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Testing. Advising. Assuring.

Title:

Small scale fire test utilising the heating and pressure conditions given in BS EN 1363-1: 2012 on a section of timber based door leaf, taken from 5 Eric Wilkins House, London.

WF Report No:

396019 – Draft Copy

Prepared for:

TSG Building Services Plc
Carnborne Road,
Potter Bar,
London,
United Kingdom.

Date:

2018

Indicative Fire Resistance Test Letter Report

We have pleasure in enclosing the information of the indicative fire test conducted on your behalf on the 3rd February 2018.

The information enclosed relates to an investigation which utilised the heating and pressure conditions given in BS EN 1363-1: 2012. Due to the test specimen being of reduced dimensions, and not representing a fully functioning doorset, the full requirements of the Standard were not, however, complied with and no formal test results can be provided. The information is provided for the test sponsor's information only and should not be used to demonstrate performance against the Standard nor compliance with a regulatory requirement.

The test was not conducted under the requirements of UKAS accreditation.

The purpose of the test was to provide an indication of the fire performance of a timber door leaf stated by the client to have been taken from the residential block of flats at Eric Wilkins House, London. On behalf of **TSG Building Services Plc**.

The door leaf was stated by the client to have been selected by TSG Building Services Plc from Number 5 Eric Wilkins House with the bottom of the leaf trimmed down by Exova Warringtonfire to fit in to the 1.5 metre furnace aperture.

The tested door leaf section was installed such that the internal face was exposed to the furnace heating conditions and had overall dimensions of 1490 mm high by 800 mm wide by 45 mm thick. The door leaf was formed form a chipboard core construction with painted facings and installed with door viewer, and a newly refurbished letter plate, latch and dead bolt.

Further details of the test specimen's construction and placement of ironmongery can be found in the schedule of components section of this report.

The test assembly formed the front vertical face of a 1.5 metre wide by 1.5 metre high by 2 metre deep gas fired furnace chamber, the temperature rise of which was controlled to conform to the relationship given in BS EN 1363-1: 2012.

The following information relating to the test is enclosed:

- Table 1 - Specified and recorded furnace temperatures.
- Table 2 - Recorded temperatures at four positions on the door leaf, one approximately at the centre of each quarter section of the door leaf.
- Table 3 - Recorded temperatures at four positions on the door leaf , positioned at 100 mm in from the door leaf vertical edges, two at mid-height, and two at 100 mm below the top edge of the leaf
- Table 4 - Recorded temperatures on the centre of the letter plate
- Graph 1 - Specified and recorded furnace temperatures.
- Graph 2 - Recorded furnace pressure 200mm above the head of the furnace aperture.
- Observations of the general behaviour of the specimen during the test.
- Test photographs from before, after and during the test.

- Test specimen drawings and schedule of components.

We trust that the information enclosed is useful to you.

Responsible Officer
D. Fitzsimmons*
Technical Officer

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

Report Issued

Date: March 2018

Table 1 – Furnace Temperature

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	27
2	445	485
4	544	571
6	603	600
8	645	629
10	678	677
12	705	699
14	728	728
16	748	745
18	766	761
20	781	781
22	796	796
24	809	806
26	820	818
28	832	829
30	842	841
32	851	852
34	860	861
36	869	868
38	877	874
40	885	879
42	892	888
44	899	897

