Warringtonfire
Chiltern House
Stocking Lane
High Wycombe
HP14 4ND
United Kingdom
T: +44 (0)1494 569750
W: www.warringtonfire.com

Title:

The fire resistance performance of an asymmetric non-loadbearing, twin wall steel stud partition system when tested in accordance with BS EN 1364-1:2015 and BS EN 1363-1: 2020

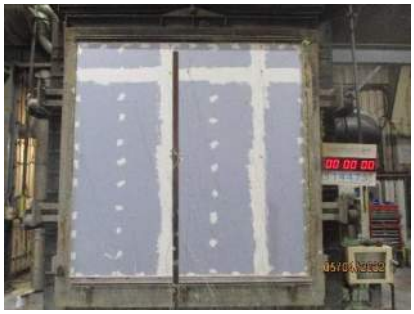
Date Of Test:

05/04/2022

Issue 1
06/04/2023

WF Report No:

WF514475



Prepared for:

Hadley Industries Holding Ltd

PO Box 92
Smethwick
West Midlands
B66 2PA

Approved Body No. 1314

1762

Test Specimen

Summary of Tested Specimen

The partition system comprised a plasterboard clad steel stud frame, built directly into a refractory lined steel restraint frame. The right edge of the partition remained unrestrained as viewed from the unexposed face.

The size of the partition system was 3000mm high x 3000mm wide x 200mm deep overall.

The wall system comprised a Hadley Group 52mm galvanised mild steel Head and Base tracks, Hadley Group metal vertical C studs. Hadley Group U Track, was used to brace the vertical studs at 1200mm vertical centres. A Hadley Group fixing plate was used behind all horizontal board joints on both layers on both the unexposed and exposed faces. Both faces were clad with 2No layers of British Gypsum 12.5mm thick Soundbloc acoustic board. Both faces were finished with Knauf tape and fill on all board joints on the outer layer.

Detailed drawings of the test specimen and a comprehensive description of the test construction based on a detailed survey of the specimen and information supplied by the sponsor of the test are included in the Test Specimen and Schedule of Components sections of this report.

Performance Criteria and Test Results

Integrity **Cotton pad** **Sustained flaming** **Gap gauges**	 93 (Ninety-Three) Minutes* 93 (Ninety-Three) Minutes* 93 (Ninety-Three) Minutes*
Thermal Insulation	88 (Eighty-Eight) Minutes
Radiation **(time to 15 kW/m^2)**	93 (Ninety-Three) Minutes*

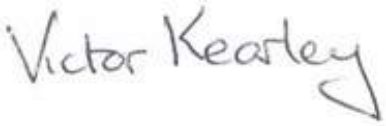
* No failure of this test criteria was observed at termination of the test at 93 minutes

Date of Test 05/04/2022

This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of Warringtonfire. All work and services carried out by Warringtonfire Testing and Certification Limited are subject to, and conducted in accordance with, the Standard Terms and Conditions of Warringtonfire Testing and Certification Limited, which are available at https://www.element.com/terms/terms-and-conditions or upon request.

Signatories

Report Prepared by:
Stephen Dorme
Technical Officer*



Report Authorised by:
Dr Vic Kearley
Technical Author*

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

Report Issued:

Date: 06/04/2023

This copy has been produced from a .pdf format electronic file that has been provided by **Warringtonfire** to the sponsor of the report and must only be reproduced in full. Extracts or abridgements of reports must not be published without permission of **Warringtonfire**. The pdf copy supplied is the sole authentic version of this document. All pdf versions of this report bear authentic signatures of the responsible **Warringtonfire** staff.

Revision History

Issue No:	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

Issue No:	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

CONTENTS PAGE NO.

Test Conditions

Standard	BS EN 1364-1, Fire resistance tests for non-loadbearing elements Part 1: Walls and BS EN 1363-1, Fire resistance tests Part 1: General requirements.
Sampling	Warringtonfire was not involved in factory sampling of the products and materials used for the test specimen described in this report, and as such the results of this test apply to the sample as received.
Installation	The components were received during the month of March 2022. The partition system was constructed and installed directly into a refractory line steel restraint frame by representatives of **Warringtonfire** to the client's specification.
Conditioning	Warringtonfire stored the specimens in climatic conditions approximate to those expected in normal service, and used the guidelines of Annex F.1 of BS EN 1363 – 1: 2020 to establish a suitable conditioned level where possible.
Ambient Temperature	The ambient air temperature in the vicinity of the test construction was 14ºC at the start of the test with a maximum variation of -1ºC during the test.
Furnace	The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 2020 Clause 5.1 using seven plate thermometers, distributed over a plane 100±50 mm from the surface of the test construction.
Thermocouples	Thermocouples were provided to monitor the unexposed surface of the specimen. The output of all instrumentation was recorded at no less than one minute intervals. The locations and reference numbers of the various unexposed surface thermocouples are shown in Figure 1.
Radiation	A water-cooled foil heat-flux meter was used to record the heat radiation from the partition. The heat-flux meter was positioned at mid-height at a distance of 1 metre from the centre of the partition.
Furnace Pressure	After the first 5 minutes of the test, the furnace pressure was maintained at -1.3 ± 5 Pa and after 10 minutes was maintained at -1.3 ± 3 Pa with respect to atmosphere, at a point 0.5 m from the notional floor level, equating to a pressure of 20 Pa at the head of the wall.

