

Report Number: **BTC 19202F**

A FIRE RESISTANCE TEST ON A GYPWALL METAL STUD PARTITION WITH 70MM STUD FRAMEWORK CLAD EACH SIDE WITH A SINGLE LAYER OF 12.5MM GYPROC HABITO EX SHERBURN, CONDUCTED IN ACCORDANCE WITH BS EN 1364-1:1999.

Test Date: 11th August 2015

www.btconline.co.uk

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

Customer: **British Gypsum**

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The Building Test Centre

Fire Acoustics Structures

The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed face at 1 hour 38

Unexposed face at 1 hour, 18 minutes, at test termination 39

FIELD OF DIRECT APPLICATION 40

General 40

Extension of width 40

Extension of height 40



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 Habito.

The test sponsor was British Gypsum.

The test specimen was installed by Alltone Limited. The construction of the specimen took place on the 7th August 2015. The Building Test Centre played no role in the design or selection of materials comprising the test specimen.

The test was witnessed by Mr M Sexton and Mr J Cherry of Saint-Gobain Gyproc Activity, and Mr N Spencer of British Gypsum and was conducted on the 11th August 2015.

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



Sam Potter
Scientist

Authorised by



Paul Miller
BSc. (Hons.)
Fire Test Manager

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The Building Test Centre

Fire Acoustics Structures

The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

TEST REPORT AMENDMENTS

Page	Amendments	Date

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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 3000mm (high) x 3000mm (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 70S50 'C' Studs were positioned at 600mm centres between 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 used to fix 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 studs.

Both the unexposed face and the exposed face of the specimen were clad with a single layer of 12.5mm Gyproc Habito. The boards were fixed with 25mm British Gypsum High Performance Fixings 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 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

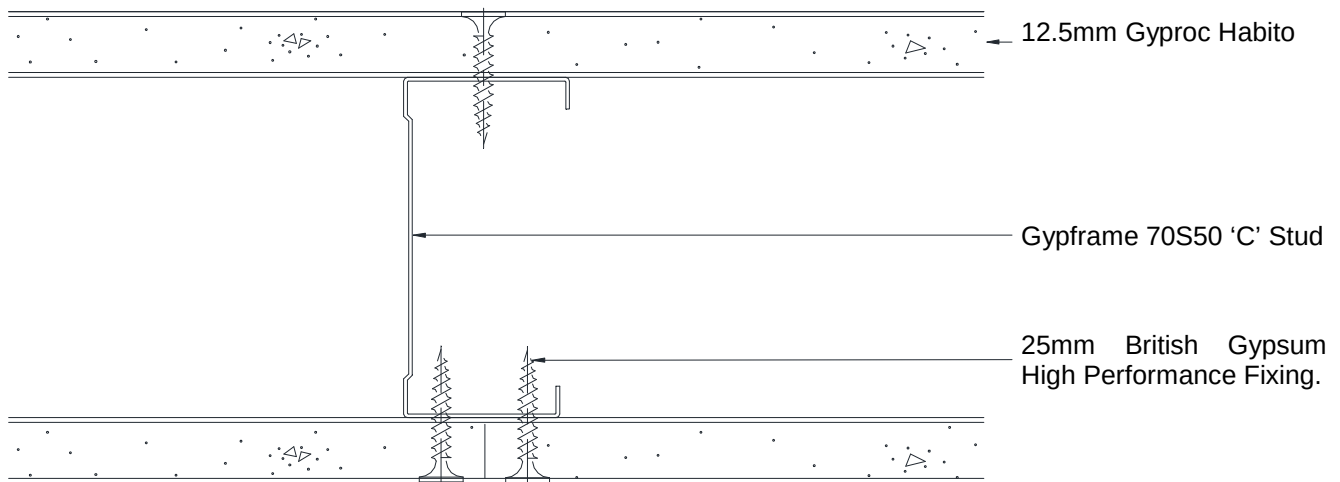
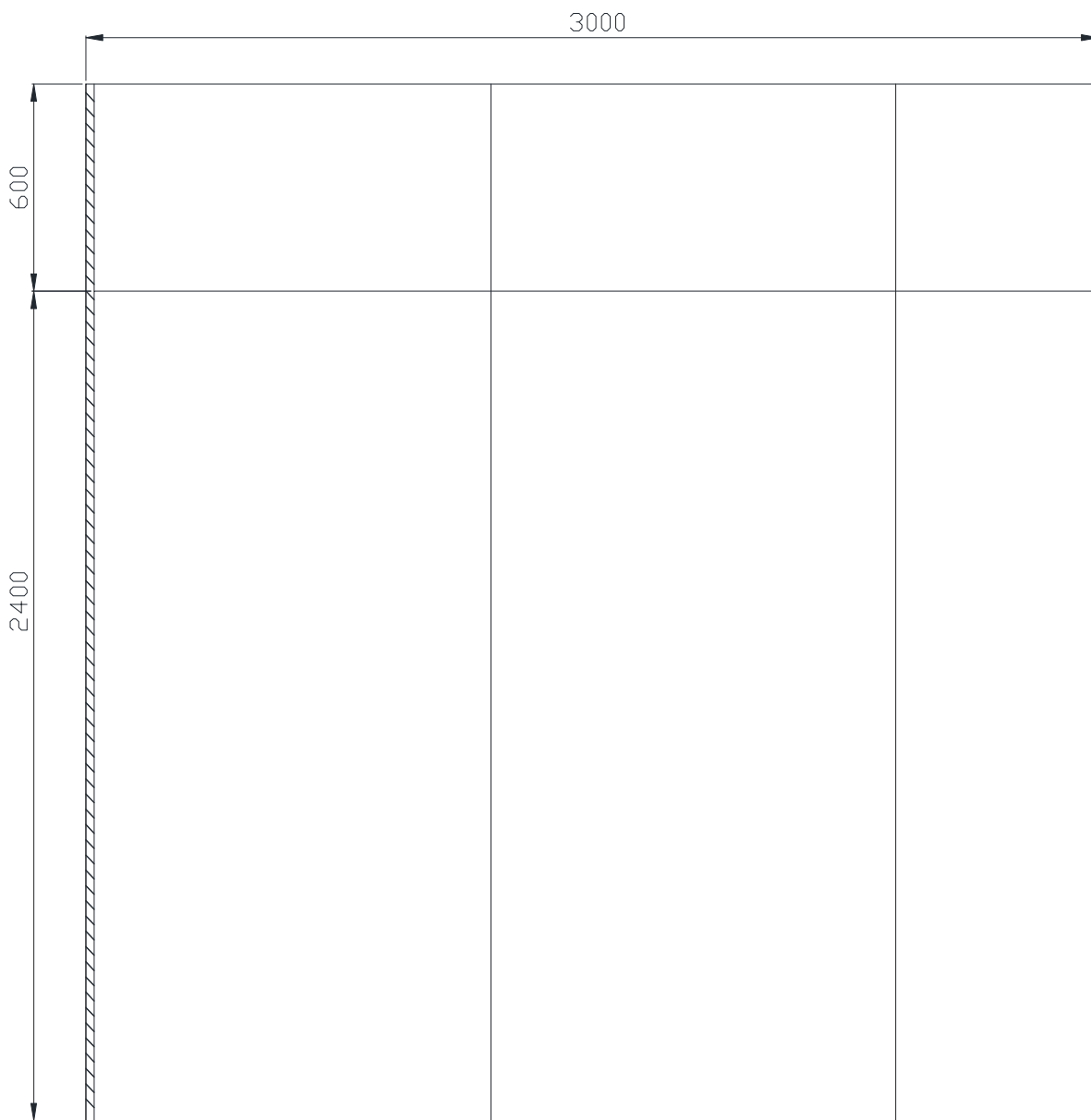


Figure 1 – Horizontal cross section.

