

Report Number: **BTC 21552F**

A FIRE RESISTANCE TEST ON A GYPWALL STAGGERED METAL STUD PARTITION WITH 60MM GYPFRAME I STUD FRAMEWORK CLAD EACH SIDE WITH A SINGLE LAYER OF 15MM GYPROC SOUNDBLOC AND 25MM ISOVER ACOUSTIC PARTITION ROLL IN THE CAVITY, CONDUCTED IN ACCORDANCE WITH BS EN 1364 1: 2015.

Test Date: 2<sup>nd</sup> November 2020

Report Issue Date: 2<sup>nd</sup> November 2020

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**Customer:** **British Gypsum**  
East Leake  
Loughborough  
Leicestershire  
LE12 6HX

Customer: **British Gypsum**

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### FOREWORD

This test report details a fire resistance test conducted on a metal stud partition clad on each face with a single layer of Gyproc SoundBloc incorporating 25 mm Isover Acoustic Partition Roll in the cavity.

The test sponsor was British Gypsum.

The test specimen was installed by CBIS. The construction of the specimen took place on 23<sup>rd</sup> October 2020. The Building Test Centre played no role in the design or selection of materials comprising the test specimen. This information is provided by the sponsor.

The test was conducted on the 2<sup>nd</sup> November 2020.

This report details the method of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedures outlined in EN 1363-1, and where appropriate EN 1363-2. Any significant deviation with respect to size, constructional details, loads, stresses, edge of end conditions other than those allowed under the field of direct application in EN 1364-1 is not covered by this report.

“Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.” (BS EN 1363-1: 2012, section 12.1)


### REPORT AUTHORISATION

Report Author



**Matthew Porter**  
MEng. (Hons.), AIFireE  
Laboratory Supervisor

Authorised by P.P. James Lucas



**Paul Miller**  
BSc. (Hons.)  
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### TEST CONSTRUCTION

#### Description of Construction

The specimen was constructed in a refractory concrete lined steel restraint test frame with an opening of 3000 mm (high) x 3000 mm (wide).

Gypframe 72FEC50 Folded Edge Standard Floor and Ceiling Channels were fixed to the head and base of the test aperture at 600mm centres using 60mm fire resistant fixings.

Gypframe 60I70 I Studs were positioned at 300mm staggered centres between the head and base channels. Gypframe SC1 Spacer Clips were used at the head and base of the studs to stagger the studs either side of the centre line of the channels.

The right hand stud viewed from the unexposed face was not fixed to the perimeter of the test frame, and the gap between the stud and the frame lining was filled with a 25mm thick rock mineral fibre gasket.

At the left-hand edge, a Gypframe 70S50 'C' Stud was fixed the partition to the test frame, using 60mm fire resistance fixings at 600mm centres.

Thermocouples were added to the studs at mid height on the web, hot and cold flanges of the central two exposed face studs.

A layer of 25mm Isover Acoustic Partition Roll (APR 1200) was positioned the in the stud cavity.

Both the unexposed face and the exposed face of the specimen were clad with a single layer of 15mm Gyproc SoundBloc.

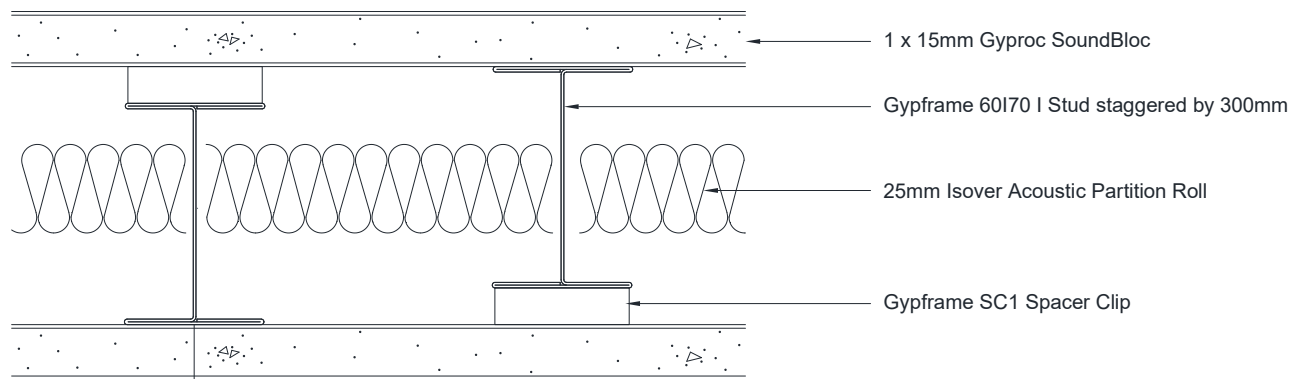
The outer layer boards were fixed with 25mm British Gypsum Jack-Point Screws at 300mm centres around the perimeter and within the field of the boards.

All vertical joints were staggered between layers, with a full board at the free end of the exposed face. A horizontal joint was positioned at 2400mm from the base, on both faces of the specimen. A Gypframe GFS1 Fixing Strap was used behind the horizontal outer layer board joint.

All external board joints were taped and filled using Gyproc Paper Joint Tape and Gyproc Joint Filler as appropriate. All screw heads were spotted using Gyproc Joint Filler.