Test Specimen Drawings

Figure 1 – General elevation of the test construction and thermocouple locations

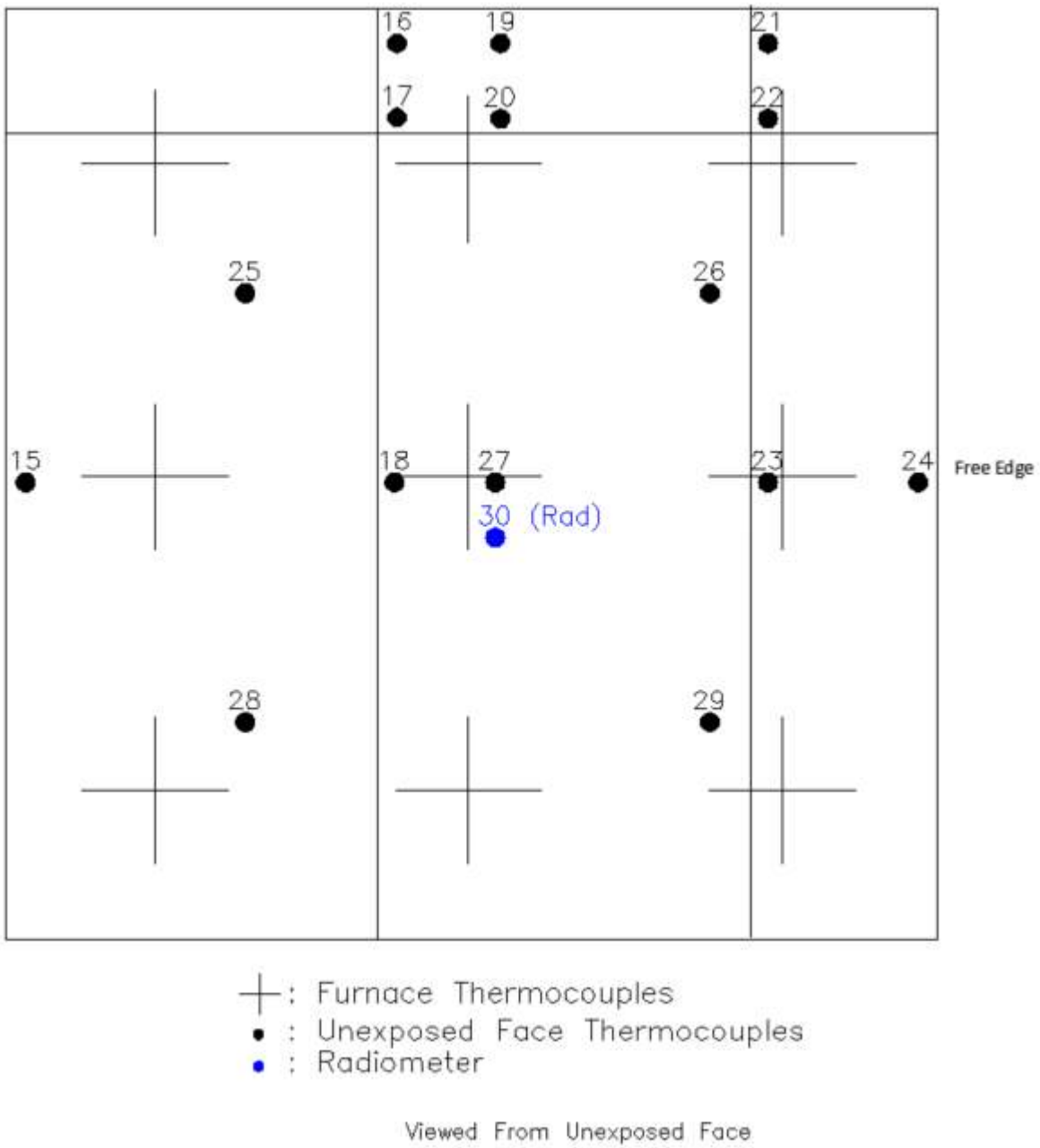


Figure 2 – Unexposed Face Elevation

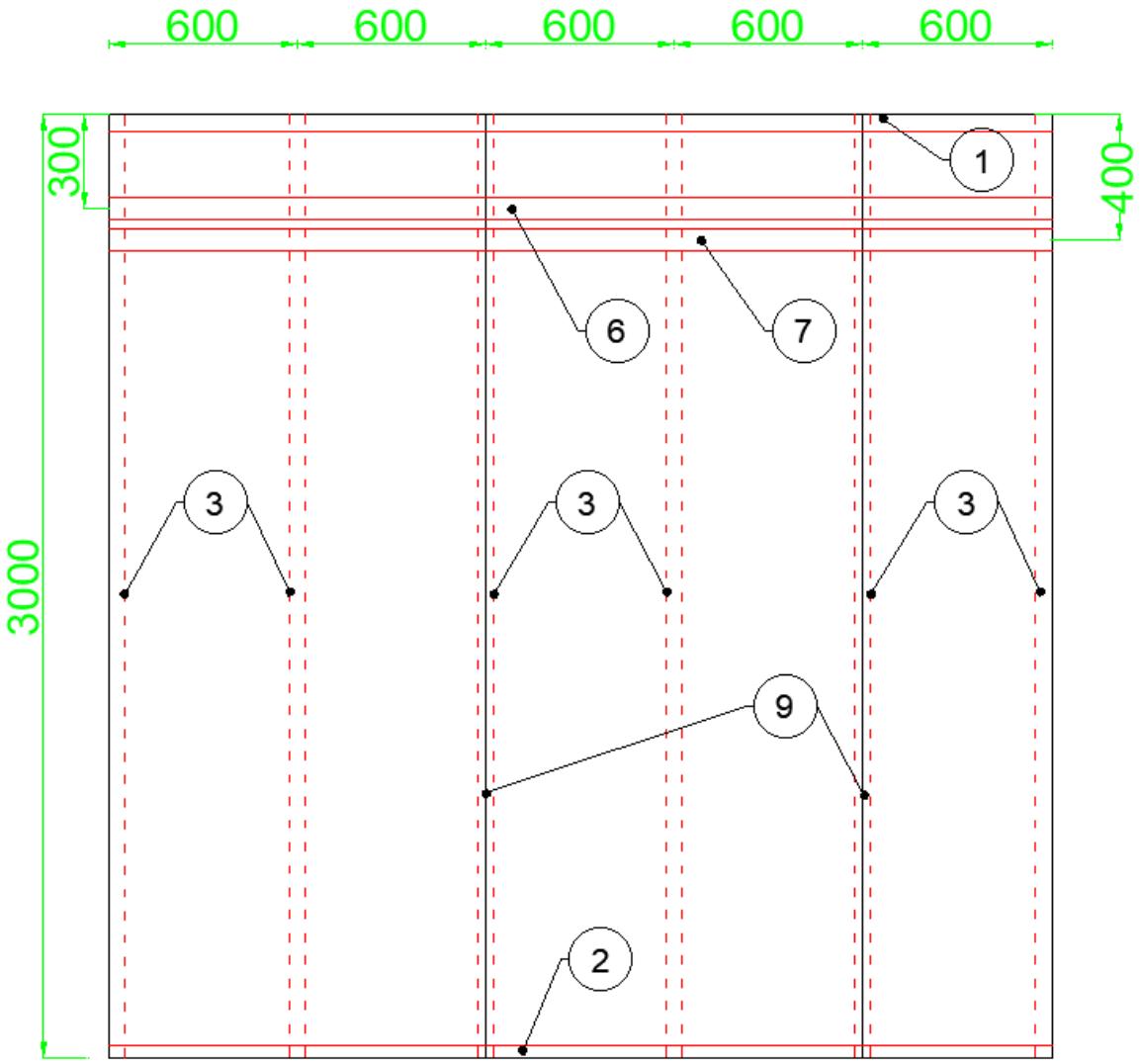


Figure 3 – Vertical Cross Section of Wall System

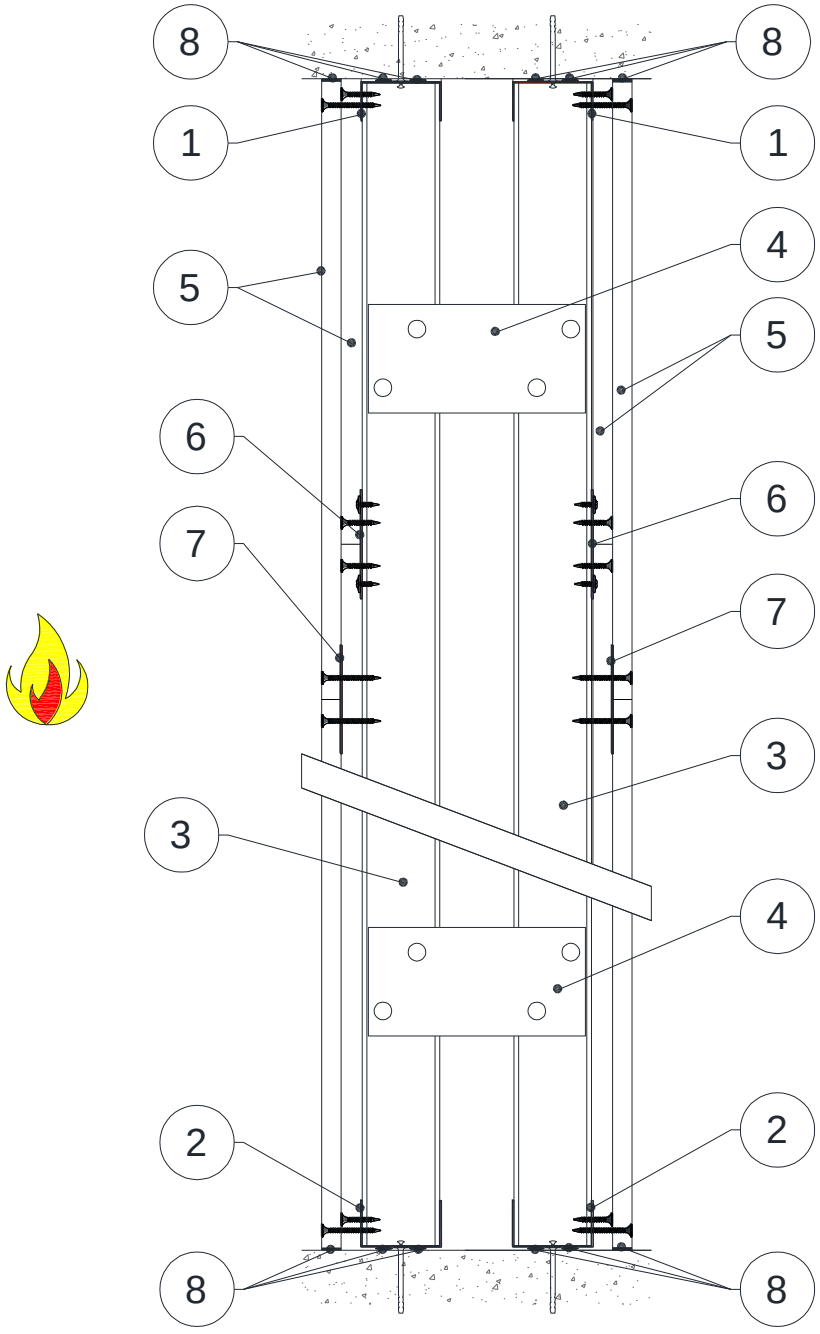
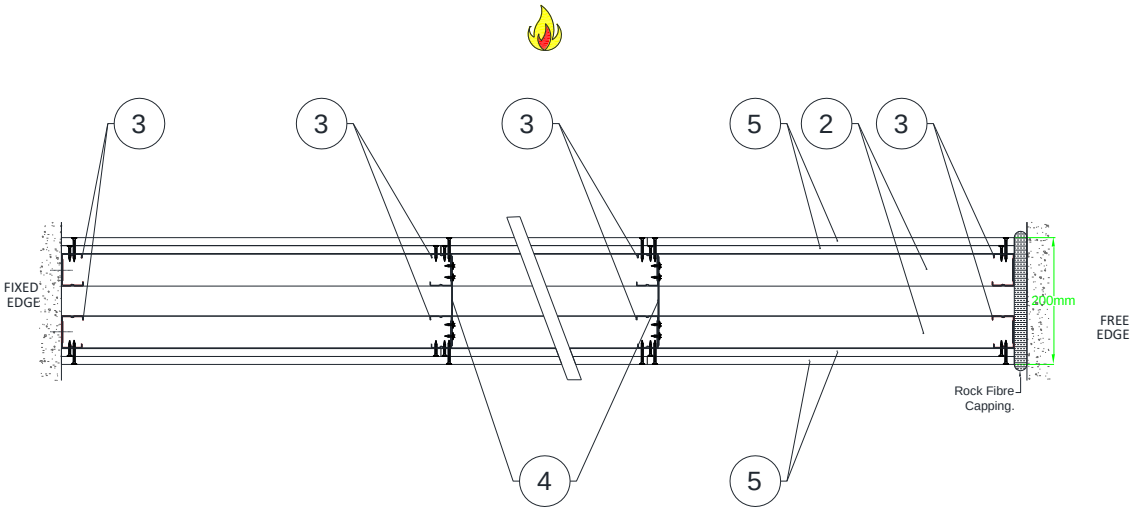


