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Title:

The Fire Resistance Performance Of A Fire Blanket When Tested Utilising The Heating And Pressure Conditions Given In BS 476: Part 20:1987

Date Of Test:

22 February 2024

Issue No. 1

06 November 2024

WF Report No:

541780/LR

Prepared for:

Prosol UK Sales and Distribution Ltd

14-16 Gleadless Rd
Sheffield
South Yorkshire
S2 3AB

Indicative Fire Resistance Test Letter Report

We have enclosed the information of the indicative fire test conducted on your behalf on the 22 February 2024.

The information enclosed relates to an investigation which utilised the heating and pressure conditions given in BS 476: Part 20: 1987 the full requirements of the Standard were not, however, complied with. 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 performance of a fire blanket under specified fire test conditions.

The specimen was a silicone coated glass cloth reference '8590SR170 - FBM8060' and had overall nominal dimensions of 1600 mm wide by 1600 mm high by 0.4 mm thick. The fabric comprised of a 0.4 mm thick woven glass cloth reference '8590LS', with a grey silicone coating referenced 'SR170' on the front and rear face.

The specimen was installed within a 1500 mm by 1500 mm aperture of a concrete lined frame. The fire blanket was fixed using 1.75 mm thick, 25 mm wide and 25 mm deep galvanised steel angle on all four edges, with 50 mm by 6 mm concrete hex screw fixings with 450 mm centres.

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 476: Part 20: 1987. The furnace atmospheric pressure was controlled so that it was 20 Pa at the head of the specimen, following the principles of BS 476: Part 20: 1987.

The test was discontinued after a period of 90 minutes. Throughout the test duration there were no occurrences of any flaming or formation of through gaps in excess of 6 mm wide by 150 mm long or 25 mm diameter.

We trust that the information enclosed is useful to you.

The following information relating to the test is enclosed:

- Table 1 - Specified and recorded furnace temperatures.
- Table 2 - Furnace pressure
- Table 3 - Individual and mean temperatures on the unexposed face of the specimen
- Graph 1 - Specified and recorded furnace temperatures.
- Graph 2 - Furnace pressure
- Observations of the general behaviour of the specimens during the test.
- Test photographs from before, after and during the test.
- Test Construction
- Schedule of components

Quality Management

Issue No: 1	Issue Date: 06 November 2024
Responsible Officer: **S. Collins***	Approved By **K. Brennan***
	

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

Table 1 – Specified and recorded furnace temperatures

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	22
3	502	467
6	603	563
9	663	641
12	705	684
15	739	728
18	766	762
21	789	784
24	809	818
27	826	823
30	842	843
33	856	859
36	869	879
39	881	904
42	892	897
45	902	908
48	912	923
51	921	923
54	930	932
57	938	945
60	945	948
63	953	961
66	960	972
69	966	972
72	973	979
75	979	994
78	985	994
81	990	998
84	996	1011
87	1001	1010
90	1006	1005

Table 2 – Furnace pressure

Time Mins	Recorded Pressure Pascals
0	0.00
3	21.50
6	21.70
9	19.90
12	21.10
15	22.00
18	22.40
21	21.30
24	20.50
27	21.20
30	21.60
33	20.50
36	21.50
39	22.10
42	21.50
45	22.00
48	22.90
51	19.80
54	22.60
57	22.80
60	19.60
63	23.40
66	18.00
69	22.90
72	21.60
75	23.10
78	19.90
81	19.60
84	23.30
87	22.80
90	19.40

