

Report Number: **BTC 20657F**

A FIRE RESISTANCE TEST ON A GYPWALL METAL STUD PARTITION WITH 48MM STUD FRAMEWORK CLAD EACH SIDE WITH A SINGLE LAYER OF 15MM GYPROC FIRELINE EX ROBERTSBRIDGE WITH 25MM ISOVER APR 1200 IN THE CAVITY, CONDUCTED IN ACCORDANCE WITH BS EN 1364 1: 2015.

Test Date: 10th September 2018

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East Leake
Loughborough
Leicestershire
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Customer: **British Gypsum**

BTC 20657F: Page 1 of 40



0296

TABLE OF CONTENTS

FOREWORD	4
REPORT AUTHORISATION	4
TEST REPORT AMENDMENTS	5
TEST CONSTRUCTION.....	6
Description of Construction	6
Test Construction Drawings.....	7
Horizontal Cross Section	7
Exposed Face Elevation	8
Unexposed Face Elevation	9
TEST MATERIALS.....	10
Plasterboard	10
Metal Components	10
Fasteners	10
Miscellaneous Components	10
Insulation	11
TEST PROCEDURE.....	12
TEST RESULTS.....	13
LIMITATIONS.....	13
TEST DATA.....	14
Observations	14
Furnace Temperature Graph	16
Furnace Pressure Graph.....	17
Unexposed Face Temperature Graph	18
Unexposed Face Thermocouple Layout.....	19
Unexposed Face Standard Five Temperature Data.....	20
Additional Unexposed Face Temperature Data.....	23
Additional Unexposed Face Temperature Data.....	26
Internal Temperature Data at 1500mm Height.....	29
Specimen Lateral Deflection.....	32
PHOTOGRAPHS.....	35
Exposed Face Prior to Test	35
Unexposed Face Prior to Test	36

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Unexposed Face at 30 Minutes.....	37
Unexposed Face at 1 Hour.....	38
Unexposed Face at 1 Hour, 29 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 FireLine incorporating 25mm Isover Acoustic Partition Roll in the cavity.

The test sponsor was British Gypsum.

The test specimen was installed by PVR Joinery. The construction of the specimen took place on the 4th September 2018. The Building Test Centre played no role in the design or selection of materials comprising the test specimen.

The test was conducted on the 10th September 2018.

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



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TEST REPORT AMENDMENTS

Page	Amendments	Date

Report Amendments Author

Name
Role

Amendments Authorised by

Name
Role

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 50FEC50 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 48S50 '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 48S50 '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.

25mm Isover APR 1200 was placed within the stud cavity.

Both the unexposed face and the exposed face of the specimen were clad with a single layer of 15mm Gyproc FireLine. The boards were fixed with 25mm British Gypsum Drywall 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

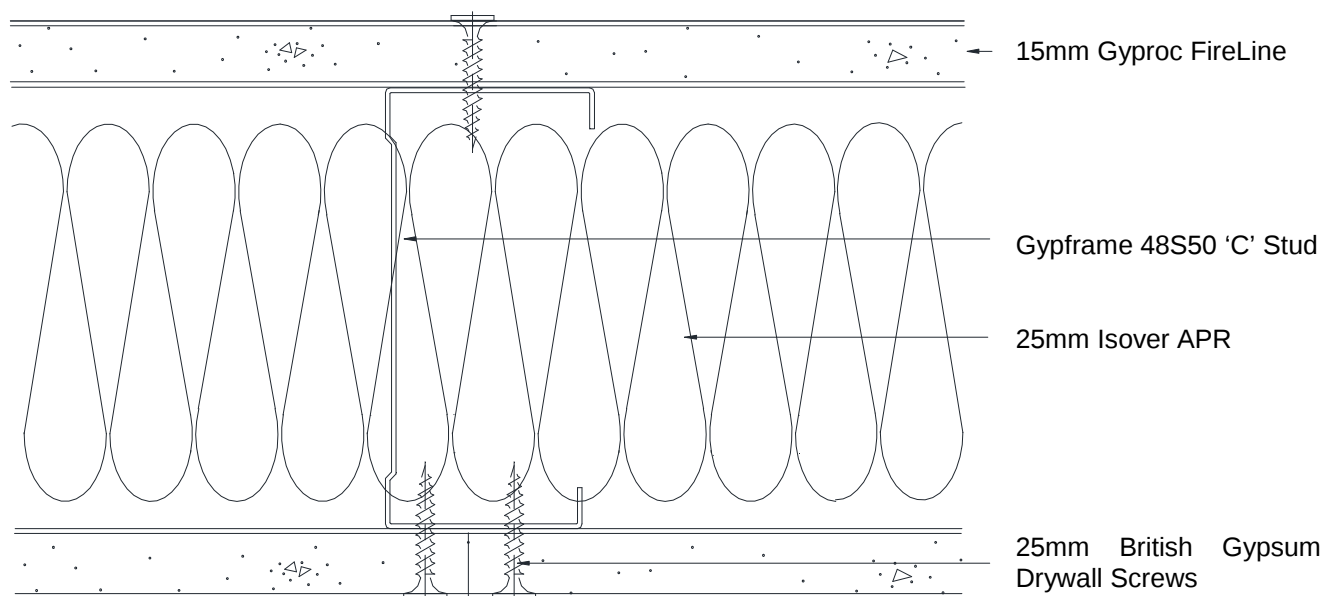


Figure 1 – Horizontal cross section.