Exposed Face Elevation



Free
edge

—— Board joints

Figure 2 – Exposed face elevation.

Unexposed Face Elevation

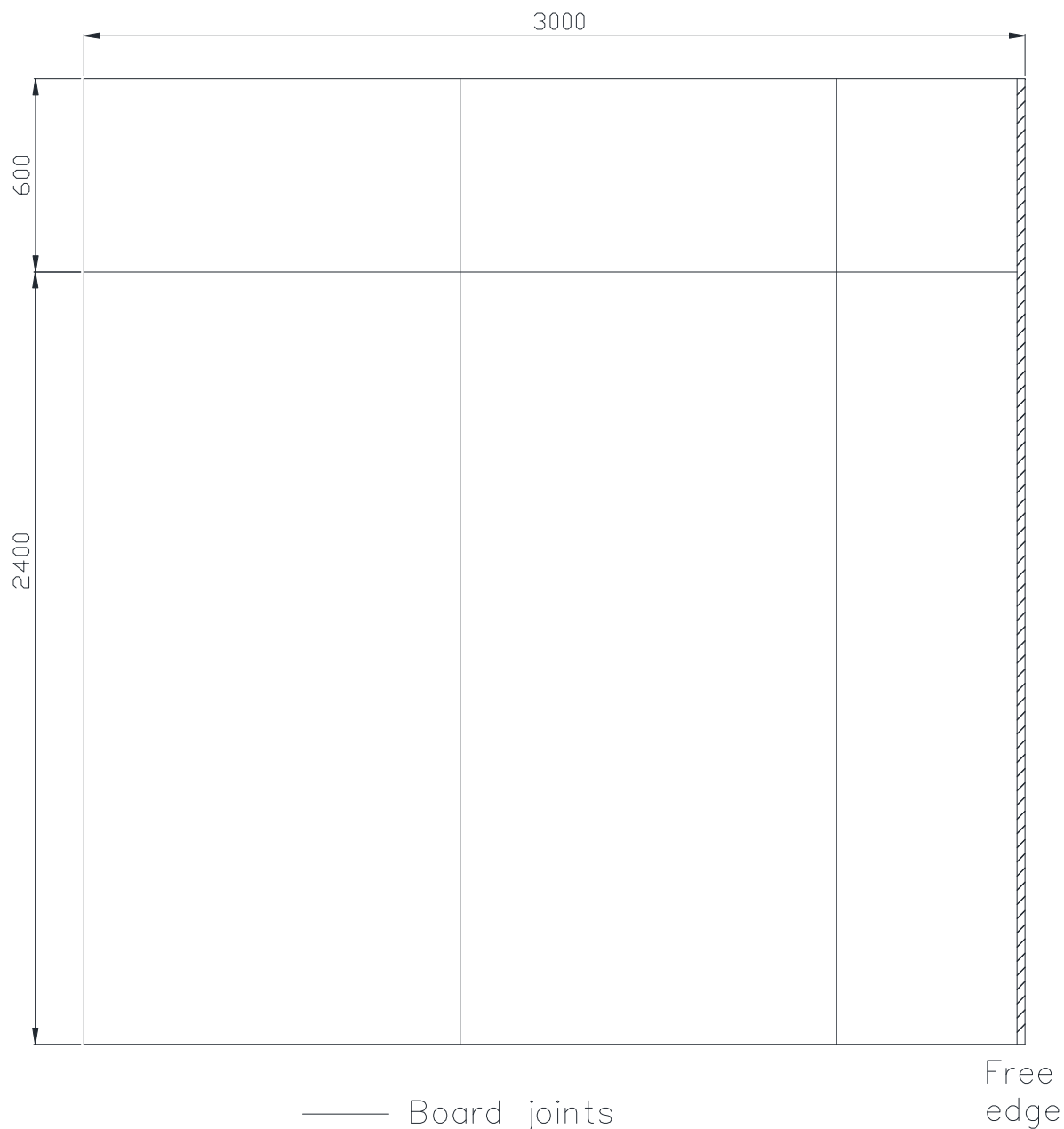


Figure 3 – Unexposed face elevation.

TEST MATERIALS

Plasterboard

- i) Nominally, 2400mm (long) x 1200mm (wide) x 12.5mm (thick), Gyproc Habito (TE), manufactured and supplied by British Gypsum, ex Sherburn.

Measured mass per unit area:	12.0 kg/m ²
Measured thickness:	12.8 mm
Board identification numbers:	31 118 15 13:20 31 118 15 13:21 31 118 15 13:42
Measured moisture content:	Less than 1%

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 70S50 'C' Studs.
iv) Gypframe GFS1 Fixing Strap.

All metal components were supplied by British Gypsum.

Fasteners

- v) 25mm British Gypsum High Performance Fixings, supplied by British Gypsum.
vi) 60mm fire resistant fixings, supplied by The Building Test Centre.

Miscellaneous Components

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

Where measurements could not be taken then mass and dimensions were provided by the customer or the manufacturer e.g. from material labelling. Material information was recorded according to procedure AP070 vs. 1.0.

TEST PROCEDURE

The test was conducted fully in accordance with BS EN 1364-1: 1999. The specimen was subjected to fire from one side, as specified in BS EN 1364-1: 1999.

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 20°C.

The furnace pressure was set to control at 18 ± 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:

Integrity	Sustained Flaming	78 minutes, no failure.
	6mm Gap Gauge	76 minutes.
	25mm Gap Gauge	76 minutes.
	Cotton Pad	63 minutes.
Insulation		55 minutes.
Test Terminated		78 minutes, at the request of the laboratory

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: 1999, section 13.

TEST DATA

Observations

All observations refer to the exposed face unless stated.

Observers: Unexposed face: Sam Potter
Exposed face: Liam Woodford

Time Hours	Minutes	Observations
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 3-5mm. Right-hand vertical joint had opened up to approximately 3-5mm. Horizontal joint had opened up to approximately 1-3mm.
0	30	Left-hand vertical joint had opened up to approximately 10-12mm. Right-hand vertical joint had opened up to approximately 8-10mm. Horizontal joint had opened up to approximately 8mm. Boards cracking around screw heads adjacent to all joints. <i>Unexposed face</i> No visible change.
0	40	Left-hand vertical joint had opened up to approximately 15-20mm. Right-hand vertical joint had opened up to approximately 10-12mm. Horizontal joint had opened up to approximately 10mm.
0	45	Left-hand vertical joint had opened up to approximately 20-25mm. Right-hand vertical joint had opened up to approximately 15mm. Horizontal joint had opened up to approximately 15mm.
0	50	No visible change.
0	54	<i>Unexposed face</i> Left-hand vertical joint had opened up to approximately 2-3mm from approximately 1200mm up to 2100mm height. All screw heads visible.