### Test Construction Drawings

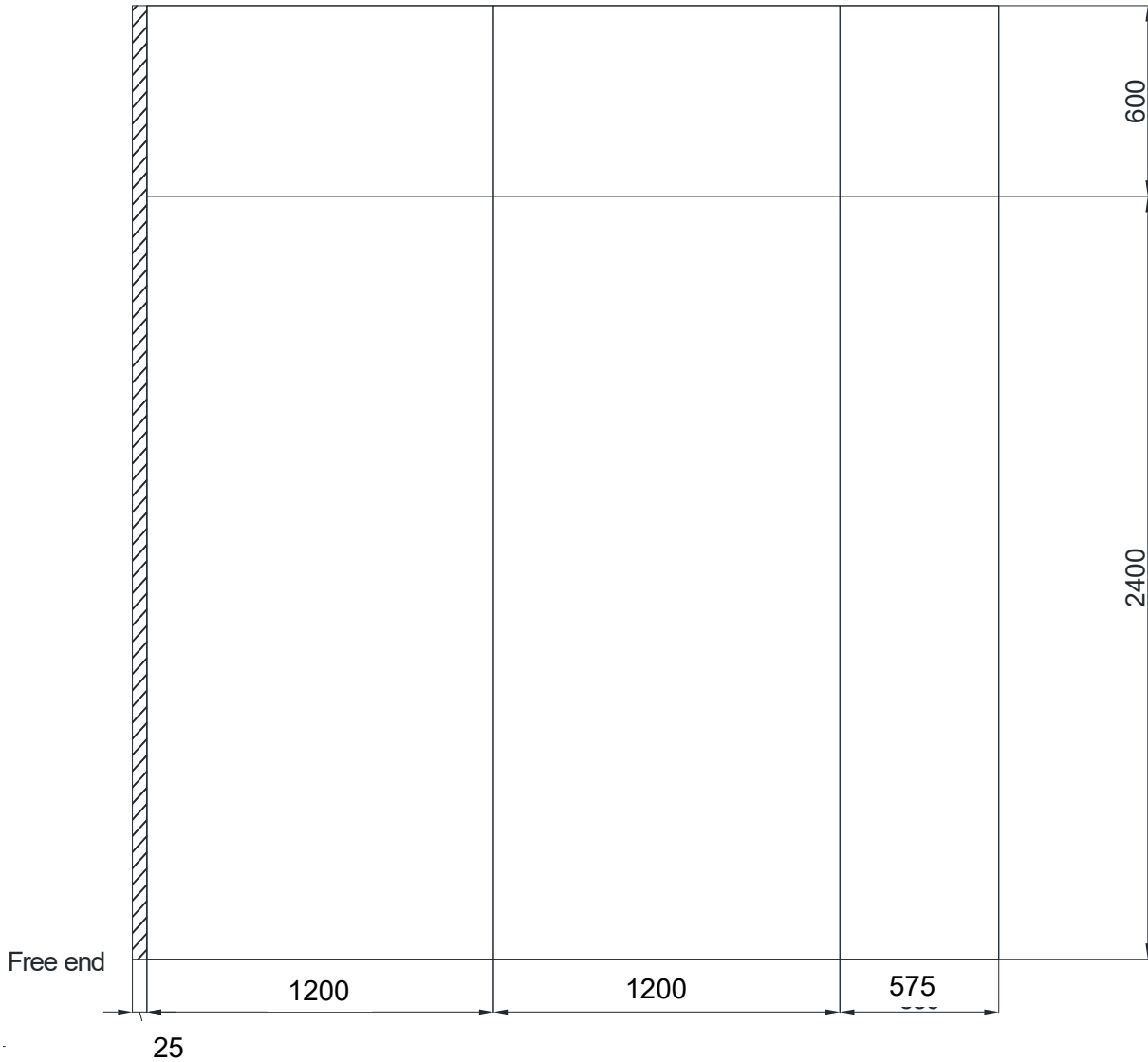
#### Horizontal Cross Section



**Figure 1** - Cross sectional view through the test specimen.

### Exposed Face Elevation

Exposed face board layout

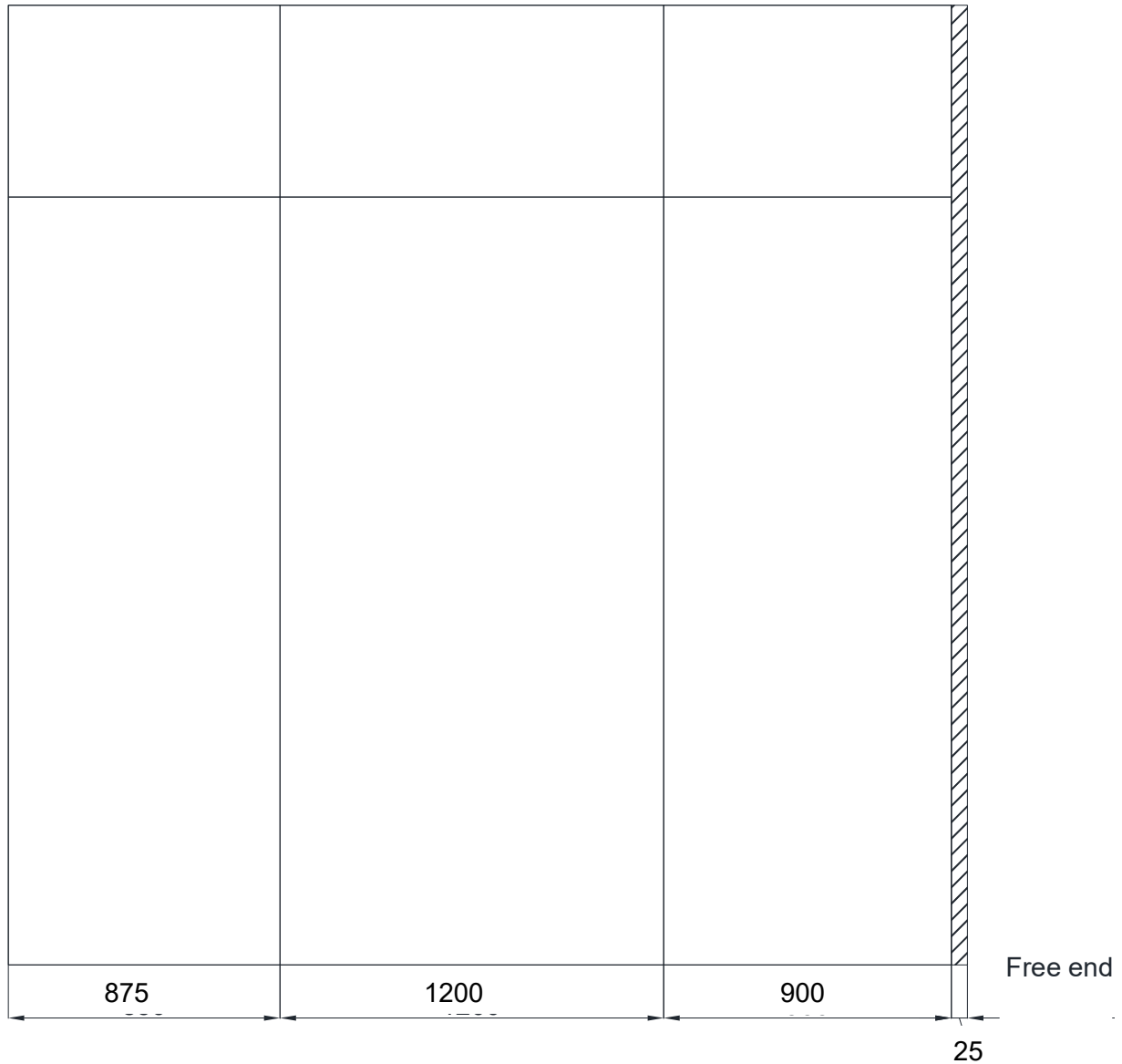


**Figure 2** – Exposed face elevation.



## Unexposed Face Elevation

Unexposed face board layout



**Figure 3** – Unexposed face elevation.

### TEST MATERIALS

#### Plasterboard

- i) Nominally, 2400 mm (long) x 1200 mm (wide) x 15 mm (thick), Gyproc SoundBloc (TE), manufactured and supplied by British Gypsum, ex Sherburn.

Measured mass per unit area:	14.5 kg/m <sup>2</sup>
Measured thickness:	15.1 mm
Board identification numbers:	31 266 19 02:05 31 266 19 02:05 31 266 19 02:05
Measured moisture content:	0.38 %

The surface density and board thickness were calculated using the actual weight and size of a selection of boards used in the test specimen. The moisture content of plasterboard was determined using samples dried to constant weight in an oven at 50°C.

Material dimensions were supplied by British Gypsum.

#### Metal Components

- ii) Gypframe 72FEC50 Standard Folded Edge Floor & Ceiling Channels.  
iii) Gypframe 60I70 'I' Studs.  
iv) Gypframe GFS1 Fixing Strap.

All metal components were supplied by The Building Test Centre.

The mass and dimensions of the timber components were calculated using the actual weight and size of a selection of components used in the test specimen. The moisture content was determined using samples dried to constant weight in an oven at 102°C.

