Warringtonfire Chiltern House Stocking Lane High Wycombe HP14 4ND United Kingdom T: +44 (0)1494 569750 W: www.warringtonfire.com

warringtonfire Proud to be part of 😑 element

Title:

The fire resistance performance of a one and a half leaf singleacting doorset, when tested in accordance with BS 476: Part 20/22: 1987

WF Report No:

421142

L



Prepared for providing хO Falcon Panel Products SPUTP Ltd

erton v spischter wiesen site of the spischter SW17-8AN to public SW17-8AN to public SPICE public Products to the spischter SPICE public Products to the spischter SPICE public Clock House Clock House Station Approach Shepperton Middlesex TW17/8AN **Fest date:** 8th November 2019 10th 10^t



run i Further resting mani u talcol This <ne THIS

PANEL PRODUCTS

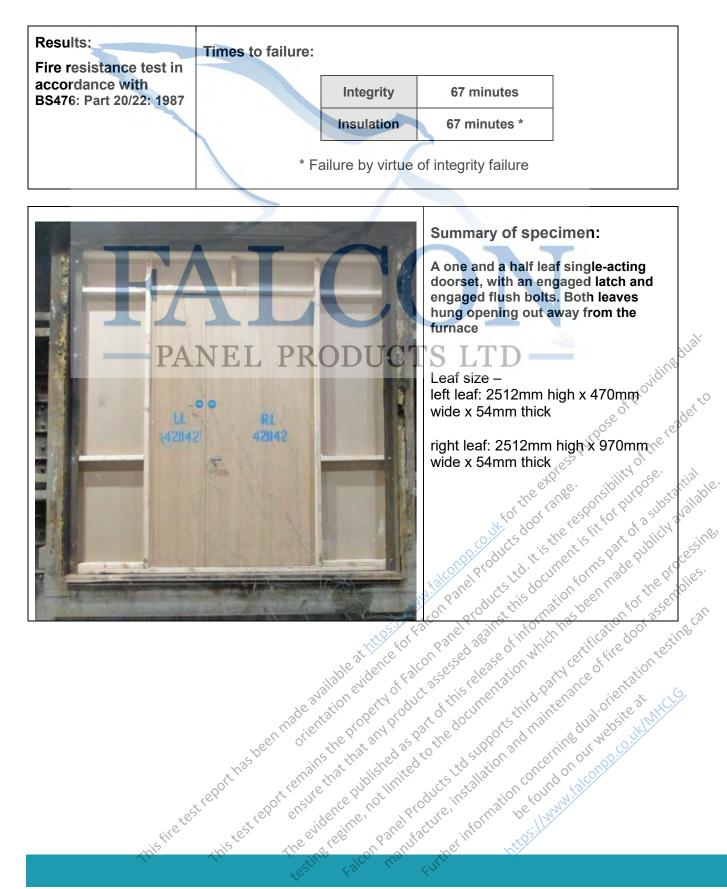
Dogo No

Contents

_			Fage NO
Sur	,	of Performance	
1		uction	
2	•	fication	
	2.1	Door leaf	
	2.2	Door perimeter gaps	
	2.3	Closer forces	
3		iption of Construction (Refers to Figures 1 to 4 of the Appendix)	
4		Conditions	
5	Test r	esults	
	5.1	Furnace Temperature Curve	
	5.2	Unexposed Face Temperature Curves	
	5.3	Door Distortion Data	11
	5.4	Observations	
	5.5	Leaf edge to frame gaps pre-test measurement	14
	5.6	Times to Failure	15
6	Limita	tions	16
	-	hs PANEL PRODUCTS LTD —	17
App	oendix ·	– figures 1 to 4	21
			seoft adertic
			ourpos there's
		1. Contraction of the second	e en
		e ^{ct2} .	sibility pose tantia ble.
		tor the second se	sport or put a substantile
		and the state of t	is fit of olichy sing'
		nge rodu d. His nen	m ^s p ^a le p ^{ut} voces
		N tale one the cts the document	or mae the publies
		when on Pe product this mation	peer nor assert an
		stussily fait and real again sinforce has	Ficatio door sting
		est ncet con resed ase on which co	ist of the ontes
		alladie vide of tai asse is relevitation upartition	ice antatile ()
		dear ation perty oduce of the une third interv	al-onite at much
		en morient reprotany spartned ports dima. ne	due webst uklik
		aspecting the matched as to the advisor and certain	ouroppico
		oorthe remains units inite urst zallation con indo	alcoliz
		est ret eport ensure a not produce in a mation for which	
		firete test service panel facture information	
		Times to Failure	
		x ^e X ^o X ^o	

Summary of Performance

The following performance was achieved from the specimen tested. Full details of the testing and specimen construction are described in the report.