Figure 4 – Horizontal Cross Section of Wall System



Schedule of Components

(Refer to Figures 1 to 4)
(All values are nominal unless stated otherwise)
* Stated by sponsor, not verified by laboratory

Internal Framing

1. Head track		Description
Manufacturer or Supplier	:	Hadley Group*
Reference	:	52 mm U Track*
Material	:	Lightweight galvanized mild steel
Cross-section	:	52 mm x 32 mm x 0.55 mm*
Location		Head of the wall, screw fixed to the supporting construction top. Two rows, 40mm apart.
Fixing locations	:	50 mm from both ends of the track and at 600 mm centres
Fixing Details to the Restraint Frame	:	
a. Manufacturer	:	Screwfix
b. Reference	:	Easydrive
c. Type & material	:	Zinc Plated Stainless Steel Concrete Screws
d. Overall size	:	6 mm Ø x 100 mm long

2. Base track		Description
Manufacturer or Supplier	:	Hadley Group*
Reference	:	52 mm U Track*
Material	:	Lightweight galvanized mild steel
Cross-section	:	52 mm x 32 mm x 0.55 mm*
Location		Bottom edge of the wall, screw fixed to the supporting construction. Two rows, 40mm apart.
Fixing locations	:	50 mm from both ends of the track and at 600 mm centres*
Fixing Details to the Restraint Frame	:	
a. Manufacturer	:	Screwfix
b. Reference	:	Easydrive
c. Type & material	:	Zinc Plated Stainless Steel Concrete Screws
d. Overall size	:	6 mm Ø x 100 mm long

3. Vertical C-Studs		Description
Manufacturer or Supplier	:	Hadley Group*
Reference	:	50mm C Stud*
Material	:	Lightweight galvanised mild steel
Location and Spacing	:	6 No, positioned vertically between head and base tracks at 600mm centres. Two rows, 40mm apart.
Cross-section	:	50 mm x 32 mm x 0.55 mm*
Details of fixings to Head and Base Track (If applicable)	:	Vertical studs are not fixed to head and base track
Fixing Method to restraint frame (fixed edge only)	:	
a. Manufacturer	:	Screwfix
b. Reference	:	Easydrive
c. Type & material	:	Zinc Plated Stainless Steel Concrete Screws
d. Overall size	:	6 mm Ø x 100 mm long
Bracing Information	:	Vertical studs are braced together using Hadley U Track at 1200mm vertical centres using 2No Wafer Head Screws per stud. Studs positioned at free edge and fixed edge are not braced.

4. Bracing Fixing Plate		Description
Manufacturer	:	Hadley Group*
Reference	:	Hadley U-Track. 140 mm long cut-out from 52 mm U-Track was used.
Material	:	Lightweight galvanised mild steel
Location	:	Brace vertical C studs at 1200 mm vertical centres, excluding the studs at the fixed and free edges
Overall size	:	52 mm wide x 140 mm long x 0.55 mm thick*
Fixing Method to vertical studs	:	Secured with 2 No Wafer Head Fixings into each Stud
Details of fixings to vertical studs	:	
a. Manufacturer	:	Evolution*
b. Reference	:	Evolution Drywall Wafer Head Screws*
c. Overall size	:	4.2 mm Ø x 13 mm long*

Cladding Material

5. Plasterboard		Description
Manufacturer	:	British Gypsum*
Reference	:	12.5 mm Gyproc SoundBloc board* 27266/0
Material	:	Plasterboard*
Individual board dimensions	:	8 No 12.5mm x 3000mm x 1200mm 4 No 12.5 mm x 3000 mm x 600 mm*
Overall dimension	:	Installed three boards vertically to cover 3000mm x 3000mm*
Board Weight (kg/m^2)	:	10.3*
Moisture content	:	Unknown
Location		2 No of plasterboard layers on each side of the wall
Fixing method	:	Drywall Screws into head and base tracks and studs at 300 mm centres and into Hadley Fixing Plates at 300 mm centres*
Details of fixings to Internal framing	:	
a. Manufacturer	:	Evolution*
b. Reference	:	Evolution Drywall Screws*
c. Overall size	:	3.9 mm Ø x 32 mm long* for inner boards each side; 3.9 mm Ø x 42 mm long* for outer boards each side

6. Inner Stagger Joint		Description
Manufacturer	:	Hadley*
Reference	:	Hadley Fixing Plate*
Material	:	Lightweight galvanised mild steel *
Fixing Plate dimensions	:	2400 mm x 70 mm x 0.55 mm and 600 mm x 70 mm x 0.55 mm*
Overall length	:	3000mm*
Location	:	Between internal board layer and C-Studwork, 300 mm from the soffit to the plate centre of width, both sides of the wall
Fixing method	:	2 No wafer head screws into each vertical stud*
Details of fixings to Internal framing	:	
a. Manufacturer	:	Evolution*
b. Reference	:	Wafer Head Screws*
c. Overall size	:	4.2 mm Ø x 13 mm long*

7. Outer Stagger Joint		Description
Manufacturer	:	Hadley*
Reference	:	Hadley Fixing Plate*
Material	:	Lightweight galvanised mild steel *
Fixing Plate dimensions	:	2400 mm x 70 mm x 0.55 mm and 600 mm x 70 mm x 0.55 mm*
Overall length	:	3000 mm*
Location		Between board layers, 400 mm from the soffit to the plate centre of width, both sides of the wall
Fixing method	:	Not fixed to vertical studs, but fixed to first layer of board through second layer of board*
Details of fixings to Internal framing	:	
a. Manufacturer	:	Evolution*
b. Reference	:	Drywall Screws*
c. Overall size	:	3.9 mm Ø x 42 mm long*

Sealing Materials

8. Sealant		Description
Manufacturer	:	Rockwool
Reference	:	212902*
Material	:	Intumescent Mastic
Location	:	Two continuous beads between the head /base track/fixed edge, and the restraint frame. There is one continuous bead around the perimeter of the wall between the framework and the inner boards, then another one between board edges, then finally a third on the outer boards where the boards meet the restraint frame.
Application	:	10mm

Tape and Fill

9. Jointing tape		Description
Manufacturer	:	Knauf
Reference	:	Jointing Tape
Material	:	Paper Tape
Location	:	Placed on all board joints on the second layer only, no tape is used on the first layer.

10. Jointing compound		Description
Manufacturer	:	Knauf
Reference	:	Fill & Finish
Material	:	Mixture of calcium carbonate, perlite, water based polymer emulsion, thickeners and water
Location	:	Used on all board joints on the outer layer only, no jointing compound is used on the inner layers. Also applied to screw heads on the outer layer of board.
Nominal Application thickness	:	2mm, then tape applied then another 2mm

Test Observations

Time (minutes)	All observations are from the unexposed face unless noted otherwise.
00:00	The test has started.
5.00	There is smoke issuing at the centre of the head.
10.00	There are vertical cracks in the boards on the exposed face.
14.00	There are 2-3mm gaps in the board joints on the exposed face.
15.30	There is an increase in the smoke issuing at free edge 600mm down from head.
20.00	There are 4-5mm gaps in the board joints on the exposed face and there are cracks at the fixing points.
21.00	There is a decrease in the smoke issuing across the head.
24.00	There are 6-8mm gaps in the board joints on the exposed face.
25.00	There is smoke issuing at the fixed edge 1000mm down from the head.
30.00	There are 8-10mm gaps in the board joints on the exposed face.
40.00	The first layer is pulling away on the exposed face.
44.50	There is an increase in the smoke issuing at the fixed edge near the top left corner.
45.10	The first layer is falling off the exposed face and there are cracks in the second layer of the exposed face.
50.00	There is an increase in smoke issuing at the centre of the free edge.
60.00	The second layer is pulling away on the exposed face.
65.00	There is a crack in the 2400mm vertical joint.
68.00	There is smoke issuing at the 2400mm vertical joint.
70.00	There is an increase in the smoke issuing across the head.
76:00	There is an increase in smoke issuing at the centre of the left hand full board at the fixing point.

