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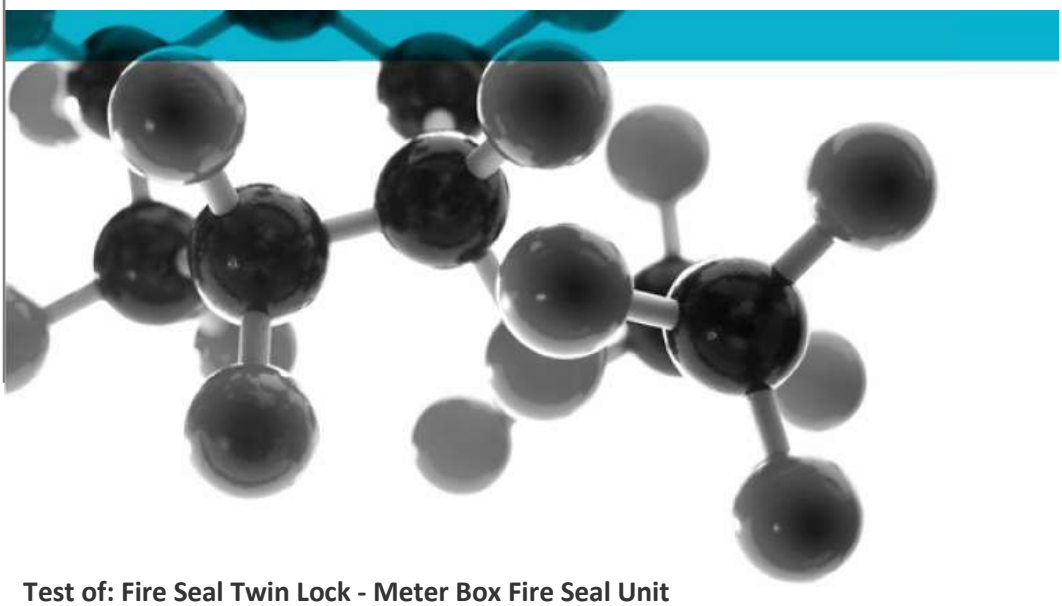
Testing, calibrating, advising.

EN 1634: 2004

Smoke control test for door and shutter assemblies



Test of: Fire Seal Twin Lock - Meter Box Fire Seal Unit

Date of Test: 24/07/18

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Issue No.: 1

Sponsor: Ritherdon and Company Limited

Lorne Street
Darwen
Lancashire
BB3 1QW

Document Reference: WYC402759/01

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Results of Test:

WYC402759/01

Ritherdon and Company Limited

Lorne Street

Darwen

Lancashire

BB3 1QW

This document confirms that performance testing was conducted on 24th July 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	**Fire Seal Twin Lock - Meter Box Fire Seal Unit**

Summary of testing procedure			**Result**
BS EN 1634-3: 2004	**Pressure (Pa)**	**Leakage (m^3/h)**	**Leakage ($m^3/m/h$)**
Results under positive chamber (door leaf opening away from chamber)	**50**	2.15	0.45
	25	0.43	0.09
	10	0.80	0.17
Results under negative chamber (door leaf opening away from chamber)	**50**	1.88	0.39
	25	0.96	0.20
	10	0.68	0.14

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 3m^3/m/hour when tested at 25Pa.

The perimeter length of gap was 4.806m

The results relate only to the specimens tested, as detailed in the technical specification

Issued by:
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Lead Technical Officer

Authorised by:
James Bacchus
Technical Officer
Issue date: 7th September 2018

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1762

1. Introduction

Performance testing to BS EN 1634-3:2004 incorporating corrigendum no. 1 was conducted on the specimen on 24th July 2018. The specimen was configured as Fire Seal Twin Lock - Meter Box Fire Seal Unit. The specimen was installed opening out of the test chamber. In accordance with BS EN 1634-3: 2004 section 10.1.1, the opening element 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 24th July 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 non-hygroscopic material – No conditioning required

2.2 Sampling

Sampling was not carried out on the product detailed in this report.

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 onto the front of the supporting construction using screws.

4. Test Equipment

Description
Scientific Ambient Monitor
Tape Measure
Callipers
Laminar Flow element:
Mass Flow Meter
Pressure Transducer
Force Gaugue

5. Description of Specimen Construction

The specimen was identified as Fire Seal Twin Lock - Meter Box Fire Seal Unit. The overall frame dimensions were 1000mm wide by 1500mm high x 152mm deep. The opening element dimensions were 948mm wide by 1450mm high x 13mm thick. The specimen has no latch and the panel was locked during the test.