Time		Observations
Hours	Minutes	
0	55	No visible change. <i>Unexposed face</i> INSULATION FAILURE. The temperature rise of thermocouple no.22 positioned at the centre of the specimen exceeded 180°C.
0	56	<i>Unexposed face</i> Left-hand side of lower centre board started to discolour.
0	57	<i>Unexposed face</i> The mean temperature rise of the standard five thermocouples exceeded 140°C.
0	59	<i>Unexposed face</i> Right-hand side of lower left-hand board had started to discolour. Left-hand vertical joint starting to glow.
1	00	Top left-hand corner of lower centre board leaning on unexposed face boards. Crack on centre of lower centre board at top of board. All boards crazed.
1	01	<i>Unexposed face</i> Cotton pad attempt at mid height on the left-hand vertical joint – no failure.
1	03	<i>Unexposed face</i> INTEGRITY FAILURE. The cotton pad ignited (flamed) when placed on the left-hand vertical joint at approximately 1500mm height.
1	04	<i>Unexposed face</i> Left-hand vertical joint had opened up to approximately 15-20mm.
1	05	Crack on centre of left-hand board. Left-hand vertical joint had opened up to approximately 60mm. Right-hand vertical joint had opened up to approximately 60mm. Horizontal joint had opened up to approximately 80mm.
1	06	<i>Unexposed face</i> Jointing material falling from left-hand vertical joint. Horizontal joint opening up above lower centre board.

Time		Observations
Hours	Minutes	
1	07	Top right-hand corner of lower left-hand board leaning against back of unexposed boards.
1	08	<i>Unexposed face</i> Metal work distorted where visible.
1	10	Crack on centre of lower left-hand board had opened up to approximately 10mm. Studs warped. <i>Unexposed face</i> Left-hand vertical joint had opened up to approximately 60-65mm.
1	13	<i>Unexposed face</i> Right-hand vertical joint had opened up to approximately 10mm.
1	16	Lower centre board had fallen into the furnace. <i>Unexposed face</i> FURTHER INTEGRITY FAILURE. The gap at approximately 1500mm height on the left-hand vertical joint exceeded 6mm x 150mm (visual) FURTHER INTEGRITY FAILURE. The gap at approximately 1500mm height on the left-hand vertical joint exceeded 25mm diameter (visual)
1	18	TEST TERMINATED at the request of the laboratory.

Furnace Temperature Graph

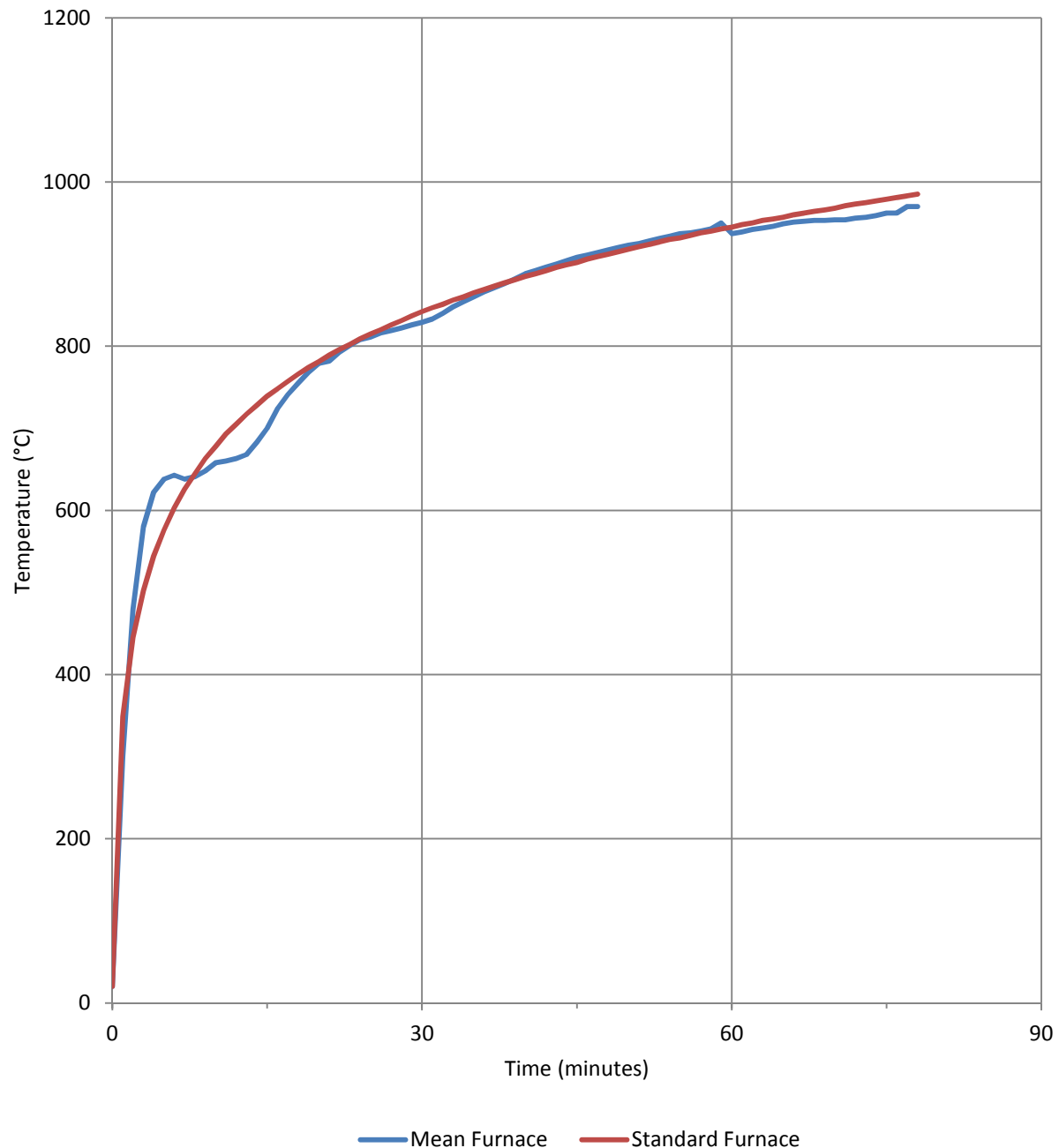


Figure 4 – Furnace temperature graph.