1 Introduction

The doorset was manufactured and supplied for test by the client and delivered on 6th November 2019. At the request of the client, Warringtonfire constructed a plasterboard clad timber stud supporting construction and the client then installed the specimen into the wall.

2 **Specification**

Details of the specimen are shown in the Appendix.

2.1 Door leaf

The left leaf measured 2512mm high x 470mm wide x 54mm thick and the right leaf measured 2512mm high x 970mm wide x 54mm thick. The doorset was hung to open out away from the furnace. The results of this test were obtained from a doorset fitted with an engaged latch and an engaged flush bolts.

2.2 **Door perimeter gaps**

The gaps between the edge of the door and frame were measured prior to test. A total of 21 readings were taken. The measurements (in mm) are given in Section 5.5 of the report.

2.3 Closer forces

Measured in accordance with FTSG Resolution No 63.

orces			
ed in accordance wit	h FTSG Resolution No 6	BS ITD -	
	1 PROBLEM	ro LID-	idine
	Opening Moment	Closing Moment	st prov
Left leaf	None	fitted	wose read
Right leaf	24	14	espurt state
		Ntalconep.co.ukforthe	and the response of a substance of a
	allable at https://w	talon to produce this of information which assessed against this of the produce o	ath has been and the door asset of the door asse
fire test report has t	h FTSG Resolution No 4 Opening Moment None 1 24 24 24	part of the docume. Third and the document of the document of the document of the document of the support of th	Apress put in the first of the constraints of the constraints of the put of the property of th
This This	the testine is taken hand	Further http:	

3 **Description of Construction (Refers to Figures 1 to 4 of the Appendix)**

		Species/type	Dimensions (mm)	Density (kg/m³)	Moisture (% w/w)	Key to figures
Stiles and rails		None fitted	-	-	-	-
Core		Falcon Panel Products Strebord particleboard with a 0.5 thick oak veneer*	54 thick	Nominally 520-630*	12.1- 13.3	1
Adhesive Lippi	ings	Dynea - Prefere 4152 urea formaldehyde polymer glue*		-	-	-
Vene	eer	Dynea - Prefere 4152 urea formaldehyde polymer glue*	-	-	-	-
Lippings – all e	dges	American white oak*	19 thick	770**	-	2

* Stated by client, not verified by laboratory

** Nominal density - TRADA Timber database

Door frame

						_						
	Species/type	Dimen si ons (mm)	Density (kg/m³)	Moisture (% w/w)	-							
Head and jambs	American white oak* ROD	40 wide x 101 deep	T770**	11.3- 11.9	3	Ing dual						
Head to jamb jointing detail	Mortice and tenon– glued with Dynea - Prefere 4152 urea formaldehyde polymer glue*	-	-	-	of provin	reader to						
Stop – planted (pinned)	American white oak*	18 high x 43 wide	770**	oress <u>pure</u>	A the	ntial le						
Frame to supporting construction fire stopping detail	Rockwool mineral fibre for full depth of frame capped with intumescent mastic on both faces	Nominally 5 – 17 wide x 10 deep mastic size	out or the the state	aner - onst	PUTP SU	ostalialah CWavailah CCessine						
Frame to supporting construction fixing detail	4No. steel screws per jamb	6Ø x 100 long	ducts this doc	an forn been n	on tor the	emblies.						
Architrave	None fitted	Chice for projection	25e of white	Certific fi	e _ `	est						
Threshold	Non-combustible	inde states set	et till	arthance	nta <u>til</u>	6.						
Jimming statuling Formal dehyde polymer glue* Image: statuling statuling Stop - planted (pinned) American white oak* 18 high x 43 wide 770** 2-2 4 Frame to supporting construction fire stopping detail Rockwool mineral fibre for full inturescent mastic on both faces Nominally 5 – 17 wide x 10 deep mastic size -												
	testille 48	to the full										