Panel frame

	Manufacturer/Material/type/reference	Dimensions (mm)
Stiles and rails	Ritherdon 1.2mm thick steel *See Appendix 1 for more detail*	152 x 42
Rebate	Single type	13 x 15
Joints	Mitred and welded	-

* Stated by sponsor, not verified by laboratory

Panel Leaf

	Material/type/reference	Dimensions (mm)
Facings	Ritherdon 1.2mm thick steel with chamfer to lock edge & lip to hinged edge *See Appendix 1 for more detail*	1.2 thick

* Stated by sponsor, not verified by laboratory

Perimeter sealing details

	Material/type/reference	Size (mm)	Location
Leaf Edges	None present	-	-
Frame reveal	Intumescent Retroflex Fire and Smoke Seal – SAFX* (Ref. PY120221SAFX)* 30144	12 x 2	On rebate platform
	Pyroplex Fire seal strip (Ref. FSSFX12S (84921))*	10 x 2.5	To outer face of frame lip
Seal Continuity	Seal uninterrupted by hardware	-	-

* Stated by sponsor, not verified by laboratory

Ironmongery

	Material/type/reference	Size (mm)	Fixing details (dimensions in mm)
Hinges	Stainless steel piano hinge 1.25" open, 20's gauge with 2mm pin*	1425 length	Riveted onto frame Welded onto leaf
Locking mechanism	2No. Stainless steel Camlock, quarter turn -	22Ø	Placed in 'Quadra D' hole, 22Ø x 20 across flats, secured with seal and lock nut
Keeps	No keeps present. Lock is retained by frame profile	-	-

* 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.

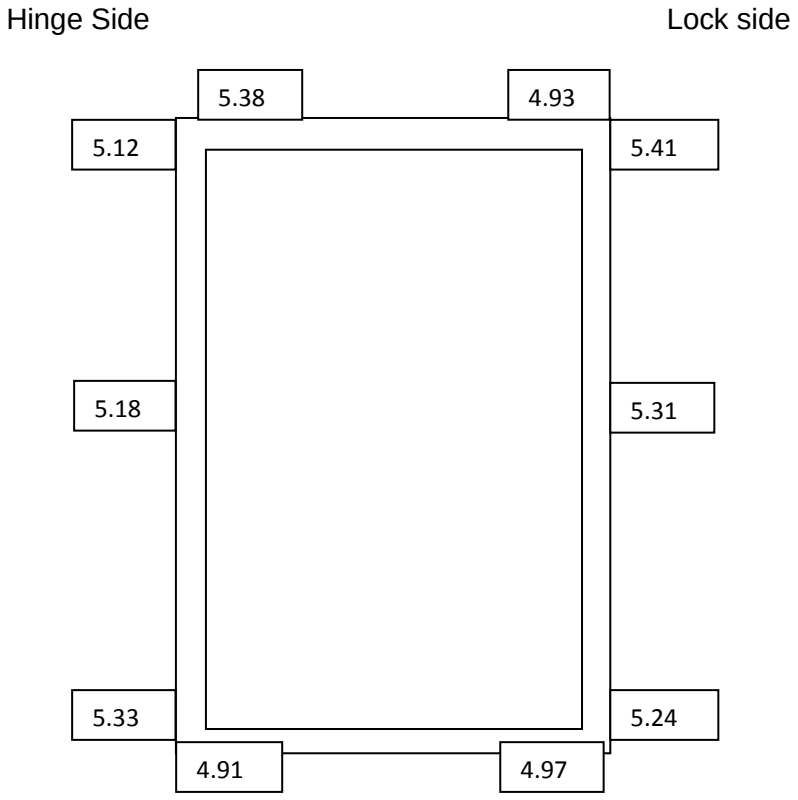
Minimum angle of opening	30°
Number of operation cycles completed	10

6.2 Retention forces

No closer fitted - No retention forces recorded

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.