Furnace Pressure Graph

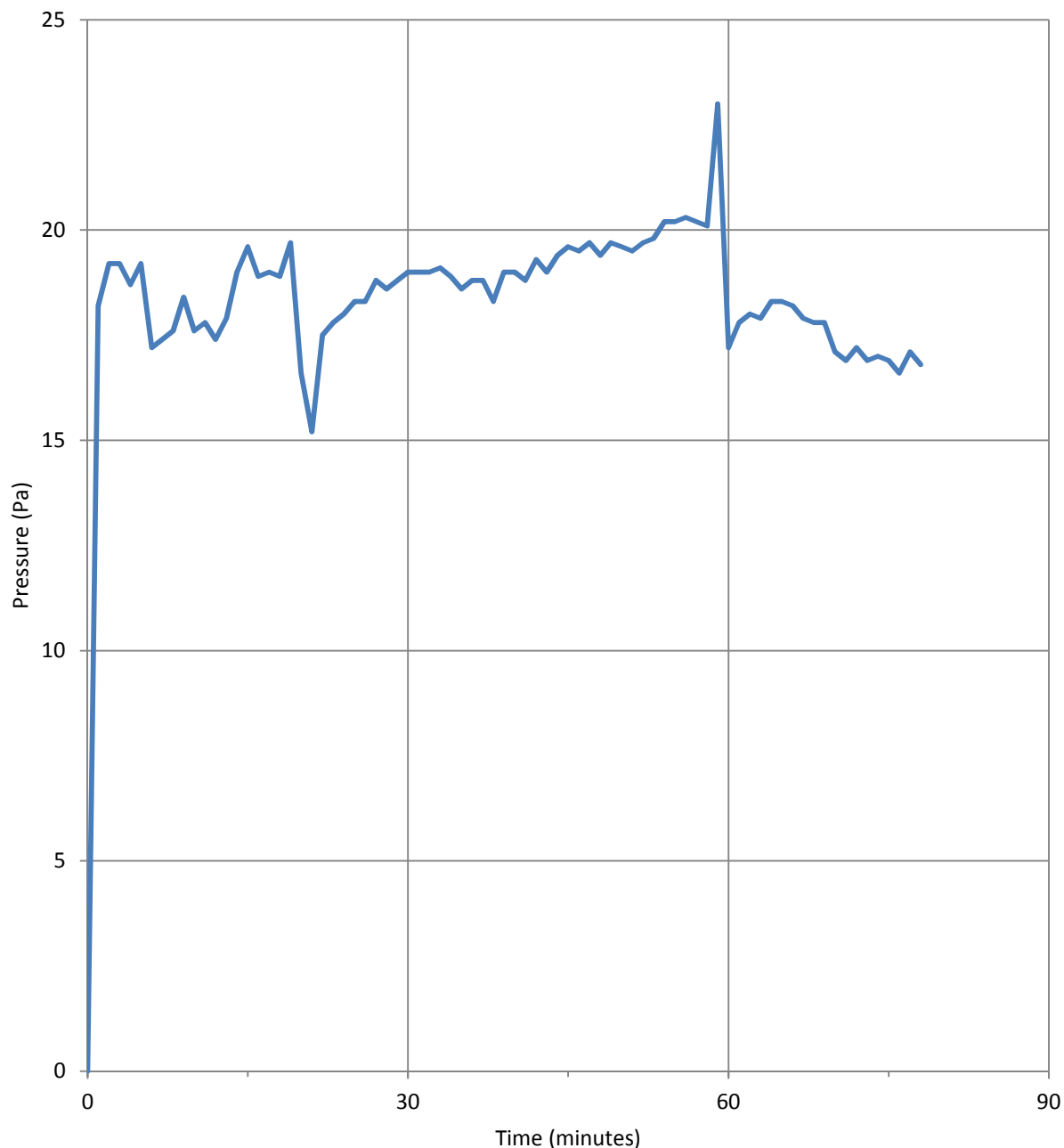


Figure 5 – Furnace pressure graph.

Unexposed Face Temperature Graph

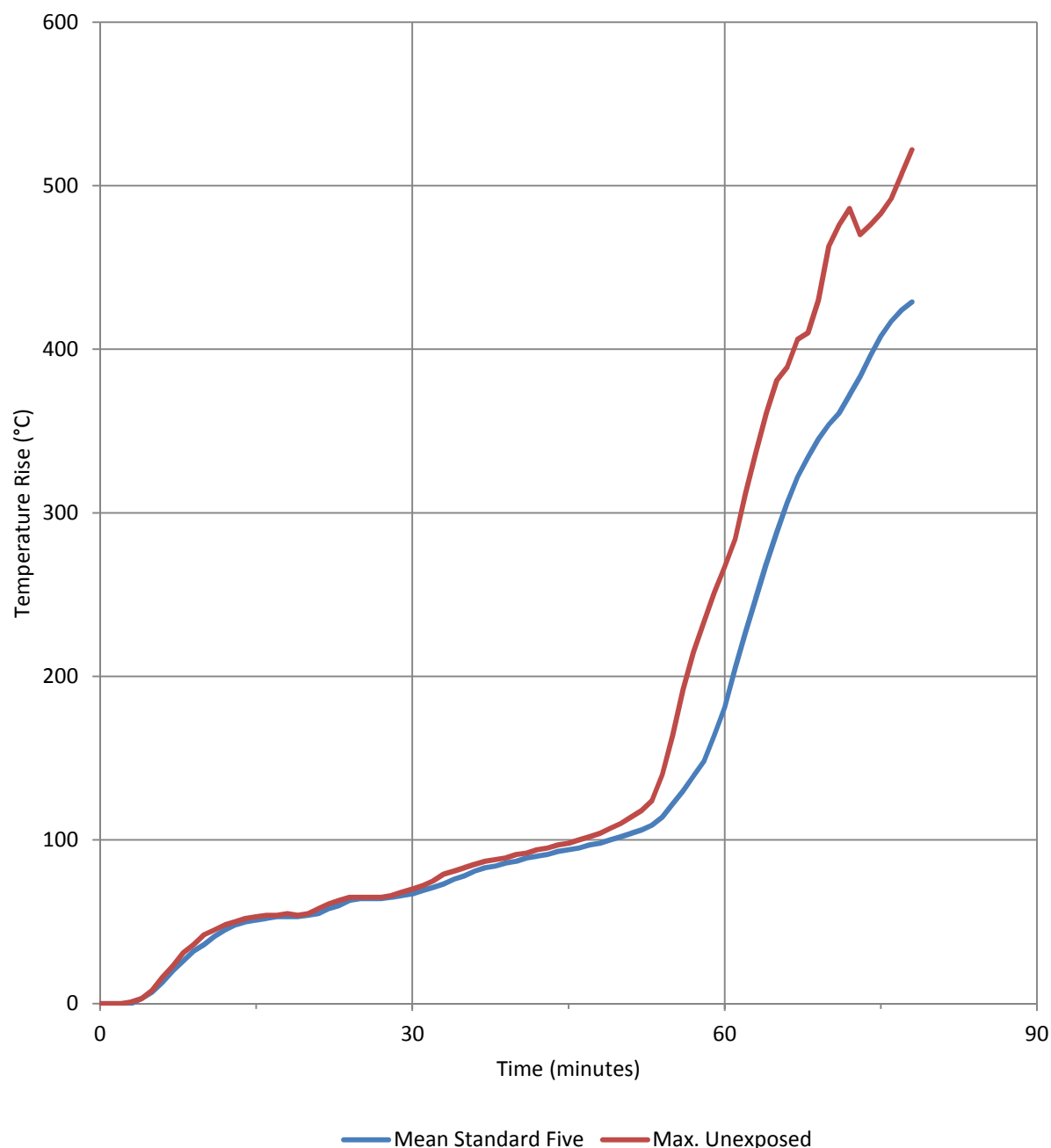


Figure 6 – Unexposed face temperature graph.