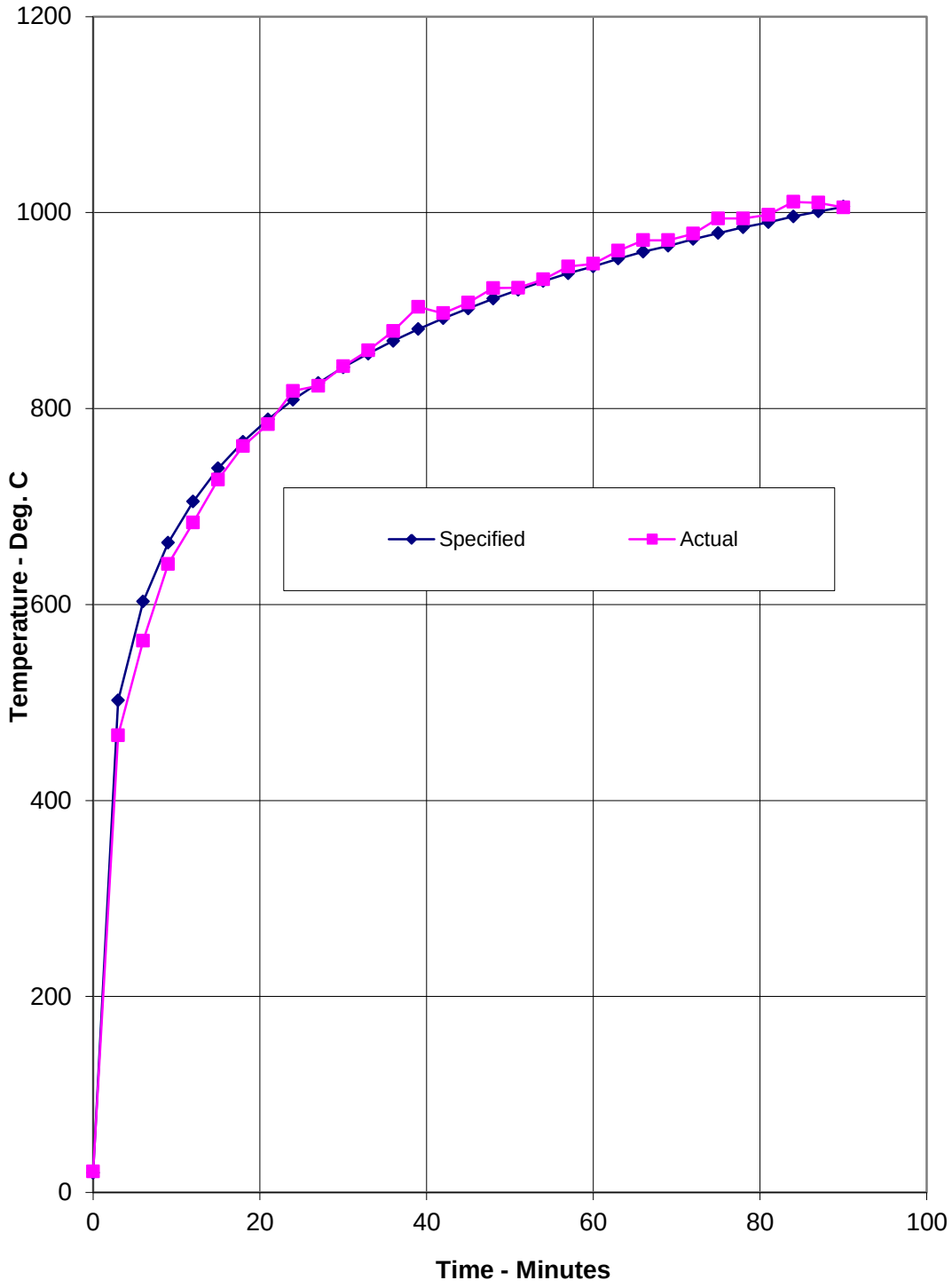
Table 3 – Individual and mean temperatures on the unexposed face of the specimen

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	18	18	19	18	18
1	99	105	105	76	77	92
2	120	124	117	108	112	116
3	180	190	160	130	141	160
4	249	256	236	180	220	228
5	283	288	281	222	268	268
6	311	313	314	252	302	298
7	339	337	352	278	333	328
8	359	355	384	302	361	352
9	398	394	434	345	411	396
10	423	426	445	373	444	422
11	426	432	445	399	446	430
12	422	425	446	422	444	432
13	425	424	450	*	448	437
14	434	437	463	*	467	450
15	448	453	479	*	483	466
16	453	466	*	*	*	460
17	465	473	*	*	*	469
18	471	481	*	*	*	476
19	482	489	*	*	*	486
20	484	495	*	*	*	490
21	*	*	*	*	*	*
60	*	*	*	*	*	*
90	*	*	*	*	*	*