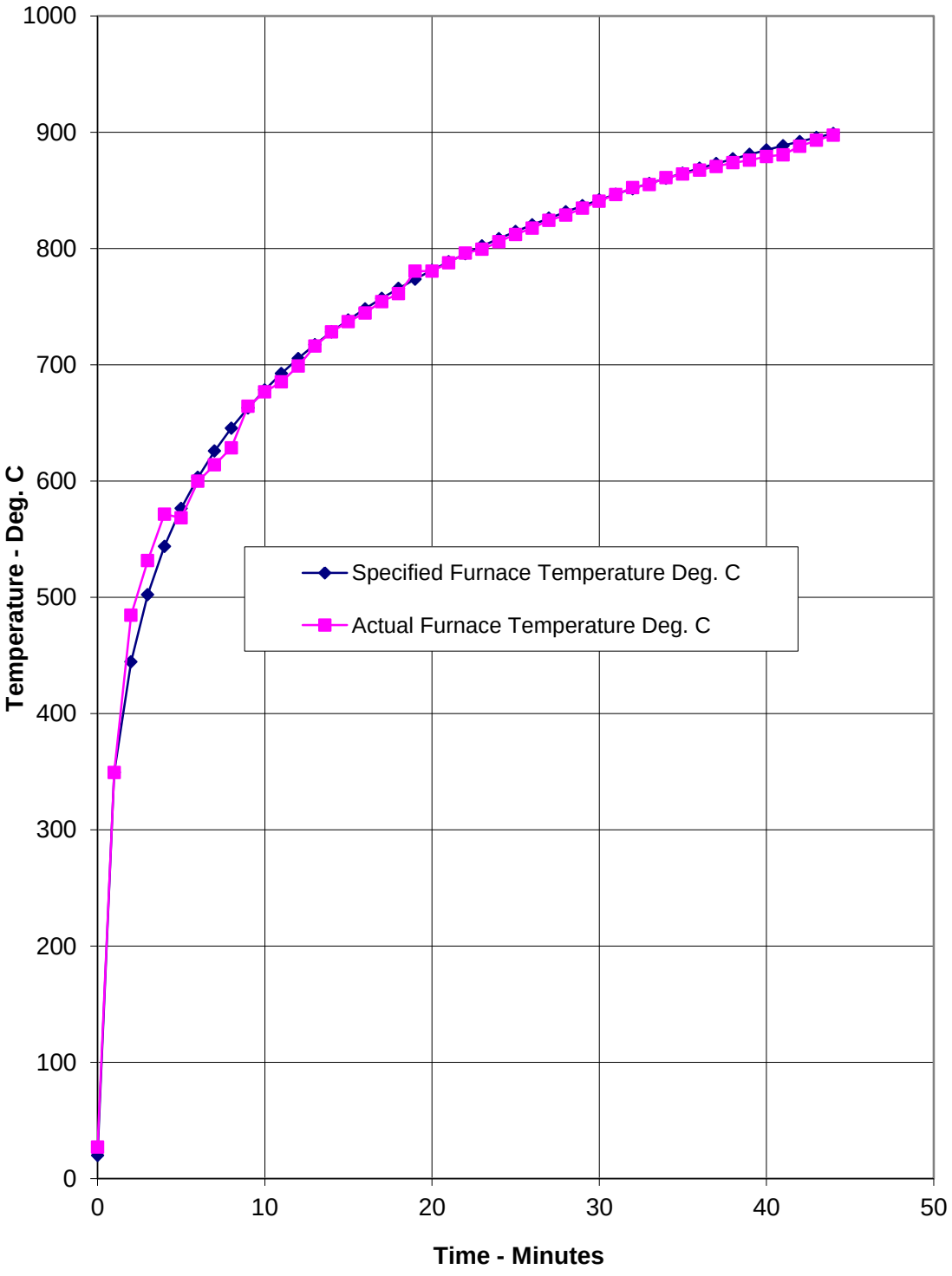
Table 2 – Unexposed Face Thermocouples

Time Mins	T/C Number 10 Deg. C	T/C Number 11 Deg. C	T/C Number 12 Deg. C	T/C Number 13 Deg. C	T/C Number 14 Deg. C	Mean Temp Deg. C
0	19	19	19	18	18	19
2	19	19	20	18	18	19
4	19	19	21	19	18	19
6	20	20	33	19	19	22
8	21	23	43	19	19	25
10	22	24	47	21	20	27
12	24	26	50	24	21	29
14	27	28	56	28	23	32
16	31	32	66	31	25	37
18	36	36	89	35	29	45
20	49	41	127	39	33	58
22	56	52	176	44	39	73
24	63	59	133	50	48	71
26	68	59	95	53	46	64
28	73	61	86	57	49	65
30	77	63	83	64	53	68
32	81	67	94	72	57	74
34	83	70	91	80	61	77
36	86	74	87	87	66	80
38	89	79	93	100	74	87
40	98	84	100	102	82	93
42	105	93	105	104	91	100
44	114	99	109	127	102	110

