

**Title:**

The Fire Resistance  
Performance Of An  
Insulated, Sliding Doorset  
When Tested In  
Accordance With BS 476:  
Part 22: 1987, Clause 6

**WF Report No:**

399097



**Prepared for:**

PC Henderson Limited,  
Durham Road,  
Bowburn,  
Durham,  
DH6 5NG.

**Date:**

14th December 2018



0249

# Summary

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<b>Objective</b>	To determine the fire resistance performance of an insulated sliding doorset when tested in accordance with BS 476: Part 22: 1987, Clause 6.
<b>Sponsor</b>	<b>PC Henderson Limited,</b> Durham Road, Bowburn, Durham, DH6 5NG.
<b>Summary of the Tested Specimens</b>	The doorset comprised a 54 mm thick graduated density chipboard leaf with 8 mm thick hardwood lippings to the vertical edges. The leaf had overall dimensions of 2315 mm high by 930 mm wide. The leaf was housed in an aluminium pocket frame with a softwood liner kit. The pocket frame incorporated two pairs of aluminium uprights with noggins and tie backs. The aluminium framing was formed from 55 x 20 mm extruded aluminium sections. The leaf was hung off an aluminium header track on a steel hanger with silicone rubber wheels. The threshold of the leaf ran on a plastic floor guide with the blade running centrally along a channel routed in the base of the leaf. The softwood liner encased the head and formed the uprights / jambs. The door assembly was housed in a timber frame partition, clad on both faces with two layers of 12.5 mm Fireline plasterboard. The doorset was held closed by an internal self-closing mechanism for the test duration.

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## Test Results:

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<b>Integrity</b>	66 minutes*
<b>Insulation</b>	66 minutes*

\*The test was discontinued after a period of 66 minutes.

**Date of Test** 12<sup>th</sup> July 2018

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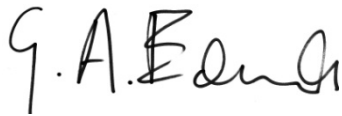
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# Signatories

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Responsible Officer  
**D. Fitzsimmons\***  
Senior Technical Officer



Approved  
**G. Edmonds\***  
Senior Technical Officer

\* For and on behalf of **Warringtonfire**.

Report Issued

Date : 14th December 2018

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# Test Procedure

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## Introduction

The doorset was of an insulated construction, the test was therefore conducted in accordance with Clause 6 of BS 476: Part 22: 1987 'Methods for determination of the fire resistance of non-loadbearing elements of construction' respectively. This test report should be read in conjunction with that Standard and with BS 476: Part 20: 1987, 'Methods for determination of the fire resistance of elements of construction (general principles)'.

The specimen was judged on its ability to comply with the performance criteria for integrity and insulation, as required by BS 476: Part 22: 1987, Clauses 6.

## Fire Test Study Group/EGOLF

Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.

## Instruction to test

The test was conducted on the 12<sup>th</sup> July 2018 at the request of PC Henderson Limited, the test sponsor.

Mr. P Cunningham, representatives of the test sponsor witnessed the test.

## Test Specimen Construction

A comprehensive description of the test construction is given in the Schedule of Components. The description is based on a detailed survey of the specimens and information supplied by the sponsor of the test.

## Installation

The doorset assembly and partition wall were constructed and installed between the 8<sup>th</sup> and the 12<sup>th</sup> of July 2018. Representatives of **Warringtonfire** conducted the build.

## Sampling

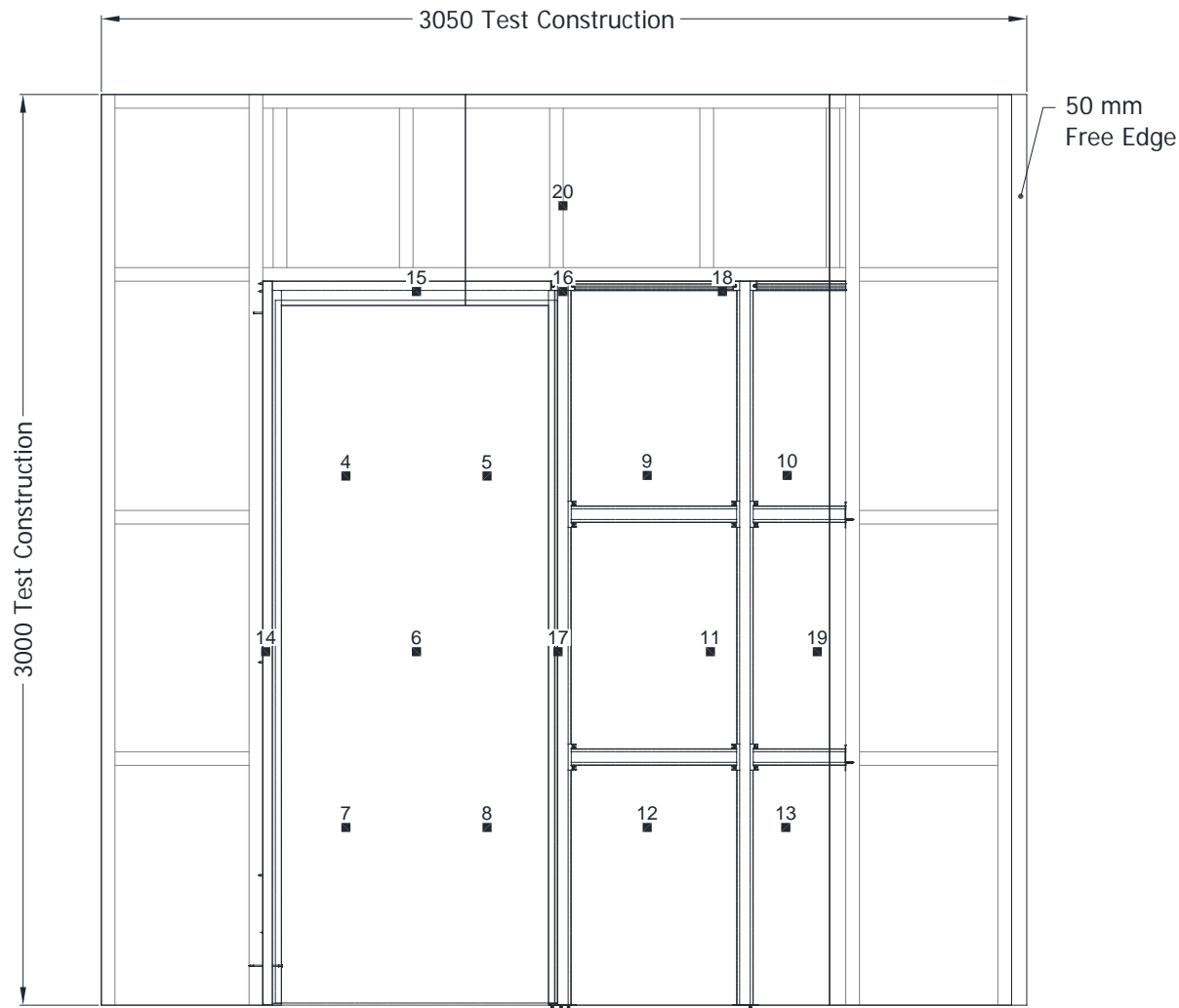
**Warringtonfire** was not involved in the sampling or selection of the tested specimen or any of the components.

## Conditioning

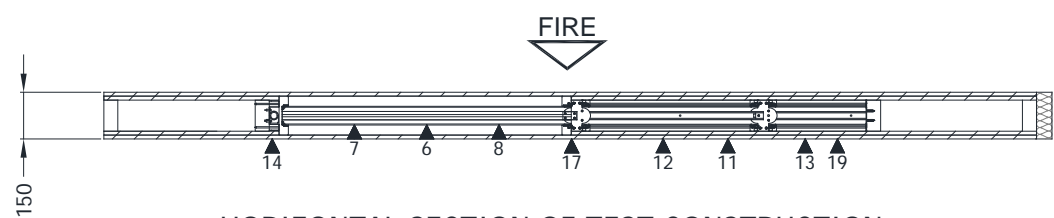
The specimen's storage, construction, and test preparation took place in the test laboratory over a total combined time of 4 days. Throughout this period both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 20°C to 29°C and 34.5% to 60% respectively.