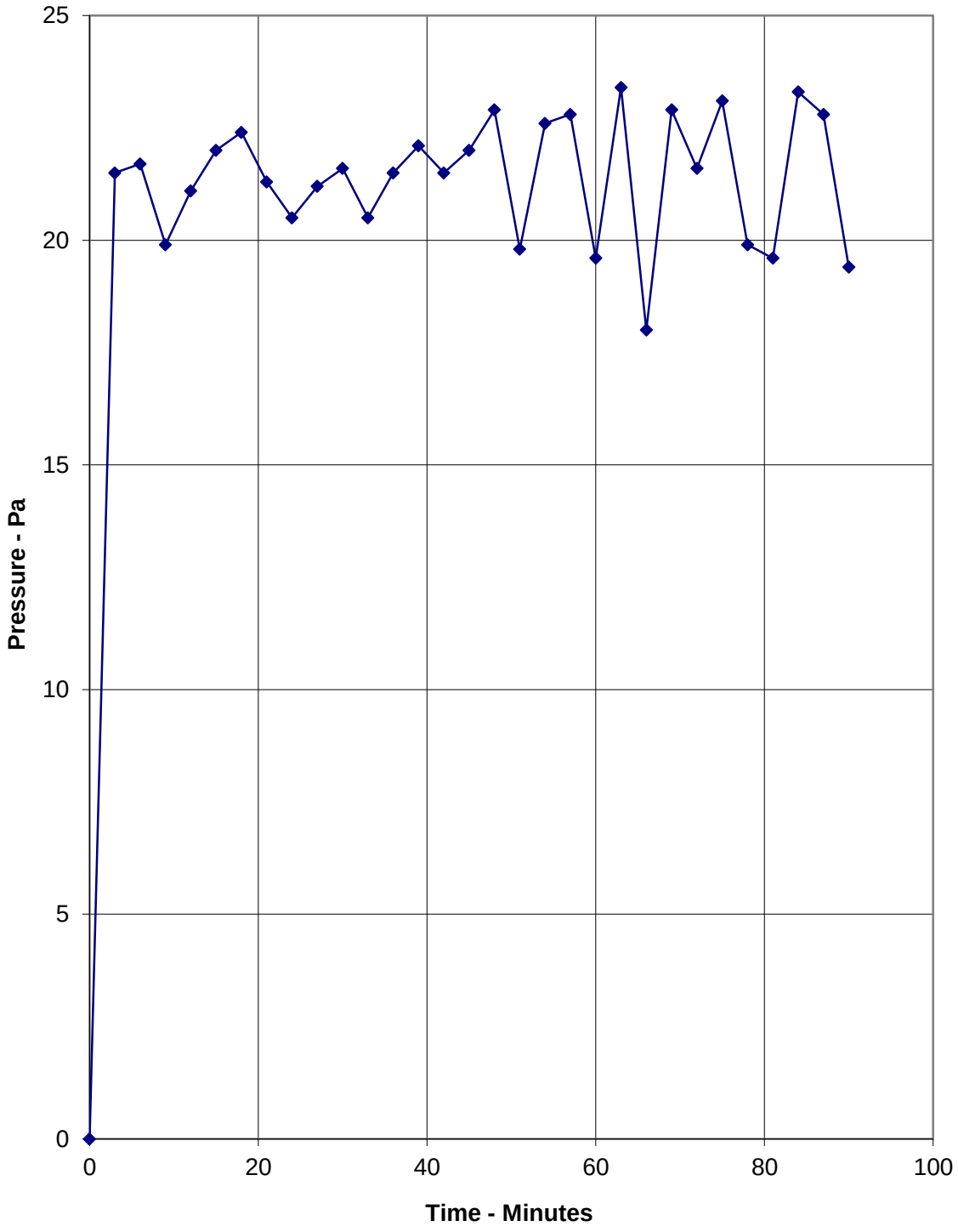
‘*’ indicates a thermocouple malfunction and no available readings

After 20 minutes of testing all five thermocouples, which were attached to the unexposed face of the specimen, had detached therefore no readings were taken after this point.