#### Fasteners

- v) 25 mm British Gypsum Jack-Point Screws, supplied by The Building Test Centre.  
vi) 60 mm fire resistant fixings, supplied by The Building Test Centre.

All fasteners were supplied by The Building Test Centre.

#### Miscellaneous Components

- vii) Gyproc Paper Joint Tape, supplied by The Building Test Centre.  
viii) Gyproc Joint Filler, supplied by The Building Test Centre.  
ix) Rock mineral fibre gasket, supplied by The Building Test Centre.  
x) Gypframe SC1 Spacer Clip, supplied by British Gypsum.

### Insulation

- xi) Nominally 25 mm (thick) APR 1200 (Acoustic Partition Roll), manufactured by Saint-Gobain Isover and supplied by British Gypsum.

Measured surface density: 0.453 kg/m<sup>2</sup>

*Where measurements could not be taken and were provided by the customer or the manufacturer e.g. from material labelling, or where mass and dimension measurements were provided by the customer or the manufacturer e.g. customer has completed material dimension forms the results only apply to the sample as received.*

*All data and materials supplied by the customer or manufacturer are clearly identified.*

*Material information was sampled and recorded according to procedure AP070 vs. 1.1.*

### **TEST PROCEDURE**

The test was conducted fully in accordance with BS EN 1364-1: 2015. The specimen was subjected to fire from one side, as specified in BS EN 1364-1: 2015.

As the test specimen is considered to be symmetrical one test is adequate to cover the fire resistance performance in both directions.

The test procedure used was EN 1364-1 Issue 3.

The ambient temperature at the commencement of the test was 18 °C.

The furnace pressure was set to control at  $18 \pm 2$  Pa positive with respect to atmosphere, at the top of the specimen. Furnace pressure data is shown in **Figure 5**.

The test conditions did not meet the full requirements of BS EN 1363-1: 2012 as the test frame stiffness did not fully comply.

The specimen and associated construction were not conditioned in accordance with clause 8 of BS EN 1363-1: 2012.

## TEST RESULTS

The requirement of the standard was satisfied for the following periods:

<b>Integrity</b>	<b>Sustained Flaming</b>	<b>78 minutes, no failure.</b>
	<b>6 mm Gap Gauge</b>	<b>75 minutes.</b>
	<b>25 mm Gap Gauge</b>	<b>78 minutes, no failure.</b>
	<b>Cotton Pad</b>	<b>76 minutes.</b>
<b>Insulation</b>		<b>72 minutes.</b>
<b>Test Terminated</b>		<b>78 minutes, at the request of the sponsor.</b>

## LIMITATIONS

The scope of the Field of Direct Application of the results and construction details in this test report is explained in BS EN 1364-1: 2015, section 13.

### TEST DATA

#### Observations

All observations refer to the exposed face unless stated.

Observers: Unexposed face: Matthew Porter  
 Exposed face: Denis Bradshaw and Eric Chee

Time		Observations
Hours	Minutes	
0	00	Test started.
0	10	Jointing material was flaking away. Face papers had charred
0	20	Left-hand vertical joint had opened up to approximately 2-3 mm. Right-hand vertical joint had opened up to approximately 2-3 mm. Horizontal joint had opened up to approximately 2-3 mm.
0	30	Left-hand vertical joint had opened up to approximately 32-34 mm. Right-hand vertical joint had opened up to approximately 7-8 mm. Horizontal joint had opened up to approximately 8-9 mm. Boards had begun to crack around screw head.  <i>Unexposed face</i> No visible change.
0	40	Left-hand vertical joint had opened up to approximately 40-42mm. Right-hand vertical joint had opened up to approximately 12-14 mm. Horizontal joint had opened up to approximately 20-22 mm. Cracks began to form at the centre of lower left-hand board.
0	50	Right-hand vertical joint had opened up to approximately 20 mm. Horizontal joint had opened up to approximately 22-24 mm. Left hand vertical stud had warped.
1	00	Left-hand vertical joint had opened up to approximately 50-52 mm. Right-hand vertical joint had opened up to approximately 22 mm. Horizontal joint had opened up to approximately 28-30 mm.