# Test Construction

Figure 1- General Elevation of Thermocouple Positions



GENERAL ELEVATION OF THERMOCOUPLE POSITIONS  
UNEXPOSED FACE

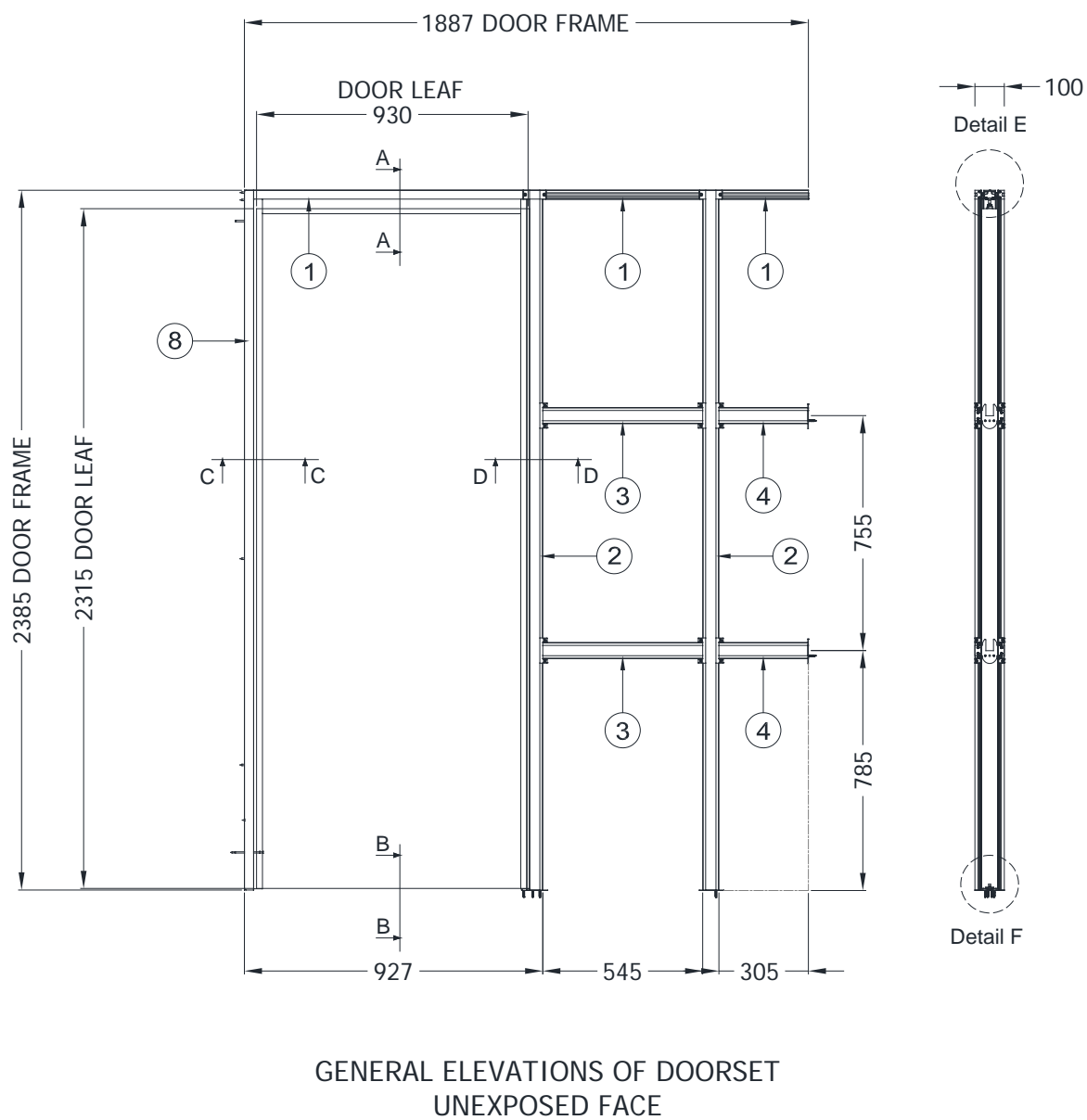


HORIZONTAL SECTION OF TEST CONSTRUCTION

THERMOCOUPLE KEY  
■/▲ Positions of thermocouples

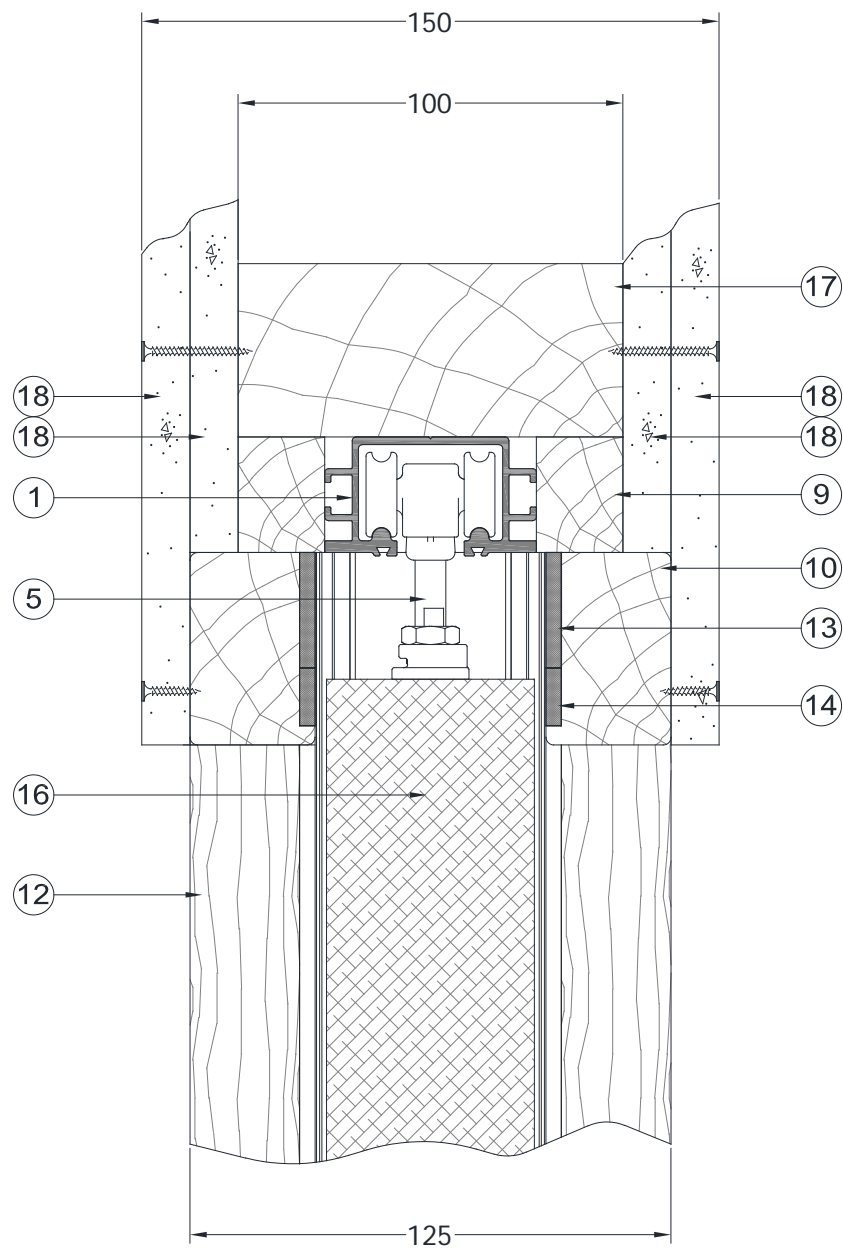
Do not scale. All dimensions are in mm

Figure 2 – Doorset - General Elevations



Do not scale. All dimensions are in mm

Figure 3 – View A-A

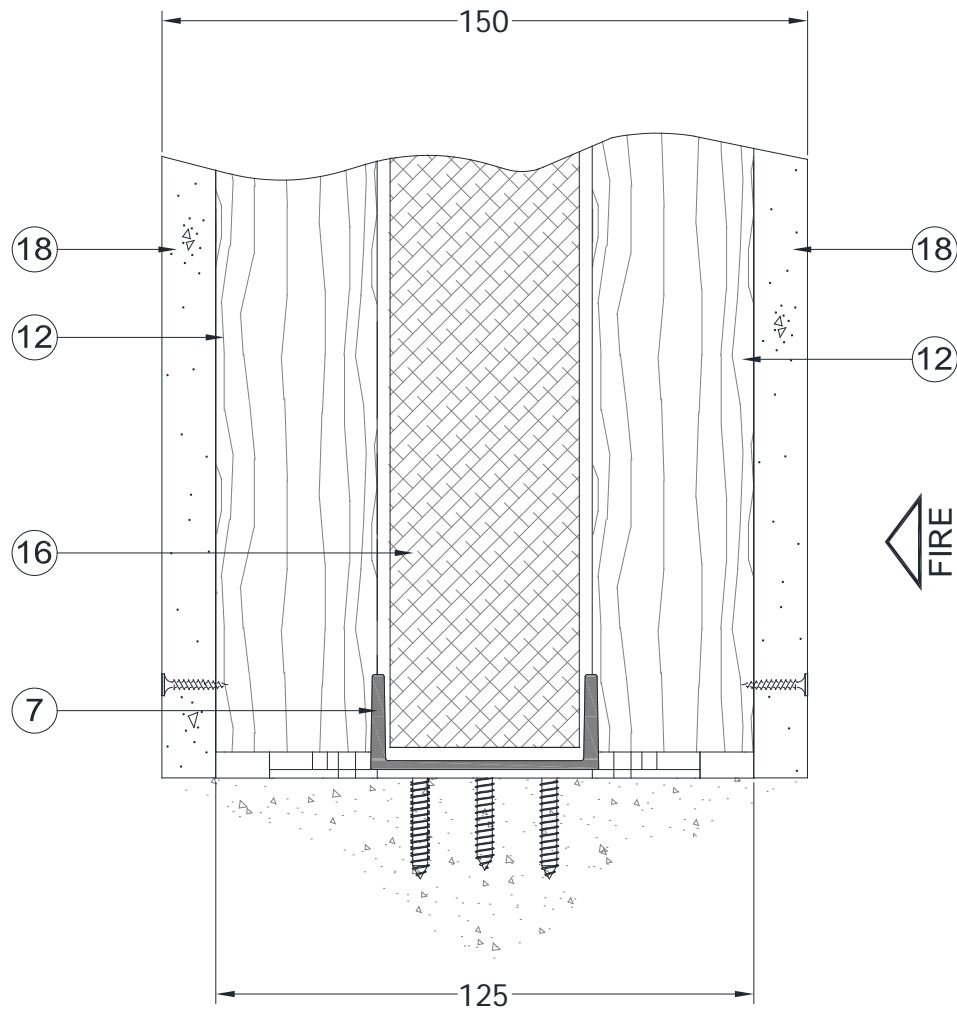


VIEW A-A - TYPICAL SECTION THROUGH  
HEAD OF DOORSET

Do not scale. All dimensions are in mm

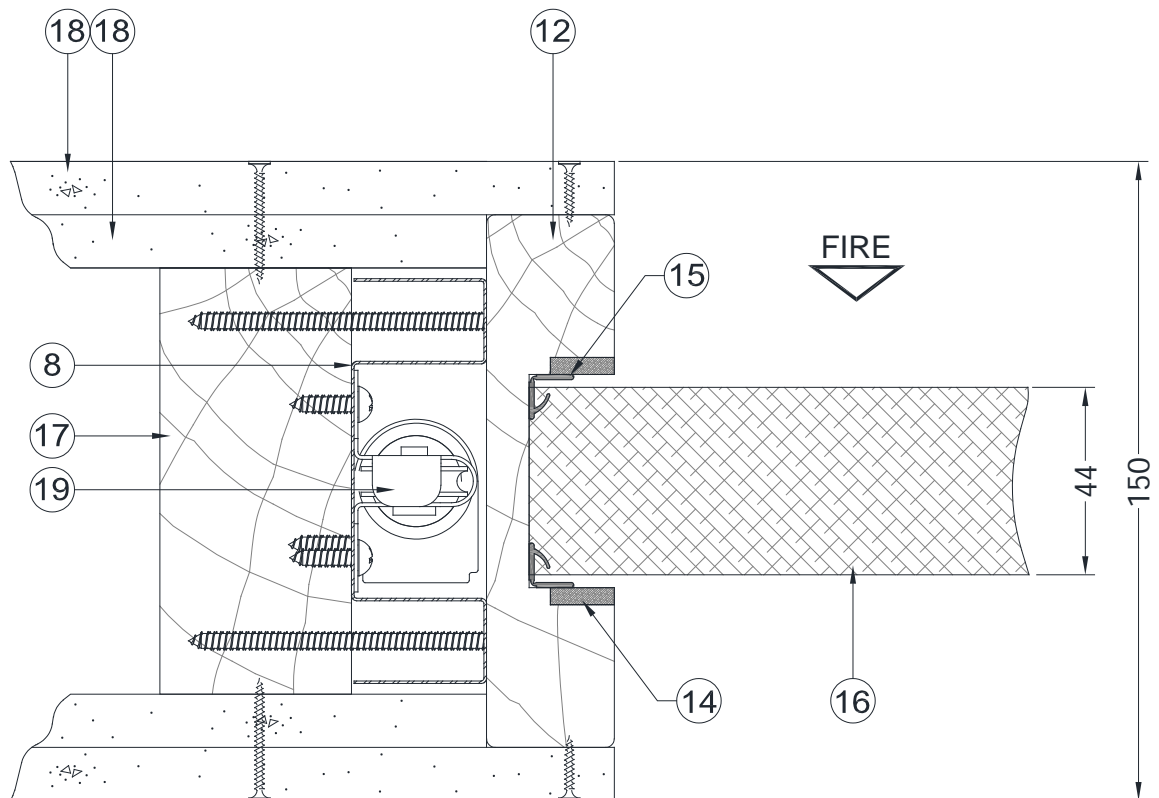


**Figure 4 – View B-B**



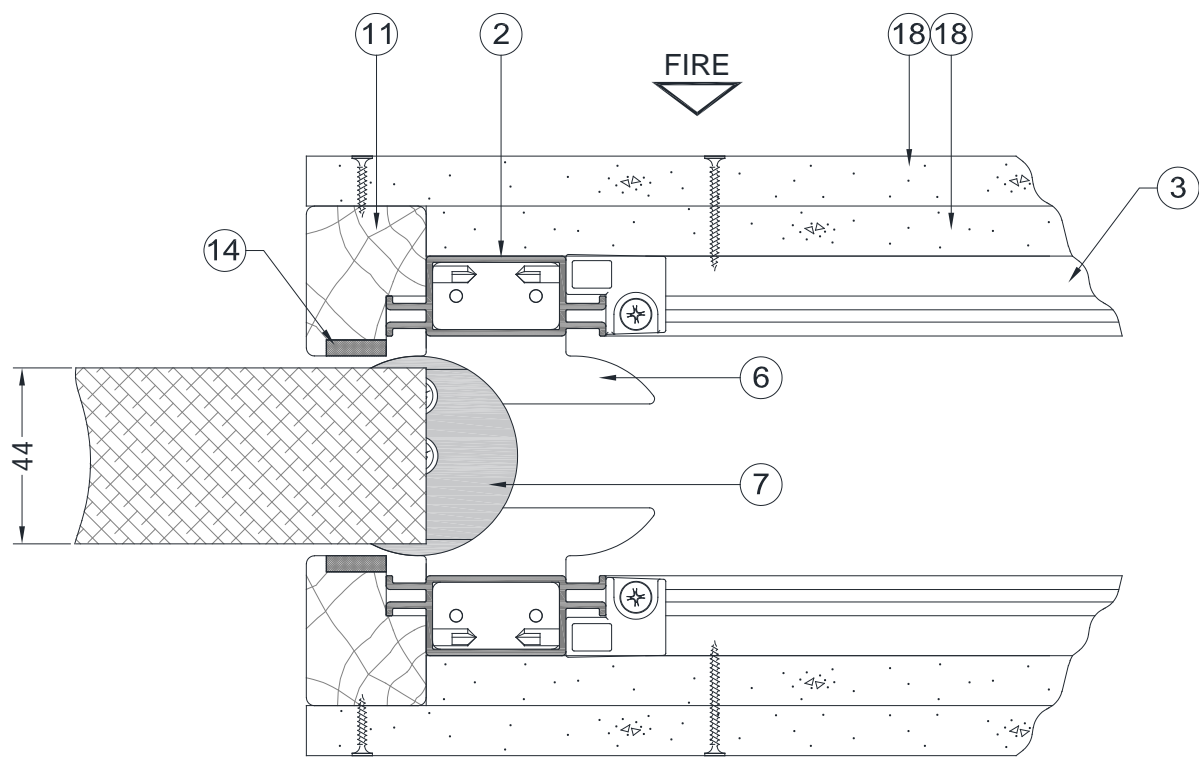
VIEW B-B - TYPICAL SECTION THROUGH  
BASE OF DOORSET