Appendix 1 – Sponsor Drawings (3 pages)

Figure 1 – General Dimensions

Figure 2 – Horizontal Section

Figure 3 – Vertical Section

Drawings not verified by Exova

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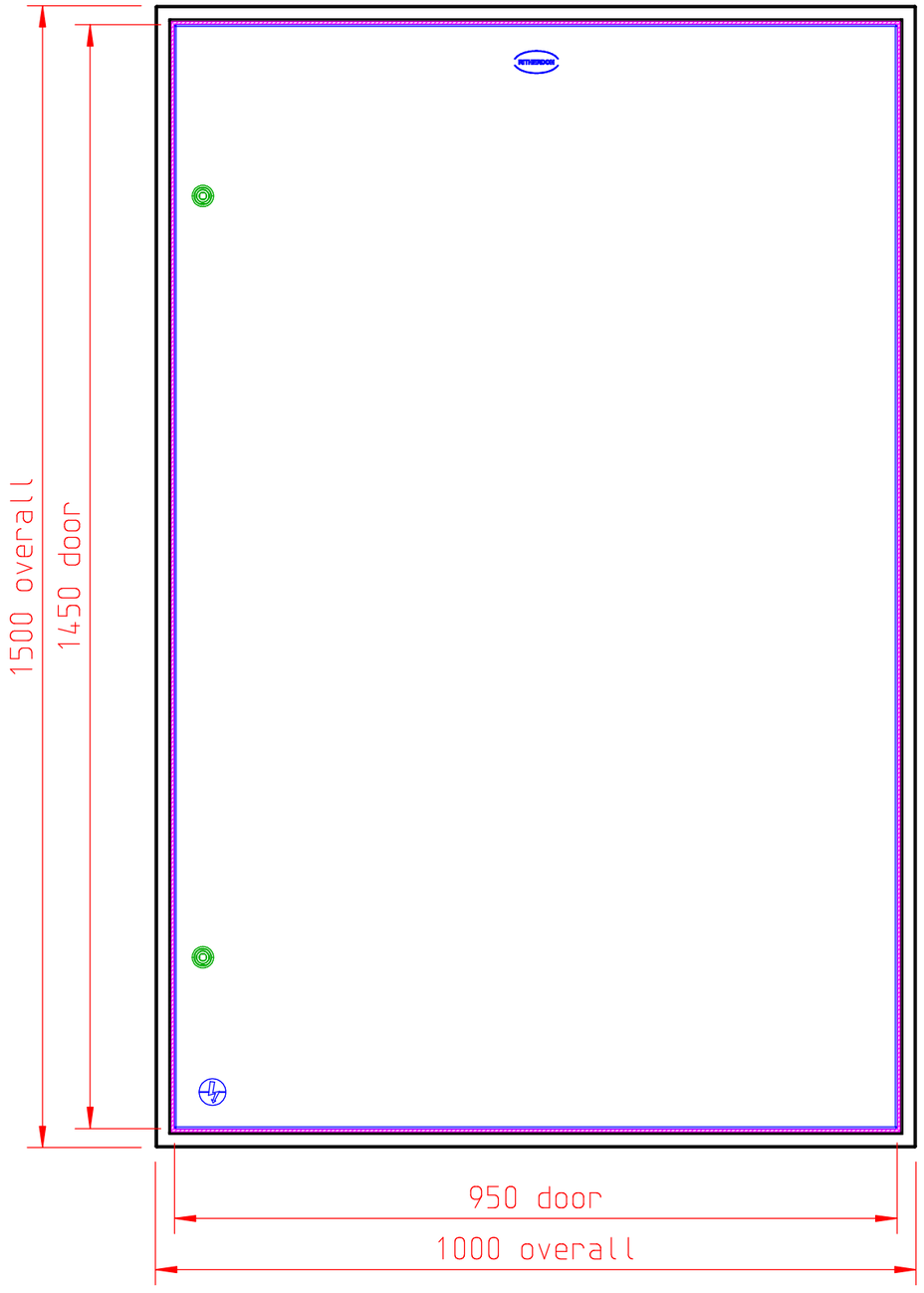