81.00 There is an increase in the smoke issuing at the 2400mm vertical joint.

88.10 The second layer is falling off the exposed face.

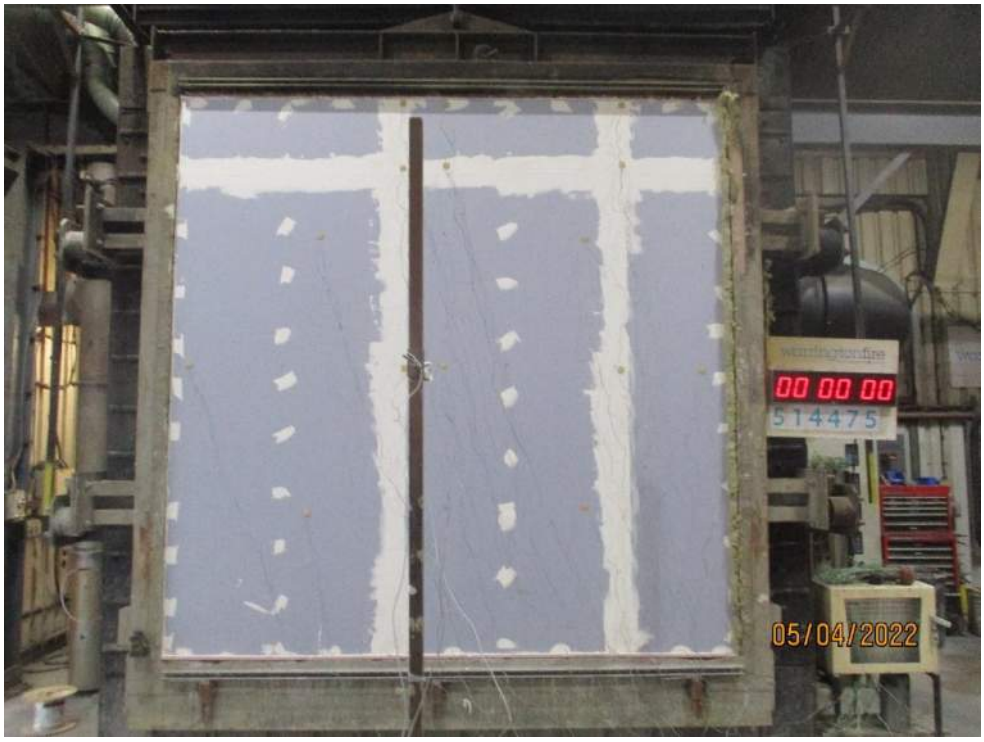
89.00 There is discolouration at the 2400mm vertical joint.

91.00 There is an increase in the smoke issuing at the centre of the fixed edge.

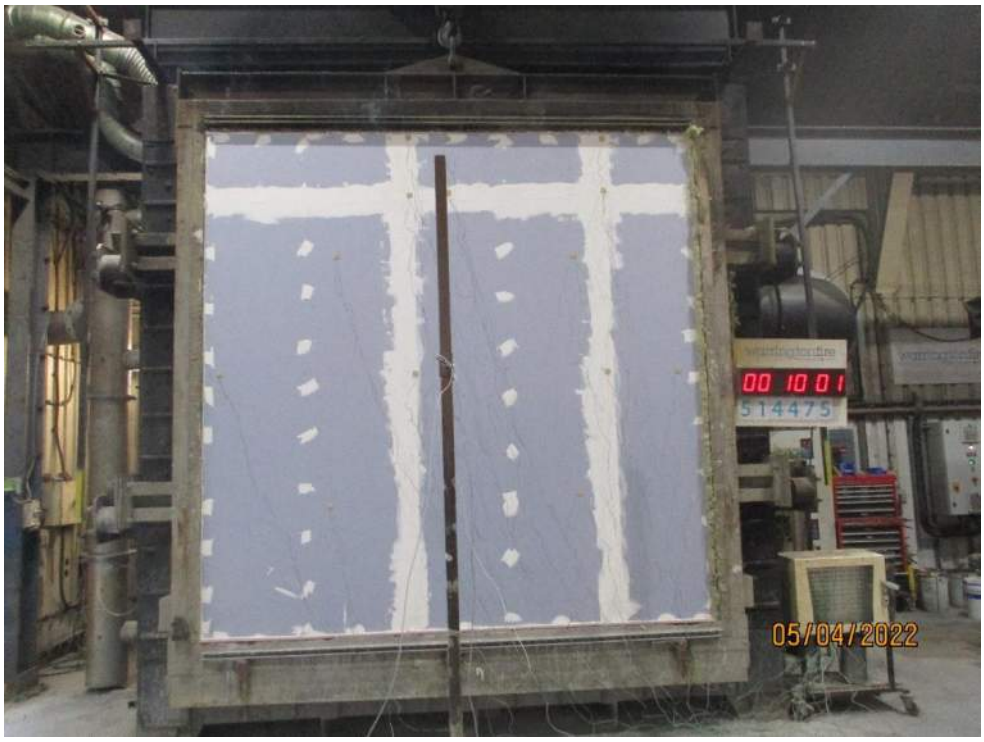
93:00 Test terminated.