Exposed Face Elevation

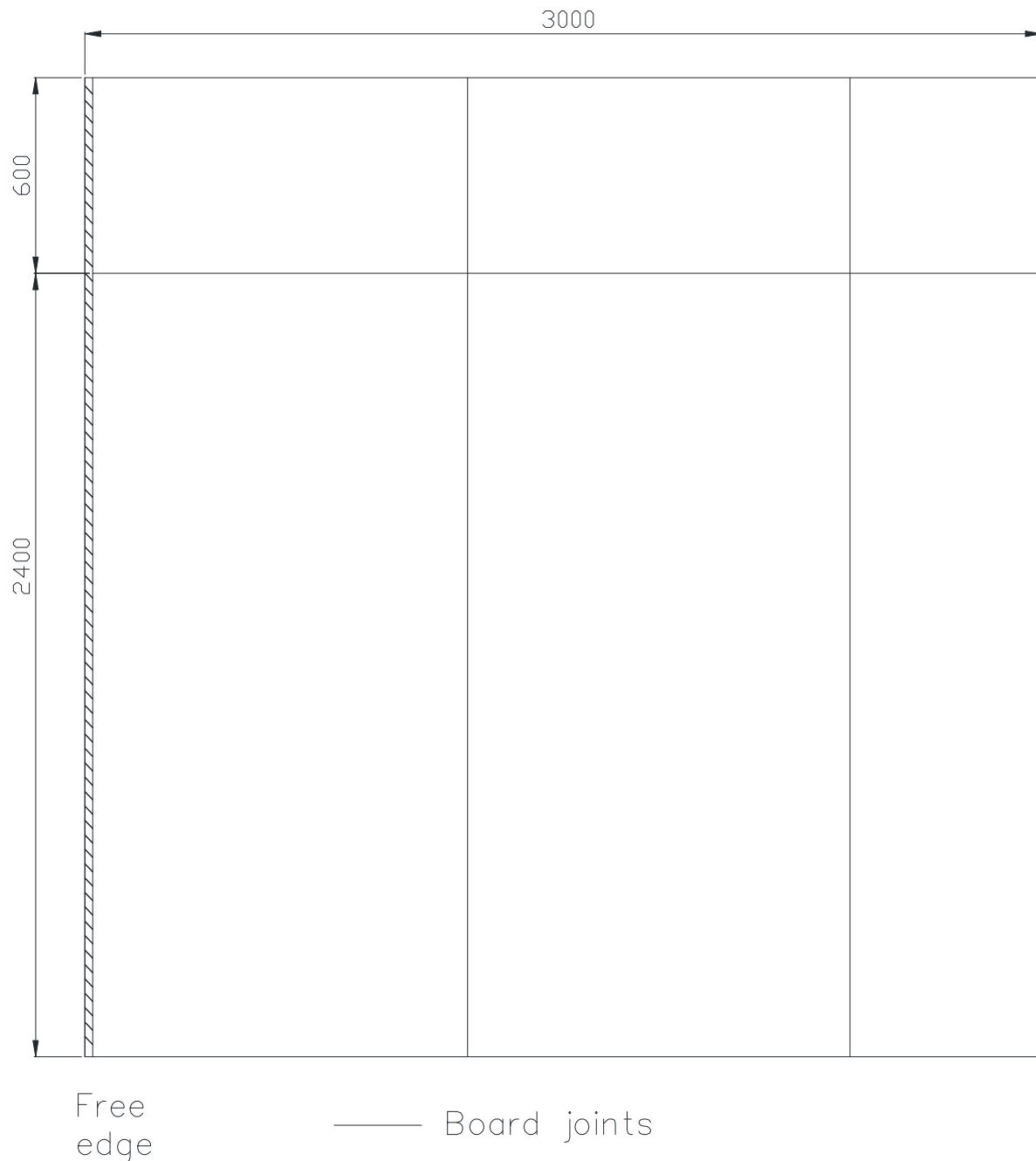


Figure 2 – Exposed face elevation.