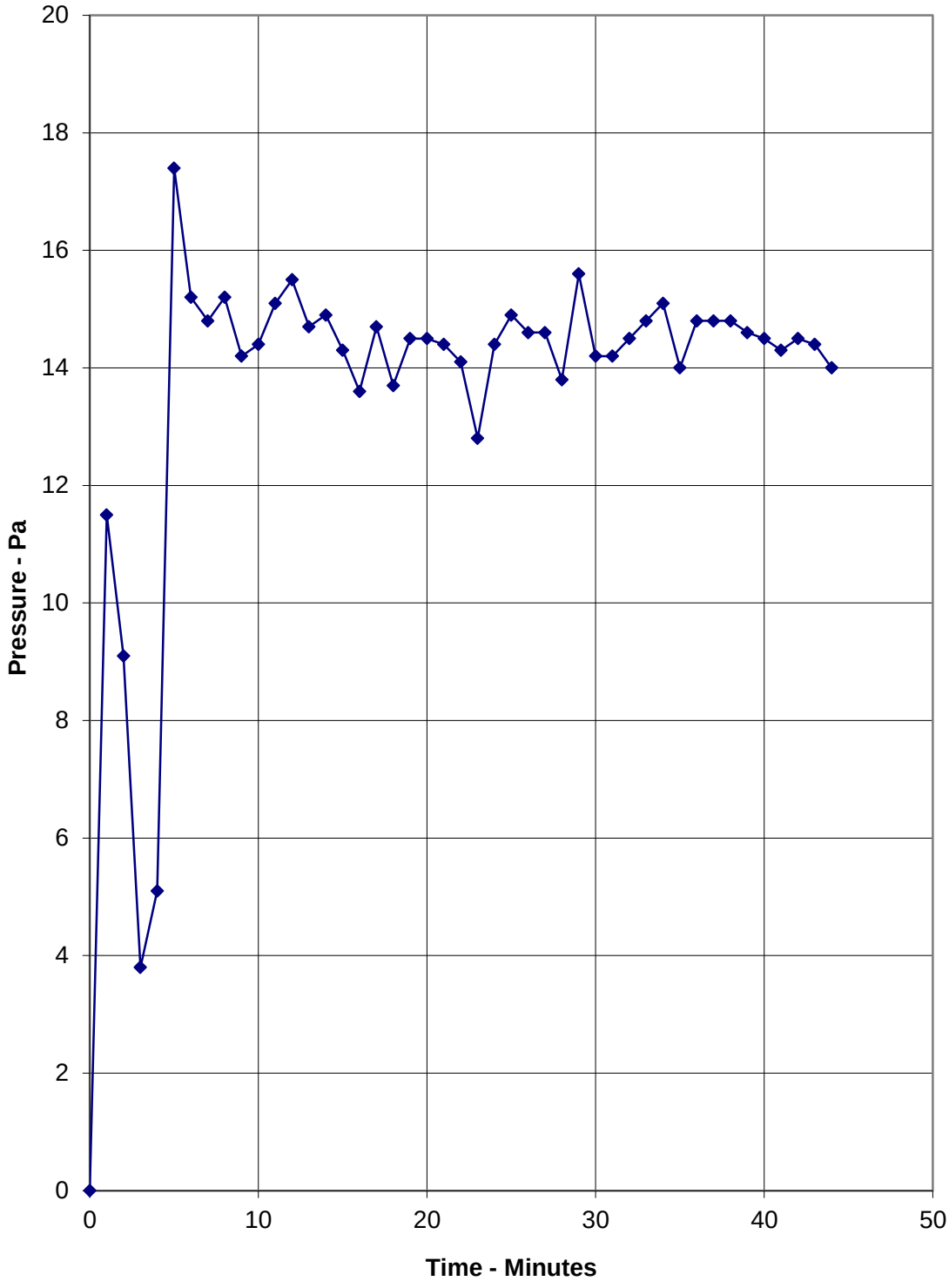
Table 3 – Unexposed Face Thermocouples

Time Mins	T/C Number 15 Deg. C	T/C Number 16 Deg. C	T/C Number 17 Deg. C	T/C Number 18 Deg. C
0	20	21	19	19
2	20	21	19	19
4	20	21	19	19
6	20	21	19	20
8	21	23	20	23
10	22	25	22	27
12	24	27	23	30
14	27	29	25	34
16	30	31	28	37
18	34	34	32	40
20	40	37	37	44
22	47	43	44	50
24	51	49	51	57
26	53	50	57	58
28	56	54	64	64
30	60	58	70	70
32	65	64	75	77
34	71	69	79	86
36	76	76	83	98
38	82	81	99	107
40	100	87	102	130
42	138	98	108	191
44	168	106	148	252

Graph 1 – Furnace Temperature



Graph 2 - Recorded furnace pressure



Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	**secs**	The ambient air temperature in the vicinity of the test construction was 16ºC at the start of the test with a no variation during the test.
00	**00**	**The test commences.**
00	**42**	Steam/smoke release issue from letter plate.
02	**45**	When viewed from the exposed face, the door leaf's face has ignited.
05	**50**	Steam/smoke release continues from the letter plate as steam/smoke release is observed issuing through the deadlock key hole.
09	**00**	When viewed from the exposed face, the outer facing of the leaf is observed peeling away and resting at the base of the leaf.
10	**27**	The painted door leaf face around the letter plate is observed discolouring black.
13	**00**	Steam/smoke release continues from the letter plate and deadlock key hole as steam/smoke begins to issue from around the latch and door viewer.
15	**00**	Large flickers of flame issue from the top and bottom of the letter plate.
16	**30**	**Cotton wool pad integrity test is performed above the letter plate. The cotton wool pad ignites.**