Test Photographs

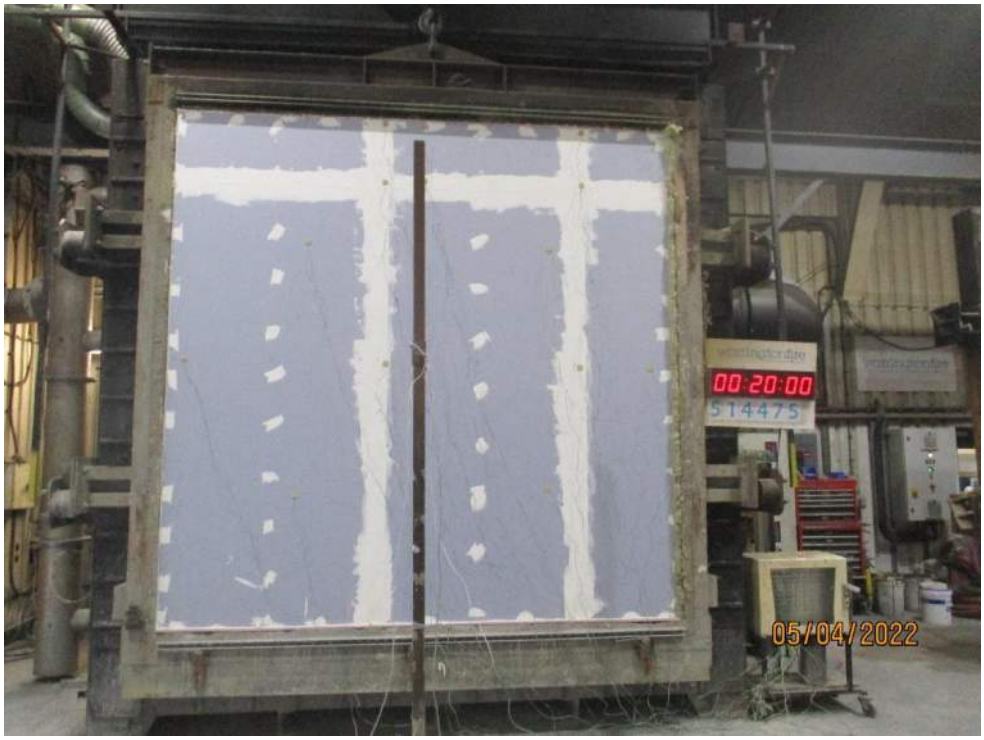
The unexposed face prior to testing



The unexposed face after a test duration of 10 minutes

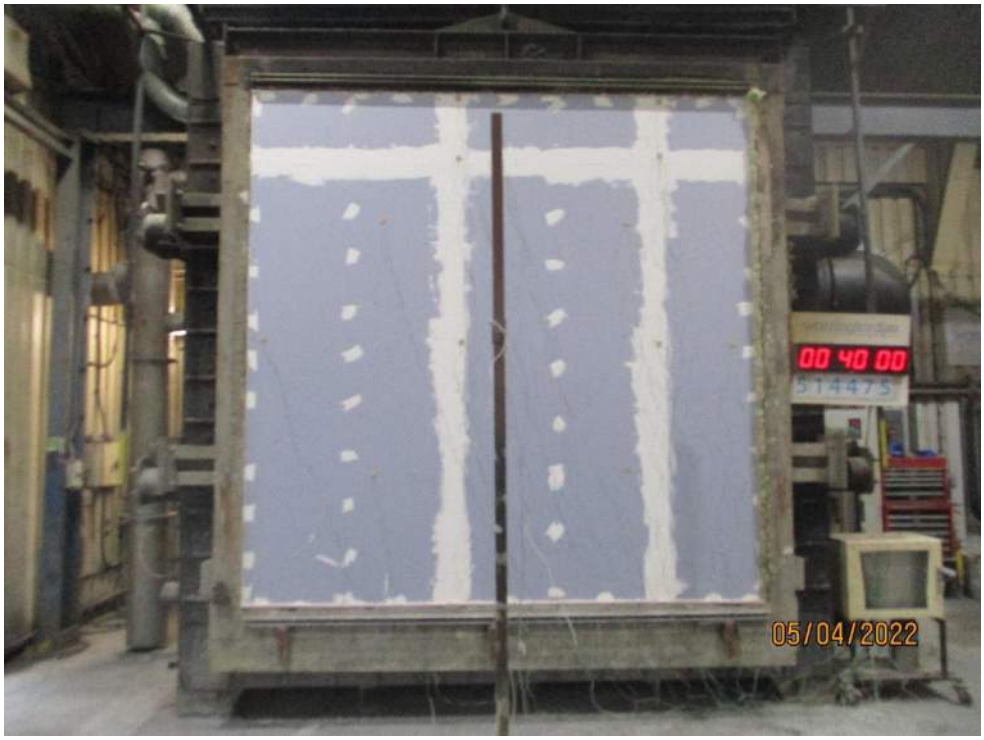


The unexposed face after a test duration of 20 minutes

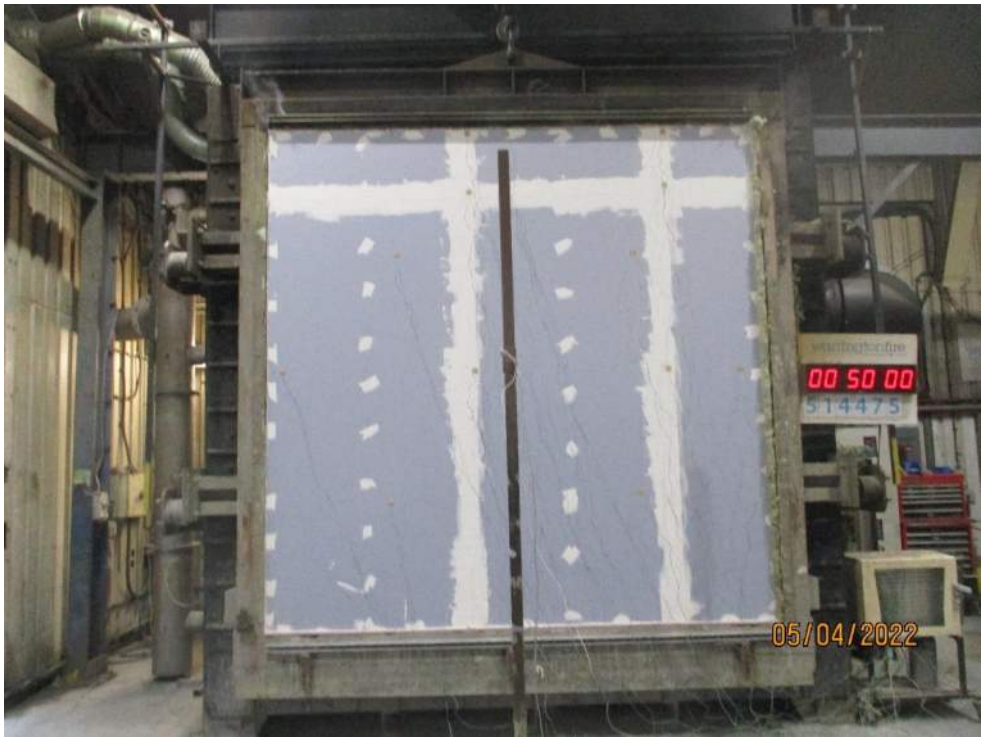


The unexposed face after a test duration of 30 minutes

The unexposed face after a test duration of 40 minutes

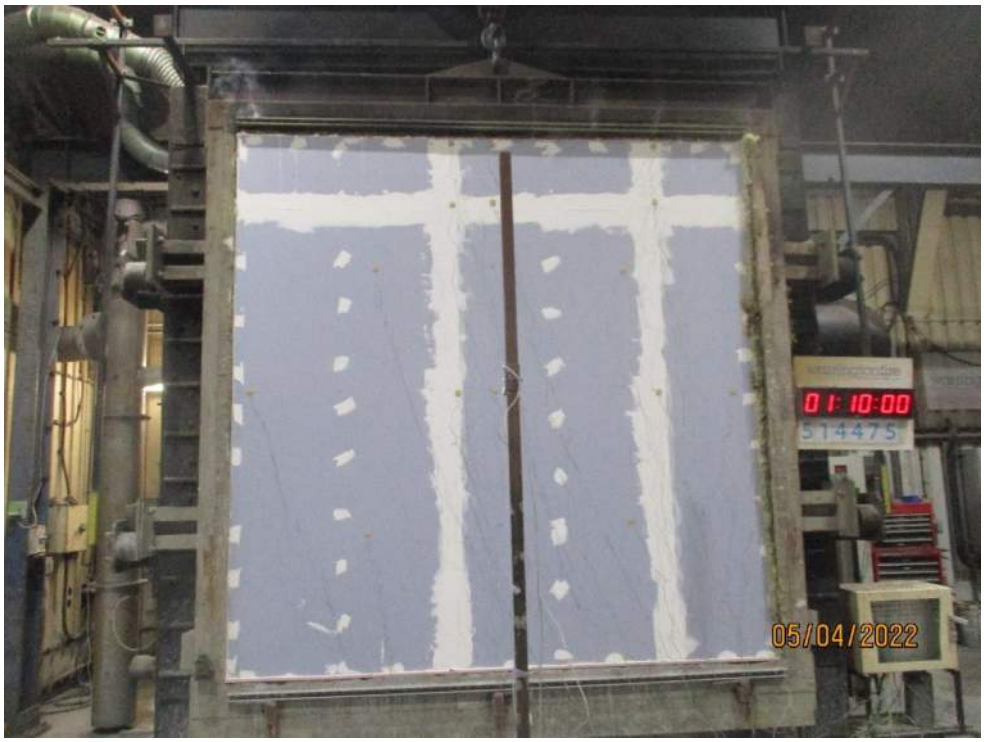


The unexposed face after a test duration of 50 minutes



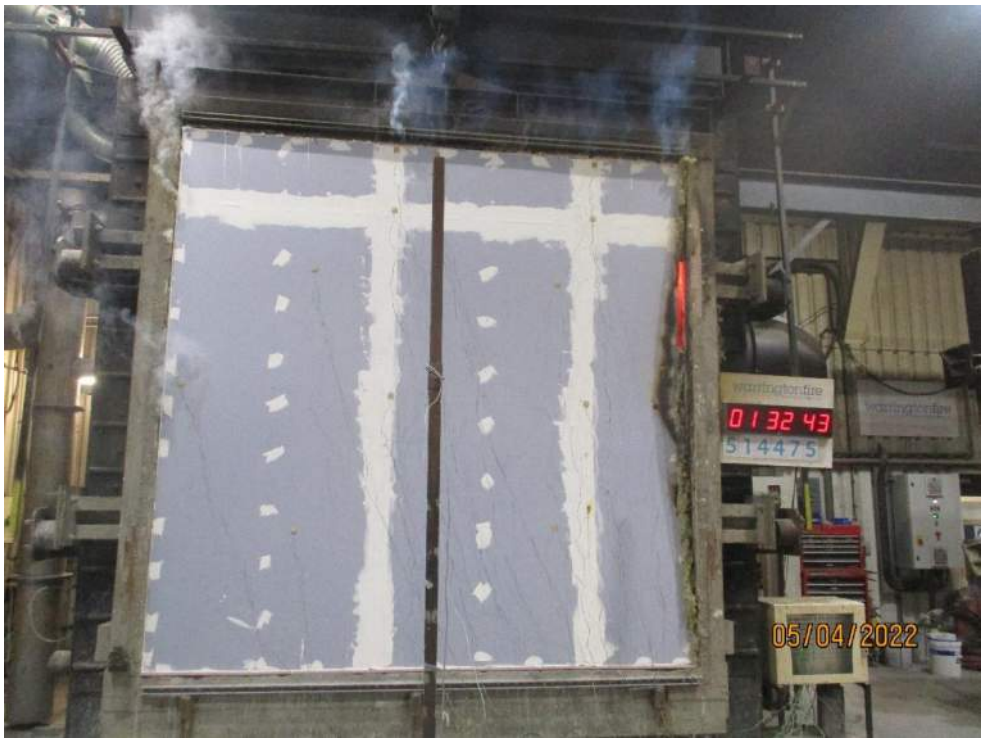
The unexposed face after a test duration of 60 minutes

The unexposed face after a test duration of 70 minutes



The unexposed face after a test duration of 80 minutes

The unexposed face after a test duration of 92 minutes



Temperature and Deflection Data

Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In BS EN 1363-1: 2020

Time	Mean Furnace Temperature	ISO834
min	°C	°C
0	20	20
1	210	349
2	357	445
3	492	502
4	578	544
5	595	576
6	597	603
7	612	626
8	641	645
9	670	663
10	687	678
11	698	693
12	708	705
13	717	717
14	726	728
15	736	739
16	746	748
17	756	757
18	766	766
19	775	774
20	783	781
21	791	789
22	798	796
23	803	802
24	809	809
25	813	815
26	819	820
27	825	826
28	830	831
29	834	837
30	838	842
31	845	847
32	850	851
33	856	856
34	859	860
35	863	865
36	867	869
37	869	873
38	872	877
39	876	881

Time	Mean Furnace Temperature	ISO834
min	°C	°C
40	880	885
41	883	888
42	886	892
43	892	896
44	896	899
45	900	902
46	908	906
47	915	909
48	921	912
49	926	915
50	930	918
51	933	921
52	935	924
53	933	927
54	936	930
55	938	932
56	941	935
57	945	938
58	947	940
59	951	943
60	955	945
61	957	948
62	961	950
63	961	953
64	962	955
65	967	957
66	964	960
67	967	962
68	968	964
69	969	966
70	971	968
71	972	971
72	977	973
73	977	975
74	979	977
75	981	979
76	983	981
77	986	983
78	986	985
79	987	986

Time	Mean Furnace Temperature	ISO834
min	°C	°C
80	989	988
81	990	990
82	991	992
83	988	994
84	990	996
85	991	997
86	993	999

Time	Mean Furnace Temperature	ISO834
min	°C	°C
87	993	1001
88	995	1003
89	992	1004
90	1008	1006
91	1004	1008
92	977	1009
93	1011	1011

Note: Due to malfunction, channels 5 & 6 were removed from the calculation of the mean.

