

Report Number: **BTC 21748F**

A FIRE RESISTANCE TEST ON A 63 MM DEEP TIMBER STUD PARTITION CLAD EACH SIDE WITH A SINGLE LAYER OF 15MM GYPROC SOUNDBLOC INCORPORATING 25 MM ISOVER ACOUSTIC PARTITION ROLL IN THE CAVITY, CONDUCTED IN ACCORDANCE WITH BS EN 1364-1: 2015.

Test Date: 25th March 2021

Report Issue Date: 29th March 2021

www.btconline.co.uk

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

Customer: **British Gypsum**

BTC 21748F: Page 1 of 35



0296

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

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
Timber Components	10
Fasteners	10
Miscellaneous Components	10
Insulation	11
TEST PROCEDURE	11
TEST RESULTS	12
LIMITATIONS	12
TEST DATA	13
Observations	13
Furnace Temperature Graph	15
Furnace Pressure Graph	16
Unexposed Face Temperature Graph	17
Unexposed Face Thermocouple Layout	18
Unexposed Face Standard Five Temperature Data	19
Additional Unexposed Face Temperature Data	21
Additional Unexposed Face Temperature Data	23
Internal Temperature Data at 1500 mm Height	25
Specimen Lateral Deflection	28
PHOTOGRAPHS	30
Exposed Face Prior to Test	30
Unexposed Face Prior to Test	31
Unexposed Face at 30 Minutes	32

Customer: **British Gypsum**

BTC 21748F: Page 2 of 35



0296

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

Unexposed Face at 1 Hour	33
Unexposed Face at 1 Hours, 19 Minutes, at Test Termination	34
FIELD OF DIRECT APPLICATION	35
General	35
Extension of Width.....	35
Extension of Height.....	35



FOREWORD

This test report details a fire resistance test conducted on a timber 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 PVR Joinery. The construction of the specimen took place on 23rd March 2021. 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 25th March 2021.

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: 2020, section 12.1)

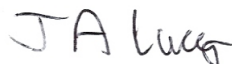
REPORT AUTHORISATION

Report Author



Eric Chee
BSc. (Hons.)
Scientist

Authorised by
p.p. James Lucas



Paul Miller
BSc. (Hons.)
Fire Test Manager

The Building Test Centre will not discuss the content of this report without written permission from the test sponsor. The Building Test Centre retains ownership of the test report content but authorises the test sponsor to reproduce the report as necessary in its entirety only.

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 3000 mm (high) x 3000 mm (wide).

63 mm x 38 mm timber head and sole plates were fixed to the head and base of the test aperture at 600 mm centres using 100 mm fire resistant fixings.

63 mm x 38 mm timber studs were positioned at 600 mm centres between the head and sole plates and skew fixed using 75 mm British Gypsum Drywall Screws. 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 25 mm thick rock mineral fibre gasket.

At the left-hand edge a 63 mm x 38 mm timber stud was used to fix the partition to the test frame, using 100 mm fire resistance fixings at 600 mm centres.

63 mm x 38 mm timber stud noggings were positioned between the studs at 2400 mm from the base of the specimen and skew fixed using 75 mm British Gypsum Drywall Screws.

Thermocouples were added to the timber studs at mid height on the web, hot and cold faces of the central two studs.

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

Both the unexposed face and the exposed face of the specimen were clad with a single layer of 15 mm Gyproc SoundBloc. The boards were fixed with 40 mm British Gypsum Drywall Screws at 300 mm 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 2400 mm from the base on the outer layer boards on both faces of the specimen.

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

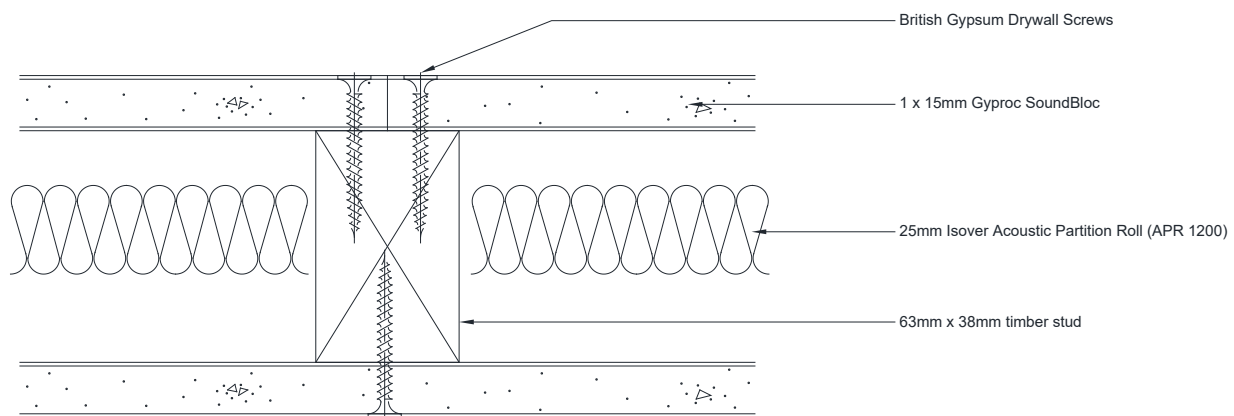


Figure 1 – Horizontal cross section.