17	**00**	Flickers of flame around letter plate continue to glow in size and frequency.
18	**00**	**Flickers of flame around the letter plate have now turned in to a sustained flame as the letter plate begins to fall away from the door leaf.**
20	**00**	**Sustained flames continue to issue from the letter plate and begin to spread up the door leaf's face.**
23	**00**	**Large sustained flames issue through the letter plate.**
		The area is blanked off with ceramic based wool to the test to continue.
24	**00**	Steam/smoke release continues from around the door viewer, latch and deadlock key hole.
27	**00**	Flickers of flame are observed around door viewer.
30	**00**	**Flickers of flame are observed around door viewer have now formed a sustained flame.**

Time		
mins	**secs**	
31	**50**	**Sustained flames continue to issue around the door viewer.** **The area blanked off with ceramic based wool to the test to continue.**
34	**00**	A small intermittent flicker of flame issue through the deadlock key hole.
39	**00**	The paint on the unexposed face of the door leaf is now showing signs of bubbling.
41	**00**	Steam/smoke release is observed from around all four sides as the door leaf bows in towards the furnace heat at the centre.
42	**00**	The door leaf continues to bow in at the centre as flickers of flame issue from the hinged side. Flickers of flame are now also observed from around the latch.
43	**00**	**Flames continue to issue from the hinge side as the bowing of the leaf continues. Sustained flames are now also issuing at the head**
43	**20**	**Holes begin to form on the unexposed face of the leaf and begin to form small sustained flames.**
44	**00**	**The test is discontinued**