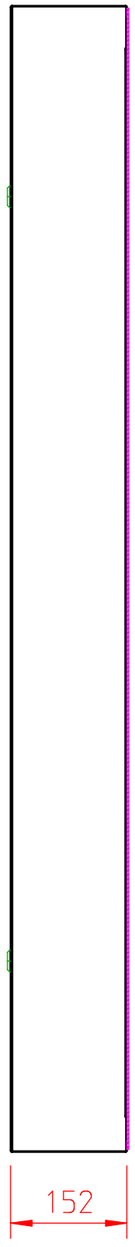

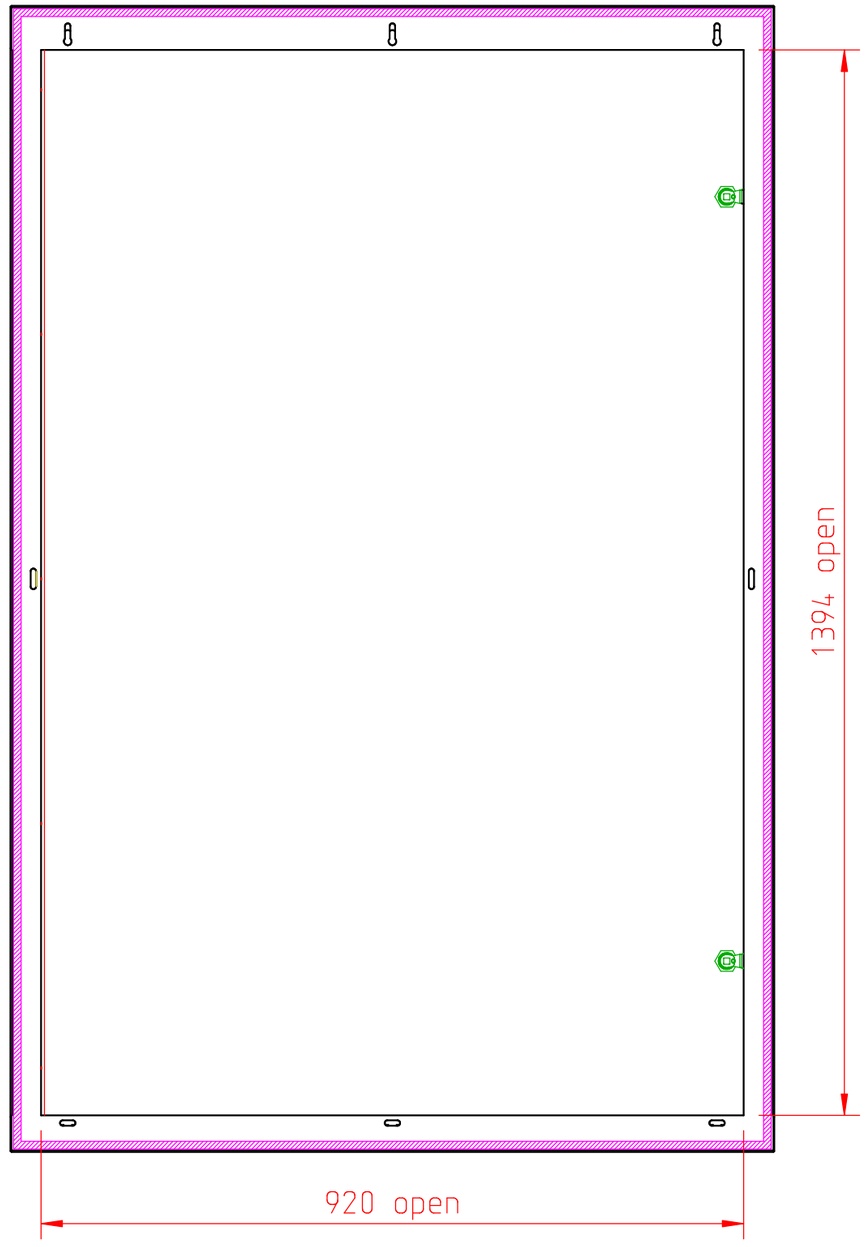

DRAWN	Mark Blease	DATE	31 . 07 . 2018
CHECKED	Brian Derbyshire	DATE	31 . 07 . 2018
APPROVED	Brian Derbyshire	DATE	31 . 07 . 2018

