FSSR LAB

Fire, Smoke, Security Test & Research

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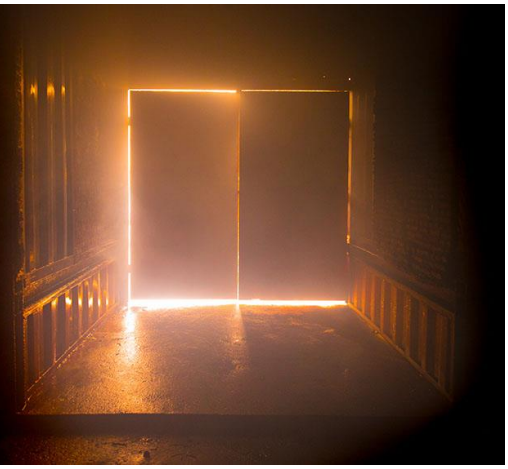
TEST REPORT
Fire Resistance

Carried out to the principles of BS EN 1634-1:2014

Specimen Description
A HINGED SINGLE LEAF DOORSET
LEAF SIZE 1905mm x 860mm x 1905mm
Report Ref
FSSR/FRT/240
Test Date
8TH October 2019

Test Sponsor
Firestop Manufacturing Ltd
Units 4/6 Wyvern Buildings
Grove Trading Estate
Dorchester
Dorset
DT1 1ST



PLAN | DO | REPORT

Our commitment to the service of our customers begins with our acknowledgement that their timetable takes precedence and we will act with the upmost sense of urgency to deliver on time, in full, their test programme.

FSSR Lab
Unit 1D
Princess Court
Low Prudhoe Industrial Estate
Prudhoe
NE42 6PL

Contents

1 Summary

1.1 Results

Standard	Performance Criteria	
	Integrity (minutes)	Insulation (minutes)
BS EN 1634-1:2014	33.10	N/A
Test stopped at 33.10 minutes due to customer request		

1.2 Specimen

The tested specimen consisted of an
Overall Frame Size – 1972mm x 930mm x 110mm x 110mm
Leaf Size – 1905mm x 860mm x 44mm
Glazing – N/A
Latch – Unlatched
Orientation – Open into the furnace

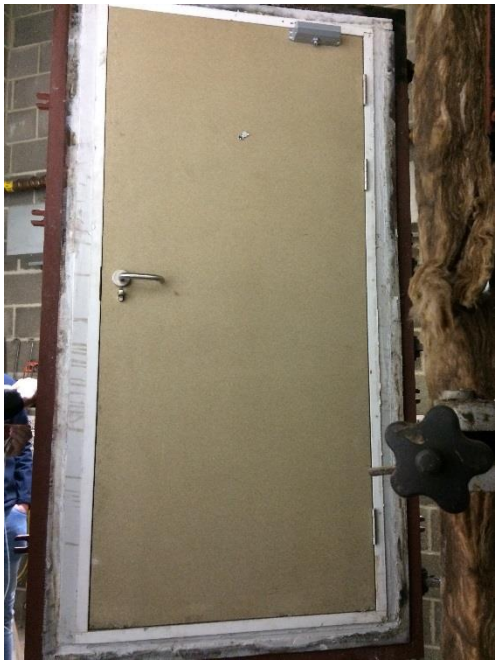
1.3 Supporting Construction

The specimen was installed into a softwood timber support frame

1.4 Pre-Test Photograph

The below images were taken prior to the test commencing. No adjustment or additional works were carried out to this specimen between the time of the photograph and the start of the test.

Unexposed Face



Exposed face

Intumescent behind Keep

Intumescent behind Hinge

Intumescent behind lock

Intumescent behind Door Viewer

Threshold Seal

2 Provision of Specimens

The doorset was manufactured by the test laboratory under instruction from the test sponsor on (03/10/2019).
The specimen provided was at FSSR Lab for a total of 96 Hours during which time they were stored, surveyed and prepared for testing. During this period, the temperature and relative humidity were measured and recorded to be in the range of 15-19 degrees and 60-73% respectively.
The supporting construction was of timber stud & plasterboard construction, constructed on (03/10/2019).
Installation of the test specimen into the supporting construction was carried out by FSSR Lab on (06/10/2019).

