupted by hardware	-	-

* As stated by sponsor, not checked by laboratory

7 Pre-test measurements

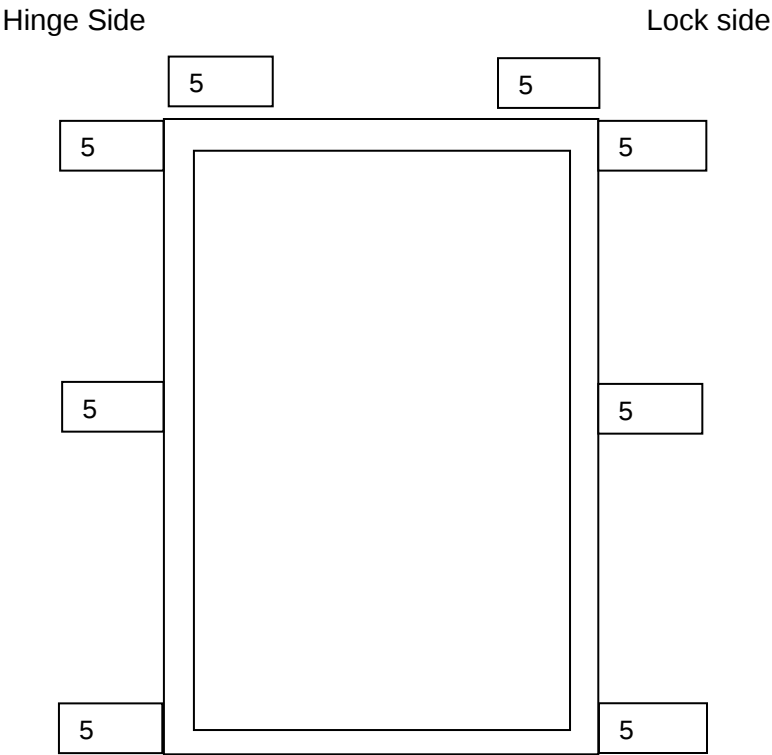
7.1 Leaf/frame gaps - Single Leaf

The gaps were measured before testing commenced - See diagram below. Gaps were measured within 20mm from corners and at the centre of the vertical edges. All measurements given in mm.



7.2 Frame/supporting construction gaps - Single Leaf

The gaps were measured before testing commenced - See diagram below. Gaps were measured within 20mm from corners and at the centre of the vertical edges. All measurements given in mm.



8 Limitations

- The results only relate to the behaviour of the specimen submitted for test, as described in the Technical Specification (section 6), and under the particular conditions of test.
- The results are not intended to be the sole criteria for assessing the smoke leakage performance of the element in use nor do they necessarily reflect the actual behaviour once installed on site.
- The specification and interpretation of test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. Warringtonfire will be able to offer a review of the procedures adopted for a particular test to ensure that they are consistent with current practices.
- The results are solely for use by the sponsor and the stated purpose.
- The sponsor cannot rely on information provided without consent from Warringtonfire.
- Any recommendations are specific to the assignment and the sponsor.
- Extracts from the report are not permitted.

Appendix 1 – Summary of Test Results

Performance testing was conducted on 1st September 2023. Testing was conducted to the principles of BS EN 1026: 2016 – Windows and Doors – Air permeability – Test method:-

The following results were achieved:

Product tested		51-FR120S-MD-PF-3WL-40A Access Panel					
Summary of testing procedure		Results		Summary of testing procedure		Results	
Positive Pressure (Pa)	Leakage (m³/h)	Leakage (m³/h/m)	Leakage (m³/h/m²)	Negative Pressure (Pa)	Leakage (m³/h)	Leakage (m³/h/m)	Leakage (m³/h/m²)
50	4.17	0.63	1.79	50	5.15	0.78	2.21
100	5.15	0.78	2.21	100	7.38	1.12	3.17
150	5.97	0.91	2.56	150	8.07	1.23	3.46
200	7.5	1.14	3.22	200	11.24	1.71	4.82
250	10.67	1.62	4.58	250	12.61	1.92	5.41
300	13.98	2.12	6.00	300	13.29	2.02	5.70
450	18.82	2.86	8.08	450	17.15	2.61	7.36
600	25.97	3.95	11.15	600	20.47	3.11	8.79

Testing was carried out at 13.2°C and 41.1% RH. The perimeter length of gap was 6.58m. The overall area was 2.33m²

*The access panel is not covered under the EN 12207: 2016 classification standard, but based on the dimensions and leakages from EN 1026 test, the panel would 'achieve' 600Pa Class 2' classification.
Please note that is for reference only as this product is neither a doorset nor window and cannot be fully classified under EN 12207: 2016*

Appendix 2 – Sponsor's Drawing

Note, the dimensions in the specification section of this report take precedence over those provided in the drawing.