Do not scale. All dimensions are in mm

**Figure 5 – Details of Door Frames and Leaves****TYPICAL SECTION THROUGH VIEW C-C**

Do not scale. All dimensions are in mm

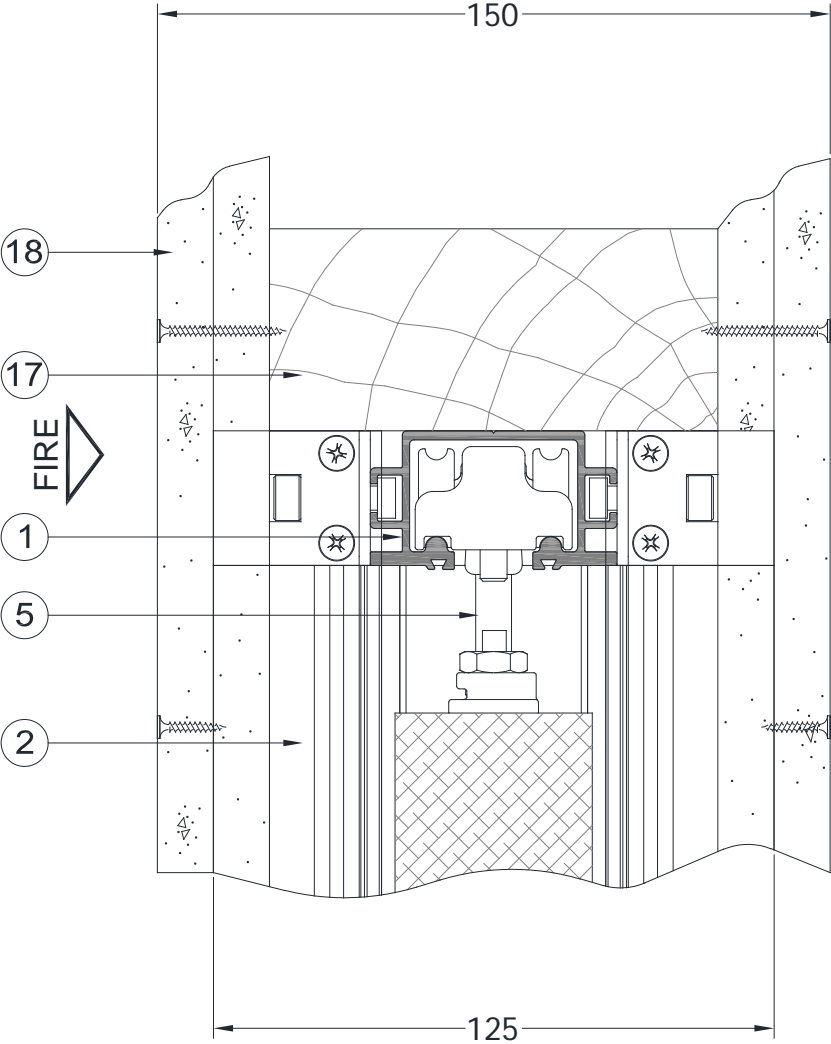
Figure 6 – View D-D



TYPICAL SECTION THROUGH VIEW D-D

Do not scale. All dimensions are in mm

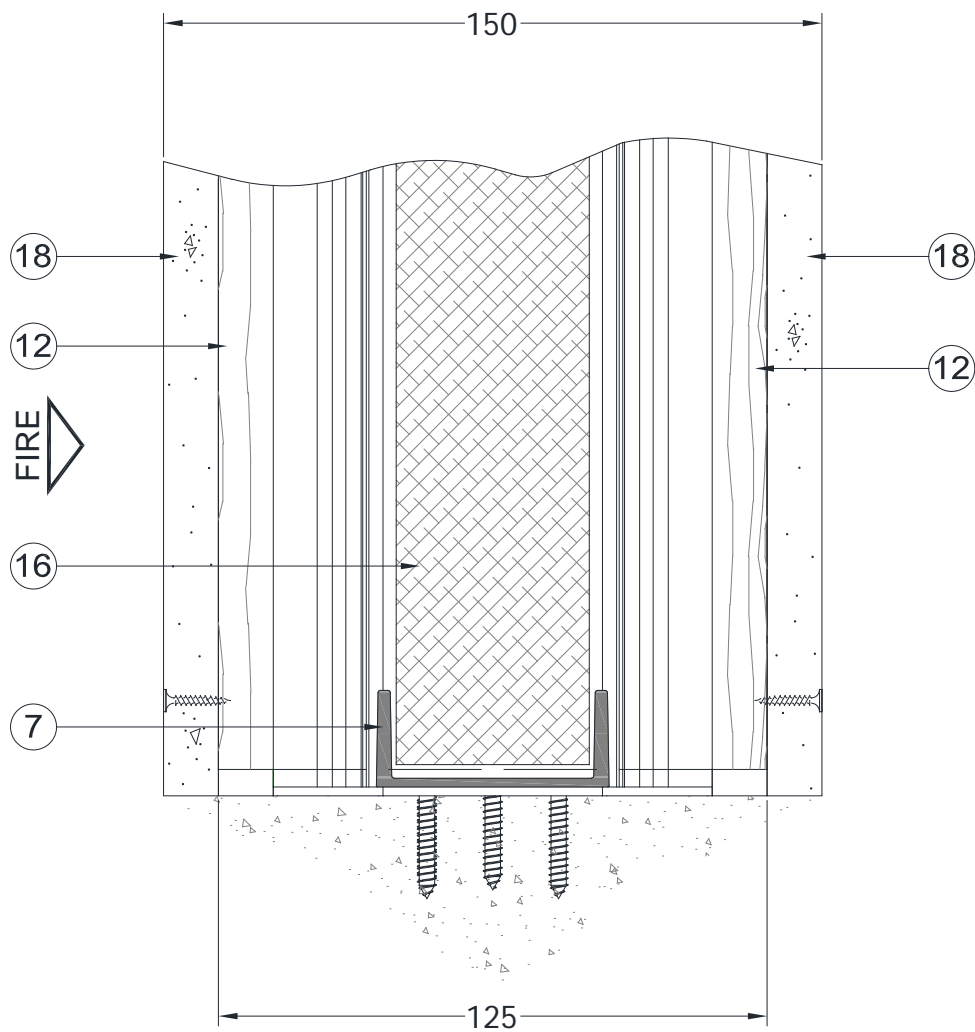
Figure 7 – Detail E-E