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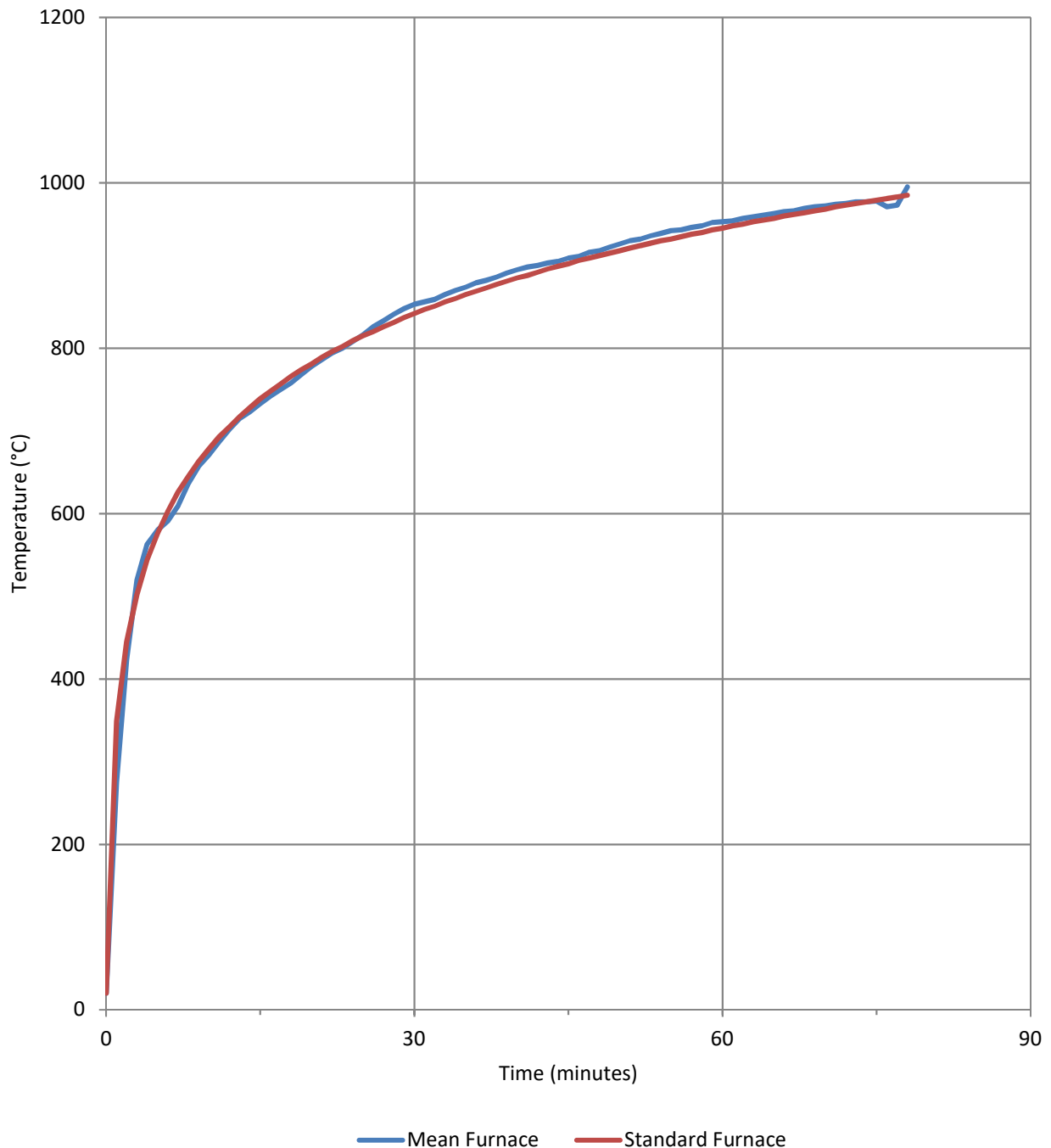
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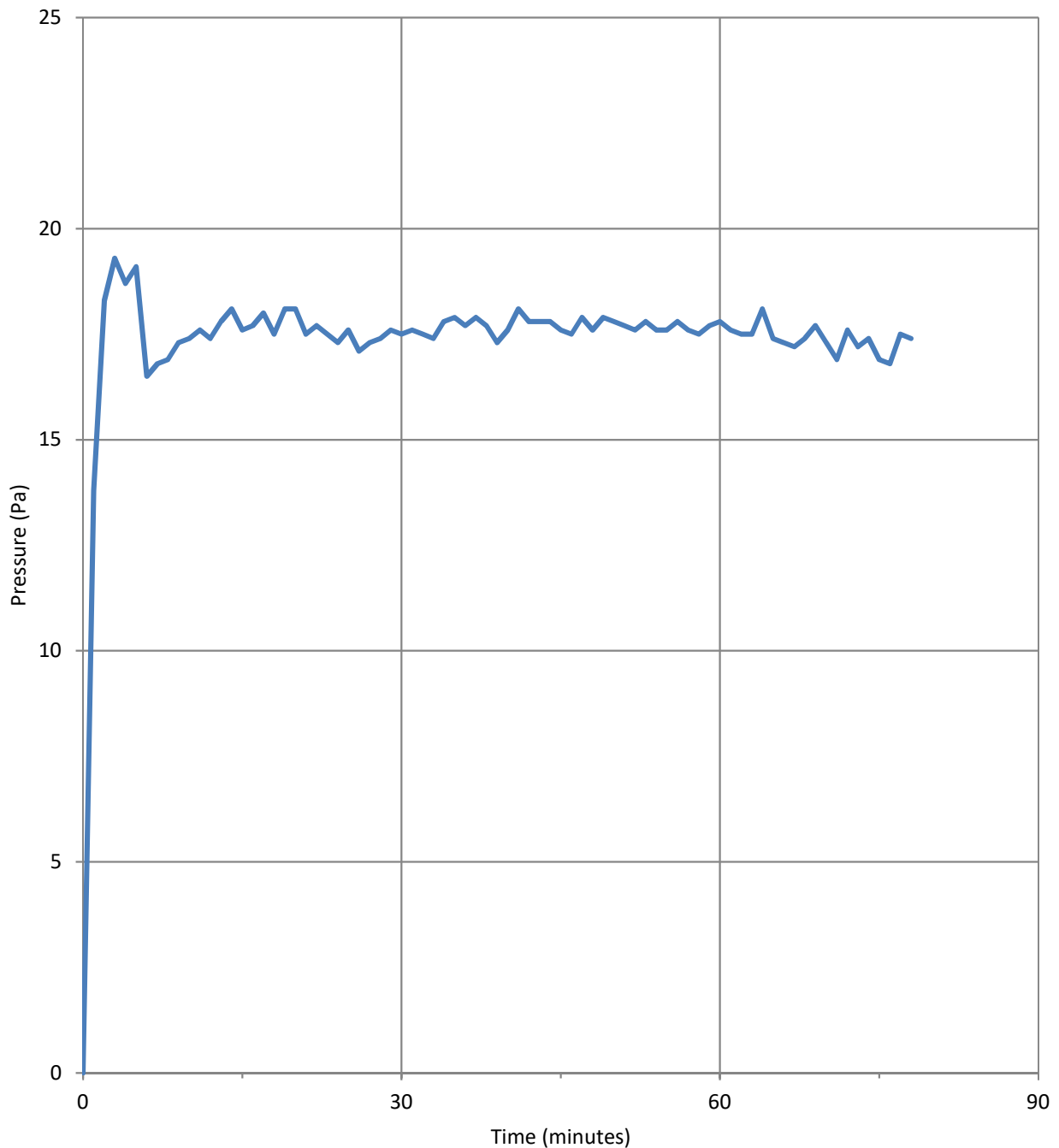
Time		Observations
Hours	Minutes	
1	04	<i>Unexposed face</i> Screw heads had discoloured on both the left-hand and right-hand vertical joints from approximately 1500 mm to 1800 mm height.
1	10	Left-hand vertical joint had opened up to approximately 80 mm. Right-hand vertical joint had opened up to approximately 24 mm. Horizontal joint had opened up to approximately 36-38 mm.
1	12	<i>Unexposed face</i> <b>INSULATION FAILURE.</b> The temperature rise at a point approximately 1800 mm from the base of the specimen in the upper right-hand area of the lower centre board, exceeded 180°C (roving thermocouple).
1	15	Lower left-hand board had fallen into the furnace.  <i>Unexposed face</i> <b>INTEGRITY FAILURE.</b> The gap at approximately 2400 mm height on the right-hand vertical joint exceeded 6 mm x 150 mm (visual).
1	16	<i>Unexposed face</i> <b>INTEGRITY FAILURE.</b> The cotton pad ignited (glowed) when placed on the right-hand vertical joint at approximately 2400 mm height.
1	17	Lower centre board had fallen into the furnace.
1	18	<b>TEST TERMINATED</b> at the request of the sponsor.