Unexposed Face Thermocouple Layout

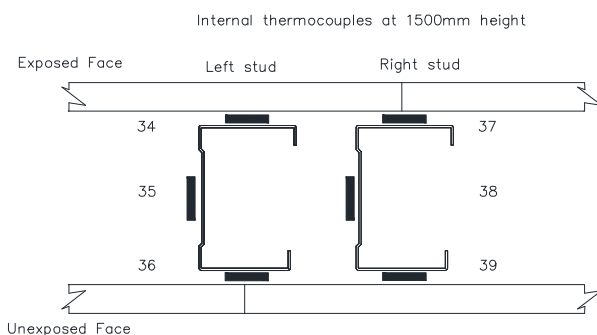
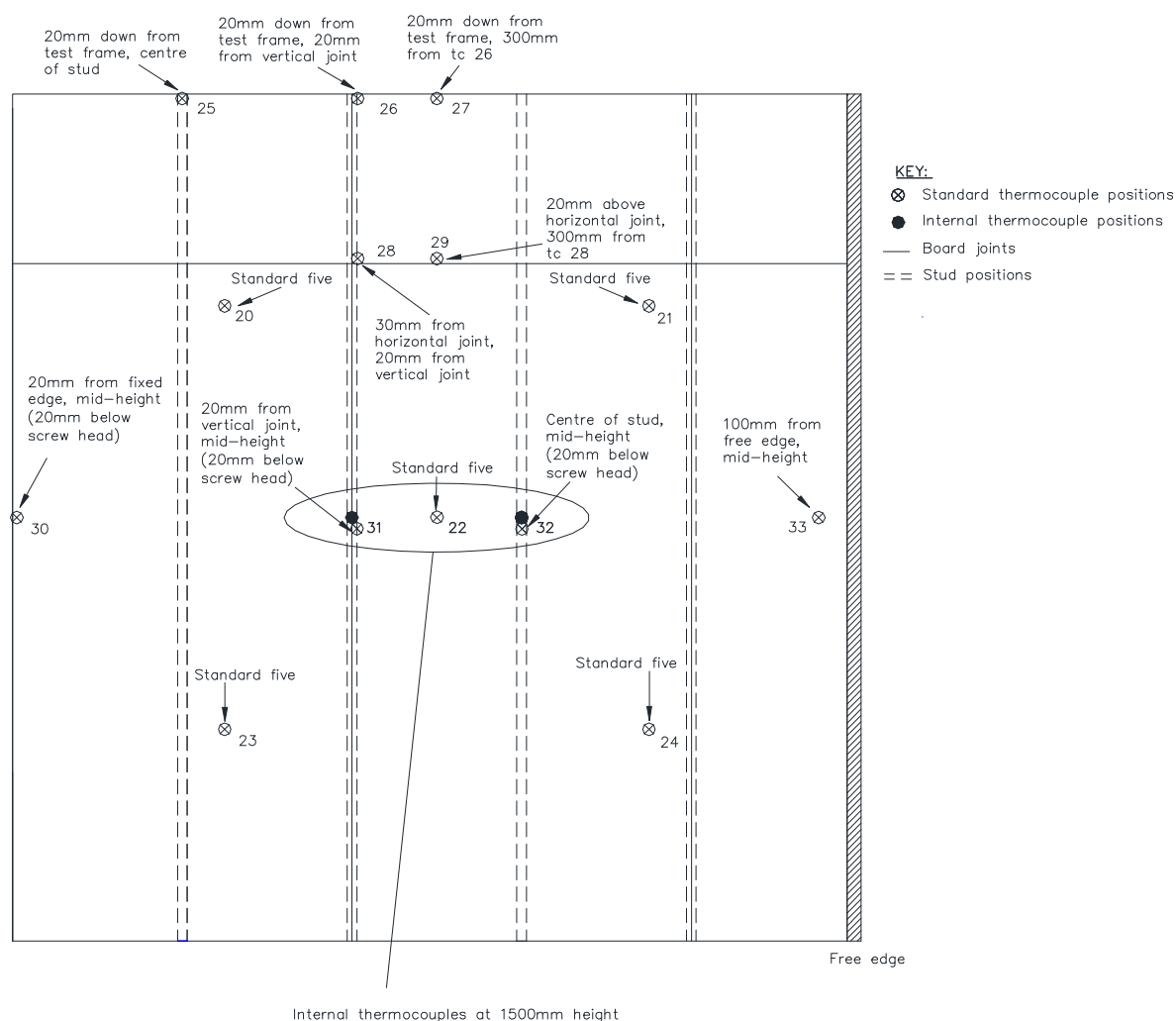


Figure 7 – Unexposed face thermocouple layout.

The Building Test Centre

Fire Acoustics Structures

The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed Face Standard Five Temperature Data

Time (minutes)	Temperature Rise (°C)					Mean Standard Five
	Thermocouple No. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	1	0	0	0	0	0
4	3	3	3	2	3	3
5	8	7	8	6	5	7
6	15	13	14	11	12	13
7	23	21	22	17	15	20
8	29	28	28	22	23	26
9	35	34	33	28	28	32
10	40	39	38	32	31	36
11	44	43	42	37	37	41
12	48	47	46	42	41	45
13	50	49	49	45	45	48
14	52	51	51	48	48	50
15	53	52	52	50	50	51
16	53	53	53	52	51	52
17	53	53	53	53	52	53
18	53	53	53	53	53	53
19	53	52	53	54	53	53
20	53	53	55	55	53	54
21	55	53	58	57	53	55
22	58	55	61	60	55	58
23	60	58	63	62	58	60
24	62	61	64	65	61	63
25	64	63	64	65	63	64
26	64	63	65	65	64	64
27	64	63	65	65	65	64
28	64	63	66	66	65	65
29	65	63	68	67	65	66
30	66	64	70	69	66	67
31	68	65	72	71	68	69
32	69	67	75	74	70	71
33	72	68	79	76	72	73
34	75	70	81	79	74	76
35	78	72	83	82	76	78
36	81	74	85	84	79	81
37	82	77	87	86	82	83

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The Building Test Centre

British Gypsum

East Leake

Loughborough

Leicestershire, LE12 6NP

Tel: (0115) 945 1564

Fax: (0115) 945 1562

Email: btc.testing@saint-gobain.com

Time (minutes)	Temperature Rise (°C)					Mean Standard Five
	Thermocouple No. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	
38	84	79	88	87	84	84
39	85	81	89	88	85	86
40	86	82	91	90	87	87
41	88	84	92	91	88	89
42	89	85	94	92	89	90
43	91	86	95	94	91	91
44	92	87	97	95	92	93
45	94	88	98	96	93	94
46	95	90	100	97	94	95
47	96	91	102	99	95	97
48	98	93	104	100	97	98
49	99	94	107	101	98	100
50	101	95	110	103	99	102
51	103	97	114	105	101	104
52	105	99	118	107	103	106
53	108	100	124	109	105	109
54	111	103	140	111	107	114
55	115	105	164	114	110	122
56	119	109	192	118	113	130
57	128	113	215	121	116	139
58	145	117	233	126	118	148
59	179	127	251	138	124	164
60	209	145	267	149	137	181
61	236	177	284	175	152	205
62	261	203	301	194	178	227
63	286	225	321	210	197	248
64	312	246	349	225	213	269
65	344	266	370	236	225	288
66	378	287	381	247	237	306
67	406	313	384	258	249	322
68	410	345	387	268	260	334
69	414	370	390	279	270	345
70	424	381	395	290	282	354
71	429	383	400	301	294	361
72	449	384	407	314	307	372
73	465	387	415	327	322	383
74	476	392	422	343	346	396
75	483	398	424	364	371	408
76	486	405	428	386	380	417
77	507	411	432	400	372	424

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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	
78	519	416	439	404	369	429

Figures highlighted in red indicated the minute in which the temperature rise exceeded 180°C and the mean temperature rise exceeded 140°C.