Graph 1 – Furnace Temperature



Graph 2 – Furnace Pressure



Test Observations

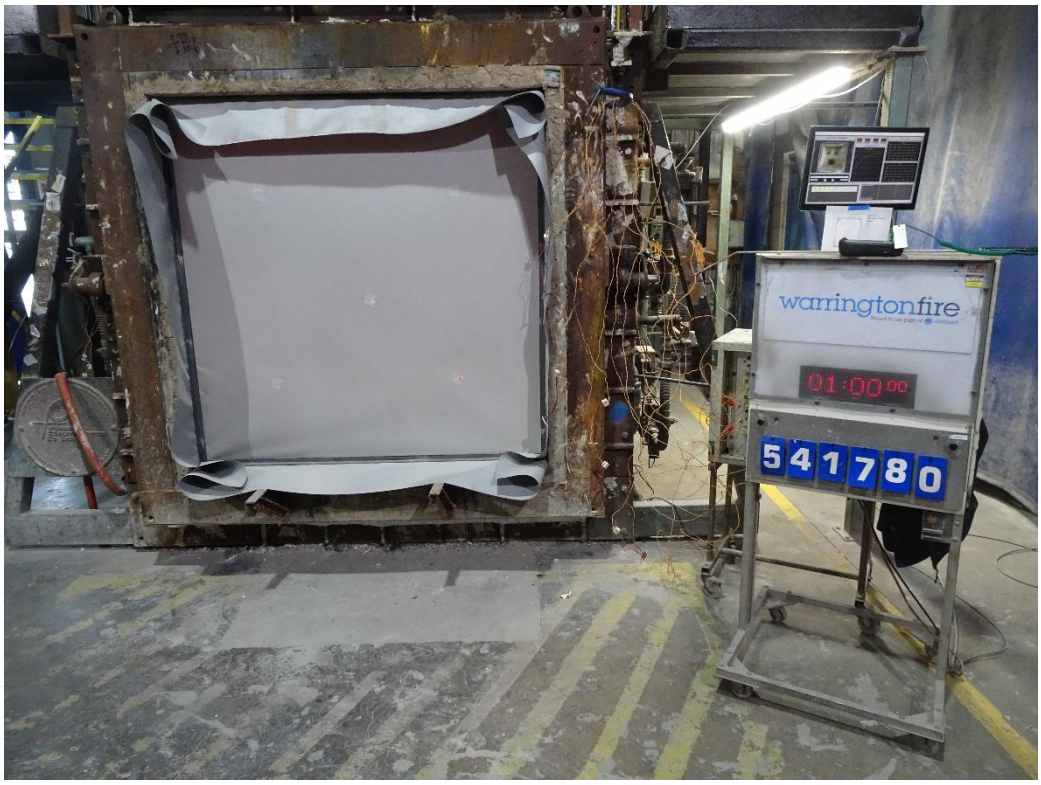
Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
00	00	**The test commences.**
01	00	Fire curtain billowing in and out with pressure.
03	00	Smoke/steam release on fire curtain.
12	00	TC13 detached.
16	00	TC12 and TC14 detached.
21	00	All TCs have now detached.
27	00	Using the roving thermocouple, 327°C was recorded at the centre of the specimen.
28	00	Fabric damaged near TC14 with roving thermocouple – can be seen from exposed face.
38	00	Curtain beginning to glow.
43	00	Hole now present where curtain was damaged.
54	00	Gap growing in size where damaged.
62	00	Fabric glowing further.
72	00	Deflecting left side angle.
90	00	**Test is discontinued at sponsor's request.**