Exposed Face Elevation

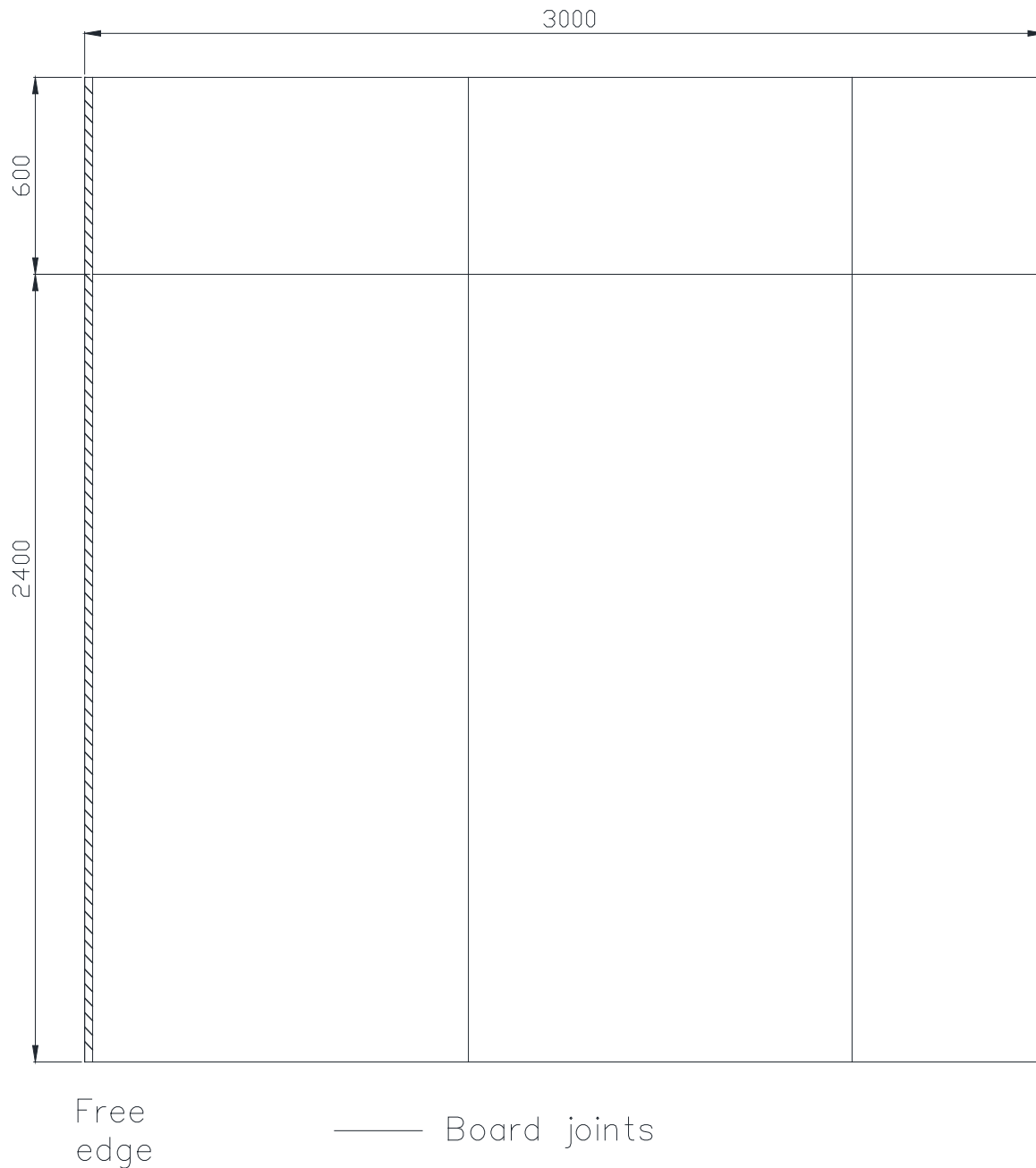


Figure 2 – Exposed face elevation.