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

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	-1	-1	0
3	1	0	0	-1	0
4	2	3	1	1	0
5	7	8	6	3	4
6	11	16	12	8	7
7	20	23	20	12	12
8	24	31	26	16	18
9	30	36	31	21	24
10	35	42	36	25	30
11	38	45	40	29	34
12	43	48	43	32	39
13	45	50	45	35	42
14	47	51	47	37	45
15	48	52	48	38	47
16	49	53	49	40	48
17	50	53	49	41	49
18	50	53	48	41	49
19	50	52	48	42	49
20	50	52	48	42	49
21	49	52	48	42	50
22	49	53	48	43	50
23	49	55	49	46	51
24	50	57	51	48	52
25	51	59	53	51	53
26	53	61	56	53	54
27	55	63	57	56	54
28	57	64	59	58	55
29	59	65	59	59	56
30	61	66	60	61	57
31	62	66	61	63	58
32	63	67	62	64	59
33	63	68	63	65	60
34	64	70	64	67	61
35	65	72	65	68	62
36	66	75	67	70	63
37	67	77	70	71	64

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British Gypsum

East Leake

Loughborough

Leicestershire, LE12 6NP

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Fax: (0115) 945 1562

Email: btc.testing@saint-gobain.com

Time (minutes)	Temperature Rise (°C)				
	Thermocouple No. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
38	69	79	73	72	65
39	71	81	75	73	66
40	74	83	77	73	66
41	76	84	79	74	67
42	77	85	80	75	68
43	78	86	81	76	69
44	79	87	82	77	70
45	80	88	83	78	72
46	81	89	84	79	73
47	82	90	85	80	76
48	83	91	86	81	78
49	83	92	87	82	81
50	84	93	88	83	83
51	85	94	90	85	85
52	86	95	91	87	87
53	87	96	92	89	89
54	88	98	94	90	91
55	89	99	95	92	93
56	89	101	97	95	95
57	90	103	98	98	98
58	92	106	101	101	100
59	94	110	104	104	103
60	96	115	107	108	105
61	98	122	111	116	108
62	99	133	116	135	113
63	102	147	122	161	124
64	105	159	130	202	149
65	110	179	149	234	177
66	113	203	179	258	233
67	117	227	210	284	294
68	121	249	238	326	370
69	130	267	263	364	430
70	140	289	292	395	463
71	160	309	330	403	476
72	191	333	369	423	486
73	222	355	409	439	470
74	246	378	419	448	466
75	271	397	424	454	481
76	296	405	428	458	487
77	325	412	438	471	497

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Time (minutes)	Temperature Rise (°C)				
	Thermocouple No. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
78	353	420	448	486	505

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

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	-1	0	-1
3	0	1	0	0
4	2	2	1	2
5	4	5	3	6
6	9	9	7	13
7	15	14	12	20
8	21	19	17	27
9	25	24	23	32
10	29	28	27	38
11	33	33	31	42
12	37	37	35	47
13	40	40	39	50
14	43	43	41	52
15	44	45	44	53
16	45	47	45	54
17	46	48	46	54
18	46	48	47	55
19	46	49	48	54
20	46	50	49	54
21	45	52	50	54
22	45	54	52	54
23	45	56	54	55
24	46	59	56	58
25	48	61	58	61
26	50	62	60	63
27	51	63	62	65
28	53	64	63	65
29	55	64	63	65
30	56	65	64	65
31	57	66	65	66
32	58	67	67	67
33	59	68	68	68
34	61	70	70	70
35	62	71	72	72
36	65	73	74	76
37	67	76	77	79

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British Gypsum

East Leake

Loughborough

Leicestershire, LE12 6NP

Tel: (0115) 945 1564

Fax: (0115) 945 1562

Email: btc.testing@saint-gobain.com

Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
38	69	78	79	81
39	71	80	81	83
40	73	82	83	84
41	74	83	85	86
42	75	85	86	87
43	76	86	88	88
44	77	87	90	89
45	77	89	91	90
46	78	90	93	91
47	79	91	95	93
48	80	92	96	94
49	80	94	98	95
50	81	95	100	96
51	82	97	102	98
52	83	99	104	99
53	83	101	107	101
54	84	103	110	102
55	85	109	114	104
56	87	119	119	106
57	88	142	125	108
58	89	176	143	110
59	90	218	172	113
60	91	249	203	117
61	93	282	228	121
62	94	312	250	129
63	96	337	271	142
64	98	361	293	164
65	100	381	316	190
66	102	389	342	210
67	105	391	366	228
68	108	402	388	244
69	113	419	396	260
70	120	436	397	276
71	132	446	398	293
72	149	455	402	313
73	172	459	407	342
74	197	468	414	380
75	219	480	419	409
76	240	492	423	413
77	261	506	428	417

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Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
78	287	522	439	423

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

Internal Temperature Data at 1500mm 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	26	25	24	26	25	24
1	28	25	24	27	25	24
2	41	28	26	37	29	25
3	71	48	40	66	51	38
4	96	71	59	95	72	58
5	100	81	70	99	81	69
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	108	100	90	103	101	90
11	111	102	91	103	103	91
12	117	104	93	104	104	93
13	123	105	94	105	105	94
14	128	106	94	108	107	94
15	132	107	94	110	108	94
16	139	110	95	116	110	94
17	152	116	97	125	116	95
18	185	131	107	140	129	100
19	228	155	119	161	148	111
20	266	185	133	185	172	122
21	298	212	148	211	196	136
22	328	237	167	245	222	154
23	353	258	188	282	244	173
24	372	274	206	318	263	191
25	387	289	222	348	277	206
26	401	302	237	382	290	218
27	413	315	252	416	303	230
28	422	327	268	442	317	243
29	429	338	282	464	332	259
30	437	349	294	486	347	276
31	445	359	305	498	363	289
32	454	370	317	514	378	308
33	460	381	329	529	393	326
34	464	392	341	545	406	343
35	471	403	352	560	419	359

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The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

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
36	479	413	363	573	433	374
37	489	424	374	586	446	389
38	499	437	387	598	461	405
39	510	450	399	610	475	424
40	519	462	412	619	487	448
41	528	475	427	628	499	465
42	538	489	444	638	511	482
43	547	500	461	647	522	497
44	556	510	474	655	533	512
45	565	520	487	663	543	525
46	574	531	500	670	553	538
47	583	541	513	676	562	550
48	593	552	525	683	572	561
49	602	562	538	687	581	572
50	610	572	550	692	589	581
51	619	583	560	697	599	591
52	628	594	569	701	609	602
53	637	605	580	708	619	614
54	646	617	592	713	628	624
55	655	628	608	721	638	635
56	664	640	621	731	649	648
57	675	653	635	745	663	664
58	683	666	649	759	641	680
59	692	680	665	768	654	699
60	700	692	680	772	666	714
61	707	702	693	777	680	729
62	711	710	703	772	693	736
63	719	718	714	766	706	742
64	726	726	724	756	717	741
65	736	736	735	749	726	741
66	752	756	755	745	733	740
67	759	763	765	744	738	741
68	763	766	769	745	742	743
69	762	765	767	746	744	744
70	761	762	763	747	747	746
71	761	758	760	747	748	747
72	759	754	757	748	748	747
73	758	751	756	749	749	748

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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
74	760	750	756	751	750	750
75	765	752	757	754	752	752
76	777	758	762	759	758	758
77	812	775	776	771	772	771
78	868	789	783	780	781	782

- Thermocouple broken due to equipment failure.