## Furnace Temperature Graph



**Figure 4** – Furnace temperature graph.

## Furnace Pressure Graph



**Figure 5** – Furnace pressure graph.



## Unexposed Face Temperature Graph

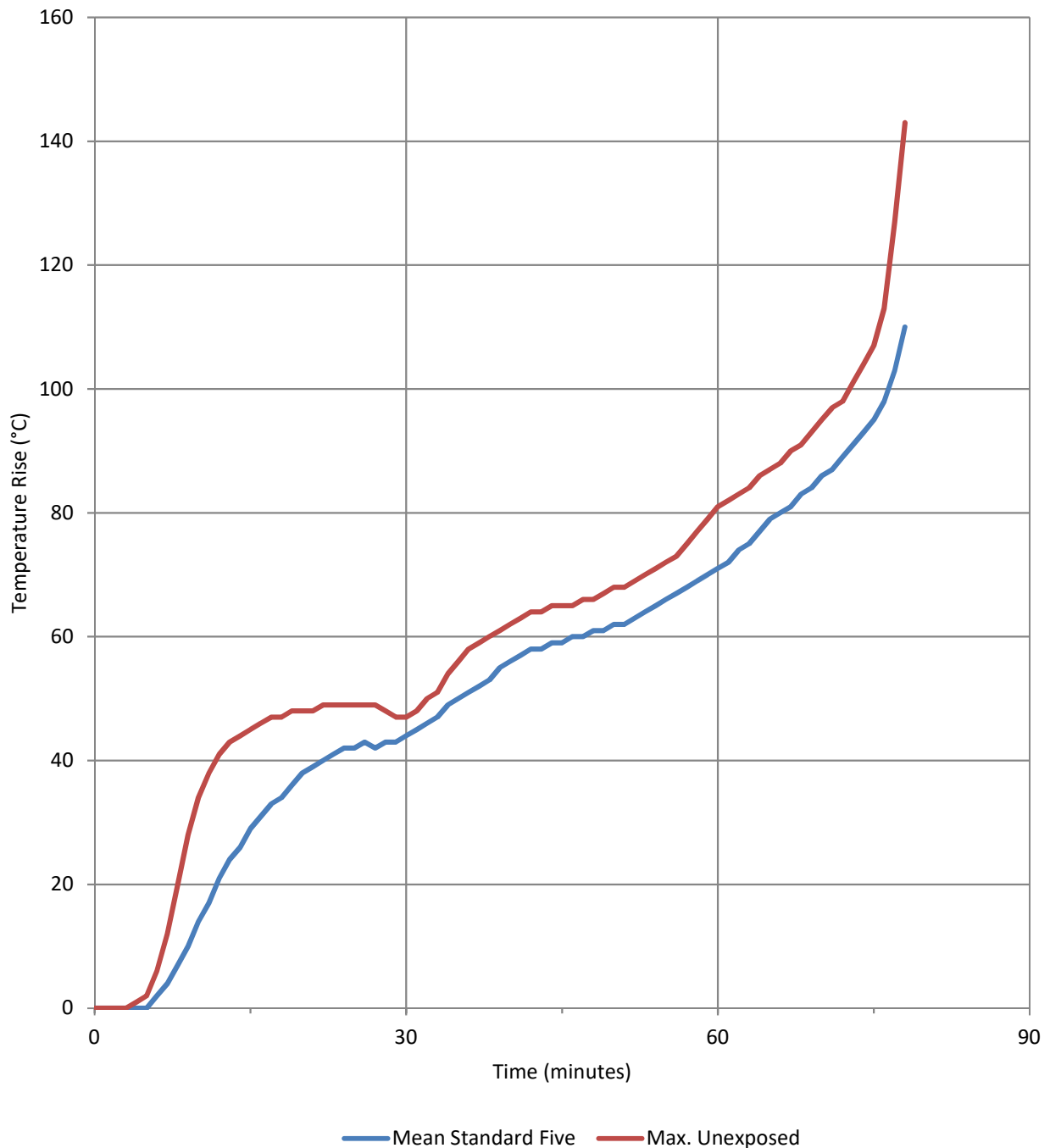
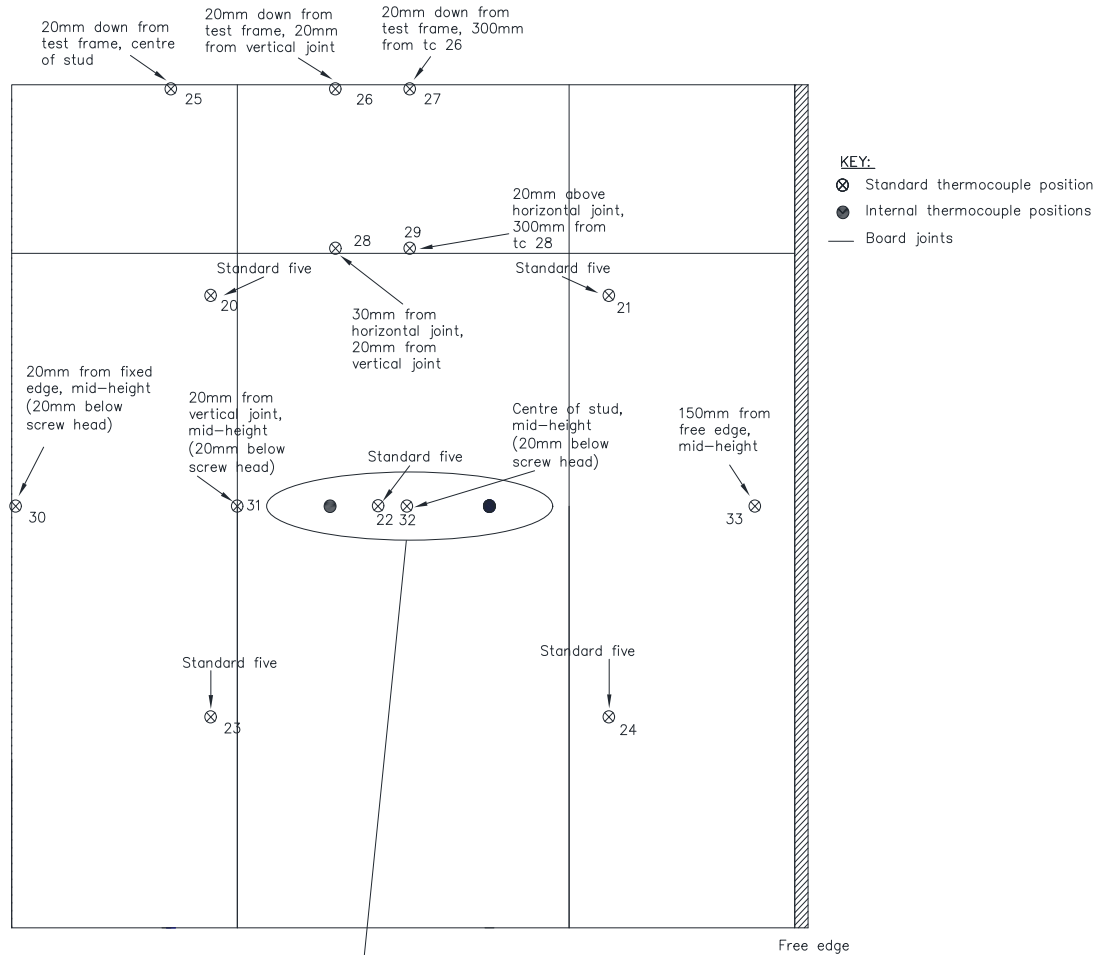


Figure 6 – Unexposed face temperature graph.

### Unexposed Face Thermocouple Layout



Internal thermocouples at 1500mm height

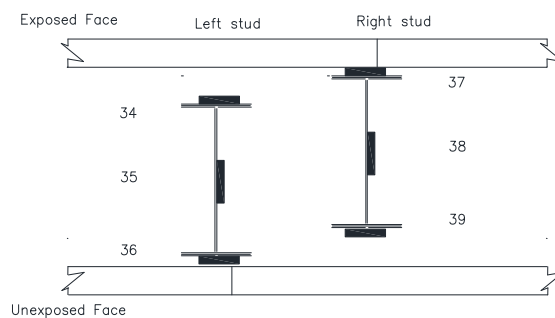


Figure 7 – Unexposed face thermocouple layout.