Unexposed Face Elevation

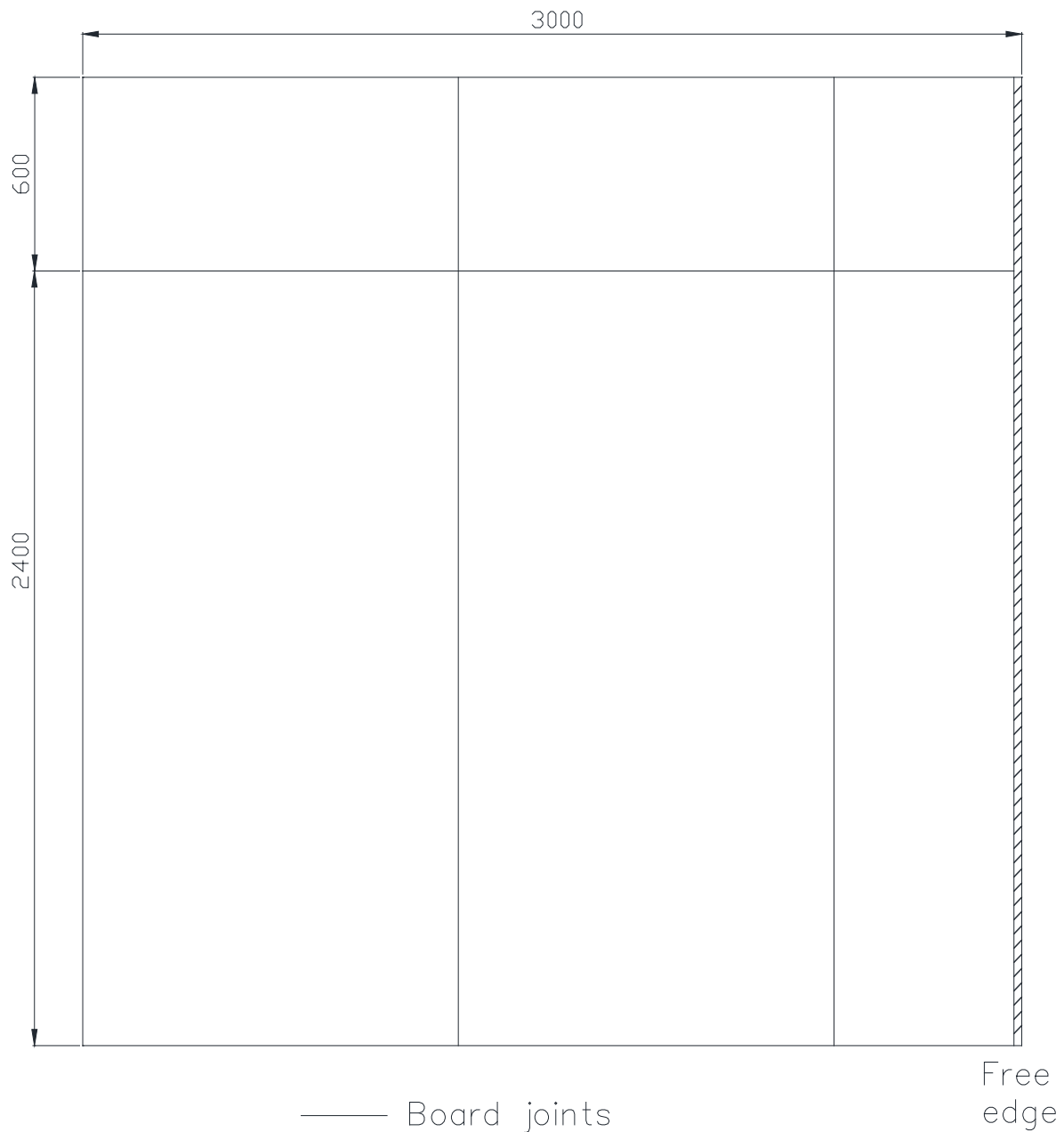


Figure 3 – Unexposed face elevation.

TEST MATERIALS

Plasterboard

- i) Nominally, 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:	14.3 kg/m ²
Measured thickness:	15.2 mm
Board identification numbers:	31 061 21 12:37 31 061 21 12:37 31 061 21 12:37
Measured moisture content:	0.25 %

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.

Timber Components

- ii) 3000 mm (long) x 63 mm (deep) x 39 mm (wide), C16 grade softwood studs, supplied by British Gypsum.

Measured dimensions:	3009 mm (long) 63 mm (deep) 39 mm (wide)
Measured mass per metre:	1.276 kg/m
Measured moisture content:	14.65 %

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

- iii) 40 mm British Gypsum Drywall Screws, supplied by The Building Test Centre.
iv) 75 mm British Gypsum Drywall Screws, supplied by The Building Test Centre.
v) 100 mm fire resistant fixings, supplied by The Building Test Centre.

Miscellaneous Components

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

Customer: **British Gypsum**

Insulation

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

Measured surface density: 0.479 kg/m²

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 21 °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: 2020 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: 2020.

TEST RESULTS

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

Integrity	Sustained Flaming	79 minutes, no failure.
	6 mm Gap Gauge	79 minutes.
	25 mm Gap Gauge	79 minutes, no failure.
	Cotton Pad	79 minutes, no failure.
Insulation		73 minutes.
Test Terminated		79 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: Danielle Yates and Eric Chee
Exposed face: Denis Bradshaw and William Pikett

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 1-2 mm. Right-hand vertical joint had opened up to approximately 1-2 mm. Horizontal joint had opened up to approximately 1-2 mm.
0	30	Left-hand vertical joint had opened up to approximately 6-7 mm Right-hand vertical joint had opened up to approximately 5-6 mm. Horizontal joint had opened up to approximately 5-6 mm. Boards began to crack around screw heads. <i>Unexposed face</i> No visible change.
0	40	Left-hand vertical joint had opened up to approximately 10-11mm. Right-hand vertical joint had opened up to approximately 10-11mm. Horizontal joint had opened up to approximately 7-8 mm.
0	50	Left-hand vertical joint had opened up to approximately 14-15 mm. Right-hand vertical joint had opened up to approximately 14-15 mm. Horizontal joint had opened up to approximately 11-12 mm.
1	00	Left-hand vertical joint had opened up to approximately 15-18 mm. Right-hand vertical joint had opened up to approximately 15-18 mm. Horizontal joint had opened up to approximately 12-15 mm. Crack down the centre of the lower left-hand board. <i>Unexposed face</i> No visible change.