DETAIL E-E

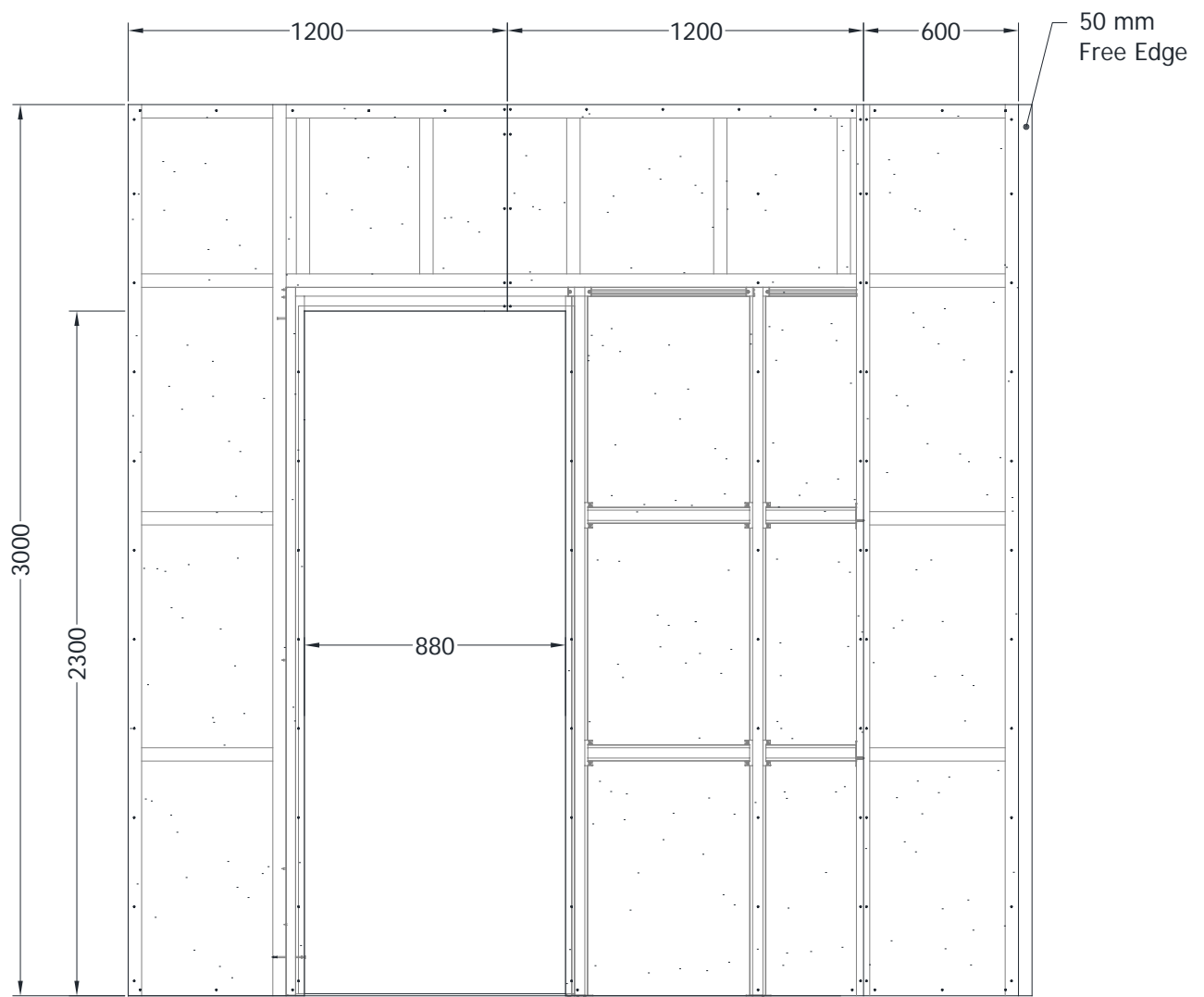
Do not scale. All dimensions are in mm

Figure 8 – Detail F-F

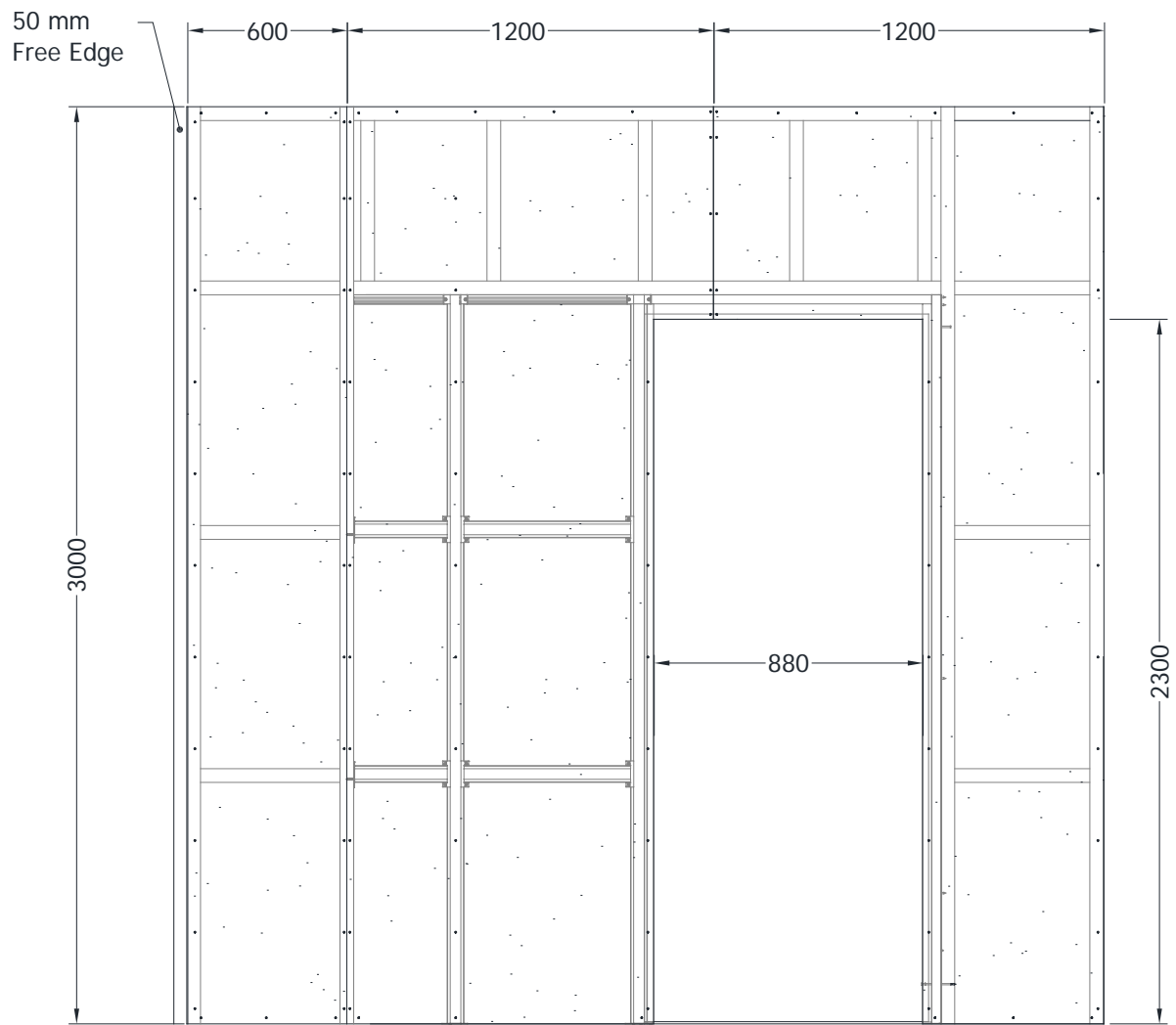


DETAIL F-F

Do not scale. All dimensions are in mm

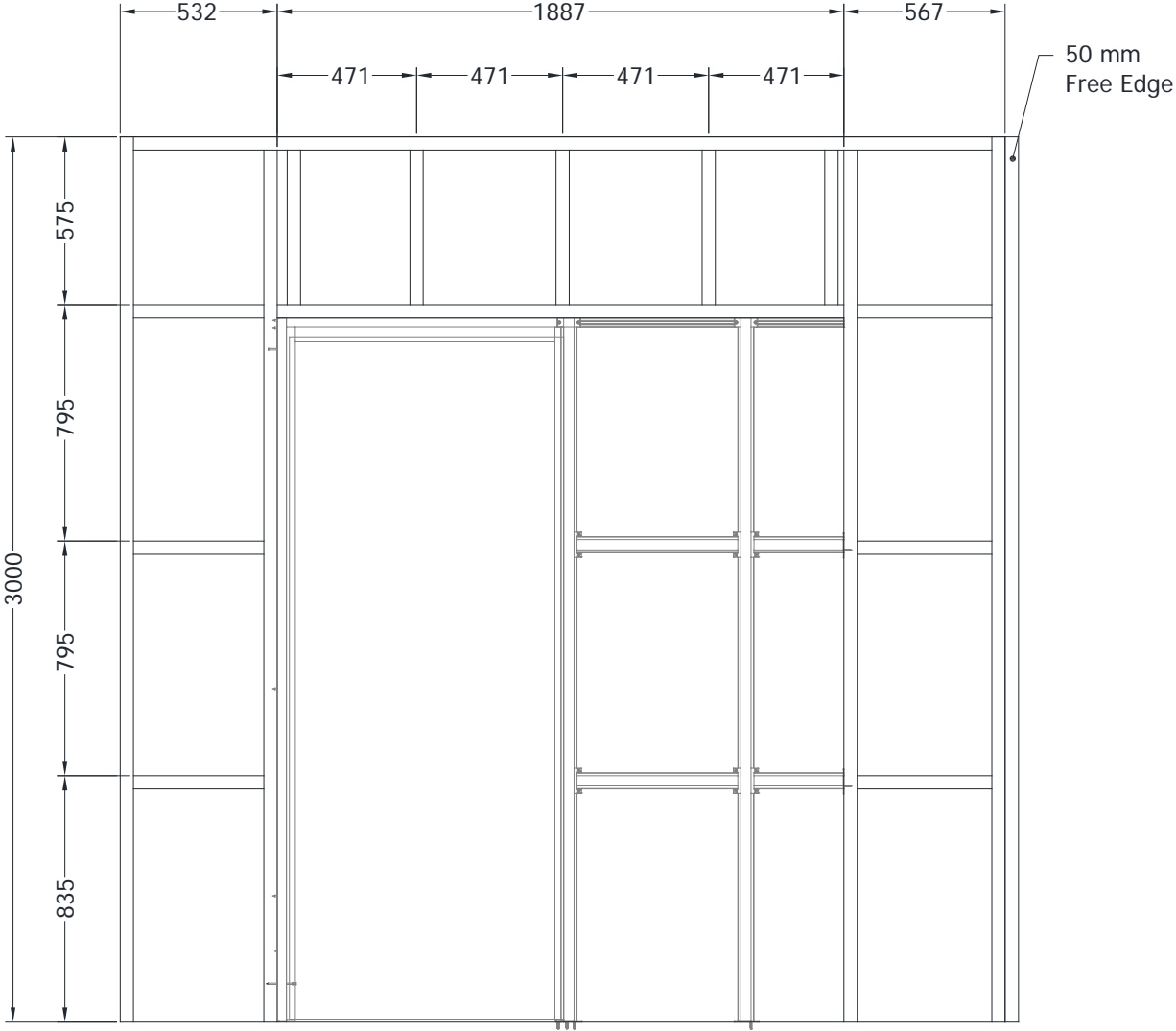
**Figure 9 – Details of Board Positions – Unexposed Face****ELEVATION OF BOARD POSITIONS  
UNEXPOSED FACE**