Intumescent and sealing materials

	Make/type	Size (mm)	Location	Key to figures
Right leaf closing edge	Lorient Polyproducts Ltd LP1504 Type 617	15 x 4	Fitted 33mm from the opening face	5
	Lorient Polyproducts Ltd LP1504DS Type 617	15 x 4	Fitted 8mm from the opening face	6
Leaf head	Lorient Polyproducts Ltd LP1504 Type 617	15 x 4	Fitted centrally along leaf head	7
Leaf – bottom edge	Lorient Polyproducts Ltd drop seal Ref. LAS8001 si	57 high x 18 wide (end plate size)	Fitted 8mm from the closing face along the bottom edge of both leaves	8
Frame reveal – head and jambs	Lorient Polyproducts Ltd LP1504 Type 617	15 x 4	Fitted 32mm from the exposed face	9
	Lorient Polyproducts Ltd LP1504DS Type 617	15 x 4	Fitted 7mm from the exposed face	10
Acoustic seal	Lorient Polyproducts Ltd LAS 1206	10 x 4	Self-adhered to the upstand of the stop	11
				Ô``
	wetest report has been made availants	table at https://www.	upstand of the stop	ipose of pose

	Make/type	Size (mm)	Location								
Around hinge blade	Partially interrupted	-	Hinge blade fully interrupts 1 st seal in frame reveal leaving 2 nd seal continuous								
Under hinge blade	Tectus 8820 kit, graphite type*	1 thick*	Fitted under hinge blade on frame and leaf								
Around concealed closer	Partially interrupted	-	Concealed closer fully interrupts seal in leaf head, and closer arm partially interrupts both seals in frame head with 10mm of both seals remaining continuous								
Under concealed closer	Manufacturers supplied graphite intumescent kit		Fitted as per the manufacturer's instructions								
Around latch forend	Partially interrupted	-	Latch forend partially interrupts both seals in right leaf edge with 10mm of both seals remaining continuous								
Under latch forend	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted under the latch forend								
Encasing latch body	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted encasing latch the latch body*								
Under latch keep	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted under the latch keep								
Around flush bolt keep	Partially interrupted R	ODUC	Flush bolt keep fully interrupts 1 st seal in the frame reveal, leaving the second seal continuous.								
Under flush bolt keep	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted under the flush bolt keep* of the reader								
Lining flush bolt rebates	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted lining the rebate*								
Around drop seal	Partially interrupted	-	Drop seal fully interrupts 2nd seal leaving first seal continuous in the meeting edge of the right leaf								
Lining drop seal rebate	Sealed Tight Solutions Limited raw graphite*	1 thick*	Fitted lining the rebate*								
rebates Limited raw graphite* Orop seal fully interrupts Partially interrupted - Drop seal fully interrupts Drop seal fully interrupts <thdrop fully="" interrupts<="" seal="" th=""> Drop seal fu</thdrop>											
This first the the secon particulation of the second secon											
	Xer										

Intumescent interruptions and additional hardware protection

Hardware

	Make/type	Size (mm)	Location	Key to figures
Hinge	3No. Simonswerk Tectus 527FR hinges*	155 x 26 x 33 (blade size)*	Fitted 200mm, 655mm and 2140mm from the head of the leaf	12
Closer – right leaf only	Geze 2-4 Boxer concealed overhead type closer*	440 x 20 (closer arm footprint)*	Closer body rebated into right leaf head, closer arm rebated into frame head, as per the manufacturer's instructions	13
Latch - engaged	AGB mortice lock/latch and keep	196 x 18 x 3 (forend size)* 81 x 22 (keep size)	Latch nib fitted 945mm from the bottom of the leaf	14
Furniture	Olivari conca round rose lever type handle and escutcheon	Ø51 (rose size)	Fitted appropriate to the latch	15
	Self-adhesive 'Fire door' signs	Ø75	Fitted 975mm from the head of the leaf	16
Flush bolts – engaged	Eurospec FBT1008/R*	204 x 19.5 x 38* DUC	Fitted 6mm from the unexposed face in the left leaf closing edge	17
	hisfiletest report has been made	e available at https://	Fitted 6mm from the unexposed face in the left leaf closing edge	pos nsibility of the rea nsibility of the rea to purpose. ns part of a substantial part of a substantial par
	-46 46 41.	estime talcol, we	Further th	

4 **Test Conditions**

Where areas of the test specification are ambiguous or open to interpretation the Fire Test Study Group Resolutions No's 51, 63, 70, 71, 72 and 78 have been followed (further specific details are available on request). These Resolutions provide basis of common agreements between the fire test laboratories which are members of this Group.