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### Unexposed Face Standard Five Temperature Data

Time (minutes)	Temperature Rise (°C)					
	Thermocouple No. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	Mean Standard Five
0	0	-1	0	0	0	0
1	0	-1	0	0	0	0
2	0	-1	0	0	0	0
3	0	-1	0	0	0	0
4	0	-1	0	0	0	0
5	1	0	0	1	0	0
6	4	1	1	2	1	2
7	9	4	1	4	1	4
8	15	8	3	8	2	7
9	21	13	4	11	3	10
10	27	18	6	15	5	14
11	32	23	7	19	6	17
12	36	28	9	23	8	21
13	39	32	10	27	11	24
14	42	35	12	30	12	26
15	43	38	13	34	15	29
16	45	40	15	37	17	31
17	46	42	17	39	19	33
18	47	44	18	41	22	34
19	48	45	20	43	25	36
20	48	46	22	45	27	38
21	48	47	23	46	29	39
22	49	48	25	48	32	40
23	49	48	27	49	34	41
24	49	48	28	49	36	42
25	48	47	29	49	38	42
26	47	46	31	49	40	43
27	46	45	32	48	41	42
28	45	45	34	47	42	43
29	45	45	36	47	43	43
30	46	45	39	46	44	44
31	47	45	41	46	44	45
32	49	46	43	47	45	46
33	51	46	45	47	45	47
34	53	48	48	49	46	49
35	55	49	49	50	46	50
36	56	50	51	51	47	51
37	57	52	52	52	47	52
38	57	53	54	54	48	53
39	58	55	56	55	49	55

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Time (minutes)	Temperature Rise (°C)					Mean Standard Five
	Thermocouple No. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	
40	59	56	58	57	51	56
41	59	56	59	58	52	57
42	60	57	60	59	53	58
43	60	57	60	59	55	58
44	61	57	60	59	56	59
45	62	58	60	59	57	59
46	63	58	60	60	58	60
47	64	59	60	60	58	60
48	64	60	61	60	58	61
49	65	61	61	61	58	61
50	66	62	62	61	58	62
51	67	63	62	62	58	62
52	68	64	63	62	59	63
53	68	65	64	63	59	64
54	69	66	65	64	60	65
55	71	67	66	65	61	66
56	72	68	67	65	61	67
57	75	69	68	66	62	68
58	77	69	70	67	63	69
59	79	69	72	68	64	70
60	81	69	73	69	65	71
61	82	70	74	70	66	72
62	83	72	75	71	68	74
63	84	74	76	73	69	75
64	86	77	78	74	71	77
65	87	79	79	76	72	79
66	88	81	81	77	73	80
67	90	83	82	78	74	81
68	91	85	84	79	75	83
69	93	87	86	80	75	84
70	95	89	87	81	76	86
71	97	91	89	83	77	87
72	98	93	90	84	78	89
73	101	95	92	86	79	91
74	104	98	94	88	80	93
75	107	101	96	90	82	95
76	113	103	98	92	83	98
77	127	108	101	94	85	103
78	143	115	106	96	88	110

See **Figure 7** for the location of the thermocouples.

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### Additional Unexposed Face Temperature Data

Time (minutes)	Temperature Rise (°C)				
	Thermocouple No. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
0	0	0	0	0	0
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	1	1	0	0	0
5	2	2	1	0	0
6	6	5	4	1	1
7	12	11	10	2	2
8	20	18	17	4	5
9	28	25	24	6	8
10	34	30	30	9	11
11	38	35	34	12	14
12	41	38	37	15	17
13	43	40	39	17	21
14	44	41	41	19	23
15	45	43	43	22	26
16	46	44	44	24	28
17	47	45	44	26	31
18	47	45	45	28	33
19	47	46	45	30	34
20	48	46	45	32	36
21	48	46	45	33	37
22	48	46	44	34	39
23	48	46	45	36	40
24	48	46	44	36	41
25	48	45	44	37	42
26	48	44	44	37	42
27	47	44	43	37	42
28	46	43	42	38	41
29	45	42	41	38	41
30	44	43	40	39	41
31	43	43	40	41	41
32	42	44	39	43	41
33	43	44	39	45	41
34	44	46	40	49	42
35	46	47	41	52	44
36	48	49	44	55	45
37	50	50	47	58	47
38	52	52	49	60	50
39	55	54	50	61	52

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Time (minutes)	Temperature Rise (°C)				
	Thermocouple No. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
40	56	57	51	62	55
41	57	59	53	63	57
42	58	60	53	64	59
43	58	61	54	64	60
44	58	62	54	65	61
45	58	63	55	65	62
46	59	64	55	65	63
47	59	65	56	66	63
48	59	66	56	66	64
49	59	67	56	66	64
50	59	68	57	66	64
51	60	68	57	66	65
52	60	69	57	66	65
53	61	70	58	67	65
54	62	71	58	68	66
55	63	71	58	69	66
56	65	72	59	70	67
57	66	73	59	70	68
58	67	74	60	71	69
59	69	75	60	72	69
60	70	75	61	74	70
61	71	76	61	77	70
62	72	77	62	78	71
63	73	78	63	80	71
64	74	78	65	81	72
65	74	79	66	83	73
66	75	80	67	84	73
67	75	81	68	85	75
68	76	81	69	86	78
69	77	82	69	87	80
70	77	83	70	89	83
71	77	84	70	90	85
72	78	85	70	91	87
73	79	86	71	93	88
74	78	86	71	94	91
75	80	89	72	97	92
76	80	89	75	98	94
77	81	91	80	101	96
78	81	95	86	111	99

See **Figure 7** for the location of the thermocouples.

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### Additional Unexposed Face Temperature Data

Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	1	0	1
6	1	2	0	2
7	3	4	1	4
8	5	8	3	8
9	8	13	4	13
10	11	17	6	17
11	13	21	9	21
12	15	24	11	24
13	17	28	13	28
14	19	30	15	30
15	20	33	17	33
16	22	36	19	35
17	23	38	20	37
18	24	40	22	39
19	25	41	24	41
20	26	43	26	43
21	27	44	27	44
22	28	45	28	45
23	29	46	29	47
24	30	47	31	48
25	31	46	31	49
26	32	46	32	49
27	32	45	33	49
28	33	45	34	48
29	34	45	36	47
30	34	46	37	47
31	35	48	39	46
32	36	50	41	46
33	36	51	43	46
34	37	54	46	46
35	38	56	48	46
36	39	58	52	47
37	41	59	55	47
38	42	60	58	48
39	44	61	59	49

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# The Building Test Centre

## Fire Acoustics Structures

The Building Test Centre  
 British Gypsum  
 East Leake  
 Loughborough  
 Leics. LE12 6NP  
 Tel: (0115) 945 1564  
 Email: btc.testing@saint-gobain.com

Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
40	46	61	60	50
41	47	61	60	52
42	49	61	61	53
43	50	62	62	54
44	52	62	63	56
45	53	62	63	57
46	54	62	64	57
47	55	63	64	57
48	55	63	65	57
49	55	64	66	57
50	56	64	67	57
51	56	65	68	58
52	56	65	69	59
53	56	66	70	60
54	57	67	71	60
55	57	68	72	61
56	57	70	73	62
57	58	72	73	63
58	59	73	74	64
59	60	74	74	65
60	61	75	75	66
61	61	77	76	68
62	62	78	77	70
63	63	79	78	71
64	64	79	79	72
65	65	80	81	73
66	66	81	82	74
67	66	82	83	75
68	67	83	85	75
69	68	84	87	76
70	68	85	88	77
71	68	87	90	78
72	69	88	91	79
73	69	90	93	79
74	70	92	95	80
75	70	95	98	82
76	70	98	101	82
77	70	100	106	83
78	70	106	112	85

See **Figure 7** for the location of the thermocouples.