Individual And Mean Temperatures Recorded On The Unexposed Face

Time	Chan 25	Chan 26	Chan 27	Chan 28	Chan 29	Mean
min	°C	°C	°C	°C	°C	°C
0	16	16	15	15	15	15
1	16	16	15	15	15	15
2	16	16	15	15	15	15
3	16	16	15	15	15	15
4	16	16	16	15	15	16
5	16	16	16	15	15	16
6	16	16	16	15	15	16
7	16	16	16	15	15	16
8	16	16	16	15	15	16
9	16	16	16	15	16	16
10	17	17	16	16	16	16
11	17	17	16	16	16	16
12	18	18	17	16	17	17
13	19	19	17	17	17	18
14	20	20	18	18	18	19
15	21	22	19	19	19	20
16	22	23	20	19	20	21
17	23	25	21	20	21	22
18	25	27	22	21	22	23
19	26	28	23	22	23	24
20	28	30	24	23	24	26
21	29	31	25	25	26	27
22	31	33	27	26	27	29
23	33	35	28	27	28	30
24	34	36	30	28	29	31
25	36	38	32	30	31	33
26	38	40	33	31	33	35
27	40	42	35	33	34	37
28	42	44	37	34	36	39
29	43	45	39	35	37	40
30	45	47	40	36	39	41
31	47	49	43	38	41	44
32	49	50	45	40	42	45
33	50	52	47	42	44	47
34	52	53	48	44	46	49
35	53	54	50	44	47	50
36	54	55	51	45	48	51
37	55	56	52	46	50	52
38	56	57	53	47	50	53
39	57	58	54	50	52	54
40	57	58	55	50	53	55
41	58	59	55	50	53	55
42	58	59	55	50	54	55
43	58	59	56	52	55	56
44	59	60	56	53	55	57

Time	Chan 25	Chan 26	Chan 27	Chan 28	Chan 29	Mean
min	°C	°C	°C	°C	°C	°C
45	59	60	56	53	56	57
46	60	61	57	53	56	57
47	61	62	57	53	56	58
48	62	63	58	54	57	59
49	63	64	58	55	58	60
50	64	65	59	54	58	60
51	64	66	60	55	58	61
52	64	67	60	56	59	61
53	65	67	61	58	60	62
54	65	68	62	59	61	63
55	66	68	62	57	60	63
56	67	69	63	60	62	64
57	68	70	64	58	61	64
58	68	71	65	59	61	65
59	69	71	67	61	63	66
60	70	72	68	62	64	67
61	70	73	69	62	64	68
62	70	73	69	61	64	67
63	71	73	70	61	64	68
64	72	73	70	61	64	68
65	72	73	71	64	66	69
66	72	73	72	65	67	70
67	72	73	72	65	67	70
68	72	73	72	65	68	70
69	72	73	72	65	68	70
70	72	73	72	67	70	71
71	73	74	72	66	70	71
72	74	74	72	66	70	71
73	75	75	72	67	70	72
74	76	76	73	66	70	72
75	78	78	74	66	71	73
76	78	79	76	66	71	74
77	78	79	76	66	70	74
78	79	79	77	69	71	75
79	79	79	78	70	71	75
80	80	80	79	72	72	77
81	81	81	80	73	72	77
82	82	81	80	72	73	78
83	82	82	81	73	75	79
84	83	83	82	73	76	79
85	84	85	83	73	77	80
86	86	87	83	73	77	81
87	89	88	84	74	77	82
88	91	91	84	74	77	83
89	93	92	84	75	77	84
90	94	95	85	75	78	85
91	96	97	87	78	80	88
92	97	99	90	80	82	90
93	99	101	93	81	83	91

Individual Temperatures Recorded On The Maximum Thermocouples

Time	Chan 15	Chan 16	Chan 17	Chan 18	Chan 19	Chan 21	Chan 22	Chan 23	Chan 24
min	°C	°C	°C	°C	°C	°C	°C	°C	°C
0	15	14	14	14	16	14	13	13	15
1	15	14	14	14	16	14	13	13	15
2	15	14	14	14	16	14	14	13	15
3	15	14	14	14	16	14	14	13	15
4	15	14	14	14	16	14	14	13	15
5	15	14	14	14	16	14	14	13	15
6	15	14	14	14	16	14	14	13	15
7	15	14	15	15	17	14	14	14	15
8	15	15	15	15	17	15	14	14	15
9	15	16	15	15	18	16	14	14	16
10	15	16	16	15	19	16	15	14	16
11	16	17	16	16	20	17	15	15	16
12	16	19	17	17	22	19	16	15	16
13	17	20	19	18	24	20	17	16	17
14	18	22	20	19	26	22	18	17	17
15	19	24	22	20	28	23	20	18	18
16	20	25	23	21	30	25	21	19	19
17	21	27	25	22	32	27	22	20	20
18	22	29	27	24	34	28	24	22	21
19	23	30	28	25	36	30	25	23	22
20	25	32	30	27	38	31	27	24	23
21	26	33	31	28	39	32	28	26	24
22	27	34	33	30	41	34	29	27	25
23	29	35	34	31	42	35	30	28	26
24	30	36	36	33	43	36	32	30	28
25	32	37	38	34	45	37	33	31	29
26	34	38	39	36	46	38	34	33	31
27	36	39	40	38	47	39	36	34	32
28	38	40	42	40	48	41	37	35	34
29	39	41	43	41	49	42	38	37	35
30	41	41	44	43	50	43	40	38	36
31	43	42	46	44	51	44	41	39	38
32	45	43	47	46	52	45	42	40	40
33	47	44	48	48	53	46	44	42	41
34	49	44	49	50	54	47	45	43	43
35	50	45	50	51	55	48	46	44	44
36	51	46	51	52	56	49	47	45	45
37	53	46	51	53	56	50	48	46	46
38	54	47	52	54	57	51	49	47	47
39	55	48	52	55	57	52	50	48	48
40	56	48	53	56	58	52	50	49	49
41	57	49	53	57	58	53	51	49	49
42	57	49	53	57	58	53	51	50	50
43	58	49	54	58	58	54	52	51	50
44	58	50	54	58	58	54	52	51	51
45	58	50	54	59	58	54	52	52	51
46	58	50	55	59	58	55	52	52	51

Time	Chan 15	Chan 16	Chan 17	Chan 18	Chan 19	Chan 21	Chan 22	Chan 23	Chan 24
min	°C	°C	°C	°C	°C	°C	°C	°C	°C
47	58	51	55	60	59	55	53	53	52
48	58	51	56	60	59	56	53	54	52
49	58	52	58	61	60	57	54	55	53
50	59	54	59	62	61	58	54	56	53
51	59	55	60	63	62	59	55	57	54
52	60	57	61	64	63	61	56	59	54
53	61	59	63	65	64	63	57	61	55
54	62	60	64	66	66	64	58	62	55
55	63	62	64	66	66	65	59	64	56
56	63	64	65	67	68	66	60	65	57
57	64	65	65	68	68	67	62	66	58
58	64	66	66	69	69	68	63	68	58
59	65	67	66	70	70	68	64	69	60
60	66	68	66	71	70	69	65	70	61
61	67	69	67	72	71	70	66	71	62
62	67	70	67	73	71	70	66	71	62
63	68	71	67	73	72	71	66	72	63
64	68	72	67	74	72	71	67	72	63
65	69	73	68	74	72	72	67	73	64
66	70	73	68	75	72	72	68	74	65
67	70	74	69	75	73	72	69	74	65
68	71	74	69	75	73	73	69	75	65
69	70	75	70	75	73	73	69	74	65
70	71	75	70	76	73	73	70	75	66
71	71	75	70	76	73	74	70	74	66
72	71	76	71	76	73	74	71	75	66
73	71	76	72	76	73	74	71	75	66
74	71	76	74	76	73	75	73	75	66
75	71	76	76	76	73	75	74	76	67
76	71	76	78	77	73	75	75	76	68
77	71	76	80	78	73	75	76	77	69
78	71	76	81	78	74	76	78	78	71
79	72	76	82	79	74	76	79	80	71
80	72	76	83	80	74	76	80	81	71
81	74	77	83	81	75	77	81	83	71
82	75	77	83	82	75	77	82	84	71
83	76	77	84	82	76	77	82	84	72
84	77	78	84	83	76	78	83	85	73
85	78	78	84	84	77	79	84	86	74
86	79	79	84	84	78	80	84	86	75
87	80	81	84	84	79	80	84	87	82
88	80	82	85	85	80	81	84	87	123
89	82	84	85	85	81	82	84	87	259
90	84	85	85	86	82	85	87	88	387
91	85	86	85	87	83	85	87	90	233
92	87	87	85	88	85	86	88	91	150
93	88	88	85	89	87	87	88	92	118

Note: Due to malfunction, channel 20 has been removed.