3 Specification

3.1 Door Leaf –

Component	Species/Type	Dimensions (mm)	Density	Moisture Content (%w/w)
Stiles	N/A	N/A	N/A	
Top Rail	N/A	N/A	N/A	
Bottom Rail	N/A	N/A	N/A	
Core	Strebord 44 Particleboard	44mm	Maximum density 630kg/m^3	11.9
Sub-Facings – Unexposed face	N/A	N/A	N/A	
Sub-Facings – exposed face	N/A	N/A	N/A	
Door facing veneer	N/A	N/A	N/A	
Adhesive for door sub-facings	N/A	N/A	N/A	
Adhesive for Door facing veneer	N/A	N/A	N/A	
Lippings	N/A	N/A	N/A	
Adhesive for Lippings	N/A	N/A	N/A	

*Stated by client, not verified by laboratory

3.2 Door Frame

Component	Species/Type	Dimensions (mm)	Density	Moisture Content (%w/w)
Head	MDF			
Jambs	MDF			
Frame to supporting construction fire stopping detail	Nominal 10mm fill of Firestop FS600 Intumescent acrylic sealant to each face of door set with central void filled mineral wool	Fitted fully filling the gap between door and frame to supporting wall construction - nominal 15mm gaps all round		
Frame to supporting construction fixing details	4No steel woodscrews per jamb with Broadfix Polypropylene plastic packers fitted to the full depth of the frame at each fixing location.	5mm Dia x 100 long fitted at 600 to 800mm centres		

3.3 Hardware

Component	Make/Type	Dimensions (mm)	Positioning	Fixings
Hinge	FS912 Grade 13 fire door hinge x 3 S/S/S	102 x 76 x 3 (blade size)		
Door Closer	FS1001 Silver	Size 3 Door Closer		
Handle	FS902 Round bar Level Handles on round rose SAA	19mm		
Escutcheon	FS905 Euro Profile Escutcheon SAA	50x10mm		
Latch	FS909 BS Sashlock case c/w Euro profile	76mm		

Door Viewer	FS3260 door viewer c/w glass lens	14mm		
Threshold seal	FS1321 CCE Trend automatic drop down seal	926mm		
Cylinder	FS900 Euro profile cylinder complete with thumb-turn satin nickel	70mm		

3.4 Glazing

Component	Make/Type	Dimensions (mm)	Positioning
N/A	N/A	N/A	N/A

*Stated by client, not verified by laboratory

3.5 Intumescents

Component	Make/Type	Dimensions (mm)	Positioning
Frame Reveal	FS460 Surface Mounted Intumescent Seal Firestop Fire and Smoke seal	2100 x 22 x 1.40	Fully lining the horizontal and vertical edges of the frame, not interrupted by hinges
Under hinge blade	FS193/SA FlexiFire	100 x 30 x 0.8mm	Behind each blade
Encasing Main Latch body	FS1271 FlexiFire universal BS Sashlock kit c/w Blank Strike Plate	0.8mm	Around all cut outs
Under latch keeps	Intumescent kit	0.8mm	To reverse side of keep
Under Door Viewer	FS547 FlexiFire	40 x 45 x 0.8mm	Around all door viewer
Smoke Seal	FS460 Surface mounted fire and smoke seal	2100 x 22 x 1.40	Fully lining the horizontal and vertical edges of the frame, not interrupted by hinges

3.6 Intumescent interruptions and hardware protection

Component	Make/Type	Dimensions (mm)	Positioning

Door was not hung in a frame so no intumescent interruptions are relevant

3.7 Perimeter Gaps

The gaps measured before commencement of the test is as the below table.

1	2	3	4	5	6	7	8	9	10
2.68	2.40	3.47	3.31	2.10	2.46	3.11	3.28	4.12	3.98

Positions 1-10 are defined in Appendix A. All dimensions are in millimetres.

3.8 Closer Forces

Opening and closing forces in accordance with FTSG Resolution No. 63 were not measured before commencement of the test as a fixed leaf was tested.