Do not scale. All dimensions are in mm

**Figure 10 – Details of Board Positions – Exposed Face****ELEVATION OF BOARD POSITIONS  
EXPOSED FACE**

Do not scale. All dimensions are in mm

**Figure 11 – Details of Timber Stud Partition**

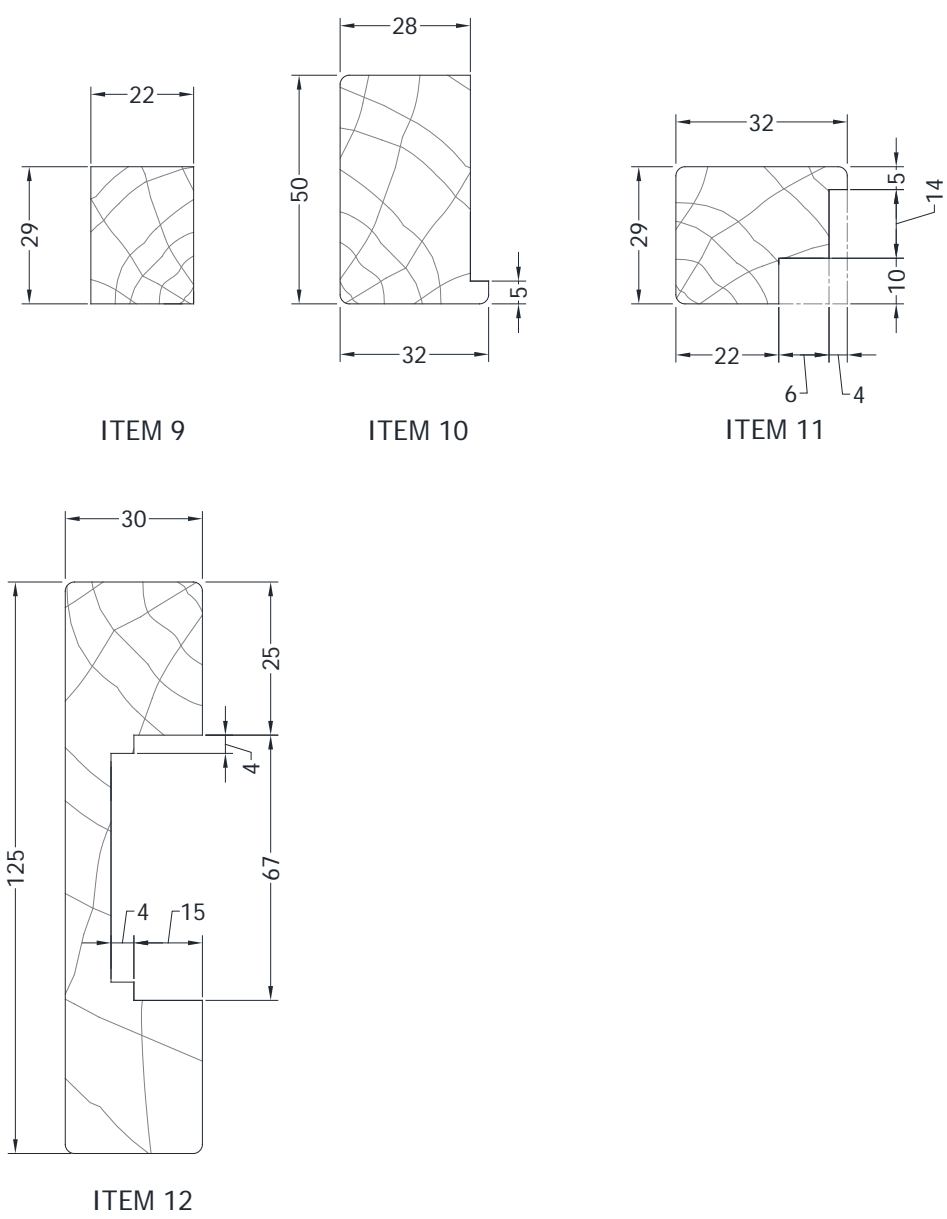


ELEVATION OF FRAME CONSTRUCTION  
UNEXPOSED FACE

Do not scale. All dimensions are in mm



Figure 12 – Details of Timber Liner Kit



DETAILS OF LINER KIT

Do not scale. All dimensions are in mm

**Figure 13 – Photos of Timber framework & Intumescent seals**



Free Edge – Timber Framework

Intumescent seals to item 12



Intumescent and smoke seal to item 12

Intumescent Seals to item 11

Figure 14 – Photos of door leaf



FD30 Door Leaf information - (item 16)



Head of Door Leaf (item 16)

Base of Door Leaf (item 16)



Self-Closing Mechanism (item 19) & Trucking Channel (item 8)



# Schedule of Components

(Refer to Figures 1 to 14)

(All values are nominal unless stated otherwise)

(All other details are as stated by the sponsor)

<u>Item</u>	<u>Description</u>
<b>Aluminium Pocket Door Frame (items 1 – 8)</b>	
<b>1. Header Track</b>	
Material	: Extruded Aluminium
Overall size	: 55 mm x 30 mm x 1887 mm
Fixing method	: Screwed
Fixings	
i. type	: No. 8 x 1" wood screws.
ii. material	: Steel
iii. size	: 25 mm long by 4.8 mm diameter.
Centres	: 6 off, spaced nominally at 300 mm centres
<b>2. Long Upright</b>	
Material	: Extruded Aluminium
Overall size	: 55 mm x 20 mm x 2300 mm
Fixing method	: Fixed with plastic brackets
Fixings	
i. type	: M6 x 20 cap head screws.
ii. material	: Steel
iii. size	: 20 mm long by 6 mm diameter.
Centres	: 8 off, 2 screws per bracket, located at the junction of the Long upright and Header track
<b>3. Noggin</b>	
Material	: Extruded Aluminium
Overall size	: 55 mm x 20 mm x 545 mm
Fixing method	: Fixed with plastic brackets
Fixings	
i. type	: Self-tapping screws
ii. material	: Steel
iii. size	: 25 mm long by 4.2 mm diameter.
Centres	: 4 off per Noggin, 2 screws per bracket, located at the junction of the Noggin and Long upright
<b>4. Tie back</b>	
Material	: Extruded Aluminium
Overall size	: 55 mm x 20 mm x 305 mm
Fixing method	: Fixed with plastic brackets
Fixings	
i. type	: Self-tapping screws
ii. material	: Steel
iii. size	: 25 mm long by 4.2 mm diameter.
Centres	: 4 off per Noggin, 2 screws per bracket, located at the junction of the Noggin and Long upright

<b><u>Item</u></b>	<b><u>Description</u></b>
<b>5. Hangers</b>	
Material	: Galvanised steel body and silicone rubber wheels
Overall size	: 58 mm x 17 mm body with 2 No. 22 mm diameter x 8 mm wheels
Fixing method	: 2 No. brackets screwed to the head of the door leaf
Fixings	
i. type	: No. 8 x 1" wood screws.
ii. material	: Steel
iii. size	: 25 mm long by 4.8 mm diameter.
Centres	: 2 off per bracket, spaced equally across the head of the door leaf
<b>6. Floor Bracket</b>	
Material	: Extruded Aluminium
Overall size	: 100 mm x 83 mm x 4 mm
Fixing method	: Screwed
Fixings	
i. type	: No. 8 x 1" wood screws.
ii. material	: Steel
iii. size	: 25 mm long by 4.8 mm diameter.
Centres	: 3 off per bracket, brackets spaced nominally at 600 mm centres
<b>7. Rotating Door Guide</b>	
Material	: Plastic
Overall size	: 52 mm diameter, 2 No. 22 mm blades
Fixing method	: Screwed
Fixings	
i. type	: No. 8 x 1" wood screws.
ii. material	: Steel
iii. size	: 25 mm long by 4.8 mm diameter.
Centres	: 2 off per unit, 1 No. unit fixed to the floor bracket
<b>8. Trucking Channel</b>	
Material	: Galvanised steel
Overall size	: 95 mm x 31 mm x 2355 mm
Fixing method	: Screwed
Fixings	
i. type	: No. 8 x 1" wood screws.
ii. material	: Steel
iii. size	: 25 mm long by 4.8 mm diameter.
Centres	: 4 off per unit, equally spaced
<b>Softwood liner kit (items 9 – 12)</b>	
<b>9. Track Packer</b>	
Material	: Softwood
Overall size	: 29 mm x 22 mm x 1845 mm
Fixing method	: Screwed
Fixings	
i. type	: SS 1 & ¾ " x 8G wood screws
ii. material	: Steel
iii. size	: 44 mm long by 4.8 mm diameter.
Centres	: 4 off per unit, equally spaced along the head of the door leaf

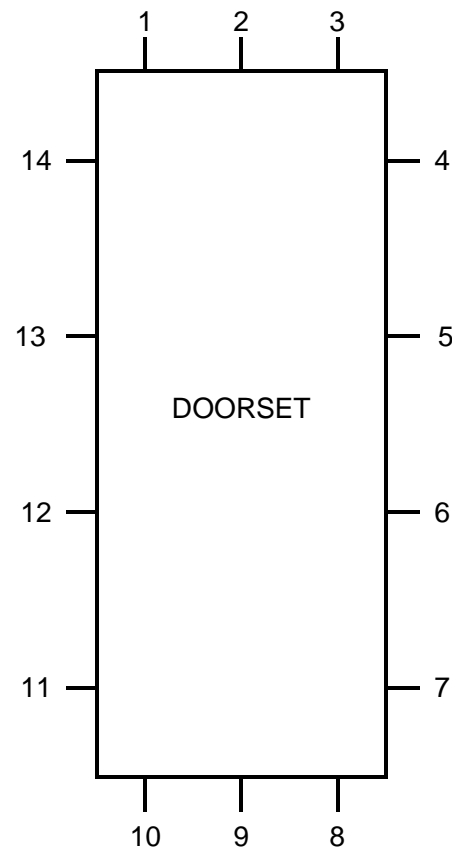
<b><u>Item</u></b>	<b><u>Description</u></b>
<b>10. Header</b>	
Material	: Softwood
Overall size	: 32 mm x 50 mm x 1765 mm
Fixing method	: Screwed
Fixings	
i. type	: 10G x 4" wood screws
ii. material	: Steel
iii. size	: 100 mm long by 6 mm diameter.
Centres	: 3 off per unit, equally spaced along the head of the door leaf, butted underneath the Track packer
<b>11. Non brush upright</b>	
Material	: Softwood
Overall size	: 32 mm x 29 mm x 2347 mm
Fixing method	: Screwed
Fixings	
i. type	: 4.8 x 45 mm Self-tapping drilling screws
ii. material	: Steel
iii. size	: 45 mm long by 4.8 mm diameter.
Centres	: 3 off per unit, equally spaced fixed to the aluminium long upright (item 2)
<b>12. Non brush jamb upright</b>	
Material	: Softwood
Overall size	: 123 mm x 30 mm x 2347 mm
Fixing method	: Screwed
Fixings	
iv. type	: SS 1 & ¾" x 8G wood screws
v. material	: Steel
vi. size	: 44 mm long by 4.8 mm diameter.
Centres	: 3 off per unit, equally spaced fixed to the Trucking channel (item 8)
<b>13. Intumescent Seal</b>	
Manufacturer	: Pyroplex Ltd
Reference	: Rigid Box Seal (CF 355)
Material	: Graphite intumescent strip within a polyvinyl chloride, PVC, carrier
Overall size	: 30 mm x 4 mm
Fixing method	: Self-adhered into grooves within rebate of frame
<b>14. Intumescent Seal</b>	
Manufacturer	: Pyroplex Ltd
Reference	: Rigid Box Seal (CF 355)
Material	: Graphite intumescent strip within a polyvinyl chloride, PVC, carrier
Overall size	: 15 mm x 4 mm
Fixing method	: Self-adhered into grooves within rebate of frame
<b>15. Acoustic Smoke Seal</b>	
Manufacturer	: Deventer
Reference	: Delta Smoke Seal
Material	: TPE (thermos plastic elastomer)
Overall size	: 10 mm x 10 mm
Fixing method	: Self-adhered into grooves within rebate of frame