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

Specimen Lateral Deflection

Time (minutes)	Deflection (mm)	
	Centre	Free Edge
0	0	0
1	7	0
2	9	1
3	10	1
4	10	1
5	10	1
6	9	1
7	8	1
8	7	1
9	7	0
10	7	0
11	8	0
12	8	0
13	8	0
14	9	0
15	9	0
16	10	0
17	12	0
18	15	0
19	19	1
20	24	1
21	29	2
22	33	3
23	36	4
24	38	6
25	41	7
26	44	9
27	46	10
28	48	12
29	49	12
30	50	13
31	52	13
32	53	14
33	54	14
34	55	14
35	56	14
36	57	15
37	58	15

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British Gypsum

East Leake

Loughborough

Leicestershire, LE12 6NP

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Fax: (0115) 945 1562

Email: btc.testing@saint-gobain.com

Time (minutes)	Deflection (mm)	
	Centre	Free Edge
38	59	16
39	60	16
40	61	16
41	61	17
42	62	17
43	62	18
44	62	19
45	62	19
46	62	20
47	61	21
48	61	22
49	61	22
50	60	23
51	61	24
52	62	24
53	62	24
54	62	25
55	63	25
56	63	25
57	63	25
58	63	25
59	61	25
60	61	26
61	60	27
62	58	29
63	57	30
64	55	30
65	51	31
66	46	31
67	38	32
68	31	32
69	28	32
70	24	32
71	21	32
72	17	32
73	14	34
74	10	35
75	8	36
76	6	35
77	5	33

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British Gypsum
East Leake
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Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Time (minutes)	Deflection (mm)	
	Centre	Free Edge
78	2	31

The deflection was recorded at the approximate centre of the specimen and at mid-height at the free edge. Positive readings indicate deflection into the furnace.

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British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
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PHOTOGRAPHS

Exposed face prior to test



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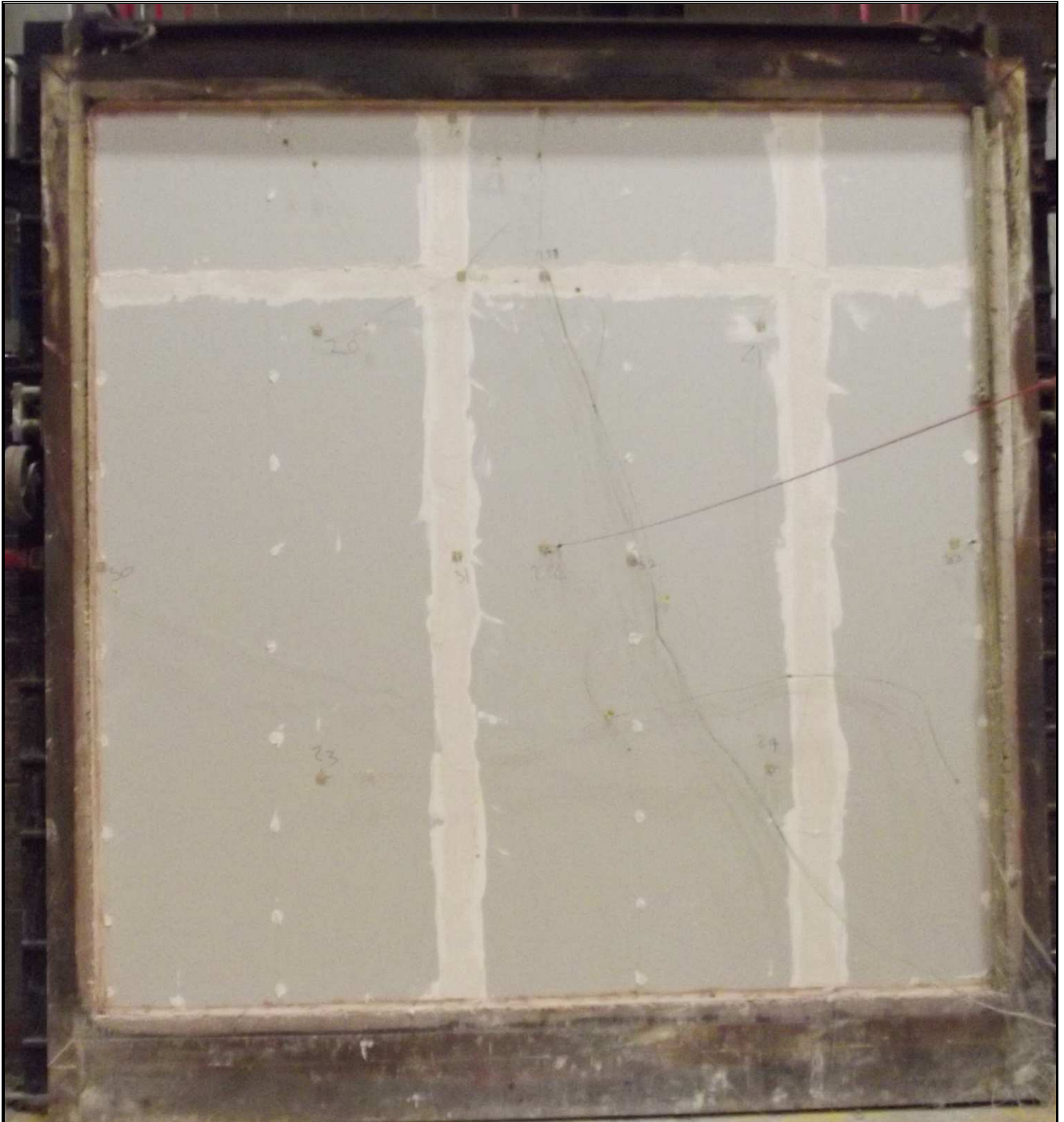
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The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed face prior to test



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British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed face at 30 minutes