Opening (Nm)	Closing (Nm)
N/A	N/A

3.9 Additional Comments & Detail

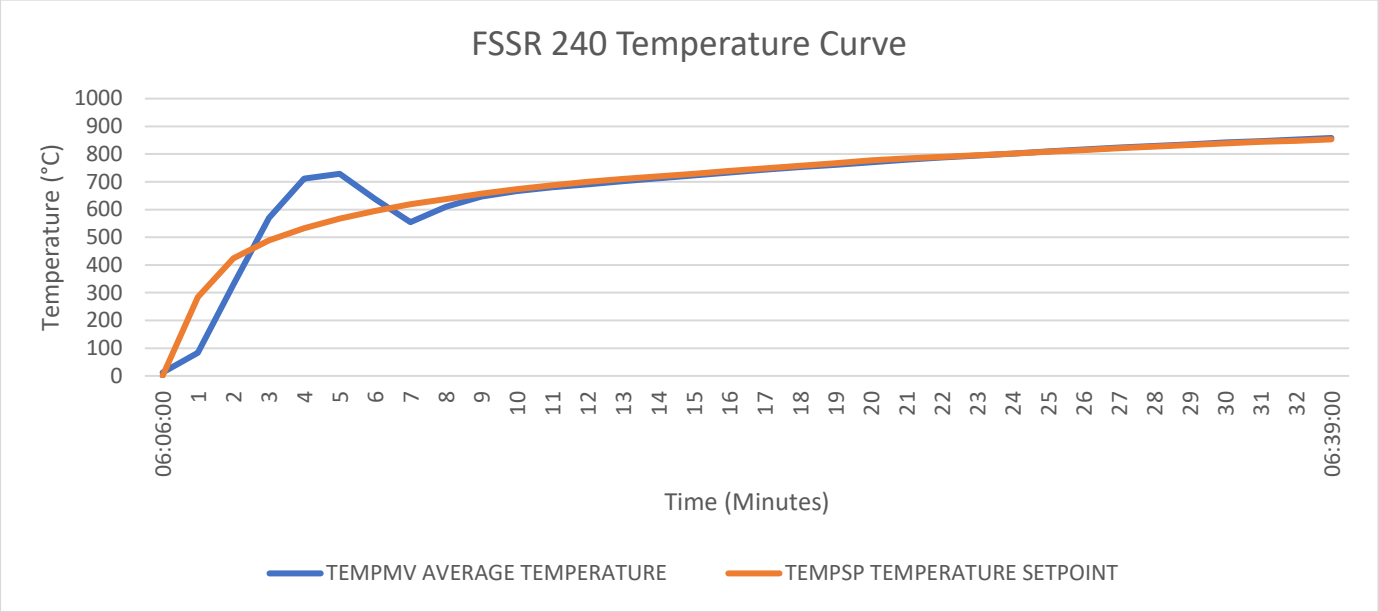
The surveyor found no additional details of any significance.

4 Test Conditions

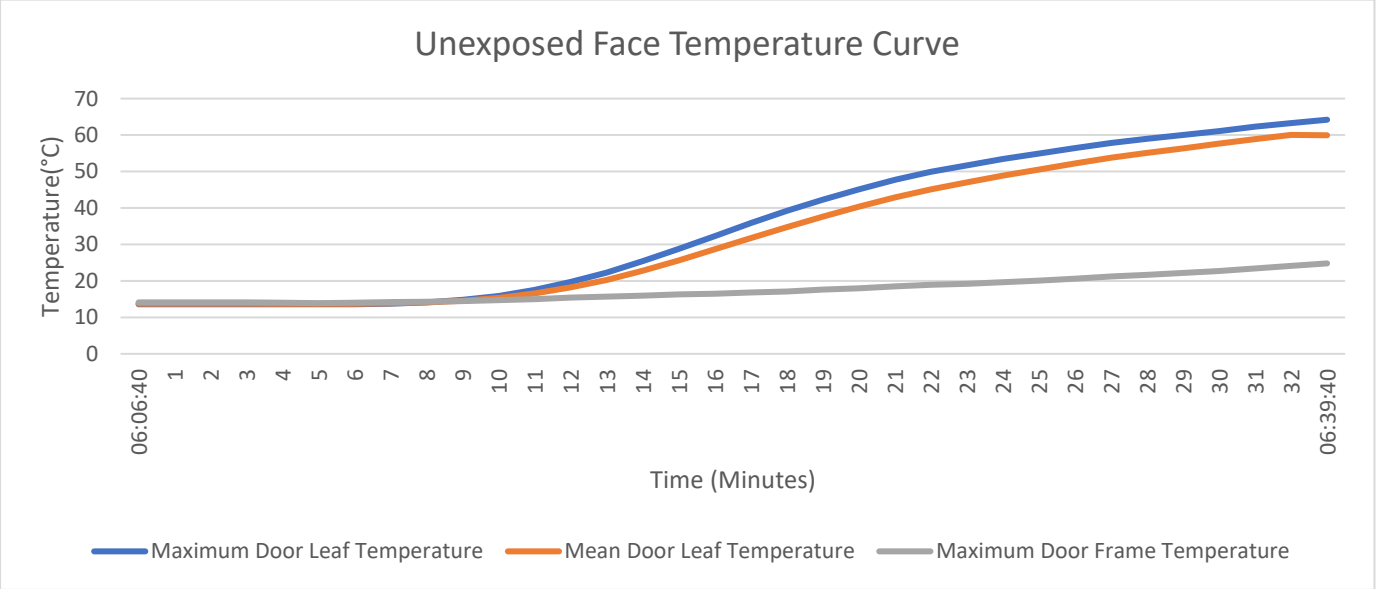
Condition	Response
Ambient temperature of test area pre-test	14.3°C
Furnace pressure	After 5 minutes of the test, maintained at 18Pa +/- 2 Pa at a point 1.5m from floor level, equating to 0Pa at 1m above the notional floor level.
Furnace temperature control	As specified in BS EN 1364-1:2014
Thermocouples	Positions as detailed in Appendix B