<b><u>Item</u></b>	<b><u>Description</u></b>
<b>16. Door Leaf</b>	
Manufacturer	: Adcas 1997 Ltd
Reference	: FD60 048
Overall thickness	: 54 mm
Construction	
Core	: Chipboard
Facings	:
i. type	: High pressure bonded laminate (HPL)
ii. thickness	: 0.8 mm (nominal)
iii. fixing Method	: Bonded
Adhesive to HPL Facings	
iv. type	: Urea Formaldehyde resin combined with a liquid UX0104 Hardener
v. reference	: Borden F120
vi. curing Method	: Heated press
vii. application method	: Rolled
Lippings	: Hardwood 8 mm thick, to vertical edges only
viii. species	: Sapele
ix. density	: 620 ~ 660 kg/m <sup>3</sup> , nominal
Adhesive to lippings	
x. manufacturer	: Hexion
xi. type	: Urea Formaldehyde resin combined with a liquid UX0104 Hardener
xii. reference	: Borden F120
xiii. curing Method	: Heated press
xiv. application method	: Rolled
<b>17. Timber Frame</b>	
Supplier	: Warringtonfire
Material	: Softwood, Grade C16
Section Size	: 100 x 45 mm
Surface Finish	: Planed all round
Fixing Method	: Head and bottom rails butt jointed and screwed to vertical studs. The right hand stud, as viewed from the unexposed face, was not fixed to the perimeter of the test frame leaving a nominal 50 mm free edge. The gap between was filled using ceramic wool fibre gasket.
Fixings	
i. type	: Countersunk head wood screws
ii. material	: Steel screws with plastics plugs
iii. size	: 100 mm long by 4.8 diameter
<b>18. Type F Plaster Board</b>	
Manufacturer	: British Gypsum.
Type	: Gyprock Fireline Type F Wallboard to EN 520.
Board size	: 1200 x 3000 mm.
Thickness	: 12.5 mm.
Density	: 800 kg/m <sup>3</sup> (stated).
Fixing method	: 2 layers fixed to the head track, vertical stud and base track of the partition and butt jointed. Board joints staggered in relation to the previous layer.
Fixings	
i. manufacturer	: British Gypsum.
ii. type	: Coarse thread, drywall screw.
iii. material	: Galvanised steel.

<b><u>Item</u></b>	<b><u>Description</u></b>
<b>18.Type F Plaster Board continued.</b>	
iv. size (layer 1)	: 2.5 x 25 mm.
v. size (layer 2)	: 2.5 x 50 mm.
vi. perimeter of stud partition	: 300 mm - screws adjacent on board joints.
vii. vertical timber studs	: 300 mm - screws adjacent on board joints.
Joint Tape	
viii. manufacturer	: British Gypsum.
ix. reference	: Gyproc Plasterboard scrim tape.
Joint Filler	
x. manufacturer	: British Gypsum.
xi. reference	: Gyproc Joint Filler.
xii. description	: Gypsum based material for filling and finishing joints in plasterboard systems.
<b>19. Self-Closing Mechanism</b>	
Material	: Plastic / Aluminium
Overall size	: 730 mm x 21 mm diameter
Fixing method	: Fixed to the Trunking channel
Fixings	
i. type	: 38 mm x 8G screw
ii. material	: Steel
iii. size	: 38 mm long by 4.8 mm diameter.
Centres	: 2 off per unit, equally spaced fixed to the Trucking channel (item 8)



# Doorset Clearance Gaps



View from unexposed face

Gap Dimension Measured From The Unexposed Face													
1	2	3	4	5	6	7	8*	9*	10*	11	12	13	14
1.2	1.7	2.3	4.4	4.9	3.6	4.6	11	9.6	7.4	3	1.7	1.3	0.9
Mean		2.7		Maximum			4.9		Minimum			0.9	

Gap Dimensions Measured From The Exposed Face													
1	2	3	4	5	6	7	8*	9*	10*	11	12	13	14
3.5	2.8	3.2	4.1	3.1	4.2	6	N/A	N/A	N/A	1.6	2.2	3.1	3.6

\* Dimension not included in calculations  
# Gap not measured

DO NOT SCALE  
ALL DIMENSIONS ARE IN mm

# Instrumentation

<b>General</b>	The instrumentation was provided in accordance with the requirements of BS 476: Part 22: 1987, Clause 6.
<b>Furnace</b>	The furnace was controlled so that its mean temperature complied with the requirements of BS 476: Part 20: 1987, Clause 3.1. using nine mineral insulated thermocouples distributed over a plane 100 mm from the surface of the test construction.
<b>Thermocouple Allocation</b>	Thermocouples were provided to monitor the unexposed surface of the specimen. The output of all instrumentation was recorded at no less than one minute intervals as follows:
<b>Thermocouples 4 to 8</b>	At five positions on the unexposed surface of the doorset, one approximately at the centre and one at approximately the centre of each quarter section of the doorset.
<b>Thermocouples 9 to 13</b>	At five positions on the unexposed face of the partition over the pocket void, one approximately at the centre and one at approximately the centre of each quarter section of the pocket void area.
<b>Thermocouple 14, 15 and 17</b>	At three position around the perimeter of the Doorset on the on the unexposed face of the partition
<b>Thermocouples 16 and 18</b>	On the unexposed face of the partition, at two position corresponding to the hanger track in the pocket void
<b>Thermocouple 19</b>	On the unexposed face of the partition at a position corresponding to perimeter edge of the pocket void, at mid-height.
<b>Thermocouple 20</b>	On the unexposed face of the partition at approximately mid-span, in-between the top of the doorset and the top of the partition.
<b>Thermocouple 21</b>	For information only, internal thermocouple located in the void of the partition adjacent to the plastic fixings at mid-height.  The locations and reference numbers of the various unexposed surface thermocouples are shown in Figure 1.
<b>Roving Thermocouple</b>	A roving thermocouple was available to measure temperatures on the unexposed surface of the specimens at any position which might appear to be hotter than the temperatures indicated by the fixed thermocouples.
<b>Integrity Criteria</b>	Cotton pads and gap gauges were available to evaluate the impermeability of the specimens where relevant.
<b>Furnace Pressure</b>	After the first five minutes of testing and for the remainder of the test, the furnace atmospheric pressure was controlled so that it complied with the requirements of BS 476: Part 20: 1987, Clause 3.2.2 (including allowance for transient occurrences in-line with Clause 12(I)). The calculated pressure differential relative to the laboratory atmosphere at the top of the clear opening was 11 ( $\pm 2$ ) Pa equating to 0 Pa at a point 1m above the notional floor level.

# Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
00	00	<b>The test commences.</b>
06	21	Very light steam/smoke release issues from the top corners of the door leaf.
08	12	When viewed from the exposed face the specimen has ignited. The paper face of the plasterboard and door leaf's veneer is observed peeling away.
11	15	Very light steam/smoke release issues along the head and from $\frac{3}{4}$ height up the trailing edge.
15	00	Steam/smoke release decreases.
28	00	Steam/smoke release continues to decrease. Steam/smoke release is now only issuing from the top corner of the trailing edge.
35	00	Steam/smoke release continues from the top corner of the trailing edge as light steam/smoke release issues from the top corner of the leading edge.
36	00	A dark discolouring is observed from approximately 300mm down from the head on the leading edge.
42	00	Steam/smoke release from the top of the vertical edges of the door leaf increase as dark discolouring spreads.
46	00	When viewed from the exposed face the joint in the boards are observed expanding as the frame lining is seen charring away.
58	00	Discolouring and smoke release continues from the top corners. Cotton pad integrity test is performed at top corner of the trailing edge, the pad discolours but does not ignite.
63	00	A large amount of deflection toward the furnace conditions is observed at mid-height of the trailing edge.
66	00	<b>The test is discontinued at the client's request.</b>

# Test Photographs

The exposed face of the test construction prior to testing



The unexposed face of the test construction prior to the start of the test





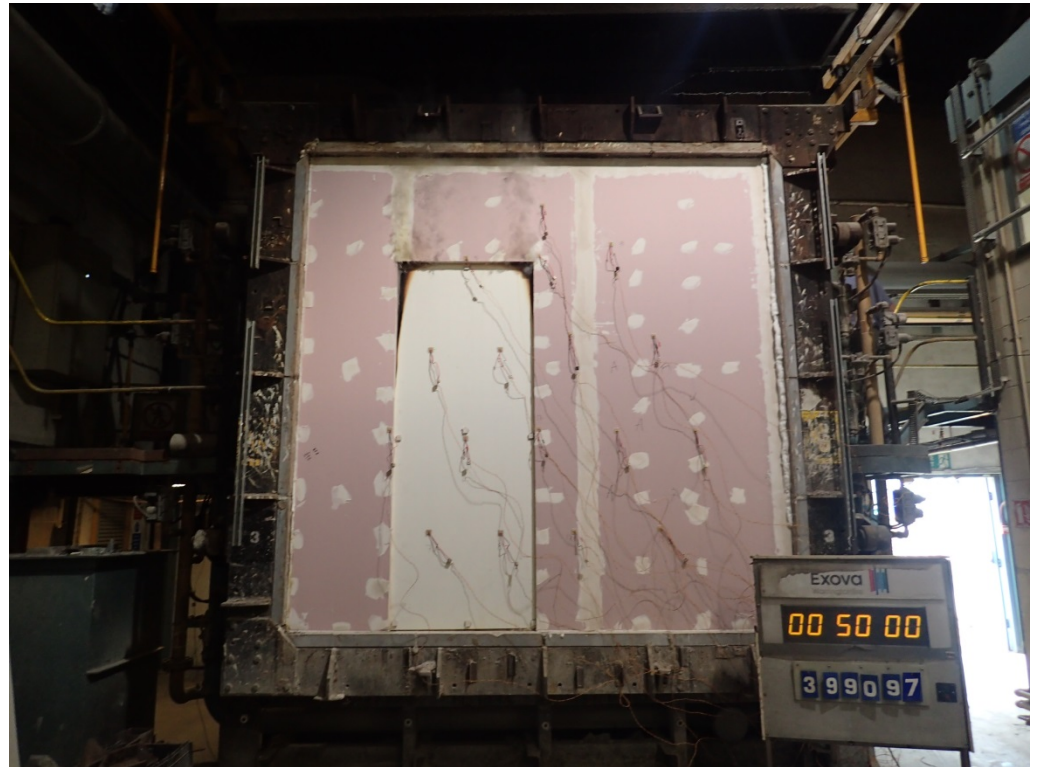
The unexposed face of the test construction after a test duration of 10 minutes