Test Photographs

The exposed face of the test assembly prior to testing

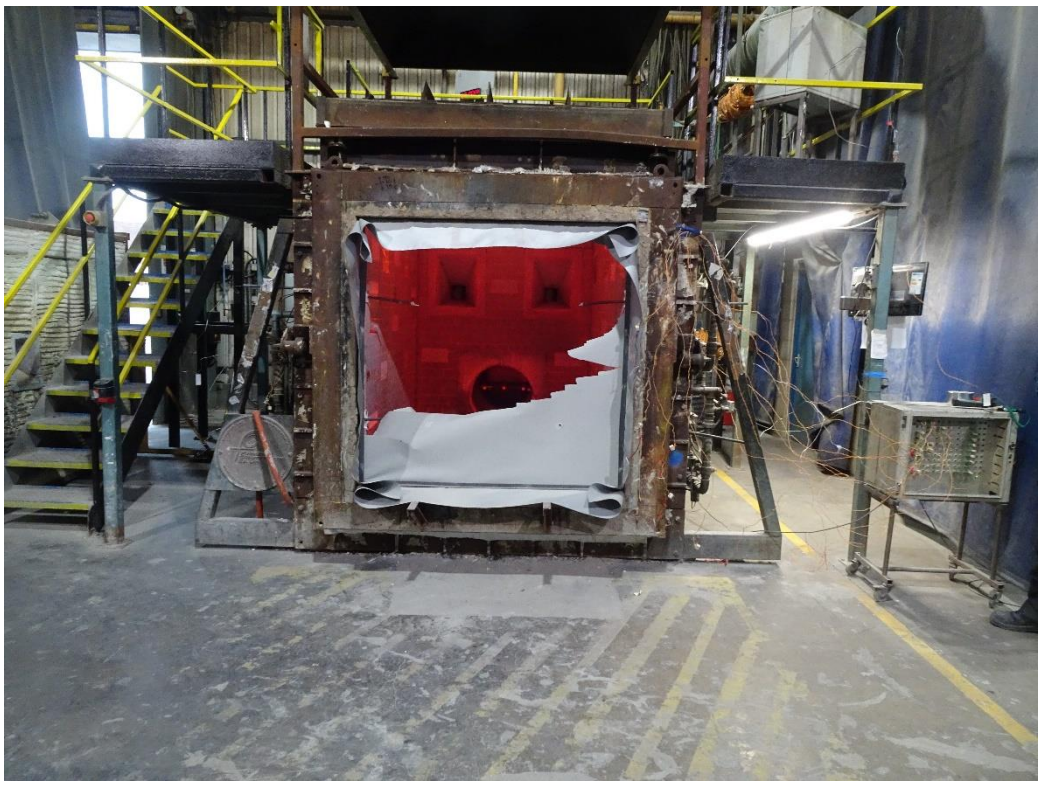
The unexposed face of the test assembly after a test duration of 20 minutes