The ambient temperature of the test area at commencement of test was 10°C.

After the first 5 minutes of the test, the furnace pressure was maintained such that it complied with the requirements of BS 476-20:1987 clause 3.2.2 (including allowance for transient occurrences in line with clause 12 (L)) at -4.25 ± 2 Pa with respect to atmosphere, at a point 0.5m from the notional floor level, equating to 0Pa at a point 1m above the notional floor level.

The furnace was controlled to follow the temperature/time relationship specified in BS 476: Part 20: 1987 as closely as possible, using the average of nine thermocouples suitably distributed within the furnace. The temperatures recorded are shown graphically in Section 5.1.

The temperature of the unexposed face was monitored by means of five thermocouples fixed to the surface of the door leaves, and four thermocouples attached to the frame, one at mid-height on each jamb and one centrally located above each leaf on the frame head.

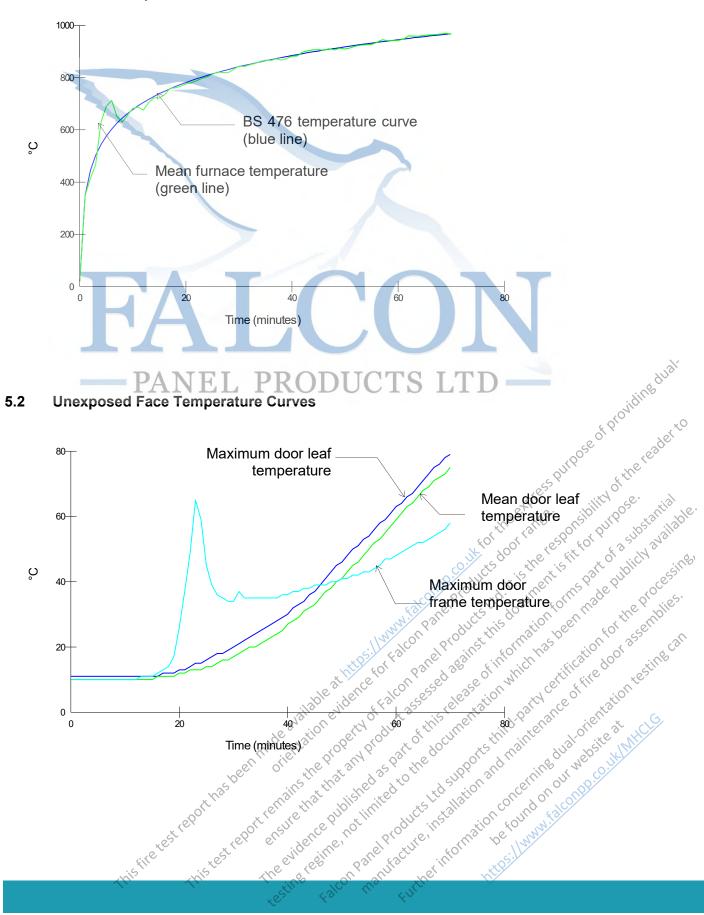
The rest contraction of the state of the sta The thermocouple positions are shown in Figure 4 of the appendix. The average temperature of the door leaves and maximum temperature of the doorset are shown Asterneon tenant the transmission of the trans graphically in Section 5.2. L PKODUCIS

evidence published as part of this release of information to react on a substantial between the optimentation which has been made publicly and the bock mentation which has be

Falon Panel Products Ltd.....

5 Test results

The following data and observations were recorded during the test.