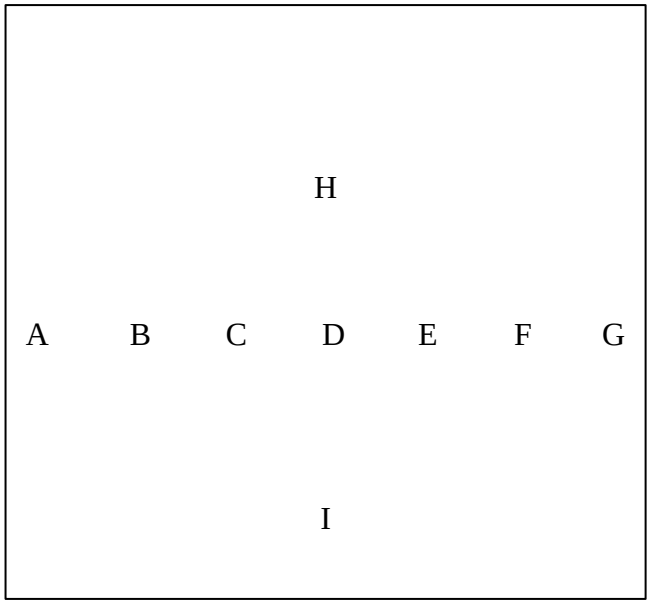
Recorded Radiation Intensity From The Partition Specimen

Time	Chan 30
min	kW/m²
0	0.2
1	0.2
2	0.2
3	0.2
4	0.2
5	0.2
6	0.2
7	0.2
8	0.2
9	0.2
10	0.2
11	0.2
12	0.2
13	0.2
14	0.2
15	0.2
16	0.2
17	0.2
18	0.2
19	0.2
20	0.2
21	0.2
22	0.2
23	0.2
24	0.2
25	0.2
26	0.2
27	0.2
28	0.2
29	0.2
30	0.2
31	0.2
32	0.2
33	0.2
34	0.2
35	0.2
36	0.2
37	0.2
38	0.3
39	0.3
40	0.2
41	0.2
42	0.3
43	0.3
44	0.3
45	0.3
46	0.3

Time	Chan 30
min	kW/m²
47	0.3
48	0.3
49	0.2
50	0.3
51	0.2
52	0.3
53	0.3
54	0.3
55	0.3
56	0.3
57	0.3
58	0.3
59	0.3
60	0.3
61	0.3
62	0.3
63	0.3
64	0.3
65	0.3
66	0.3
67	0.3
68	0.3
69	0.3
70	0.3
71	0.2
72	0.3
73	0.3
74	0.3
75	0.3
76	0.3
77	0.3
78	0.4
79	0.3
80	0.4
81	0.3
82	0.4
83	0.4
84	0.4
85	0.4
86	0.4
87	0.4
88	0.4
89	0.5
90	0.5
91	0.5
92	0.5
93	0.4

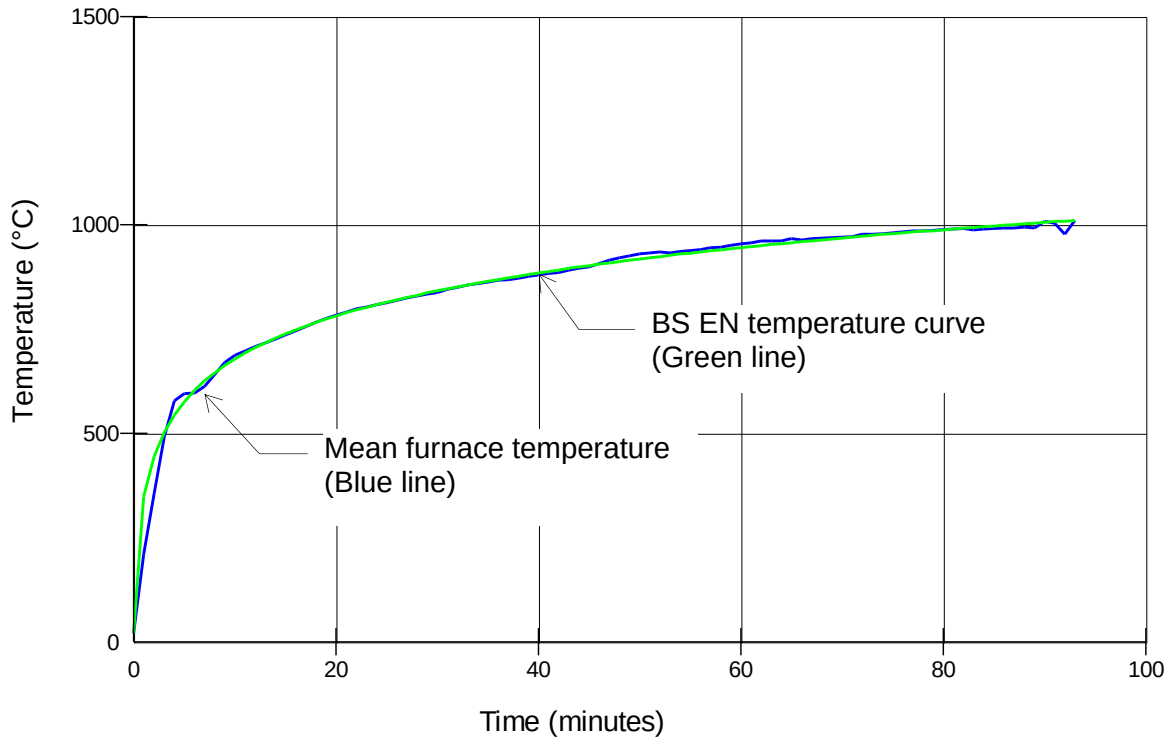
Horizontal Deflections Of The Partition Specimen

The deflection of the specimen partition was measured from the centre point, and at mid height on each stud. The readings have been tabulated and are shown graphically below. A positive reading represents deflection in towards the furnace. A negative reading represents deflection away from the furnace.