Time		Observations
Hours	Minutes	
1	01	Lower centre board had fallen into the furnace.
1	10	No visible change.
1	13	<i>Unexposed face</i> INSULATION FAILURE. The temperature rise of thermocouple no.22 positioned at mid-height on the centre of the lower centre board exceeded 180°C.
1	14	<i>Unexposed face</i> Centre of lower centre board had discoloured from approximately 300 mm - 1500 mm height. The mean temperature rise of the standard five thermocouples exceeded 140°C.
1	15	<i>Unexposed face</i> Right-side of the lower left-hand board had discoloured from approximately 300 mm - 1500 mm height.
1	17	<i>Unexposed face</i> Screw heads had discoloured on the left-hand vertical joint from approximately 600 mm - 2100 mm height.
1	19	<i>Unexposed face</i> INTEGRITY FAILURE. The gap at approximately 600 mm to 1500 mm height on the left-hand vertical joint exceeded 6 mm x 150 mm (6 mm visual) TEST TERMINATED at the request of the sponsor.

Furnace Temperature Graph

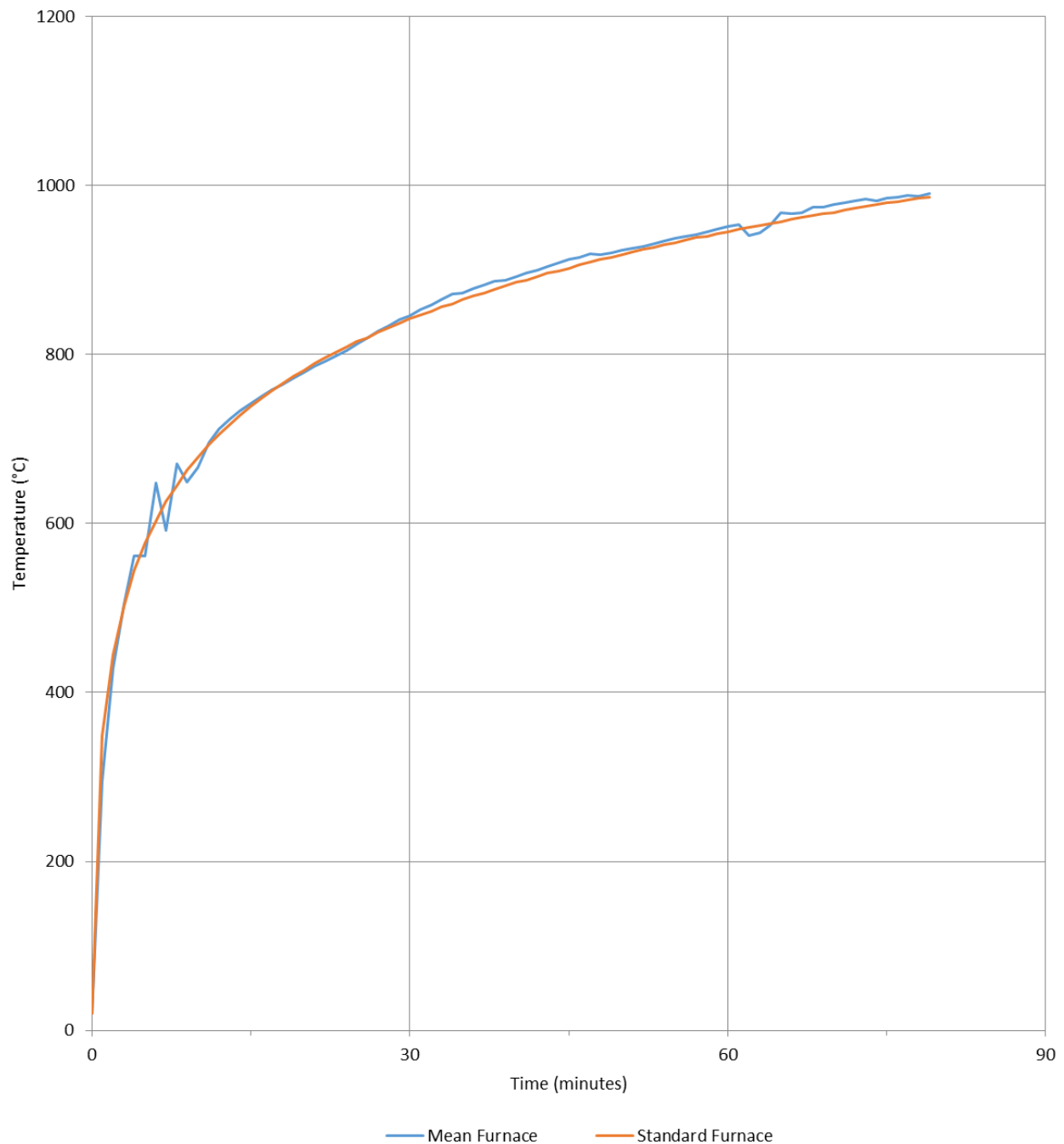


Figure 4 – Furnace temperature graph.