5.1 Furnace Temperature Curve

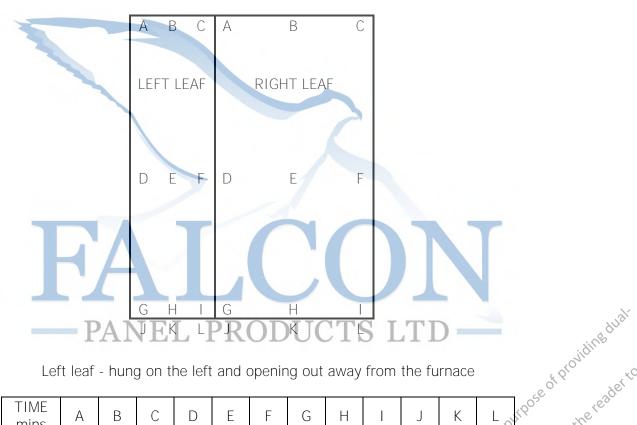
5.3 **Door Distortion Data**

The following tables show the distortion of the door leaves in mm with an accuracy of ±1mm.

A positive measurement indicates distortion towards the furnace.

A negative measurement indicates distortion away from the furnace.

J, K and L give vertical movement of the door, a negative reading indicates that the door has dropped.



Left leaf - hung on the left and opening out away from the furnace

	vidille														
Lef	Left leaf - hung on the left and opening out away from the furnace $\sqrt{2}$														
	Leon ader														
TIME	А	В	С	D	E	F	G	Η	-	1	К	1 NROS CETERS			
mins	7.	D	0				0			5					
0	0	0	0	0	0	0	0	0	0	0	0	(Si			
15	0	1	0	-1	-1	-1	-1	0	-1	0	Qei	. Silon neos tanti able.			
30	1	1	3	0	0	2	0	0	0	0 .0	x 0 x				
45	1	1	1	1	-8	-12	3	-2	-5	4	ૃષ્૧ે	a this of the the			
60	5	2	-1	3	-19	-30	-	-	- 2	,		<u>aton for the processine store of the processine store of the property of the processine store of the </u>			
									, cont	R102 (×9.	une arms ade to proces.			
Righ	t leaf	- hunę	g on tl	he rigl	nt and	open	ing ou	it awa	y fron	n the f	urnac	e n'to n'me the name			
								. July		, 201 ×	iup ~	atte bee for sseries			
TIME	А	В	С	D	E	F	GS	K K N	o and le	AB AN ST	in Rinn	N 2 Kication 10 ass			
mins	A	D	C	D	L	I	V. G.	S ^N	03/ ×	80 5	ilar il	AL ALCO AL STITUT			
0	0	0	0	0	0	Q	QCe	Qo ^c	0eb	Qe	CON.	ation for the photocological states in the ph			
15	0	1	1	0	1		1/9-3	<21 s	5-1 (20,3	0	N-1 CE NOT			
30	0	0	0	-5	-48		-24		14	net.	ATT I	atte bee n 2 n 2 <u>0</u> er of fire door assering can <u>0</u> er of fire door assering can <u>1 - 1 ce</u> of fire at out <u>1</u> <u>1 - 1 ce</u> of fire at out <u>1</u>			

30	1	1	3	0	0	2	0	0	0	0 $(10$ (2^{-1}) (2^{-1}) (2^{-1}) (2^{-1}) (2^{-1}) (2^{-1})				
45	1	1	1	1	-8	-12	3	-2	-5	- 35 69 60 Kt 5 6 6 6 6				
60	5	2	-1	3	-19	-30	-	-	- ~	AND THE ATT PART AND CEST				
Righ	30 1 1 3 0 0 2 0 0 0 0 -1 45 1 1 1 1 -8 -12 3 -2 -5 -1 9 0 60 5 2 -1 3 -19 -30 -													
TIME mins	А	В	С	D	E	F	NY S	or Halc	o arel P	$\frac{\partial^{U^{U}}}{\partial e^{2}} \frac{\partial^{U^{U}}}{\partial e^{2}} \frac{\partial^{U^{U}}}}{\partial e^{2}} \frac{\partial^{U^{U}}}{\partial e^{2}} \frac{\partial^{U^{U}}}}{\partial e^{2}} \frac{\partial^{U^{U}}}{\partial e^{$				
0	0	0	0	0	0	Q	Qce	Qor	Qed	$\frac{Q^2}{Q^2} = \frac{Q^2}{Q^2} + $				
15	0	1	1	0	1	1/22	10-3	<u> <</u> 21 3	5-1	e O to O to T to Take				
30	0	0	0	-5	-42	16,5	-24	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	N.	Net the test of the second				
45	-1	-1	2	-21	220	õ	5 ⁰⁻¹ 40	-16%	6	- 1 1 1 5 th 1				
60	-2	-1	4	-36	-39	NR Y	-25	~38	<u>x</u> -4	1020 right right we out				
Where a	0 0													
			\sim		estill	40	5 6	- 4N	х С					

5.4 Observations

All comments relate to the unexposed face unless otherwise specified.