ISSUE	DATE	MOD. NO.	DRN

RITHERDON

TOLERANCES
WHOLE NUMBERS +/- 0.5
1 DECIMAL PLACE +/- 0.2
HOLES +/- 0.15
UNLESS OTHERWISE STATED

ALL OUTSIDE SIZES

MATERIAL: 1.2mm Stainless Steel

FINISH: Polyester Powder Coated

TITLE: FireSeal - twin lock
General dimensions

SCALE	DRAWING NO.	[SHEET]	ISSUE
NTS	S 9511	5	-

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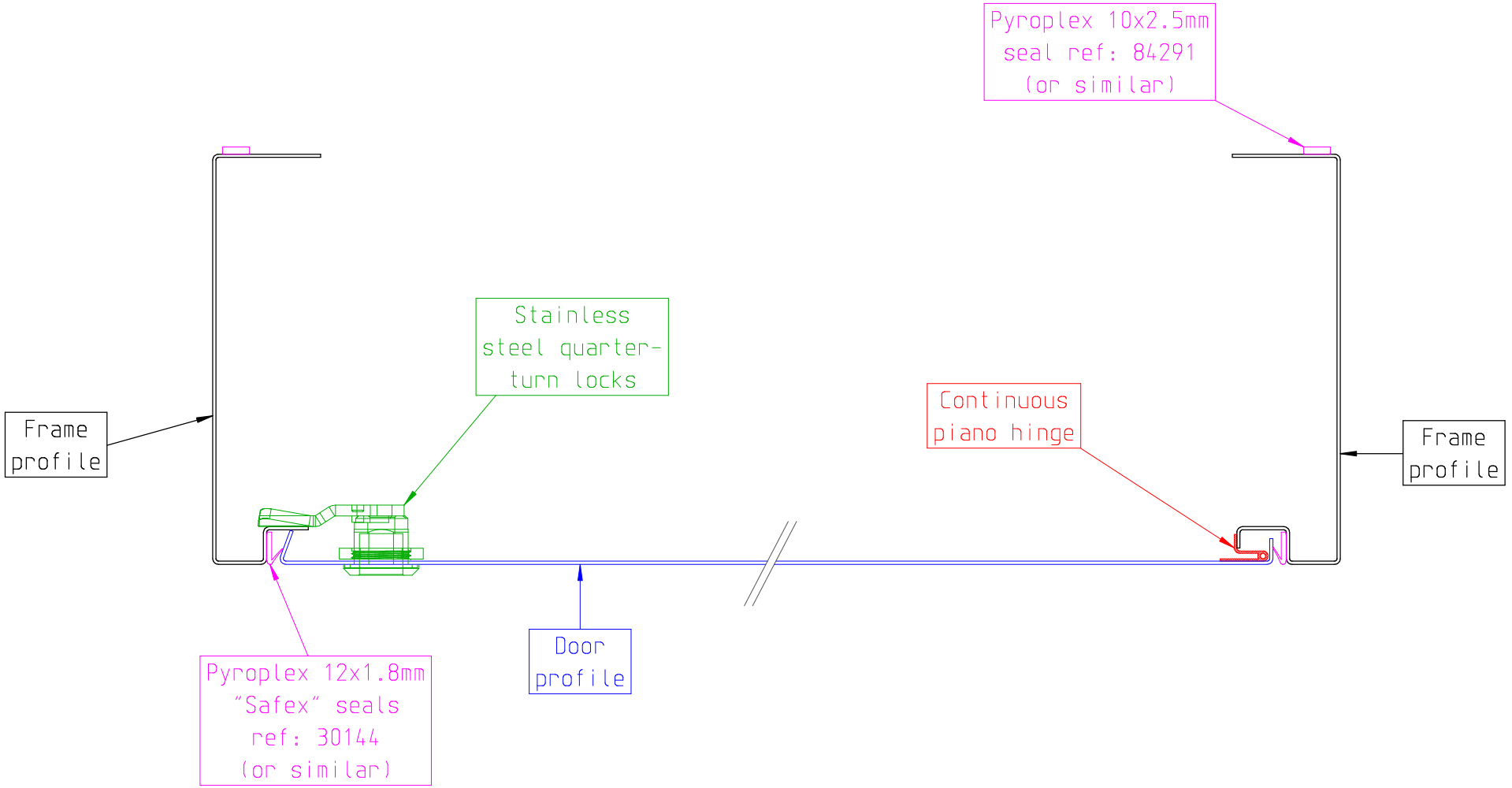

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HOLES +/- 0.15
UNLESS OTHERWISE STATED