Unexposed Face Elevation

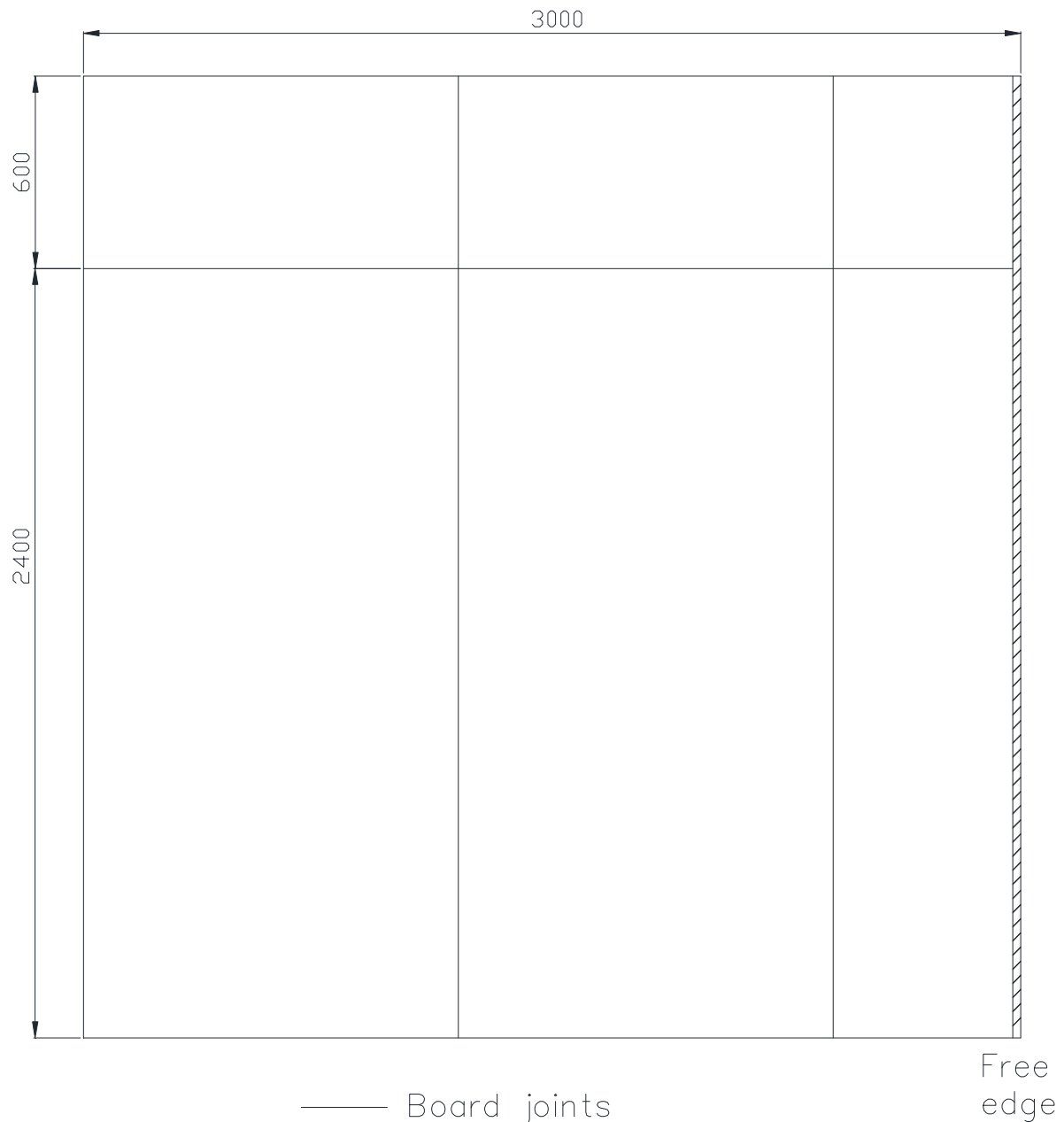


Figure 3 – Unexposed face elevation.

TEST MATERIALS

Plasterboard

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

Measured mass per unit area:	13.1 kg/m ²
Measured thickness:	15.4 mm
Board identification numbers:	24 220 18 22:02 24 220 18 22:03 24 220 18 22:03
Measured moisture content:	0.45%

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 50FEC50 Standard Folded Edge Floor & Ceiling Channels.
- iii) Gypframe 48S50 'C' Studs.
- iv) Gypframe GFS1 Fixing Strap.

All metal components were supplied by British Gypsum.

Fasteners

- v) 25mm British Gypsum Drywall Screws, 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.

Insulation

- x) Nominally 25mm (thick) Isover APR 1200 manufactured and supplied by Saint-Gobain Isover.

Measured surface density: 0.45 kg/m²

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. 1.1.

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 17°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	89 minutes, no failure.
	6mm Gap Gauge	89 minutes, no failure.
	25mm Gap Gauge	89 minutes, no failure.
	Cotton Pad	87 minutes.
Insulation		70 minutes.
Test Terminated		89 minutes, at the request of the sponsor.

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: Liam Woodford
Exposed face: Denis Bradshaw

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 2-3mm. Right-hand vertical joint had opened up to approximately 2-3mm. Horizontal joint had opened up to approximately 2-3mm.
0	30	Left-hand vertical joint had opened up to approximately 6-8mm. Right-hand vertical joint had opened up to approximately 6-8mm. Horizontal joint had opened up to approximately 4-6mm. <i>Unexposed face</i> No visible change.
0	40	Left-hand vertical joint had opened up to approximately 8-10mm. Right-hand vertical joint had opened up to approximately 8-10mm. Horizontal joint had opened up to approximately 6-8mm. Cracks around screw heads adjacent to all joints.
0	50	Left-hand vertical joint had opened up to approximately 12-15mm. Right-hand vertical joint had opened up to approximately 12-15mm. Horizontal joint had opened up to approximately 8-10mm. Boards breaking around screw heads adjacent to joints.

Time		Observations
Hours	Minutes	
1	00	Left-hand vertical joint had opened up to approximately 20-25mm. Right-hand vertical joint had opened up to approximately 20-25mm. Horizontal joint had opened up to approximately 15-18mm. <i>Unexposed face</i> No visible change.
1	10	No visible change. <i>Unexposed face</i> INSULATION FAILURE. The temperature rise of thermocouple no.32 positioned at mid-height on the centre of the lower centre board exceeded 180°C. Screw heads discoloured on left-hand vertical joint.
1	15	<i>Unexposed face</i> Lower centre board had discoloured along stud position.
1	18	<i>Unexposed face</i> Left-hand vertical joint had discoloured. Centre of lower left-hand board had discoloured along stud position. All screw heads had discoloured.
1	20	Left-hand vertical joint had opened up to approximately 35-40mm. Right-hand vertical joint had opened up to approximately 35-40mm. Horizontal joint had opened up to approximately 30-35mm.
1	21	<i>Unexposed face</i> The mean temperature rise of the standard five thermocouples exceeded 140°C.
1	27	<i>Unexposed face</i> INTEGRITY FAILURE. The cotton pad ignited (flamed) when placed on the horizontal joint at approximately mid-width of the specimen.
1	29	TEST TERMINATED at the request of the sponsor.