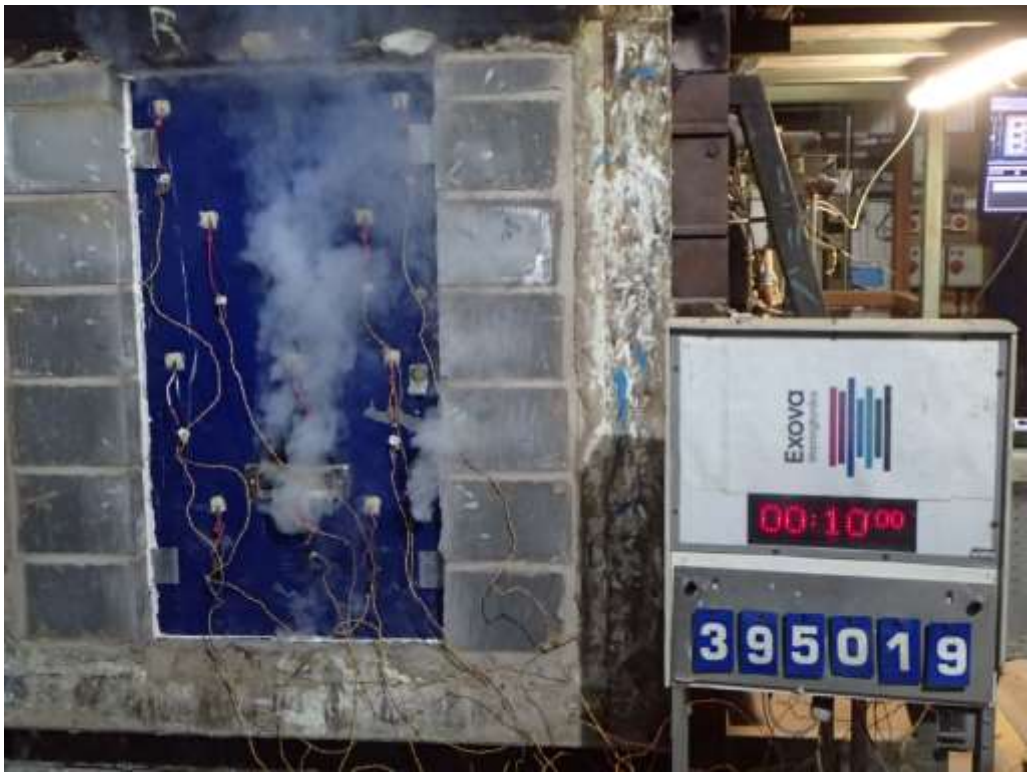
Test Photographs

The exposed face of the doorset prior to testing

The unexposed face of the doorset prior to testing

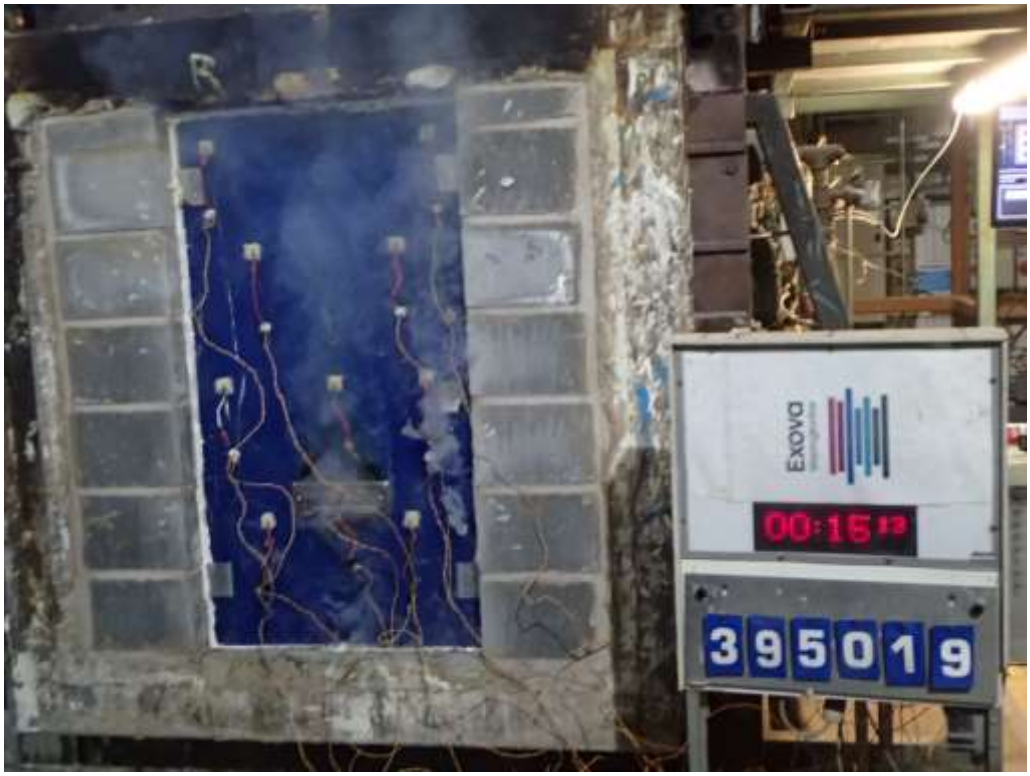
The unexposed face of the doorset after a test duration of 5 minutes