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



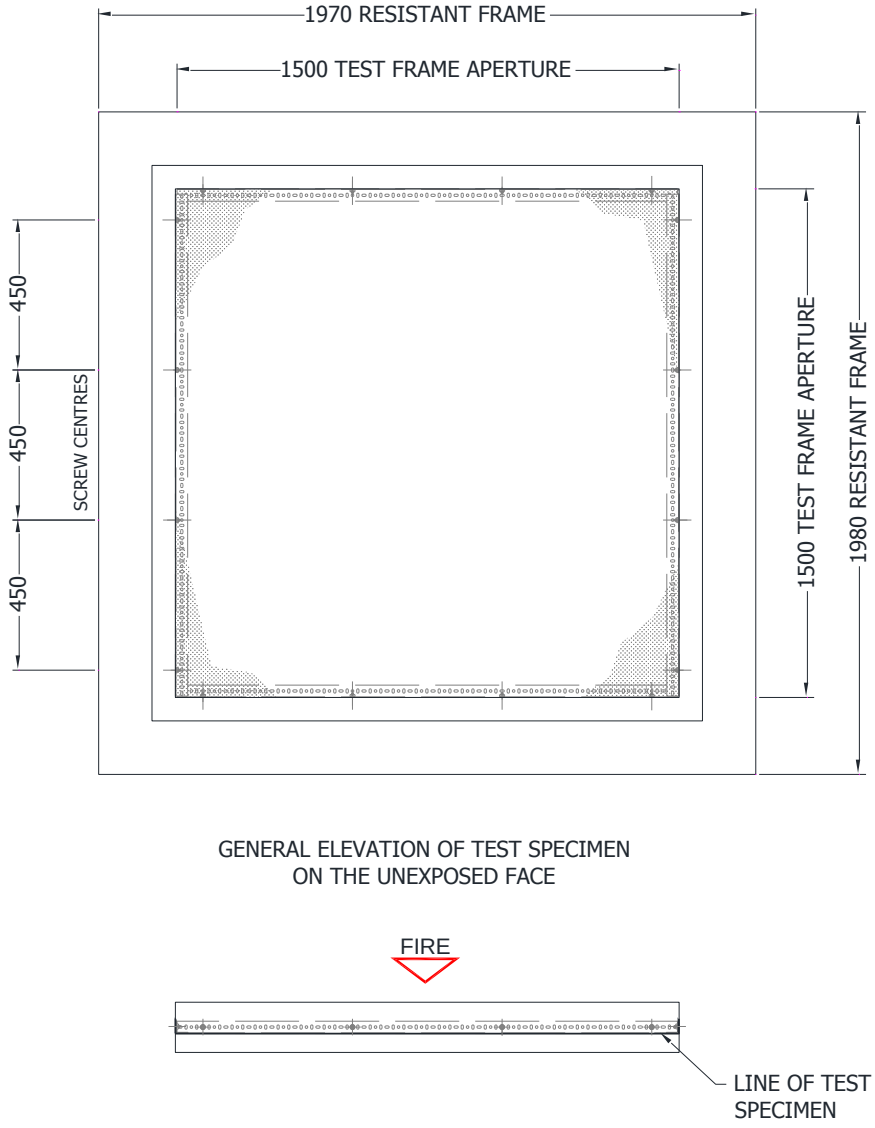
The unexposed face of the test assembly after a test duration of 90 minutes