Furnace Temperature Graph

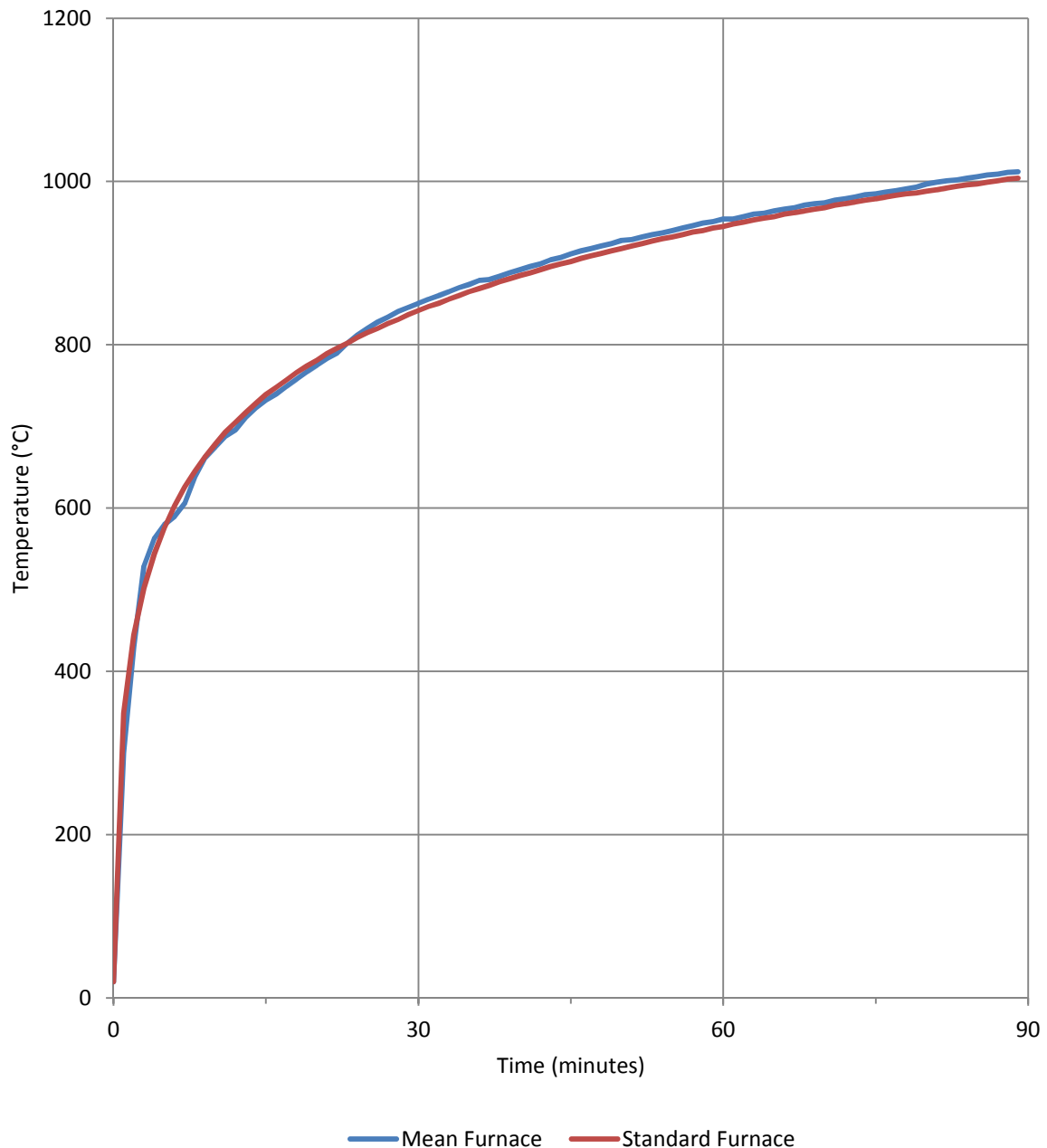


Figure 4 – Furnace temperature graph.