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

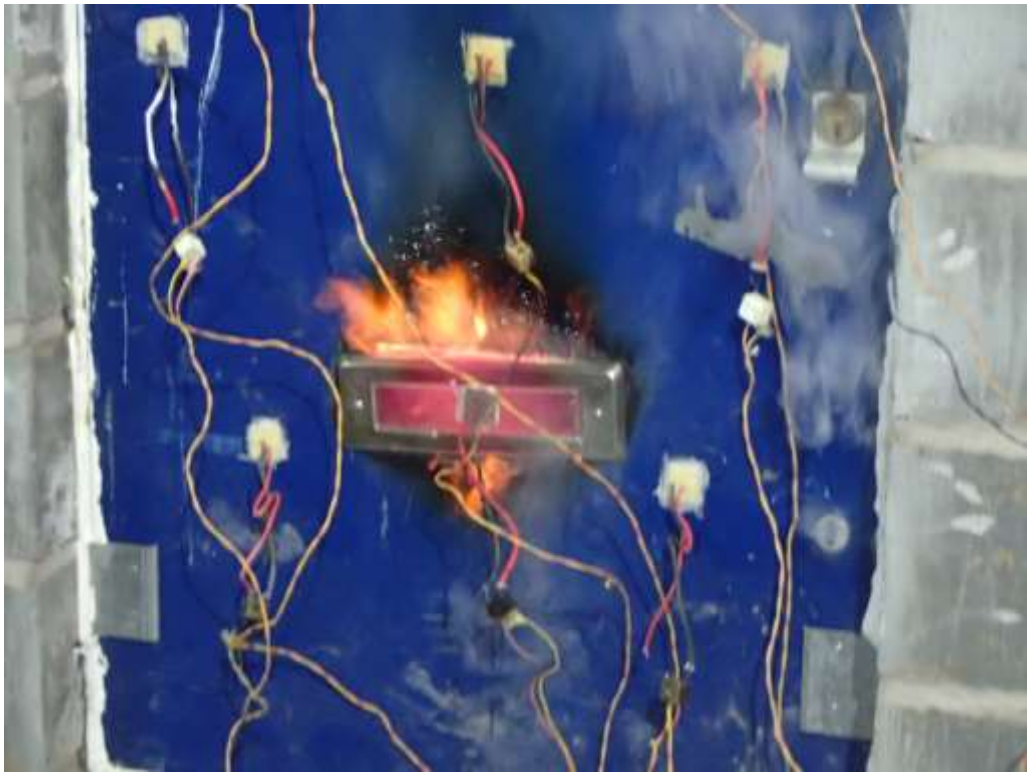


Flaming observed from around the letter plate on the unexposed face of the doorset after a test duration of 14 minutes