5 Test Results

5.1 Furnace Temperature Curve



5.2 Unexposed Face Temperature Curve



5.3 Distortion Data

Time	A	B	C	D	E	F	G	H	I
0	118	126	132	131	138	144	146	152	158
10	120 (2)	122(-4)	131(-1)	129 (-2)	130 (8)	140(-4)	148(2)	154(2)	166(8)
20	122 (4)	120(-6)	131(-1)	128 (-3)	125(-13)	137(-7)	149(3)	155(3)	170(12)
30	124 (6)	120(-6)	133(1)	137 (6)	120(-18)	136(-8)	151(5)	156(4)	178(20)

Positions A to I are defined in Appendix A. All dimensions are in millimetres. (Movement)

5.4 Observations

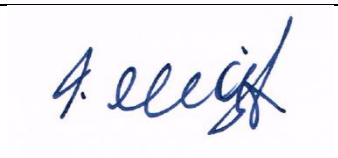
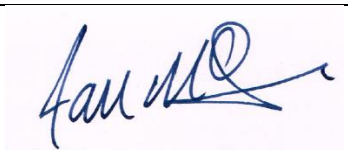
All observations are from the non-exposed face unless otherwise stated

Time	Comments
01:01	Smoke at the top left of frame
01:47	Smoke stopped at 01:01
05:18	Smoke at top left corner (Deflection point A)
06:08	Smoke at cylinder
09:00	Smoke still significant at 06:08
11:25	Discolouration around handle / cylinder
12:40	Smoke at the head of the door still significant
14:05	Smoke at handle still excessive
15:28	Discolouration at door viewer
25:37	Smoke at head and cylinder still significant
27:59	Glowing at foot of the door next to deflection point I
30:42	Gap at bottom eroding across the threshold
33:10	Test stopped due to customer request

6 Limitations & Competency

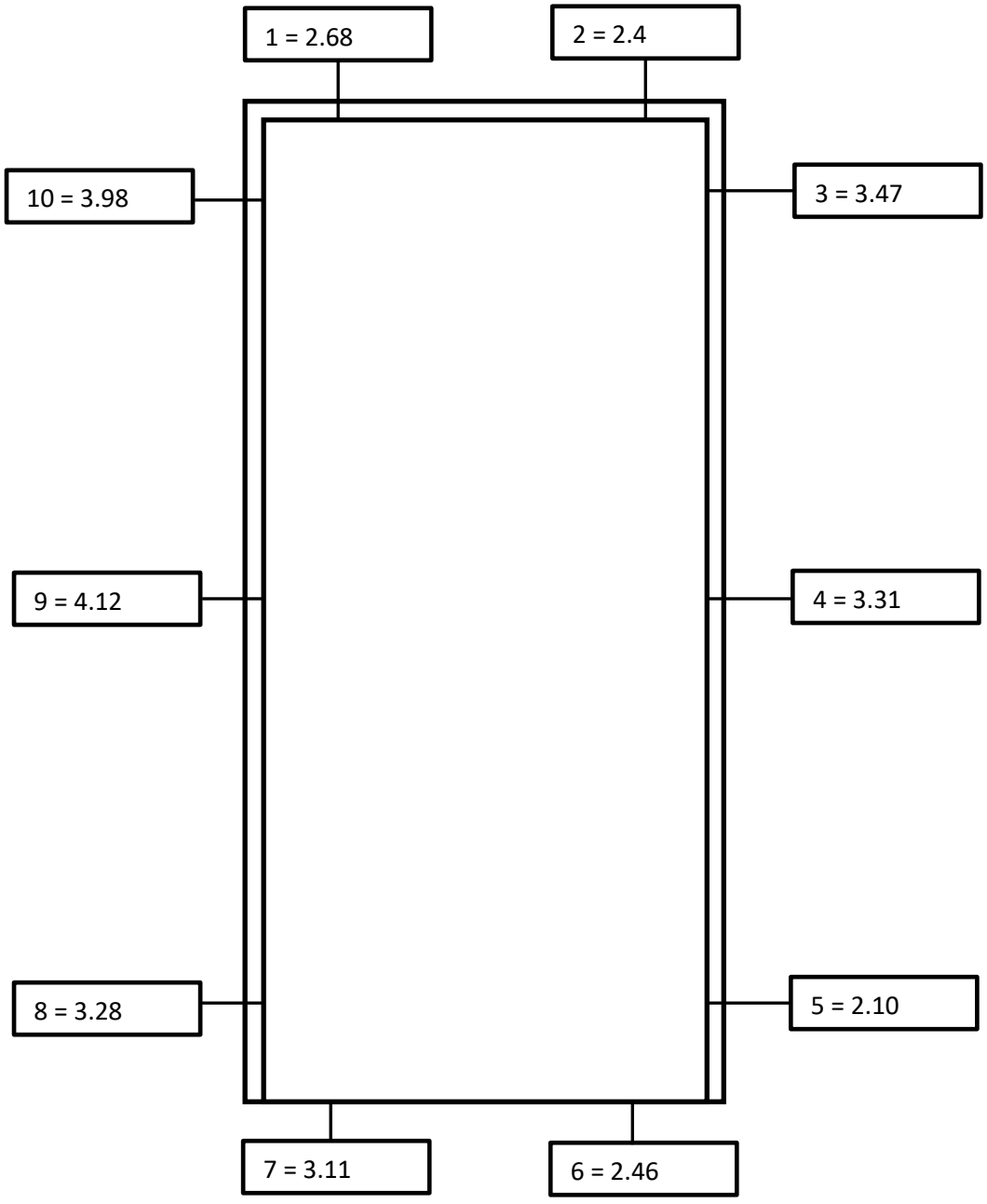
The results of this test only relate to the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they reflect the actual behaviour in fires.