The unexposed face of the test assembly immediately after the test



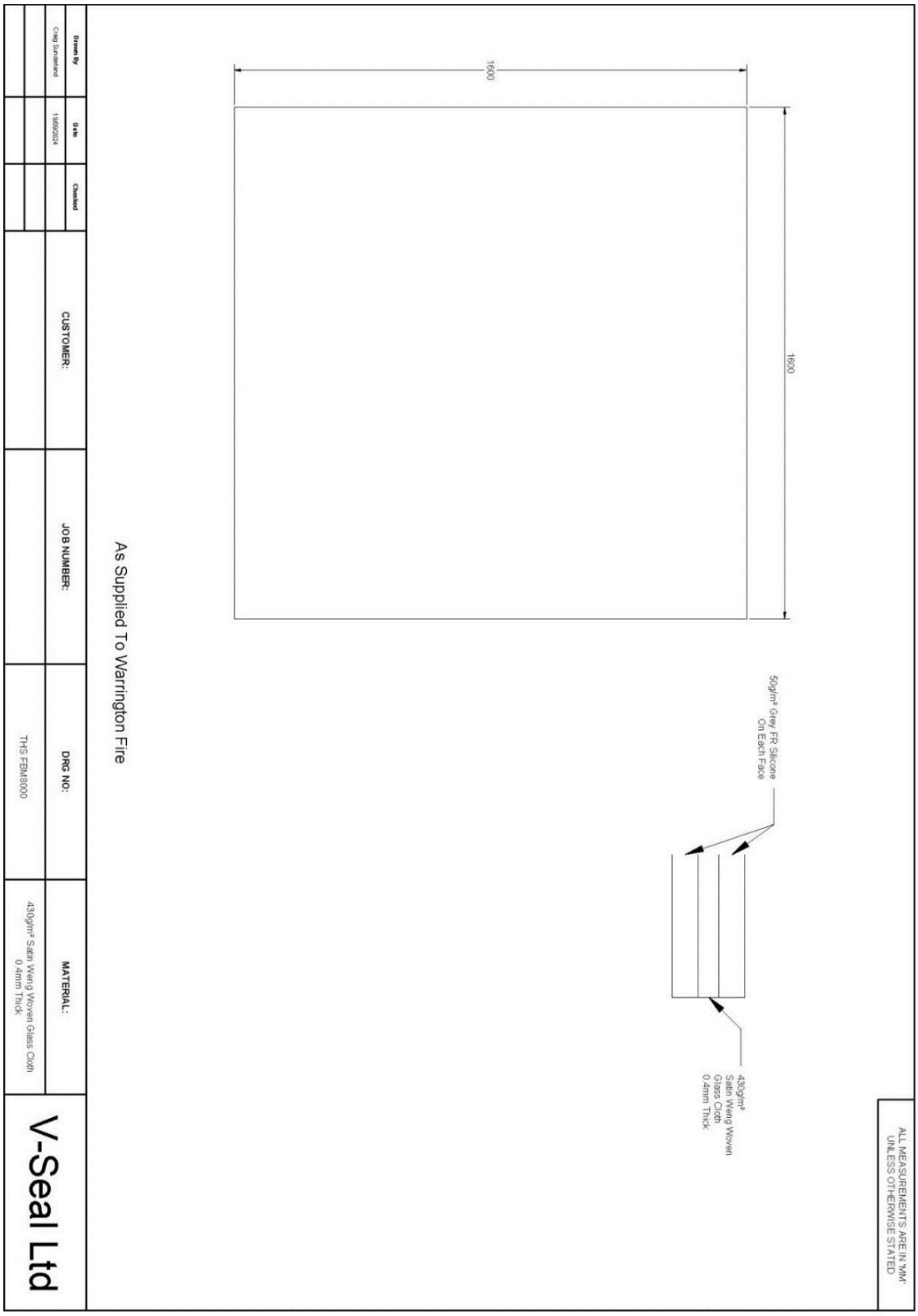
Test Construction

Figure 1 General arrangement of test construction - Unexposed face



Do not scale. All dimensions are in mm

Figure 2 Client drawing – THS FBM8000



Do not scale. All dimensions are in mm

Schedule of Components

The schedule of components describes the test specimen and lists the components used in the construction of the test specimen. These were provided by the test sponsor and surveyed by Warringtonfire.

All measurements were verified by Warringtonfire unless stated otherwise in the schedule of components. All components marked with an "*" have not been verified by Warringtonfire.

Figure 2 supplied by the test sponsor.

Item		Description
1. Fire barrier curtain [SB2]		
Manufacturer	:	*Confidentiality retained by Warringtonfire*
Product reference	:	8590SR170 - FBM8060
General description	:	Silicone coated glass cloth
Installed Size	:	1600 mm x 1600 mm
Thickness	:	0.4 mm
Density / weight per unit area of overall composite	:	520g/m^2 (stated)
Construction details	:	Single layer of curtain fabric, comprising following details
Material details		
Coating (front and rear face)		
Generic type	:	Silicone coating
Product reference	:	SR170
Colour reference	:	Grey
Number of coats	:	1
Weight per unit area	:	50g/m^2
Density / specific gravity	:	Approx 1.30g/cm^3 (stated)
Glass Cloth		
Generic type	:	Woven glass cloth
Product reference	:	8590LS
Weight per unit area	:	420g/m^2
Thickness	:	0.4 mm
Fixing method	:	The curtain barrier was fixed to the concrete restraint frame using steel angles (item 2) to the unexposed face
2. Steel Angle		
Supplier	:	DPC Joinery Ltd
General description	:	Metal angle
Material	:	Galvanised steel
Overall size	:	25 mm wide x 25 mm deep
Thickness	:	1.75 mm thick
Fixing method	:	Through fixed to the concrete restraint frame
Fixings		
i. type	:	Concrete hex screws
ii. size	:	50 mm long x 6.0 mm diameter
ii. centre	:	450 mm