Furnace Pressure Graph

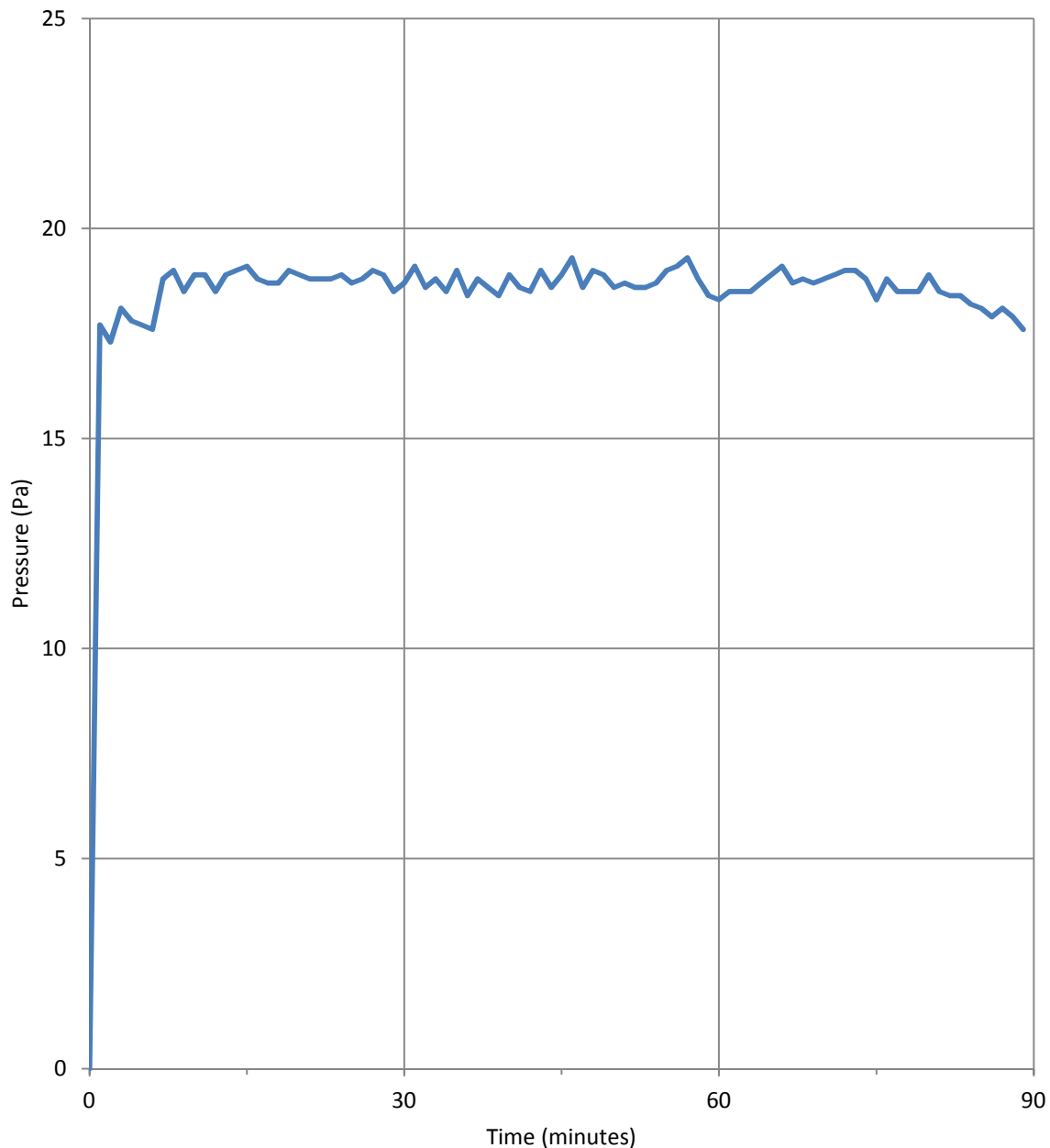


Figure 5 – Furnace pressure graph.

Unexposed Face Temperature Graph

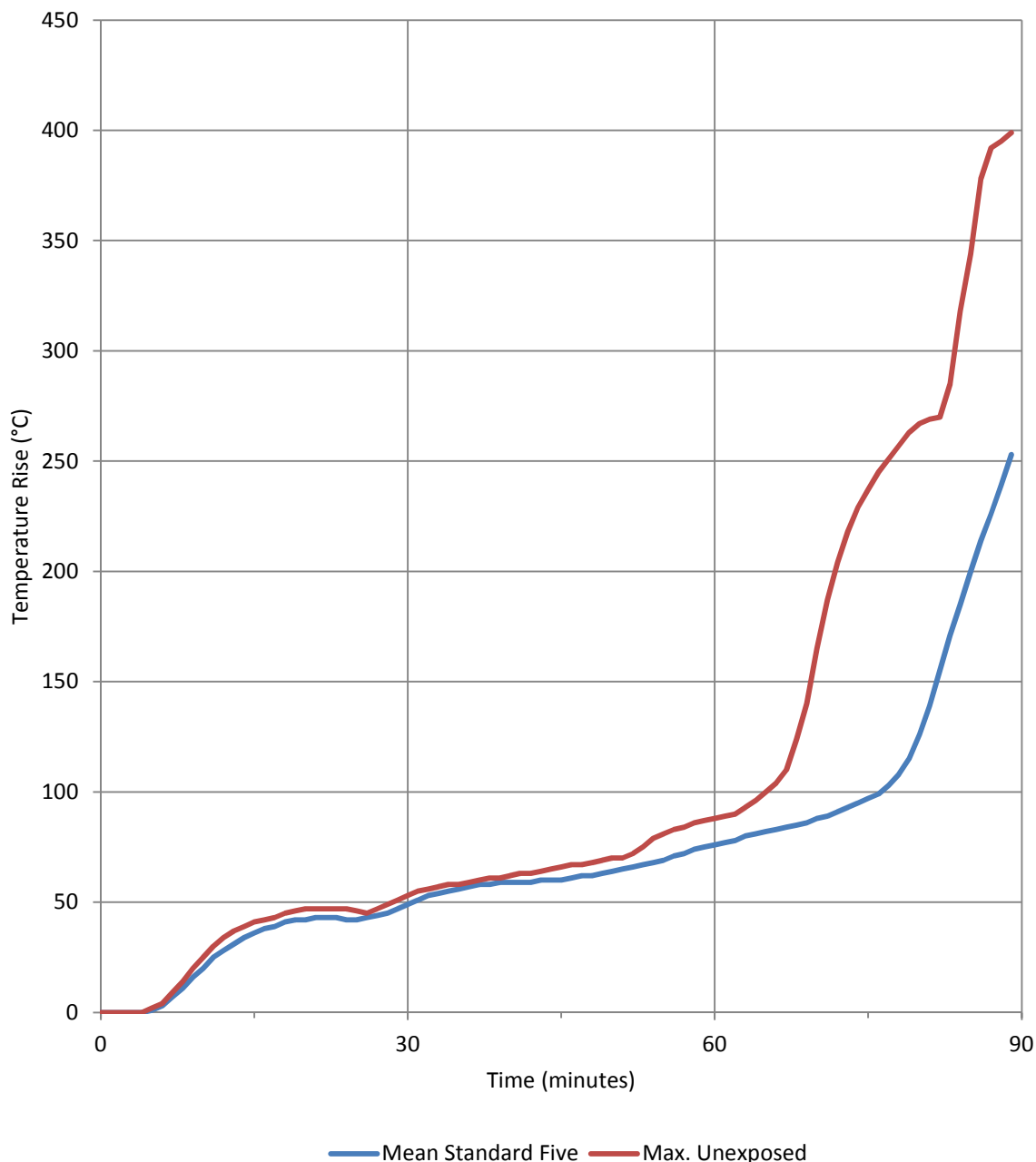


Figure 6 – Unexposed face temperature graph.