Time (minutes)	Comments
00:00	Test Started
03:06	There is smoke issuing at the top meeting edge.
03:25	There is smoke issuing at the top hinge position of the left leaf.
03:41	There is smoke issuing at the bottom hinge position of the right leaf.
04:00	There is smoke issuing at the top hanging corner and the top meeting corner of the left leaf.
04:00	There is smoke issuing at the top meeting corner, the top hanging corner and the centre of the right leaf.
04:54	There is smoke issuing at the latch.
05:10	There is smoke issuing at the keyhole.
06:13	There is moisture across the centre of the head of the right leaf.
07:26	There is smoke issuing at the threshold of the left leaf.
13:00	There is an increase in smoke issuing at the head of the right leaf.
23:29	There is an increase in smoke issuing at the head of the right leaf. There is discolouration on the frame above the right leaf.
35:34	There is discolouration on the left leaf by the hanging edge, approximately 600mm down from the top hanging corner.
35:40	There is a glow visible at the threshold at the door gap of the right leaf. The furnace
40:28	There is smoke issuing from the middle hinge position to the top hanging corner set in the of the left leaf.
41:38	There is discolouration at the centre of the base of the right leaf.
48:09	The handle has dropped.
49:52	 is visible. There is smoke issuing from the middle hinge position to the top hanging corner of the left leaf. There is discolouration at the centre of the base of the right leaf. The handle has dropped. There is discolouration and smoking issuing at the top hinge position on the right leaf. There is discolouration around the handle and escutcheon. There is discolouration at the bottom hanging corner of the left leaf.
50:30	There is discolouration around the handle and escutcheon.
52:00	There is discolouration at the bottom hanging corner of the left leaf.
53:32	There is discolouration at the bottom hinge position of the right leaf.
54:35	There is discolouration at the top of the meeting edge.
54:50	The handle has dropped. There is discolouration and smoking issuing at the top hinge position on the right leaf. There is discolouration around the handle and escutcheon. There is discolouration at the bottom hanging corner of the left leaf. There is discolouration at the bottom hinge position of the right leaf. There is discolouration at the top of the meeting edge. There is intermittent flaming through the gap at the threshold of the right leaf.
	*62, 43, 1, 42, 1

Anderse published as part of the documentation which has been made out of a substantial be

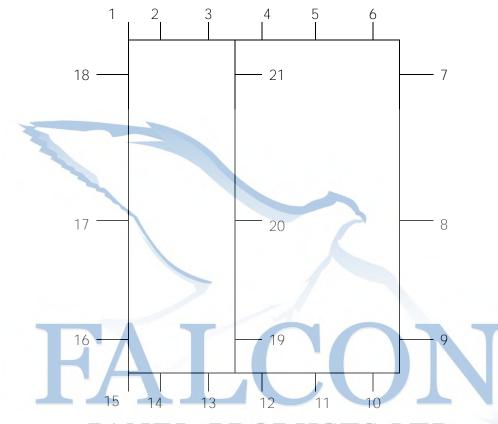
FUT

on panel produces installation and maintenance of the produces installation and maintenance of the door assemblies.

ther information to found on our website at the found on o

- 60:49 A cotton pad test was performed at the threshold of the right leaf which did not result in the ignition of the cotton pad. No failure.
- A cotton pad test was performed at the threshold of the right leaf which did not 65:21 result in the ignition of the cotton pad. No failure.
- 66:06 There is burn-through at the bottom meeting corner of the right leaf.
- 66:38 A cotton pad test was performed at the bottom meeting corner of the right leaf which did not result in the ignition of the cotton pad. No failure.
- 67:18 There is continuous flaming at the handle, thereby constituting integrity failure.
- 67:56 There is continuous flaming at the threshold of the right leaf, thereby constituting further integrity failure.
- 68.00 Test terminated.