The unexposed face of the test construction after a test duration of 30 minutes



The unexposed face of the test construction after a test duration of 50 minutes



The unexposed face of the test construction after a test duration of 60 minutes





The unexposed face of the test construction after a test duration of 66 minutes



The exposed face of the test construction immediately after the test



## Temperature and Deflection Data

### Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	35
2	445	425
4	544	534
6	603	601
8	646	660
10	678	692
12	706	702
14	728	710
16	748	768
18	766	758
20	781	789
22	796	805
24	809	823
26	820	831
28	832	845
30	842	848
32	852	838
34	860	865
36	869	880
38	877	887
40	885	892
42	892	900
44	899	910
46	906	915
48	912	925
50	918	923
52	924	930
54	930	935
56	935	940
58	940	939
60	945	943
62	950	952
64	955	959
66	960	960



**Individual And Mean Temperatures Recorded On The Unexposed Surface Of The Doorset**

Time Mins	T/C Number 4 Deg. C	T/C Number 5 Deg. C	T/C Number 6 Deg. C	T/C Number 7 Deg. C	T/C Number 8 Deg. C	Mean Temp Deg. C
0	21	21	21	22	21	21
2	21	21	22	22	21	21
4	21	21	22	22	21	21
6	21	21	22	22	22	22
8	21	21	22	22	22	22
10	21	22	22	22	22	22
12	21	22	22	22	22	22
14	22	22	22	22	22	22
16	22	22	22	22	22	22
18	22	23	23	23	23	23
20	23	23	24	23	24	23
22	24	24	25	24	25	24
24	25	25	26	25	26	25
26	26	27	27	26	27	27
28	27	28	29	28	29	28
30	29	29	31	29	31	30
32	31	31	33	31	33	32
34	33	33	35	33	35	34
36	36	36	37	35	37	36
38	38	38	39	37	39	38
40	41	41	42	40	42	41
42	44	44	44	43	45	44
44	47	47	47	45	47	47
46	50	50	50	48	50	50
48	53	53	53	51	53	53
50	56	56	56	54	55	55
52	59	59	59	58	58	59
54	63	63	62	61	61	62
56	65	66	65	65	64	65
58	68	69	69	69	67	68
60	71	72	72	72	70	71
62	74	75	75	75	73	74
64	76	77	77	78	76	77
66	78	79	79	81	78	79

**Individual And Mean Temperatures Recorded On The Unexposed Surface Of The Partition Over  
The Pocket Void**

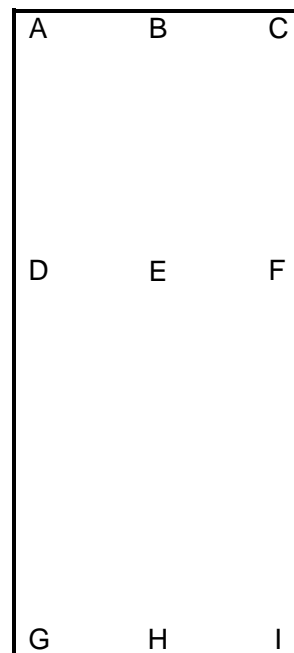
Time Mins	T/C Number 9 Deg. C	T/C Number 10 Deg. C	T/C Number 11 Deg. C	T/C Number 12 Deg. C	T/C Number 13 Deg. C	Mean Temp Deg. C
0	21	21	21	21	22	21
2	21	21	21	21	22	21
4	21	22	22	21	22	22
6	21	22	22	21	22	22
8	21	22	22	21	22	22
10	22	23	22	22	22	22
12	23	24	23	22	23	23
14	24	25	24	23	24	24
16	26	27	26	25	25	26
18	27	29	28	26	27	27
20	29	31	30	28	29	29
22	31	33	31	29	30	31
24	33	35	33	31	31	33
26	35	37	35	32	33	34
28	37	40	37	34	35	37
30	39	42	39	35	36	38
32	43	46	42	38	39	42
34	46	50	46	41	42	45
36	50	54	50	44	46	49
38	53	57	53	47	49	52
40	59	60	56	48	50	55
42	64	63	58	49	51	57
44	67	65	60	50	51	59
46	69	66	62	50	52	60
48	72	67	63	51	52	61
50	73	68	65	52	52	62
52	74	69	67	53	53	63
54	74	69	68	55	55	64
56	73	69	70	58	57	65
58	73	70	71	63	60	67
60	73	70	72	67	63	69
62	73	70	72	70	66	70
64	73	70	72	71	67	71
66	73	70	72	71	66	70

**Individual Temperatures Recorded Around The Perimeter Of The Doorset And The Pocket Void On  
The Unexposed Face Of The Partition And Above The Doorset**

Time Mins	T/C Number 14 Deg. C	T/C Number 15 Deg. C	T/C Number 16 Deg. C	T/C Number 17 Deg. C	T/C Number 18 Deg. C	T/C Number 19 Deg. C	T/C Number 20 Deg. C
0	21	21	20	21	22	22	22
2	21	21	20	21	22	22	23
4	21	21	20	21	22	22	23
6	21	21	20	21	22	22	23
8	21	22	21	21	22	22	23
10	21	25	22	22	22	22	23
12	21	28	22	22	23	22	24
14	21	31	24	22	23	23	25
16	21	32	25	22	24	23	27
18	21	33	27	23	25	24	29
20	22	31	28	23	26	25	31
22	22	30	30	24	27	26	33
24	22	28	32	25	29	27	35
26	23	28	33	26	30	28	37
28	23	26	34	27	32	29	39
30	24	25	35	28	33	30	41
32	24	26	36	29	35	32	43
34	25	26	38	30	38	34	46
36	26	26	40	32	40	35	48
38	26	26	42	33	43	38	51
40	27	27	44	35	45	40	53
42	28	27	47	36	48	42	56
44	29	28	50	38	50	44	58
46	29	28	53	40	53	46	60
48	30	29	56	43	56	48	62
50	31	30	59	45	58	50	63
52	33	31	61	49	60	52	64
54	34	32	64	53	61	54	65
56	36	32	65	56	63	55	66
58	37	34	66	56	64	57	67
60	38	35	67	58	65	59	68
62	40	36	68	61	66	60	70
64	41	37	68	64	67	62	71
66	43	38	69	68	68	63	72

**Temper measured in the cavity adjacent to the plastic fixings at mid-height**

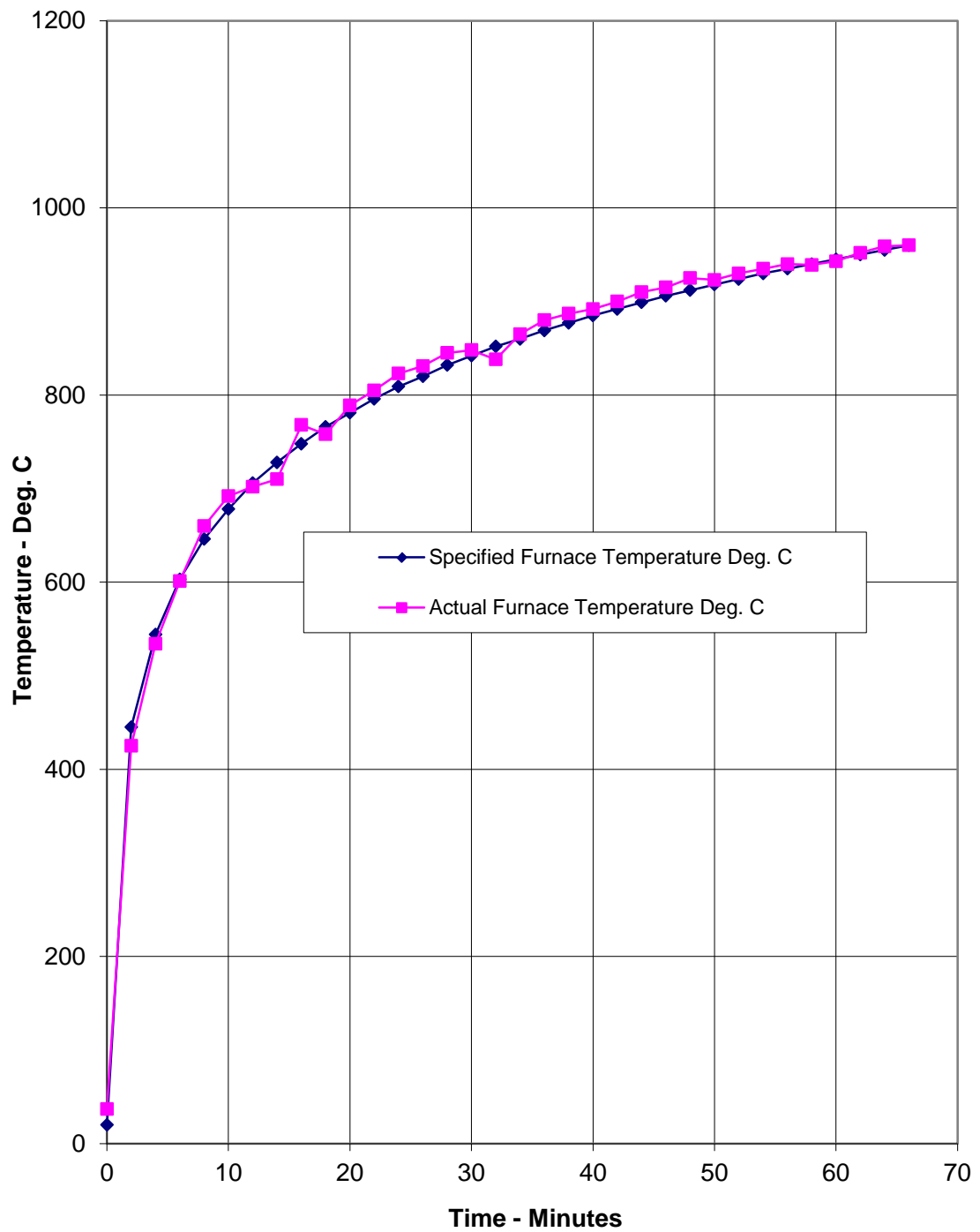
Time Mins	T/C Number 21 Deg. C
0	24
2	24
4	25
6	31
8	41
10	49
12	54
14	57
16	59
18	61
20	64
22	65
24	69
26	75
28	80
30	84
32	86
34	88
36	85
38	85
40	112
42	124
44	136
46	153
48	166
50	178
52	190
54	203
56	218
58	264
60	311
62	329
64	350
66	377