Furnace Pressure Graph

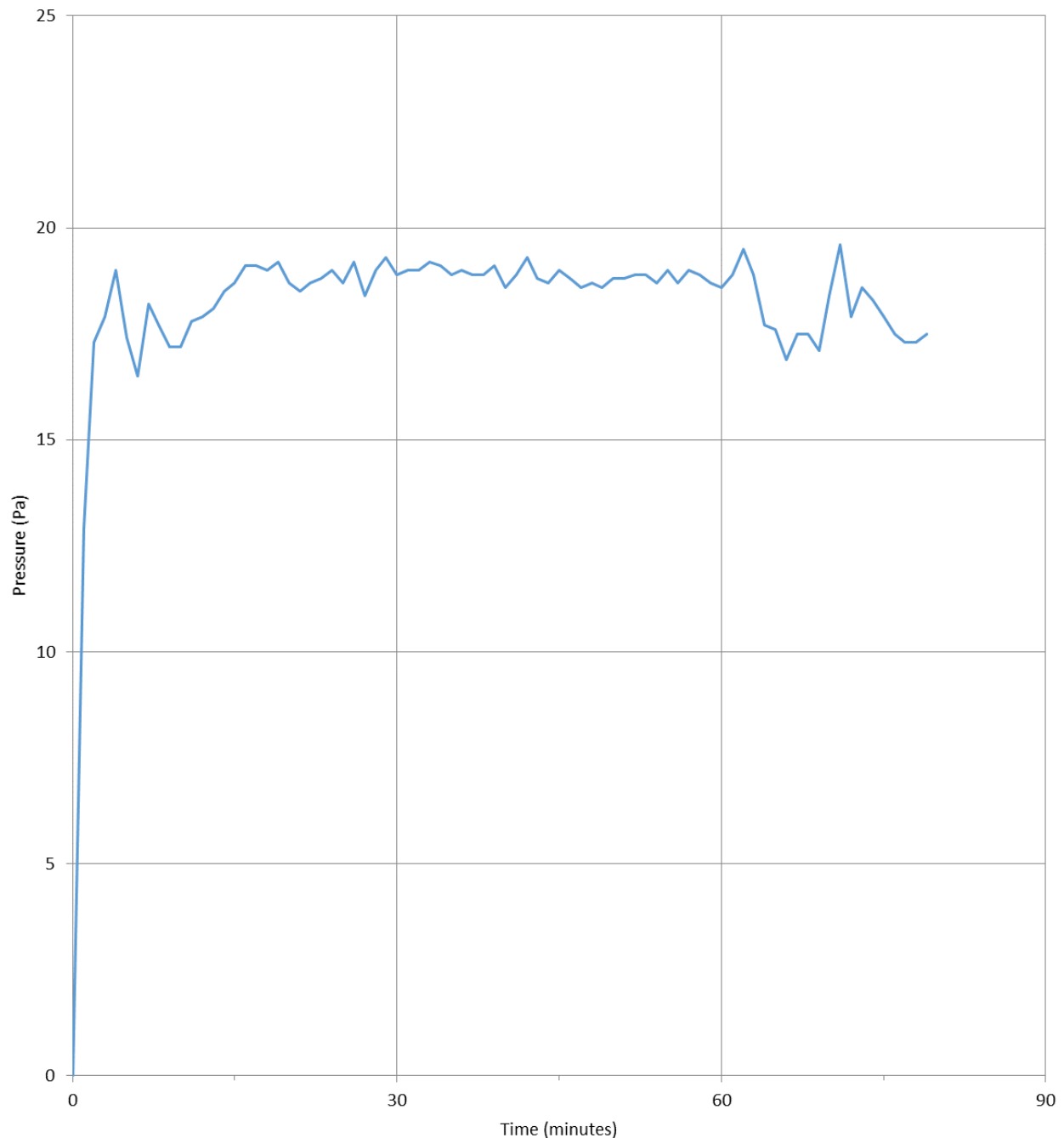


Figure 5 – Furnace pressure graph.