5.5 Leaf edge to frame gaps pre-test measurement

			15	14	13	12	11	10				
	-	-P	AN	ap Dime	ension 1	n mm a	nt Positio	TS	LT	D –		of providing dual
1	2	3	4	5	6	7	8	9*	10*	11*	12*	Wildi
3	2.9	2.9	3	2.1	2	2.6	2.2	3	5.2	5	5.1	Store sto
13*	14*	15	16	17	18	19	20	21				ender
5.2	5.1	5	2.7	2.3	3	2.7	2.6	2.5			JUN	pose of pro
Me	ean	2	.8	Maxi	mum	5	.0	Minii	mum		2,55	oft
										et	19'	ibility ose ntial le.
		Gap Be	tween I	ace of	Leaf ar	d Door	stop in	mm at l	Position	"he	anee.	151. OULL ISTA. IISDI
1	2	3	4	5	6	7	8	9	10	<0 ¹ 1101	120	sipilit pose substantiable.
2.5	2.4	2.5	2.4	2.4	2.3	2.3	2.3	2.5	-0.	<u></u>	ne . st	t of which ins'

J.Z	J. I	J	2.7	2.5	5	∠./	2.0	Z.J			~~~·	fthe
Me	ean	2	.8	Maxi	mum	5	.0	Minii	mum	2	2.55	0
Gap Between Face of Leaf and Doorstop in mm at Position												
1	2	3	4	5	6	7	8	9	10	(⁰¹ 110'	122	401 × 350, 340.
2.5	2.4	2.5	2.4	2.4	2.3	2.3	2.3	2.5	-0.11	x5-00	ne - 59	t at o' blich sing'
13	14	15	16	17	18	19	20	21	08:00	11,12	rent	SPALE PULL CESS
-	-	2.5	2.5	2.4	-	-	-	-26	PL	V10.00	N FOLL	spart of a substantial ble.
We part we is a join of the share												
Gap Between Doorframe and Supporting Construction in mm at Position												
1	2	3	4	5	6	7		<39 S	2 100	17	^ر 12	(3 ¹¹ 40 ⁰) *in ⁶
12	13	14	15	16	17	11	13.6	15	ede	0' - N'	- Kill	ation for the provides.

2.0	2.4	2.0	Ζ.4	Ζ.4	2.0	2.3	2.3	2.0		
13	14	15	16	17	18	19	20	21	SP ON HIS LEAT SPACE PULL CLESS	
-	-	2.5	2.5	2.4	-	-	-	- 20	alere ito, can som made se provies.	
	2.3 2.4 2.3 2.3 2.3 2.3 2.5 2.5 2.5 13 14 15 16 17 18 19 20 21 10 11 10 11									
Gap Between Doorframe and Supporting Construction in mm at Position										
1	2	3	4	5	6	7		5°9 ~	2 10 ¹¹	
12	13	14	15	16	17	11	13.6	15	ed a contraction of the rest	
13	14	15	16	17	18	1.90	. 20 .	21.e	leas tion the end tion	
-	-	5	6	5	-	Vall- Ce	<u>-</u> 0	10 ⁻ 1	is cent dig and dentity and	
2.3 2.4 2.3 2.3 2.3 2.3 2.3 2.5 2.5 2.6 5 6 7 8 9 10										

5.6 Times to Failure

When tested in accordance with BS 476: Part 22: 1987, Method 6, determination of fire resistance of fully insulated doorsets and shutter assemblies, the requirements of the standard were satisfied for the following periods:

Integrity	y 67 minute	es	
Insulatio	on 67 minute	es*	
* Failu	re by virtue of integrity	y failure	
		2	
		\cap	
HA			
	DDODIC		
FANEL	rkuduu	19 TIT	
This fire test report has been the test of			
			, ne
		0:50.11×50	,200
		1.falconde Prode	9. 9. /r
	si	In Falcon Pic Product th	ins for
	ale at http://	or Paned age of	n nh
	deavailable evice hot	duct asset in role ntati	nird.r
20	zen machientat property pro	as part of the doct of the area	19 m3
port hast	remains that the uplished	ted to the table to the table to the table to the table tabl	con
evetest ret ast	eport ensuit ence to not	Produce instormatio	0e f0
Thisfly Thister	The rine rest ion par	nutio therit h	58