**Deflections of the Doorset During the Test**

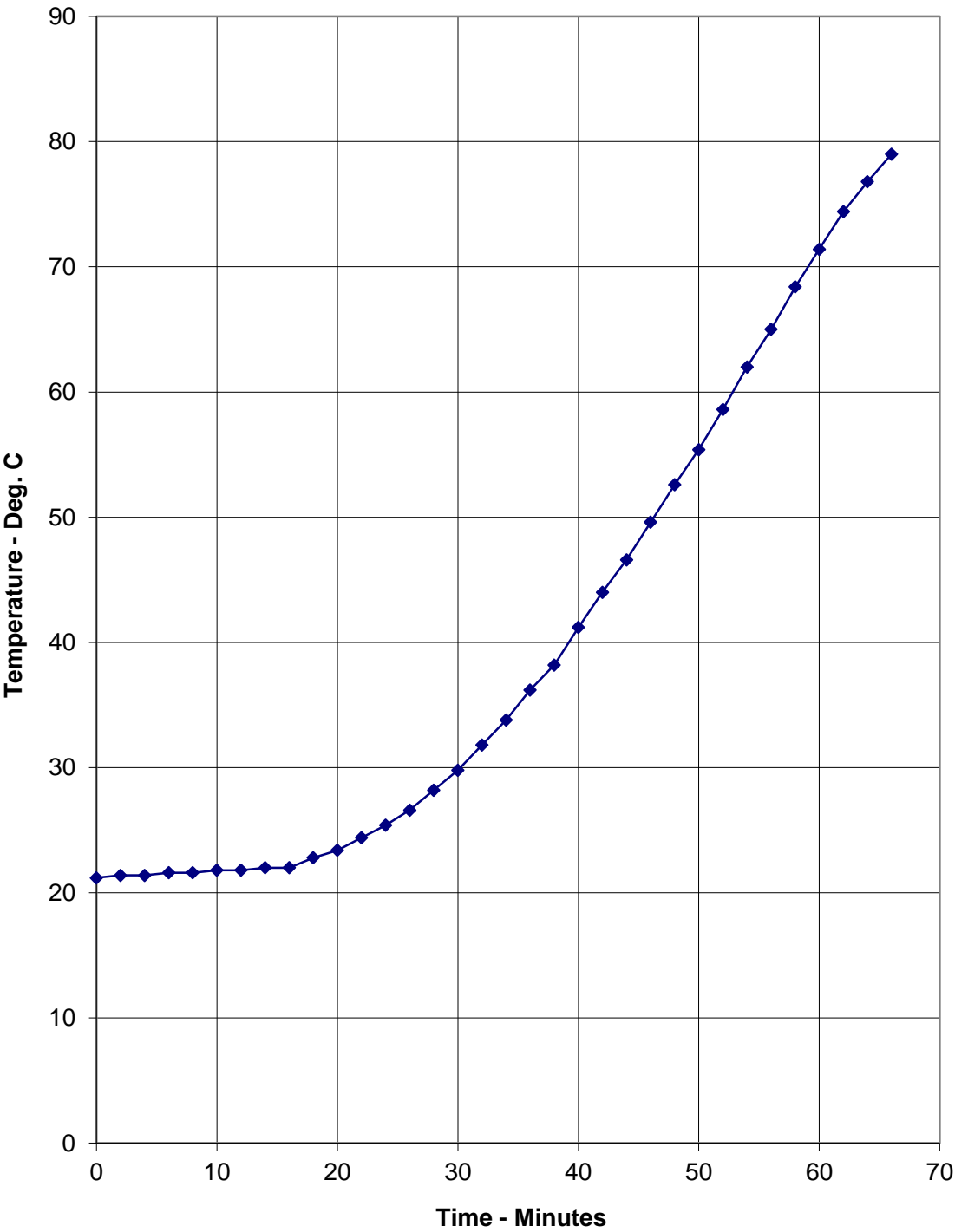
Deflections - mm									
TIME mins	A	B	C	D	E	F	G	H	I
0	0	0	0	0	0	0	0	0	0
10	3	2	4	0	0	4	-3	-2	-2
20	3	2	1	-3	0	1	-5	-3	-3
30	2	4	5	-3	-1	1	-6	-4	-6
40	-5	5	4	-5	-1	4	-4	-1	-1
50	5	3	0	-1	1	10	-3	-5	0
60	3	4	-3	6	23	62	-3	-6	-2

Positive values indicate movement towards the furnace chamber

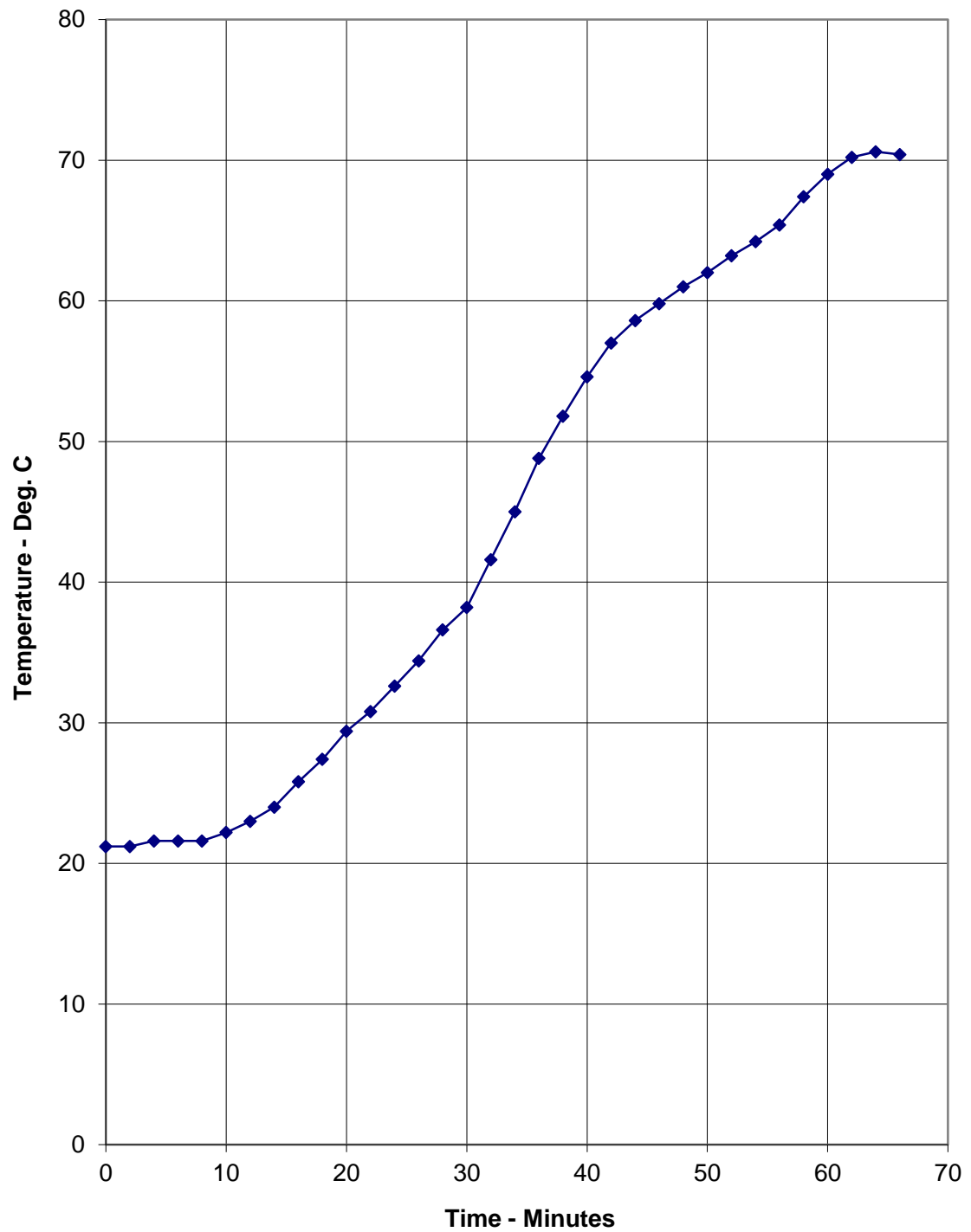
**Graph Showing Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard**



Graph Showing Mean Temperature Recorded On The Unexposed Surface The Doorset



**Graph Showing Mean Temperature Recorded On The Unexposed Surface The Partition Over The Pocket Void**





## Performance Criteria and Test Results

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### Integrity

It is required that there is no collapse of the specimen, no sustained flaming on the unexposed surface and no loss of impermeability. These requirements were satisfied for the test duration of 66 minutes.

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### Insulation

It is required that the mean temperature rise of the unexposed surface shall not be greater than 140°C and that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure. These requirements were satisfied for the test duration of 66 minutes.

## On-going Implications

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### Limitations

The results relate only to the behaviour of the specimen 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 test results relate only to the specimen tested. Appendix A of BS 476: Part 20: 1987 provides guidance information on the application of fire resistance tests and the interpretation of test data. Application of the result to doorsets of different dimensions or supported other than by a masonry wall or incorporating different components should be the subject of a design appraisal.

The tested assembly was deemed to be symmetrical and therefore testing was carried out from one side only.

### Review

The specification and interpretation of fire 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 five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, 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.

# Conclusions

**Evaluation Against Objective**     An insulated sliding doorset mounted in a timber stud partition has been subjected to a fire resistance test in accordance with BS 476: Part 22: 1987, Clause 6.

                                 The evaluation of the doorset against the requirements of BS 476: Part 22: 1987, Clause 8 showed that it satisfied the requirements for the periods stated below:

**Test Results:**

<b>Integrity</b>	66 minutes*
<b>Insulation</b>	66 minutes*

\*The test was discontinued after a period of 66 minutes.