Unexposed Face Temperature Graph

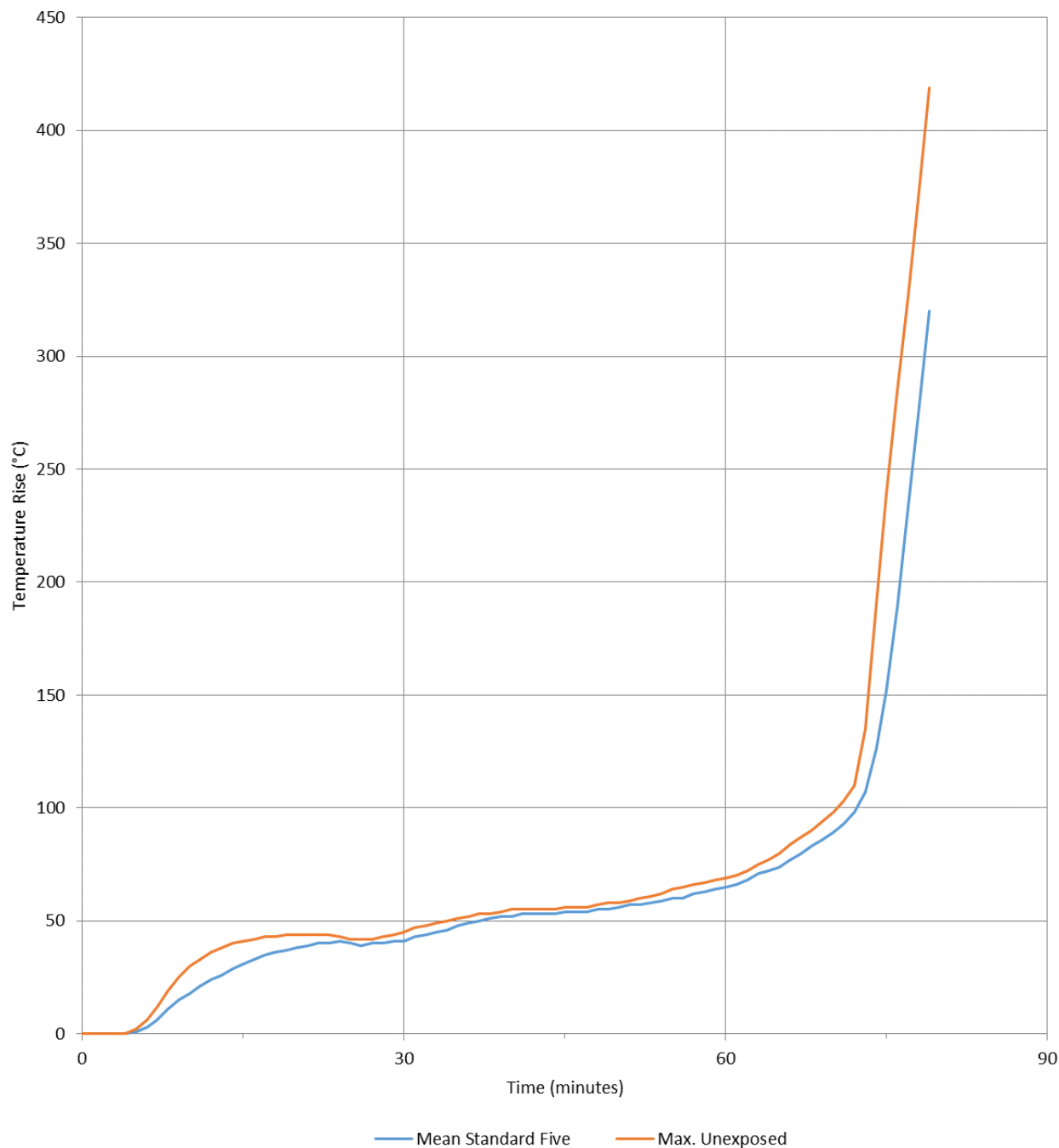


Figure 6 – Unexposed face temperature graph.

Unexposed Face Thermocouple Layout

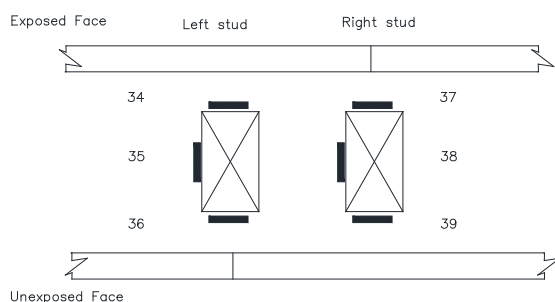
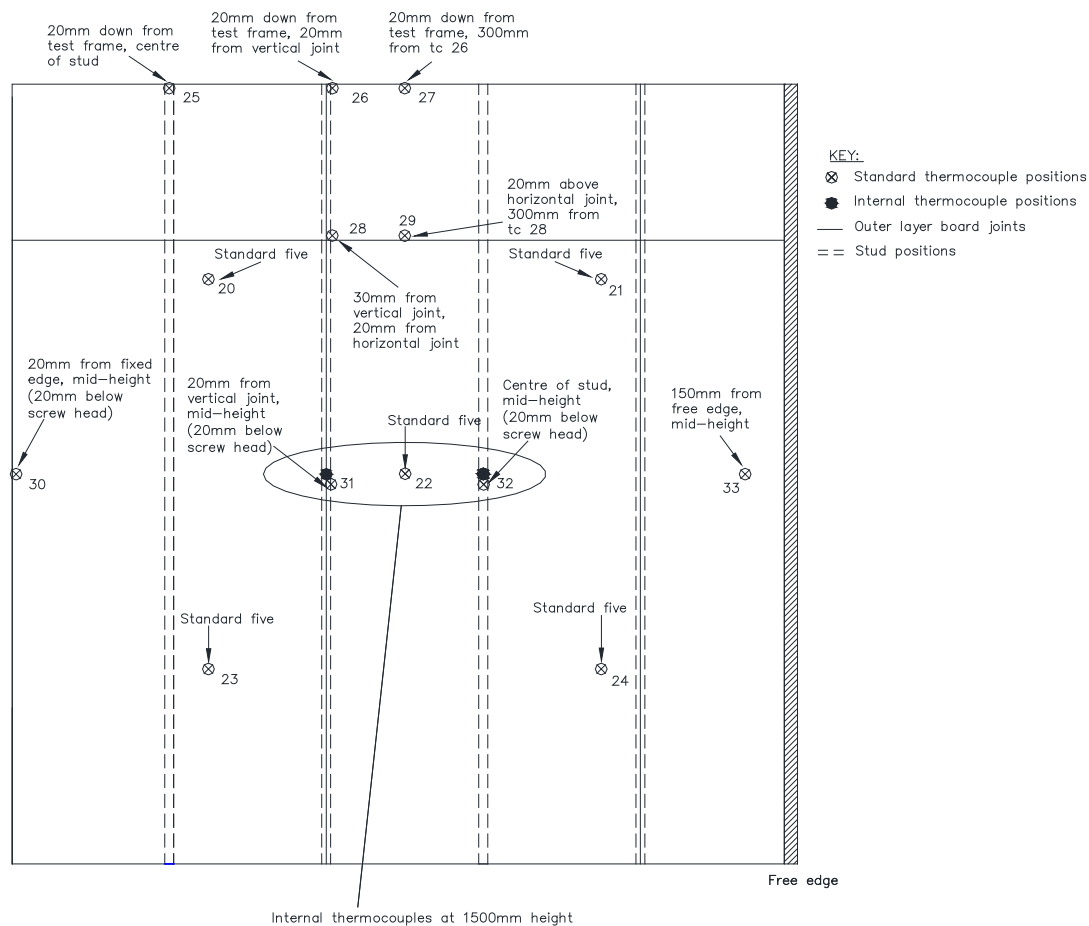


Figure 7 – Unexposed face thermocouple layout.