6 Limitations

The results only relate to the behaviour of 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 results of this test were obtained using the specimens provided for testing, and the door to frame gaps recorded in Section 5.5 of this report. Further, where information in relation to the specimen has been provided to us but not verified by us, we have assumed that it is correct: and where comments above identify particular materials or substances comprised in the specimen those comments are based on information supplied to us and/or on general visual inspection undertaken during the process of testing of the sample, and in either case have not been verified by reference to materials testing or documentary evidence except as described above. The fire resistance performance of doors of this design may be different if any aspect of the design or construction differs from that tested. This includes, by way of example only, any difference as a result of (i) any deviation from the information supplied to us, or (ii) the employment of different door to frame gaps. The tested assembly was asymmetrical and was tested such that the door leaves opened away from the heating conditions of the test. The test result may not be appropriate to situations where by the samples tested have been installed in a different configuration to that which they are tested.

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. No assurance can be given that this test or its results will reflect current practice, and/or be consistent with prevailing legislative / regulatory requirements, at any time after the date of this report. Warringtonfire will be able to offer the addressee of this report, at any time on request, 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. It is strongly recommended that, at the latest, such a review be sought at intervals of no more than five years.

D This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of Warringtonfire. All work and services carried out by Warringtonfire Testing and Certification Limited are subject to, and conducted in accordance with, the Standard Terms and Conditions of Warringtonfire Testing and Certification Limited, which are available at https://www.element.com/terms/termseand-55 PUT conditions or upon request.

Warringtonfire Testing accordance with, the St Certification Limited, wh conditions or upon reque	and Certification Limited are s andard Terms and Conditions of ich are available at https://www.opst.	by ubject to, and conducted in the services carried but by
	Written and checked by:	Authorised by:press P billity of the section of the
Signature:	J.R. Jones	Construction the structure part of the state
Name:	John Jones	Victop Kearley at on the providence of the contract of the con
Title:	Technical Officer	Technical Author
Date of issue:	20/02/2020 ¹⁰¹ 0000000000000000000000000000000	this reperties the stand of the
is fire test report	has been on the that that and as the the that an end as the the that that an end as the the that the the the the the the the the the th	Authorised by: Victor Kearley Technical Author Control for the providence of the

Photographs

Intumescent interruptions by hardware

Around hinge blade



Around latch forend



Closer arm channel in frame head

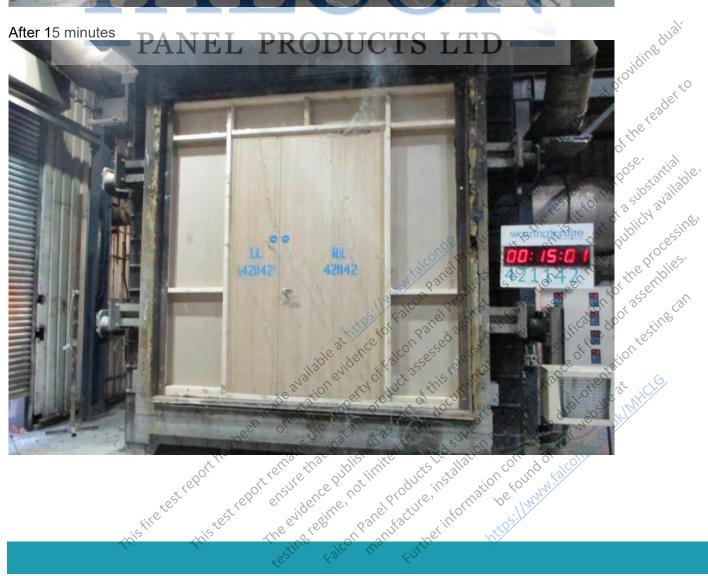
Around drop seal



Intumescet under latch keep







Falc

At start of test



At 60 minutes



Falc

hisfire test report

WF Test Report No. 421142 Page 21 of 21

anderce published as part of the documentation which has been made published as part of the documen

Further information concerning dualorientation testing can

Appendix – Figures 1 to 4

with the the the property of the states of t No test report reported and point as seed against the document of the property of the property

Falc

test