Unexposed Face Thermocouple Layout

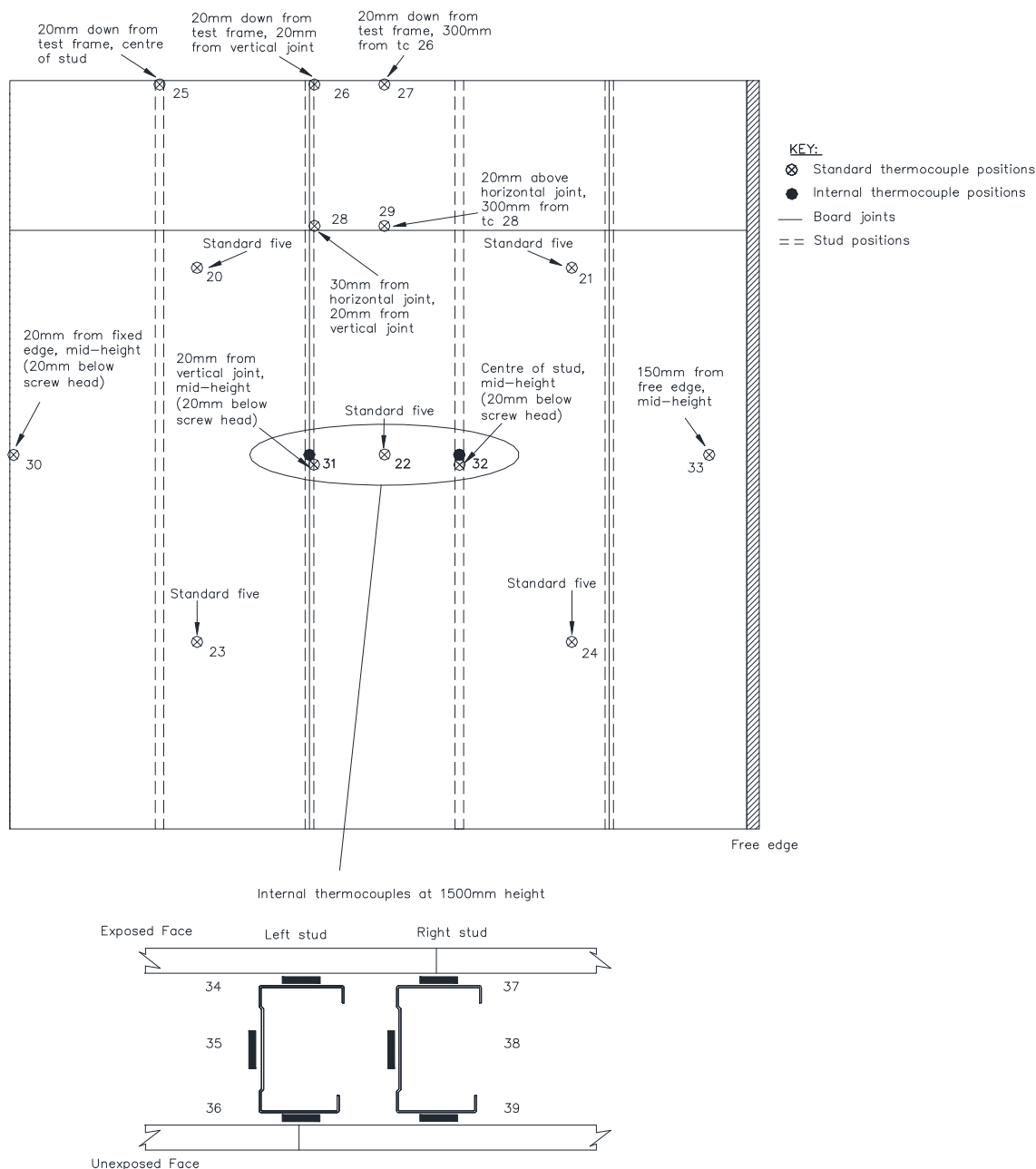


Figure 7 – Unexposed face thermocouple layout.

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	0	0	0	0	0	0
4	0	0	0	0	0	0
5	1	1	1	0	1	1
6	4	4	4	2	2	3
7	9	8	8	5	4	7
8	14	14	13	8	7	11
9	20	19	17	12	11	16
10	25	25	22	15	15	20
11	30	29	26	19	19	25
12	34	33	29	22	23	28
13	37	36	32	25	26	31
14	39	39	35	28	29	34
15	41	40	37	31	30	36
16	42	42	39	34	32	38
17	43	43	41	36	34	39
18	43	44	42	38	36	41
19	44	45	43	40	37	42
20	44	45	43	42	37	42
21	44	45	43	43	38	43
22	44	46	43	43	39	43
23	44	45	43	43	39	43
24	43	44	43	42	39	42
25	43	44	44	42	39	42
26	44	44	45	42	39	43
27	45	45	47	43	40	44
28	46	46	49	44	41	45
29	48	48	51	46	43	47
30	50	50	53	47	45	49
31	52	51	55	49	46	51
32	54	53	56	51	49	53
33	54	55	57	53	51	54
34	56	56	58	54	52	55
35	57	57	58	55	53	56
36	58	58	58	56	54	57

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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	
37	58	59	59	57	56	58
38	58	59	59	58	57	58
39	59	59	59	59	58	59
40	59	59	59	59	58	59
41	59	60	60	59	58	59
42	60	60	60	59	58	59
43	60	60	60	59	59	60
44	60	60	61	59	59	60
45	61	61	61	60	59	60
46	61	61	62	60	60	61
47	62	62	62	61	61	62
48	62	63	63	61	61	62
49	63	64	64	62	62	63
50	64	65	65	63	63	64
51	65	66	67	64	64	65
52	66	67	68	65	64	66
53	66	68	70	66	65	67
54	67	69	72	67	66	68
55	68	70	74	68	66	69
56	68	72	76	69	68	71
57	69	74	77	71	69	72
58	70	76	79	72	71	74
59	71	77	80	74	72	75
60	72	78	81	75	73	76
61	74	79	82	77	74	77
62	76	80	83	78	75	78
63	77	81	85	79	76	80
64	79	82	86	80	77	81
65	80	83	87	81	78	82
66	82	84	88	82	79	83
67	83	85	89	83	80	84
68	85	86	91	84	80	85
69	87	87	92	85	81	86
70	89	88	93	87	82	88
71	91	89	95	89	83	89
72	94	91	97	90	84	91
73	97	92	100	92	85	93
74	99	94	103	93	86	95
75	102	96	107	94	87	97
76	104	99	110	96	88	99