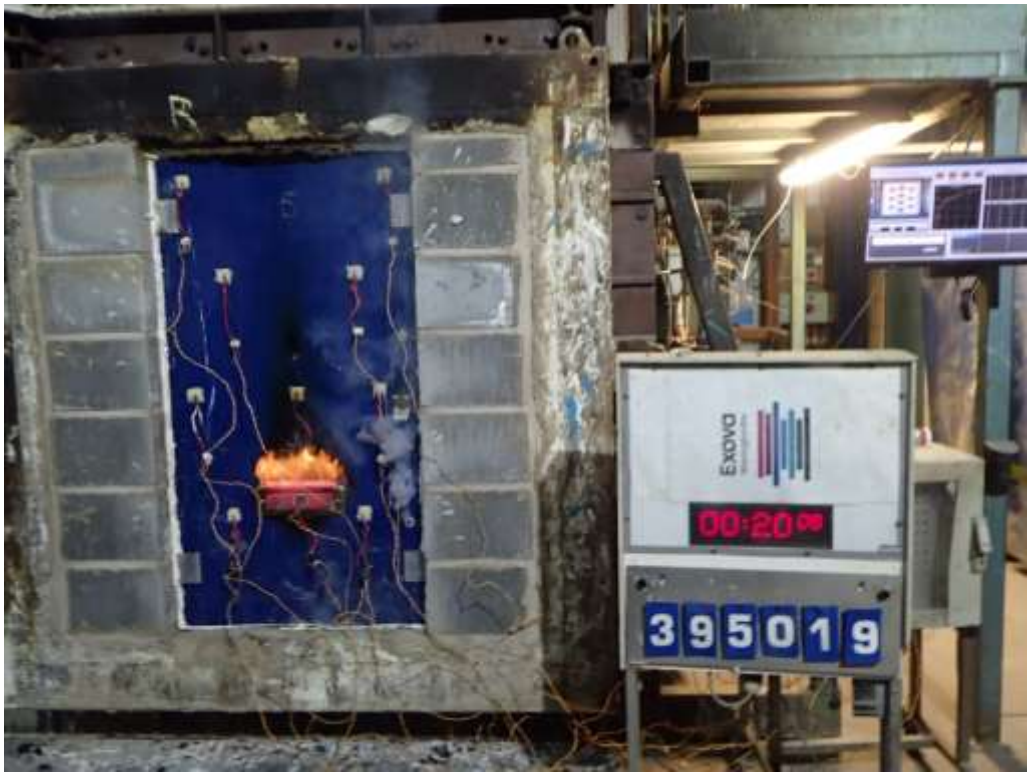
The unexposed face of the doorset after a test duration of 15 minutes



Sustained flames issue around the latter plate on the unexposed face of the doorset after a test duration of 18 minutes



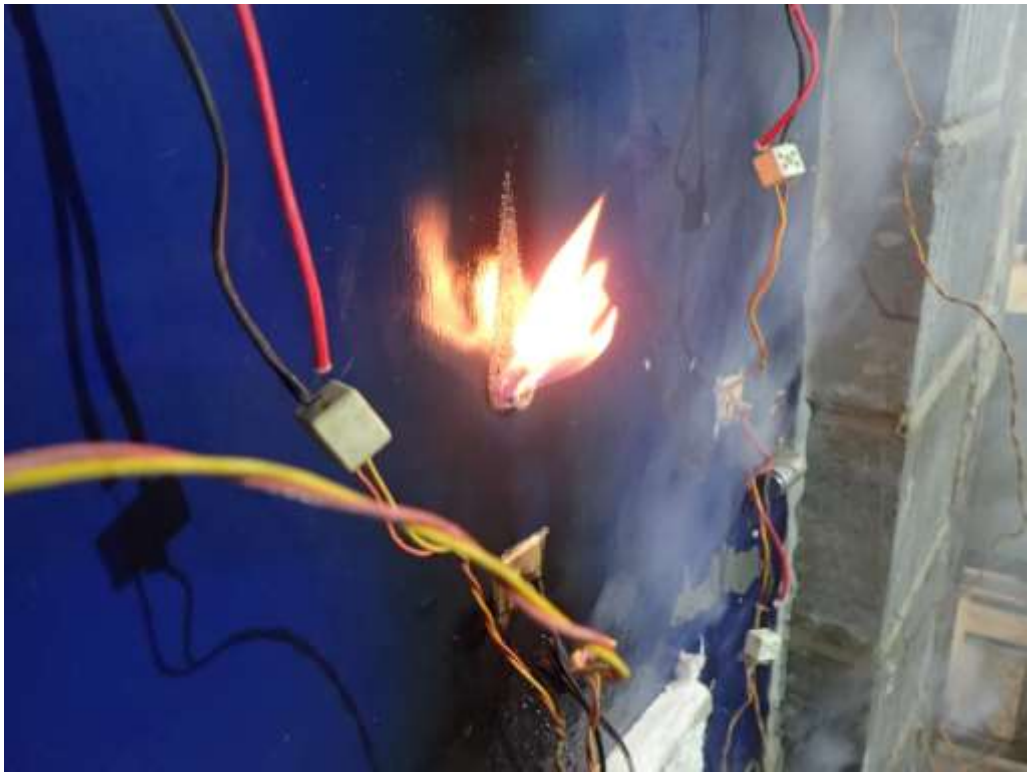
The unexposed face of the doorset after a test duration of 20 minutes