Customer: **British Gypsum**

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### Internal Temperature Data at 1500 mm Height

Time (minutes)	Actual Temperature (°C)					
	Left stud			Right stud		
	Hot Flange Thermocouple No. 34	Web Thermocouple No. 35	Cold Flange Thermocouple No. 36	Hot Flange Thermocouple No. 37	Web Thermocouple No. 38	Cold Flange Thermocouple No. 39
0	25	24	23	25	25	23
1	27	24	23	26	25	23
2	34	24	23	33	26	23
3	50	29	23	51	36	24
4	72	50	27	80	60	31
5	86	69	38	97	75	48
6	93	79	52	99	82	64
7	96	84	62	99	86	71
8	97	86	67	99	87	75
9	99	87	69	99	88	77
10	100	86	71	99	90	79
11	100	87	72	99	92	80
12	101	87	73	101	94	81
13	101	88	75	102	97	83
14	101	90	76	103	99	84
15	102	91	77	105	100	85
16	103	92	79	108	102	86
17	104	93	81	113	103	86
18	107	94	83	120	105	87
19	113	94	84	129	108	88
20	121	96	85	137	110	89
21	131	97	87	145	114	90
22	139	98	89	158	120	90
23	148	100	89	181	129	90
24	164	106	91	221	153	90
25	195	120	94	282	191	91
26	242	142	101	366	239	96
27	287	170	109	454	303	104
28	332	209	118	536	354	111
29	372	245	131	604	411	123
30	406	275	147	649	472	147
31	435	299	161	668	516	196
32	461	322	176	700	550	284
33	486	343	191	725	577	351
34	508	365	207	748	589	395
35	527	379	226	765	588	430
36	542	384	248	773	588	456

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Time (minutes)	Actual Temperature (°C)					
	Left stud			Right stud		
	Hot Flange Thermocouple No. 34	Web Thermocouple No. 35	Cold Flange Thermocouple No. 36	Hot Flange Thermocouple No. 37	Web Thermocouple No. 38	Cold Flange Thermocouple No. 39
37	551	387	274	777	590	469
38	557	383	291	781	594	479
39	562	382	300	786	600	488
40	565	384	309	791	605	498
41	567	388	318	794	612	508
42	570	393	327	798	619	519
43	573	398	335	802	626	531
44	576	405	343	803	632	542
45	579	411	351	811	638	554
46	582	420	360	811	643	565
47	585	430	371	817	646	576
48	588	438	382	823	651	586
49	591	446	391	829	657	598
50	594	454	399	831	661	609
51	597	462	407	836	669	621
52	600	471	415	840	675	632
53	602	480	424	846	682	642
54	605	487	433	852	691	-
55	608	496	442	856	695	-
56	611	504	451	860	701	-
57	614	512	460	865	714	-
58	617	520	469	870	718	-
59	620	530	479	874	722	-
60	622	540	490	875	727	-
61	622	551	502	877	738	-
62	623	563	515	880	754	-
63	626	575	527	-	799	-
64	631	587	538	-	805	-
65	637	598	550	-	-	-
66	643	608	561	-	-	-
67	649	615	571	-	-	-
68	654	622	582	-	-	-
69	661	630	594	-	-	-
70	668	640	608	-	-	-
71	677	648	623	-	-	-
72	687	655	640	-	-	-
73	698	663	654	-	-	-
74	720	686	670	-	-	-
75	809	703	693	-	-	-

Customer: **British Gypsum**

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Time (minutes)	Actual Temperature (°C)					
	Left stud			Right stud		
	Hot Flange Thermocouple No. 34	Web Thermocouple No. 35	Cold Flange Thermocouple No. 36	Hot Flange Thermocouple No. 37	Web Thermocouple No. 38	Cold Flange Thermocouple No. 39
76	-	748	745	-	-	-
77	-	-	-	-	-	-

- Thermocouple broken due to equipment failure.

See **Figure 7** for the location of the thermocouples.

Specimen Lateral Deflection

Time (minutes)	Deflection (mm)
	Centre
0	0
1	-2
2	-1
3	1
4	4
5	5
6	6
7	6
8	6
9	6
10	6
11	6
12	6
13	6
14	6
15	7
16	7
17	7
18	7
19	8
20	8
21	8
22	9
23	10
24	12
25	16
26	23
27	30
28	38
29	44
30	-
31	47
32	48
33	54
34	61
35	67
36	73
37	78
38	64
39	67

Time (minutes)	Deflection (mm)
	Centre
40	67
41	69
42	69
43	70
44	71
45	71
46	71
47	72
48	72
49	72
50	73
51	73
52	74
53	74
54	74
55	74
56	74
57	74
58	74
59	74
60	74
61	74
62	74
63	74
64	74
65	74
66	74
67	67
68	68
69	68
70	67
71	68
72	67
73	67
74	68
75	68
76	67
77	68
78	67

The deflection was recorded at the approximate centre of the specimen. Positive readings indicate deflection into the furnace.

- Indicates transducer became detached.