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

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

Customer: **British Gypsum**

BTC 21748F: Page 19 of 35



0296

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. 20	Thermocouple No. 21	Thermocouple No. 22	Thermocouple No. 23	Thermocouple No. 24	Mean Standard Five
40	49	51	54	52	55	52
41	50	51	54	53	55	53
42	51	51	54	54	55	53
43	52	51	54	54	55	53
44	52	51	55	54	55	53
45	52	51	55	54	56	54
46	52	52	55	54	56	54
47	52	52	56	55	56	54
48	52	52	57	56	57	55
49	52	53	57	56	58	55
50	53	53	58	57	58	56
51	54	54	59	57	59	57
52	54	54	60	58	60	57
53	55	55	61	58	61	58
54	55	55	62	59	62	59
55	56	56	63	60	64	60
56	56	56	64	61	65	60
57	57	57	66	63	66	62
58	58	58	67	64	67	63
59	58	59	68	65	68	64
60	59	60	69	66	69	65
61	60	62	70	67	70	66
62	66	62	72	71	71	68
63	70	64	75	73	72	71
64	70	66	77	74	73	72
65	71	69	80	76	76	74
66	73	71	84	80	78	77
67	76	72	87	83	81	80
68	79	74	90	87	84	83
69	83	77	94	90	88	86
70	86	79	98	93	91	89
71	90	82	103	96	94	93
72	94	86	110	102	98	98
73	99	89	135	108	103	107
74	106	94	190	129	109	126
75	124	100	239	175	120	152
76	164	115	285	223	157	189
77	208	155	327	270	210	234
78	249	201	374	311	254	278
79	288	244	419	354	296	320

Figures highlighted in red indicate 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.

Customer: **British Gypsum**

BTC 21748F: Page 20 of 35



0296

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

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	0	0	0	1	0
6	0	2	1	2	0
7	1	4	3	5	1
8	2	6	5	8	2
9	3	9	8	10	4
10	4	11	10	12	5
11	5	13	13	14	7
12	7	15	15	15	8
13	8	17	17	16	10
14	9	19	19	17	11
15	10	22	21	19	12
16	12	23	22	20	13
17	13	24	24	20	15
18	14	25	26	21	15
19	15	26	27	21	17
20	17	26	28	21	18
21	17	27	29	22	19
22	18	27	30	22	20
23	19	27	31	22	21
24	20	28	32	23	22
25	20	28	32	24	23
26	21	28	33	25	24
27	22	28	33	26	25
28	22	28	32	26	26
29	23	28	31	27	26
30	23	28	31	27	27
31	23	28	30	28	28
32	24	27	30	28	29
33	24	27	30	29	30
34	24	27	30	30	31
35	25	27	30	31	32
36	25	27	30	32	33
37	25	27	30	32	34
38	25	27	31	33	36
39	26	27	31	34	36

Customer: **British Gypsum**

BTC 21748F: Page 21 of 35



0296

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. 25	Thermocouple No. 26	Thermocouple No. 27	Thermocouple No. 28	Thermocouple No. 29
40	26	27	32	34	37
41	26	27	32	35	37
42	26	27	33	36	37
43	27	27	34	36	38
44	27	27	34	37	39
45	27	28	35	37	39
46	28	28	35	37	40
47	28	28	35	38	40
48	28	28	36	38	41
49	28	29	36	39	41
50	29	29	36	39	42
51	29	29	37	40	42
52	30	30	37	40	43
53	30	31	38	41	44
54	31	31	38	41	44
55	32	31	39	41	45
56	32	32	40	41	45
57	33	32	40	42	46
58	34	33	41	42	47
59	34	33	41	42	47
60	35	33	41	43	48
61	36	34	42	43	48
62	37	35	42	44	49
63	37	35	43	45	50
64	38	36	44	46	51
65	38	36	44	47	52
66	39	37	45	48	52
67	39	38	45	49	53
68	40	38	46	49	54
69	40	39	46	49	55
70	41	39	47	50	55
71	41	40	47	50	56
72	42	40	48	51	57
73	42	41	48	52	58
74	43	41	48	52	59
75	43	42	49	52	62
76	44	43	50	54	66
77	44	45	52	57	71
78	46	47	54	63	79
79	48	51	60	73	94

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

Customer: **British Gypsum**

BTC 21748F: Page 22 of 35



0296

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

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

Customer: **British Gypsum**

BTC 21748F: Page 23 of 35



0296

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	24	36	35	50
41	25	36	36	51
42	26	37	37	52
43	27	38	38	52
44	27	38	38	53
45	28	39	39	54
46	29	39	40	54
47	30	40	41	54
48	31	41	42	54
49	32	42	43	54
50	33	43	44	54
51	34	44	45	55
52	35	44	46	55
53	36	45	47	56
54	37	46	48	56
55	38	46	48	57
56	39	46	49	57
57	40	47	49	58
58	41	47	49	59
59	41	47	50	60
60	42	48	50	61
61	43	48	51	62
62	43	52	52	64
63	44	60	55	65
64	45	62	57	70
65	46	63	59	71
66	47	63	60	73
67	49	64	61	75
68	50	65	62	78
69	53	65	63	82
70	55	66	63	86
71	57	67	64	89
72	58	68	64	92
73	60	69	65	95
74	60	72	66	98
75	61	78	66	103
76	62	86	67	109
77	63	96	68	124
78	65	110	69	159
79	66	130	71	206