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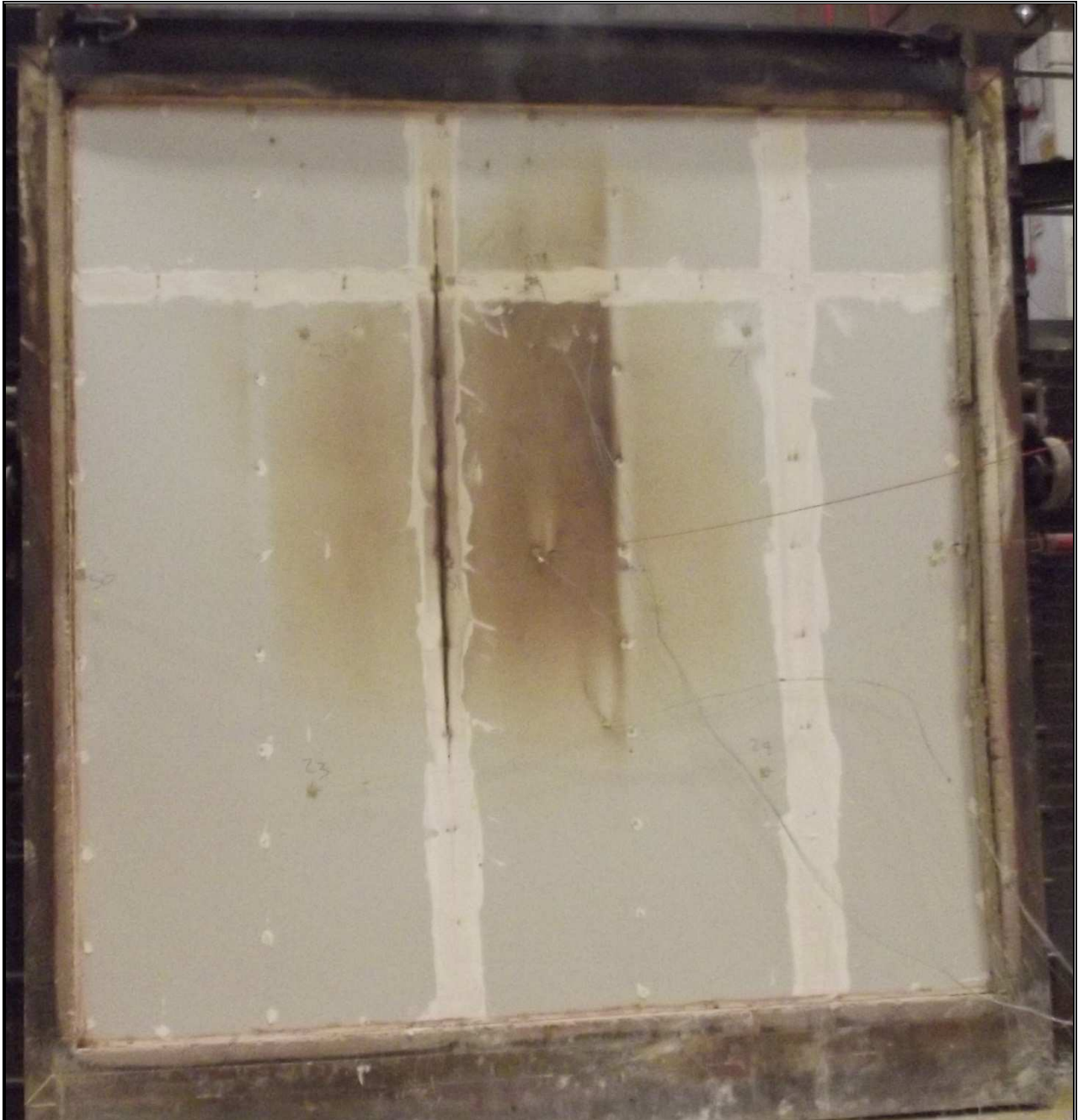
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The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed face at 1 hour



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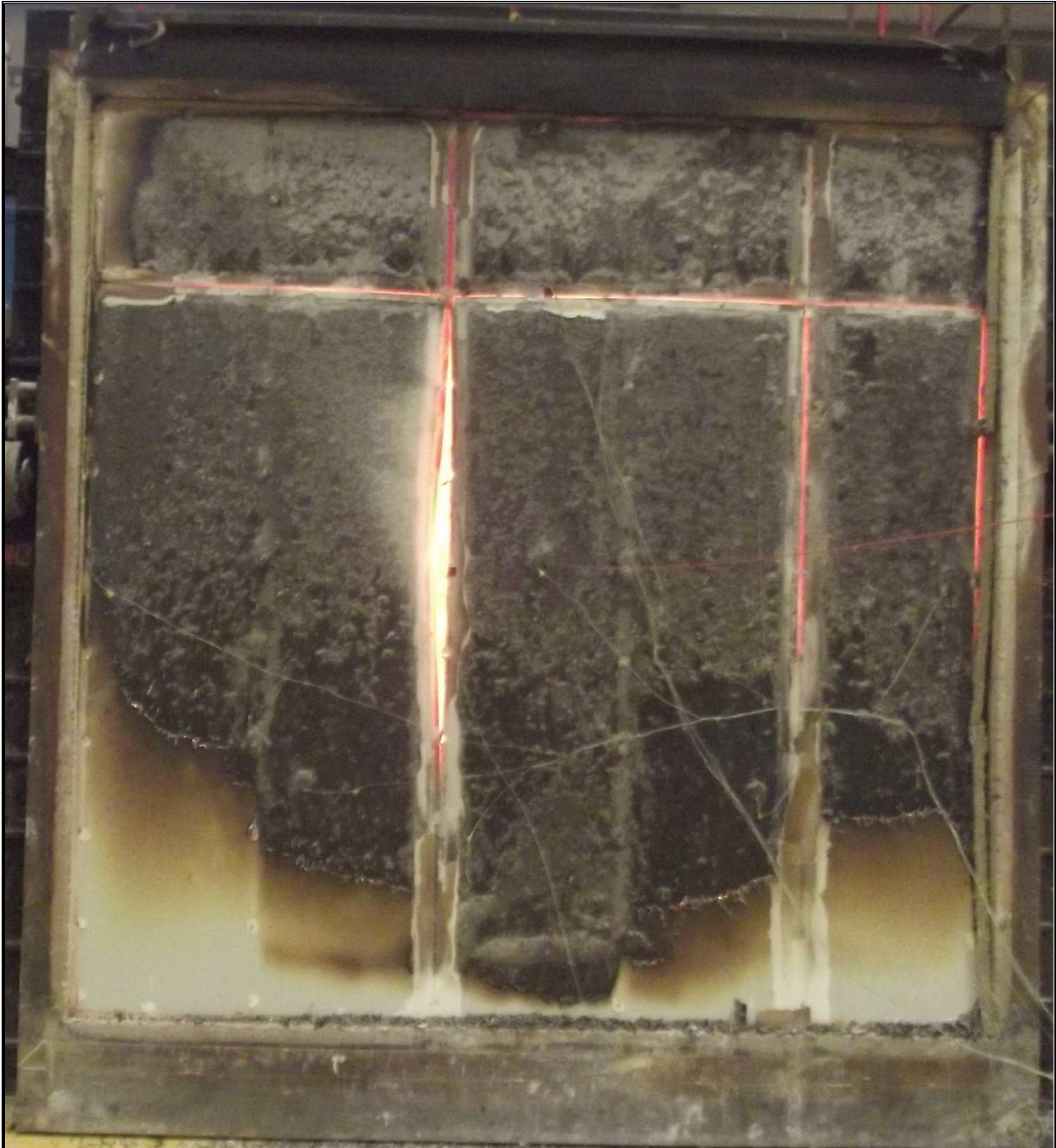
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The Building Test Centre
British Gypsum
East Leake
Loughborough
Leicestershire, LE12 6NP
Tel: (0115) 945 1564
Fax: (0115) 945 1562
Email: btc.testing@saint-gobain.com

Unexposed face at 1 hour, 18 minutes, at test termination



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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 3000mm.
- ii) Increase in the thickness of the wall (minimum thickness 97mm).
- iii) Increase thickness of component materials (minimum Gypframe stud depth 70mm, minimum Gypframe stud gauge 0.50mm).
- iv) Decrease in the linear dimensions of the boards but not thickness ($\leq 2400\text{mm}$ (long) $\times \leq 1200\text{mm}$ (wide) Gyproc Habito).
- v) Decrease stud spacing from 600mm.
- vi) Decrease in fixing centres from 300.
- vii) Horizontal and vertical joints, of the type tested.

Extension of width

The width of an identical construction may be increased as the specimen was tested at nominally 3000mm wide with one vertical edge without restraint.

Extension of height

The height of constructions tested at a minimum of 3000mm, may be increased to 4000mm at the following fire resistance periods as the lateral deflection was below 100mm.

30 minutes	60 minutes
$\leq 100\text{mm}$	$\leq 100\text{mm}$