The specification and interpretation of fire test methods are the subject of ongoing development and potential refinement. Changes in associated legislation may also occur. For these, and any other currently unknown, reasons it is recommended that the relevance of test reports over 5 years old should be considered by the report user. Fire Smoke and Security Laboratories Ltd will be able to offer, on behalf of the legal owner of this test report, A review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

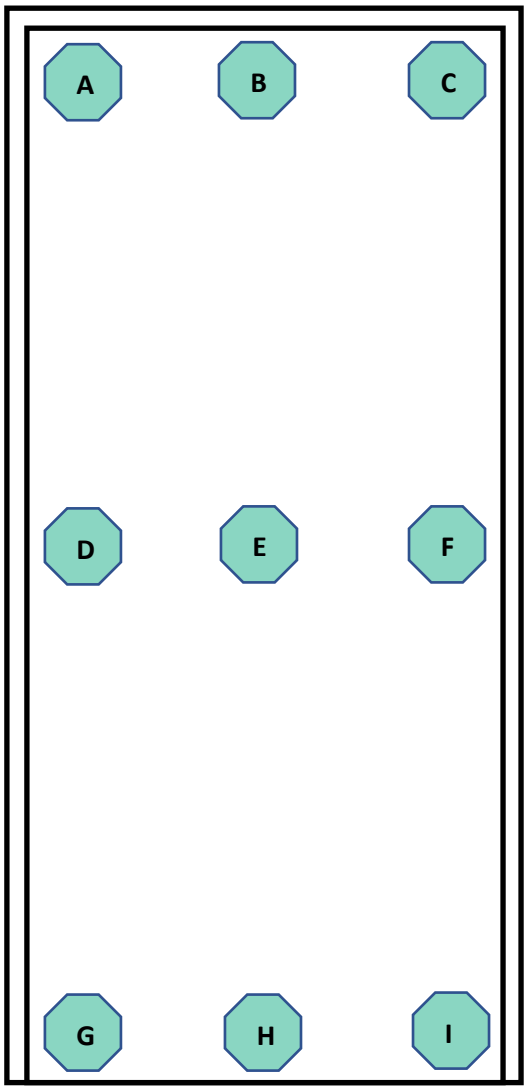
	Written By:	Authorised by
Signature:		
Name:	James Leigh	Ian McSally
Title:	Senior Lab Technician	Lab Manager
Date of Issue:	23/01/2020	27/01/2020

Appendix A – Perimeter Gaps and deflection positions

Perimeter Gaps – Dimensions recorded in section 3.6



Deflection Positions – Dimensions defined in section 5.3



Appendix B – Test Photographs

Exposed Face

Unexposed Face

Appendix C – Clients Drawings and Data sheets