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

Customer: **British Gypsum**

BTC 21748F: Page 24 of 35



0296

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	40	32	25	41	33	26
1	45	32	25	42	33	26
2	59	33	25	66	33	26
3	76	51	25	97	38	27
4	92	72	26	101	67	27
5	97	82	29	100	85	28
6	100	87	33	100	88	31
7	103	87	35	99	87	33
8	107	88	38	100	86	36
9	114	88	41	101	86	38
10	119	85	43	102	86	40
11	125	86	46	103	86	44
12	130	87	49	105	87	47
13	135	88	51	109	88	51
14	139	89	54	113	88	54
15	143	88	57	118	89	56
16	146	90	60	120	88	59
17	151	90	63	123	89	61
18	155	91	64	126	89	62
19	161	91	66	130	90	63
20	175	92	67	136	90	65
21	193	92	68	146	91	66
22	211	91	70	169	91	67
23	234	90	72	205	90	68
24	258	89	72	242	88	69
25	282	89	72	277	88	70
26	304	89	72	312	89	70
27	328	90	73	351	90	70
28	351	90	73	385	92	71
29	372	91	73	415	95	71
30	393	92	73	443	106	71
31	415	94	73	469	129	71
32	436	95	74	493	151	72
33	454	97	74	517	168	73
34	471	147	75	539	183	74
35	485	192	76	556	195	75
36	499	216	76	575	206	75

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)	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	513	231	77	592	216	76
38	528	241	77	607	226	77
39	533	249	77	622	235	79
40	544	257	78	637	244	80
41	551	264	79	649	254	81
42	560	272	80	655	264	82
43	569	279	81	664	275	84
44	578	284	83	679	285	86
45	587	289	85	694	295	89
46	592	294	86	705	306	92
47	599	301	87	717	316	94
48	606	308	89	725	326	97
49	612	314	89	733	337	98
50	618	323	90	740	347	99
51	625	333	91	747	358	100
52	632	344	91	754	370	101
53	638	356	92	763	383	102
54	644	369	92	772	396	102
55	649	375	92	781	408	103
56	652	382	92	795	420	104
57	655	389	93	794	434	105
58	659	394	93	800	449	106
59	666	395	93	804	464	108
60	671	391	93	815	479	110
61	651	383	94	825	493	111
62	884	918	808	828	508	114
63	934	885	945	896	654	164
64	960	934	992	971	871	851
65	959	940	990	982	861	938
66	965	947	989	980	856	941
67	952	950	990	962	869	939
68	950	963	996	957	884	958
69	947	950	989	966	892	963
70	951	955	983	982	904	956
71	954	960	988	968	910	957
72	954	977	1002	957	909	946
73	962	988	1009	955	913	941
74	949	986	987	958	917	956
75	957	984	999	978	914	969

Customer: **British Gypsum**

BTC 21748F: Page 26 of 35



0296

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)	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	959	1016	1016	957	917	967
77	968	1017	1035	944	922	962
78	890	972	976	913	915	930
79	1006	999	1053	901	918	926

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

Customer: **British Gypsum**

BTC 21748F: Page 27 of 35



0296

Specimen Lateral Deflection

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

Time (minutes)	Deflection (mm)
	Centre
40	2
41	2
42	2
43	2
44	2
45	1
46	1
47	1
48	0
49	0
50	-1
51	-2
52	-3
53	-4
54	-5
55	-7
56	-8
57	-11
58	-13
59	-15
60	-18
61	-21
62	-29
63	-36
64	-40
65	-44
66	-47
67	-50
68	-50
69	-50
70	-49
71	-47
72	-43
73	-42
74	-42
75	-43
76	-44
77	-45
78	-50
79	-52

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

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

PHOTOGRAPHS

Exposed Face Prior to Test



Customer: **British Gypsum**

BTC 21748F: Page 30 of 35



0296

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

Unexposed Face Prior to Test



Customer: **British Gypsum**

BTC 21748F: Page 31 of 35



0296

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

Unexposed Face at 30 Minutes



Customer: **British Gypsum**

BTC 21748F: Page 32 of 35



0296

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

Unexposed Face at 1 Hour



Customer: **British Gypsum**

BTC 21748F: Page 33 of 35



0296

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

Unexposed Face at 1 Hours, 19 Minutes, at Test Termination



Customer: **British Gypsum**

BTC 21748F: Page 34 of 35



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 3000 mm.
- ii) Increase in the thickness of the wall (minimum thickness 93 mm).
- iii) Increase thickness of component materials (minimum Timber stud dimension 63 mm x 39 mm).
- iv) Decrease in the linear dimensions of the boards but not thickness (≤ 2400 mm (long) x ≤ 1200 mm (wide) Gyproc SoundBloc.
- v) Decrease stud spacing from 600 mm.
- 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 ± 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
≤ 100 mm	≤ 100 mm