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BTC 20657F: Page 21 of 40



0296

Time (minutes)	Temperature Rise (°C)					
	Thermocouple No. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	Mean Standard Five
77	108	102	116	98	89	103
78	112	107	132	101	90	108
79	118	113	148	104	91	115
80	132	122	175	108	93	126
81	154	141	196	112	94	139
82	181	171	212	117	96	155
83	202	196	226	133	98	171
84	221	218	238	147	102	185
85	237	237	249	172	105	200
86	252	256	260	192	108	214
87	265	273	268	208	117	226
88	277	292	278	222	128	239
89	288	315	289	233	141	253

Figures highlighted in red indicate the minute in which 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	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	1	0	0	0	0
6	3	1	1	1	2
7	7	4	3	3	4
8	13	8	7	6	8
9	19	13	11	10	11
10	24	18	14	13	15
11	29	23	18	17	18
12	32	27	22	21	21
13	36	30	25	24	24
14	38	33	28	26	26
15	40	35	30	29	28
16	42	36	32	30	29
17	43	38	34	32	31
18	44	39	36	33	32
19	45	40	37	34	33
20	45	40	38	35	34
21	46	41	39	35	34
22	46	42	40	36	34
23	46	42	40	36	35
24	46	42	41	36	35
25	46	42	40	36	34
26	45	42	40	36	35
27	45	41	40	36	36
28	45	41	40	36	36
29	45	41	40	37	37
30	45	41	40	38	39
31	46	42	40	41	41
32	47	43	41	43	44
33	47	43	41	47	46
34	49	45	42	50	48
35	50	46	43	54	51
36	51	48	45	56	53
37	52	50	46	58	55

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Time (minutes)	Temperature Rise (°C)				
	Thermocouple No. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
38	53	51	47	59	56
39	55	52	48	60	57
40	55	54	49	61	57
41	56	55	50	62	58
42	57	55	51	62	59
43	58	56	51	63	59
44	58	57	52	63	60
45	59	58	52	64	60
46	59	58	53	64	61
47	59	59	53	65	62
48	60	60	54	65	62
49	60	60	55	66	63
50	60	60	55	66	64
51	60	61	56	67	64
52	60	61	57	68	65
53	61	61	57	68	66
54	61	62	57	69	66
55	61	62	58	70	66
56	61	62	58	70	66
57	61	63	58	72	67
58	61	63	59	73	68
59	62	63	60	75	69
60	62	63	60	76	71
61	62	64	61	78	72
62	62	64	62	79	74
63	62	65	62	80	75
64	62	65	63	81	76
65	63	65	63	83	77
66	63	66	64	83	78
67	63	67	66	85	79
68	63	69	68	86	80
69	64	71	70	87	81
70	64	72	72	88	82
71	64	73	74	89	84
72	65	74	75	91	85
73	65	75	76	92	87
74	66	76	77	94	88
75	66	77	78	96	90
76	67	78	79	98	93
77	68	78	81	101	96

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BTC 20657F: Page 24 of 40



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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	69	79	82	106	99
79	71	80	84	114	102
80	73	81	86	125	112
81	75	82	87	144	131
82	78	84	90	164	155
83	80	86	93	191	186
84	81	87	96	215	212
85	83	90	99	239	237
86	84	93	103	267	280
87	86	95	106	300	313
88	88	97	109	333	349
89	91	99	111	362	396

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	0	0	0
3	0	0	0	0
4	0	0	0	0
5	2	1	0	1
6	3	2	1	2
7	6	4	3	6
8	9	8	6	10
9	13	12	9	15
10	17	16	13	20
11	21	20	17	25
12	24	24	21	30
13	27	27	24	33
14	29	30	27	37
15	31	31	28	39
16	33	33	30	41
17	35	34	31	43
18	36	36	32	45
19	38	37	33	46
20	39	38	34	47
21	40	38	34	47
22	41	39	34	47
23	42	40	35	47
24	42	40	35	47
25	43	40	35	46
26	43	41	37	45
27	43	42	39	44
28	43	43	41	45
29	44	45	44	45
30	45	47	47	46
31	46	49	51	48
32	48	52	54	49
33	49	54	56	51
34	50	56	57	53
35	51	58	58	54
36	53	59	59	56
37	54	60	60	57

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Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
38	56	61	61	58
39	58	61	61	59
40	59	61	62	61
41	61	62	63	61
42	62	62	63	62
43	63	63	64	62
44	64	63	65	63
45	64	63	66	63
46	65	63	67	63
47	65	64	67	64
48	66	64	68	65
49	66	65	69	66
50	66	66	70	68
51	66	66	70	70
52	66	67	71	72
53	67	68	74	75
54	67	69	77	79
55	67	70	79	81
56	68	71	81	83
57	68	72	82	84
58	68	73	84	86
59	68	74	86	87
60	68	76	87	88
61	69	78	89	88
62	69	80	90	89
63	70	81	93	90
64	70	83	96	91
65	70	84	100	91
66	71	86	104	92
67	72	87	110	93
68	72	88	124	94
69	73	90	140	96
70	73	92	165	97
71	74	94	187	99
72	76	96	204	100
73	79	98	218	102
74	83	100	229	104
75	86	103	237	106
76	88	106	245	110
77	90	112	251	114

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BTC 20657F: Page 27 of 40



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Time (minutes)	Temperature Rise (°C)			
	Thermocouple No. 30	Thermocouple No. 31	Thermocouple No. 32	Thermocouple No. 33
78	91	121	257	120
79	93	142	263	131
80	94	173	267	154
81	96	214	269	180
82	97	248	270	207
83	99	285	269	230
84	100	318	266	251
85	102	344	264	270
86	104	378	261	294
87	107	392	260	324
88	112	395	260	352
89	118	399	260	376

Figures highlighted in red indicate the minute in which the temperature rise exceeded 180°C.