The letter plate on the unexposed face of the doorset is blanked off after a test duration of 23 minutes

The unexposed face of the doorset after a test duration of 25 minutes

Sustained flames issue from around the door viewer on the unexposed face of the doorset after a test duration of 30 minutes



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

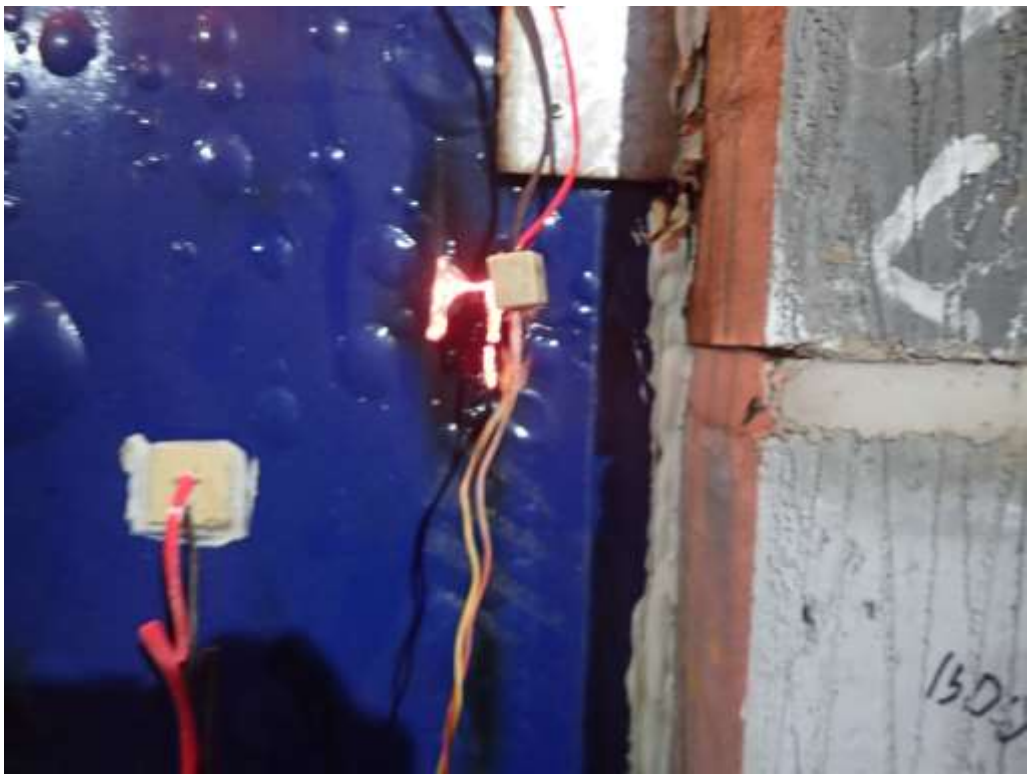
The door viewer on the unexposed face of the doorset is blanked off after a test duration of 32 minutes

The unexposed face of the doorset after a test duration of 35 minutes

The unexposed face of the doorset after a test duration of 40 minutes

The unexposed face of the doorset after a test duration of 43 minutes

Holes beginning to form on the unexposed face of the doorset after a test duration of 43 minutes



The unexposed face of the doorset after a test duration of 44 minutes

The exposed face of the doorset shortly after the test

Test Specimen

Figure 1- General Elevation of Test Construction

Do not scale. All dimensions are in mm

Schedule of Components

(Refer to Figures 1 to ?)
(All values are nominal unless stated otherwise)
(All other details are as stated by the sponsor)

Item	Description