ALL OUTSIDE SIZES

MATERIAL
1.2mm Stainless Steel

FINISH
Polyester
Powder Coated

TITLE FireSeal - twin lock
Horizontal section

SCALE	DRAWING NO.	[SHEET]	ISSUE
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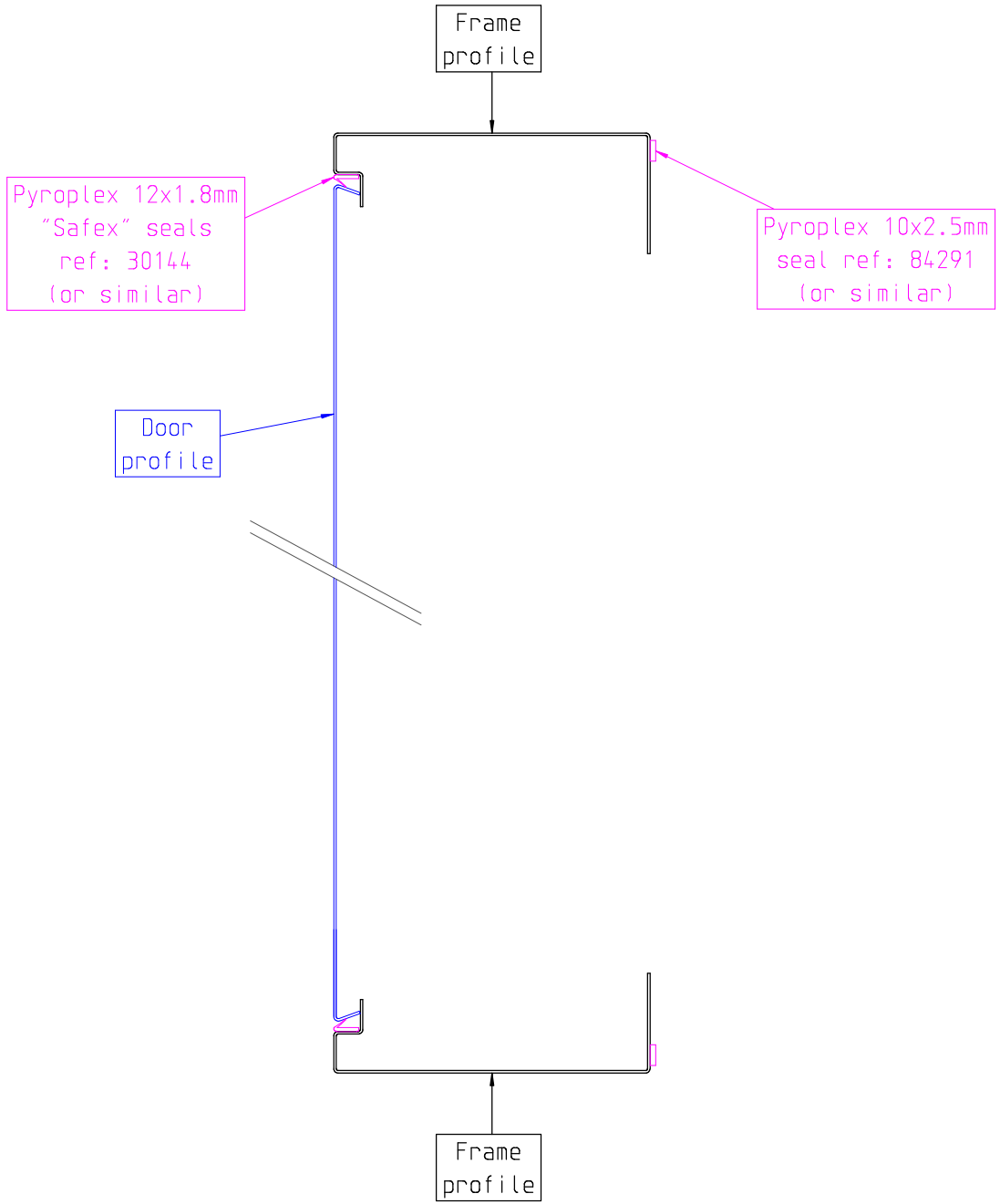

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RITHERDON

TOLERANCES
WHOLE NUMBERS +/- 0.5
1 DECIMAL PLACE +/- 0.2
HOLES +/- 0.15
UNLESS OTHERWISE STATED

ALL OUTSIDE SIZES

MATERIAL: 1.2mm Stainless Steel

FINISH: Polyester Powder Coated

TITLE: FireSeal - twin lock
Vertical section

SCALE	DRAWING NO.	[SHEET]	ISSUE
NTS	S 9511	7	-