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

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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	17	19	19	20	19	19
1	11	19	18	21	19	19
2	-2	21	19	31	22	19
3	69	33	23	63	38	23
4	89	56	42	93	68	43
5	98	73	63	99	81	66
6	102	80	73	98	84	74
7	105	83	76	97	86	77
8	108	84	77	97	88	80
9	111	85	77	97	90	82
10	114	86	78	97	90	83
11	117	87	81	98	90	84
12	121	89	85	100	90	85
13	125	90	85	102	91	86
14	129	91	84	103	91	87
15	134	92	85	104	91	87
16	139	93	85	105	92	88
17	144	93	86	108	93	88
18	149	95	87	114	96	88
19	157	96	87	126	99	88
20	167	98	87	147	103	87
21	186	101	86	174	109	84
22	220	106	85	223	122	84
23	265	120	86	294	151	92
24	307	146	88	375	192	107
25	342	185	97	437	239	118
26	374	224	106	481	287	133
27	411	257	113	511	337	151
28	442	287	125	541	381	171
29	472	315	144	567	417	191
30	492	342	164	595	451	209
31	510	364	182	622	481	229
32	527	383	196	647	505	250
33	540	398	208	666	525	269
34	550	412	220	686	544	287
35	559	424	231	702	559	303

Customer: **British Gypsum**

BTC 20657F: Page 29 of 40



0296

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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
36	566	434	241	716	572	319
37	572	444	250	726	582	333
38	578	454	258	730	590	346
39	584	463	267	735	598	358
40	589	471	277	741	605	370
41	594	479	285	746	612	381
42	598	487	294	749	620	392
43	602	495	303	753	626	403
44	606	502	311	756	632	414
45	610	509	320	759	638	427
46	614	517	328	763	645	440
47	618	524	335	765	651	453
48	622	530	343	768	656	465
49	627	537	351	771	661	477
50	632	543	359	774	666	489
51	637	548	367	775	671	502
52	641	554	375	777	674	514
53	644	560	384	779	675	525
54	648	567	393	780	674	537
55	654	576	402	781	675	550
56	660	584	412	780	680	572
57	666	592	423	779	682	598
58	671	599	434	776	681	618
59	674	605	445	777	683	632
60	678	611	454	780	687	642
61	682	617	464	782	689	649
62	686	622	474	784	692	655
63	689	628	483	788	696	661
64	693	634	492	790	700	667
65	697	640	502	794	704	673
66	702	646	511	797	706	679
67	706	652	522	801	709	685
68	710	657	531	806	713	692
69	714	663	541	809	717	698
70	718	671	552	812	719	703
71	-	663	593	809	714	702
72	-	661	608	811	717	703
73	-	660	617	812	720	706

Customer: **British Gypsum**

BTC 20657F: Page 30 of 40



0296

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	-	639	616	815	725	711
75	-	644	622	821	730	717
76	-	654	633	823	733	721
77	-	664	644	828	737	725
78	-	675	656	832	741	729
79	-	688	667	839	747	735
80	-	702	688	847	755	743
81	-	716	706	853	765	751
82	-	730	722	859	775	761
83	-	743	736	-	787	772
84	-	755	749	-	798	783
85	-	767	760	-	811	794
86	-	776	770	-	825	808
87	-	786	778	-	836	819
88	-	792	783	-	845	829
89	-	798	786	-	857	840

- Thermocouple broken due to equipment failure.

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

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Specimen Lateral Deflection

Time (minutes)	Deflection (mm)
	Centre
0	0
1	7
2	7
3	10
4	14
5	15
6	15
7	15
8	15
9	16
10	16
11	17
12	17
13	18
14	19
15	20
16	21
17	22
18	23
19	24
20	26
21	30
22	36
23	44
24	52
25	61
26	69
27	76
28	82
29	88
30	92
31	97
32	101
33	105
34	107
35	110
36	112
37	114

Customer: **British Gypsum**

BTC 20657F: Page 32 of 40



0296

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Time (minutes)	Deflection (mm)
	Centre
38	115
39	117
40	118
41	119
42	120
43	121
44	122
45	123
46	124
47	124
48	125
49	126
50	127
51	127
52	128
53	128
54	128
55	129
56	129
57	129
58	129
59	130
60	130
61	130
62	130
63	131
64	131
65	131
66	130
67	131
68	130
69	130
70	130
71	129
72	129
73	128
74	127
75	127
76	126
77	124

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BTC 20657F: Page 33 of 40



0296

Time (minutes)	Deflection (mm)
	Centre
78	124
79	124
80	123
81	122
82	122
83	120
84	120
85	120
86	121
87	122
88	122
89	124

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

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PHOTOGRAPHS

Exposed Face Prior to Test



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BTC 20657F: Page 35 of 40



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Unexposed Face Prior to Test



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BTC 20657F: Page 36 of 40



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Unexposed Face at 30 Minutes



Customer: **British Gypsum**

BTC 20657F: Page 37 of 40



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Unexposed Face at 1 Hour



Customer: **British Gypsum**

BTC 20657F: Page 38 of 40



0296

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Unexposed Face at 1 Hour, 29 Minutes, at Test Termination



Customer: **British Gypsum**

BTC 20657F: Page 39 of 40



0296

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 80mm).
- iii) Increase thickness of component materials (minimum Gypframe stud depth 48mm, minimum Gypframe stud gauge 0.50mm).
- iv) Decrease in the linear dimensions of the boards but not thickness ($\leq 2400\text{mm}$ (long) x $\leq 1200\text{mm}$ (wide) Gyproc FireLine).
- v) Decrease stud spacing from 600mm.
- vi) Decrease in fixing centres from 300mm.
- vii) Increase in the number of horizontal joints, of the type tested, when tested with one joint not more than (500 ± 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 3000mm wide with one vertical edge without restraint.

Extension of Height

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

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