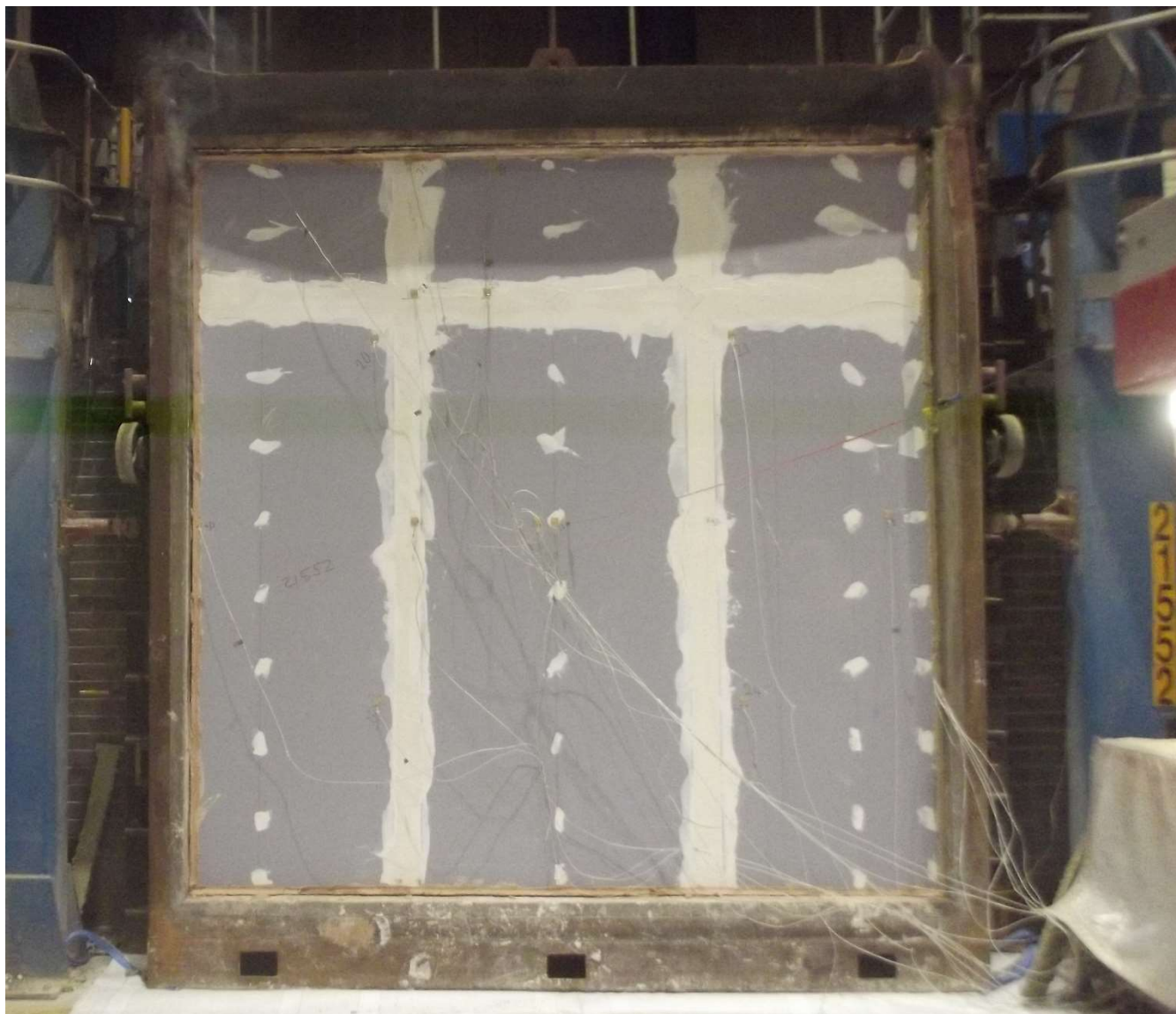
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## PHOTOGRAPHS

### Unexposed Face Prior to Test

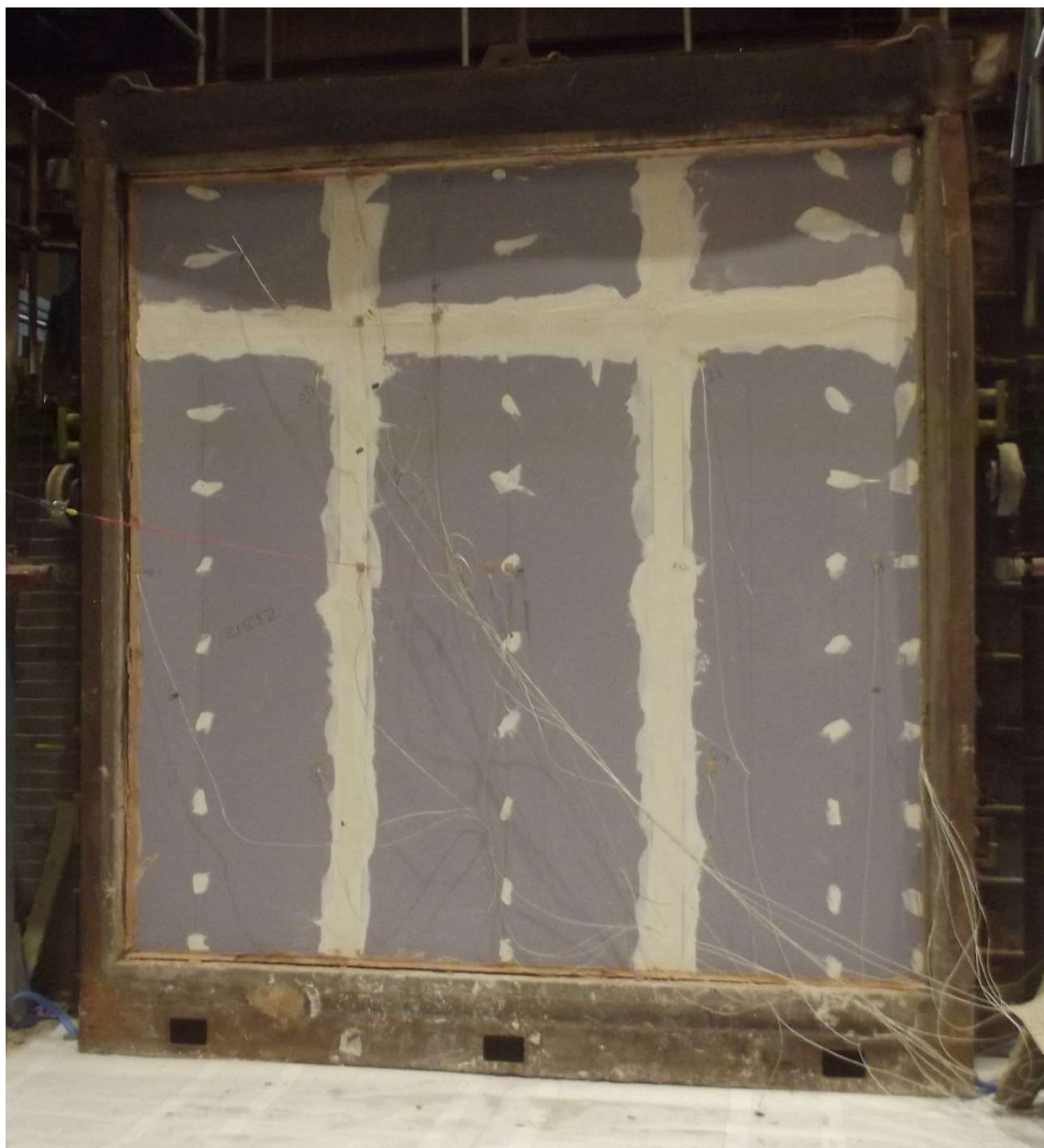


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### Unexposed Face at 30 Minutes



Customer: **British Gypsum**

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# The Building Test Centre

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### Unexposed Face at 1 Hour



Customer: **British Gypsum**

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### FIELD OF DIRECT APPLICATION

#### General

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability.

- i) Decrease in height from 3000 mm.
- ii) Increase in the thickness of the wall (minimum thickness 102 mm).
- iii) Increase thickness of component materials (minimum Gypframe 'I' stud depth 60 mm, minimum Gypframe stud gauge 0.70 mm).
- iv) Decrease in the linear dimensions of the boards but not thickness ( $\leq 2400$  mm (long) x  $\leq 1200$  mm (wide) Gyproc SoundBloc).
- v) Decrease stud spacing.
- vi) Decrease in fixing centres from 300 mm.
- vii) Increase in the number of horizontal joints, of the type tested, when tested with one joint not more than  $(500 \pm 150)$  mm from the top edge.

#### Extension of Width

For test specimens tested without a supporting construction, the width of an identical construction may be increased as the specimen was tested at nominally 3000 mm wide with one vertical edge without restraint.

#### Extension of Height

The height of the construction may be increased by 1000 mm under the following conditions:

30 minutes	60 minutes
$\leq 100$ mm	$\leq 100$ mm