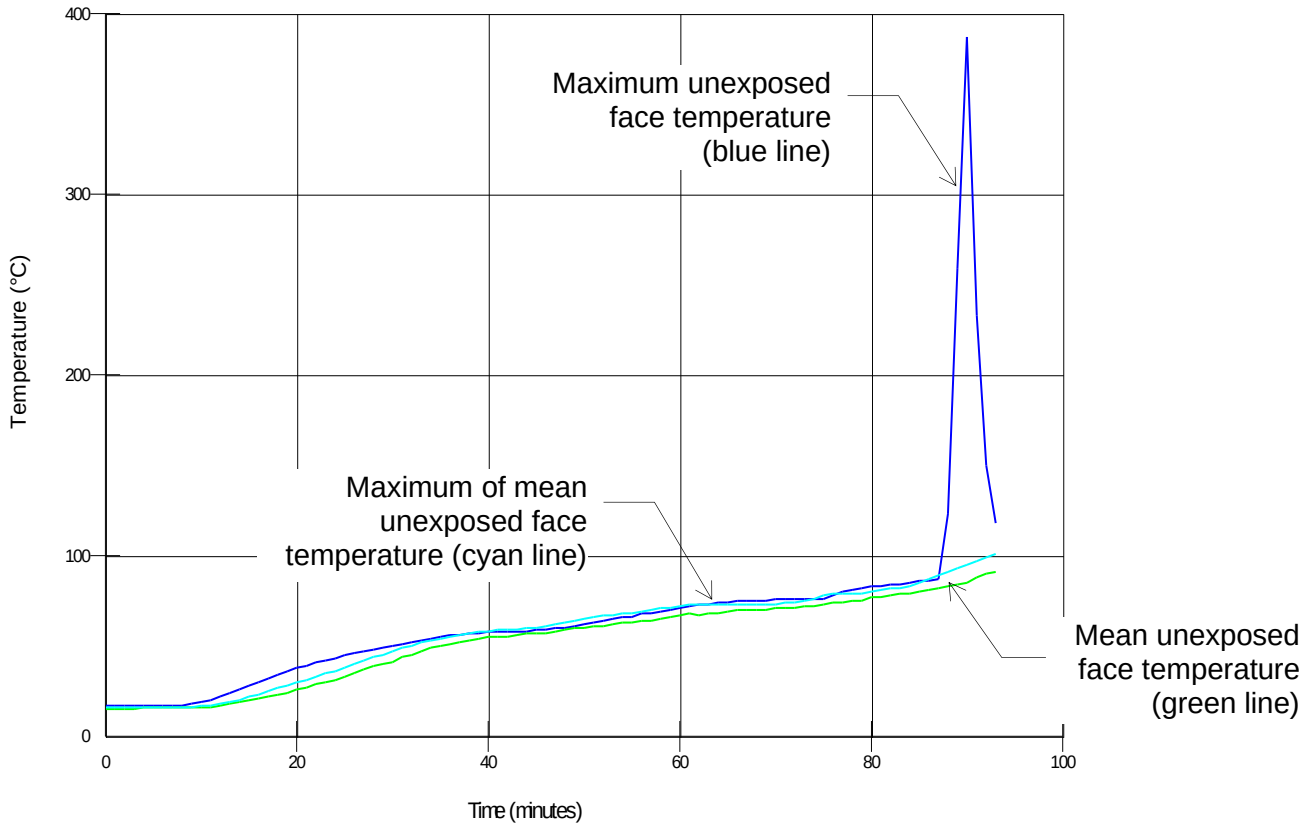


TIME mins	A	B	C	D	E	F	G	H	I
10	1	-1	-2	-7	-5	-2	-3	-2	-4
20	1	-3	-6	-8	-8	-5	-3	-7	-7
30	2	-3	-7	-9	-8	-6	-5	-6	-6
40	2	4	2	3	6	3	0	4	2
50	4	20	20	20	24	19	15	18	13
60	5	30	40	38	40	39	31	30	25
70	5	42	62	60	69	65	60	46	40
80	5	48	75	76	87	93	98	55	50
90	-4	50	90	-	-	-	-	-	-

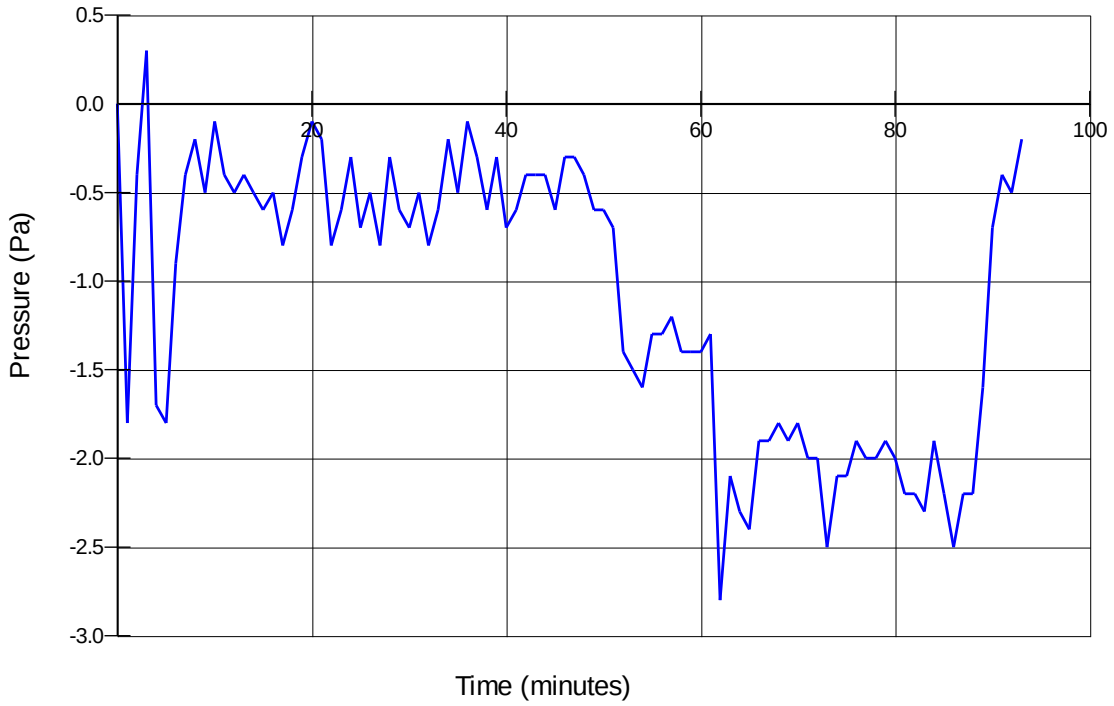
Graph Showing Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In BS EN 1363-1: 2020



Graph Showing Mean and Maximum Temperatures Recorded On The Unexposed Surface



Graph Showing Recorded Furnace Pressure At 0.5 m From The Notional Floor Level



On-going Implications

Limitations

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 procedure outlined in BS EN 1364-1, BS EN 1363-1, and where appropriate BS EN 1363-2. Any significant deviation with respect to size, construction details, loads, stresses and edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report.

The results only relate to the behaviour of the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they reflect the actual behaviour in fires.

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. **Warringtonfire** will be able to offer, on behalf of the test sponsor, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test 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.

EGOLF

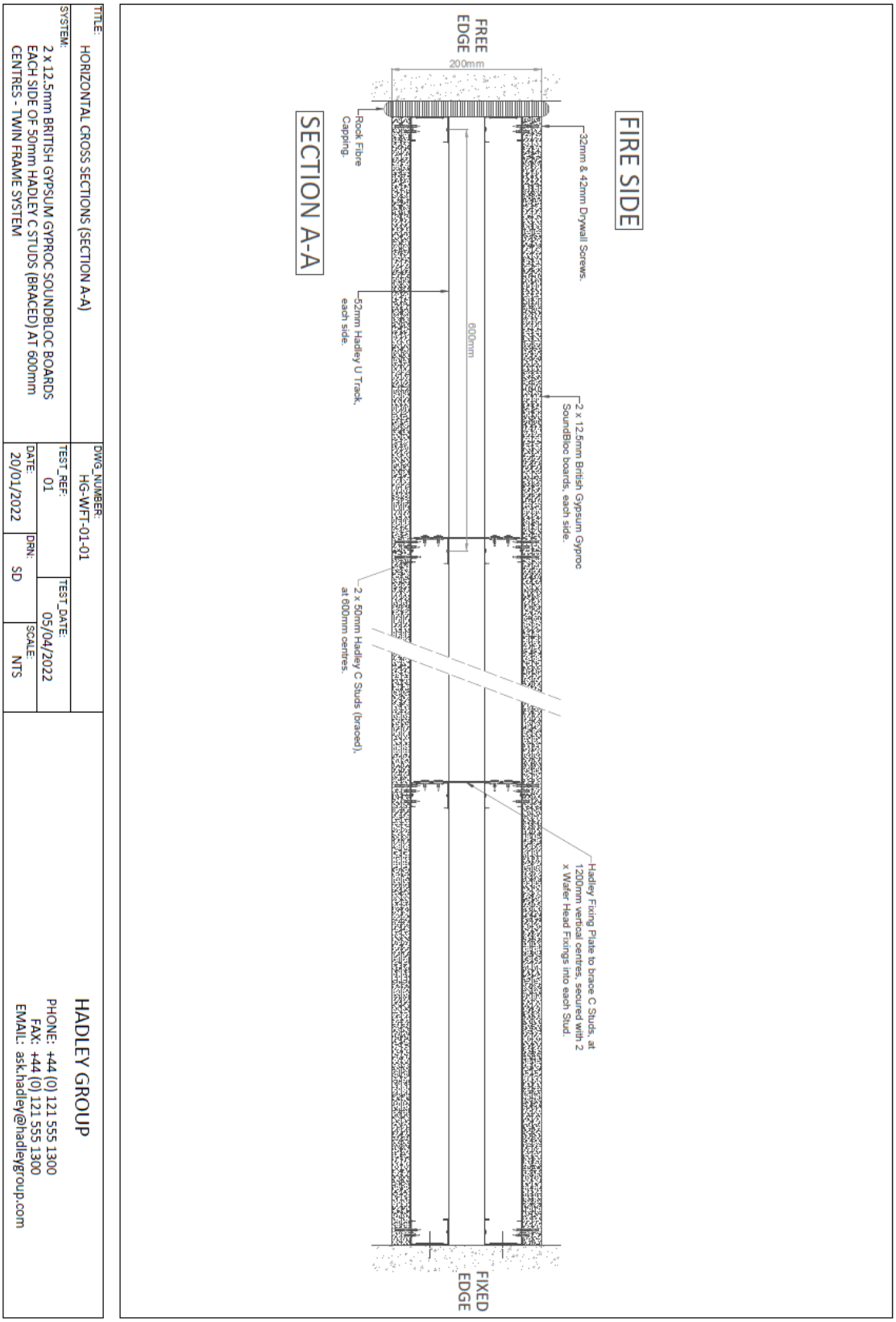
Certain aspects of some fire test specifications are open to different interpretations. EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.

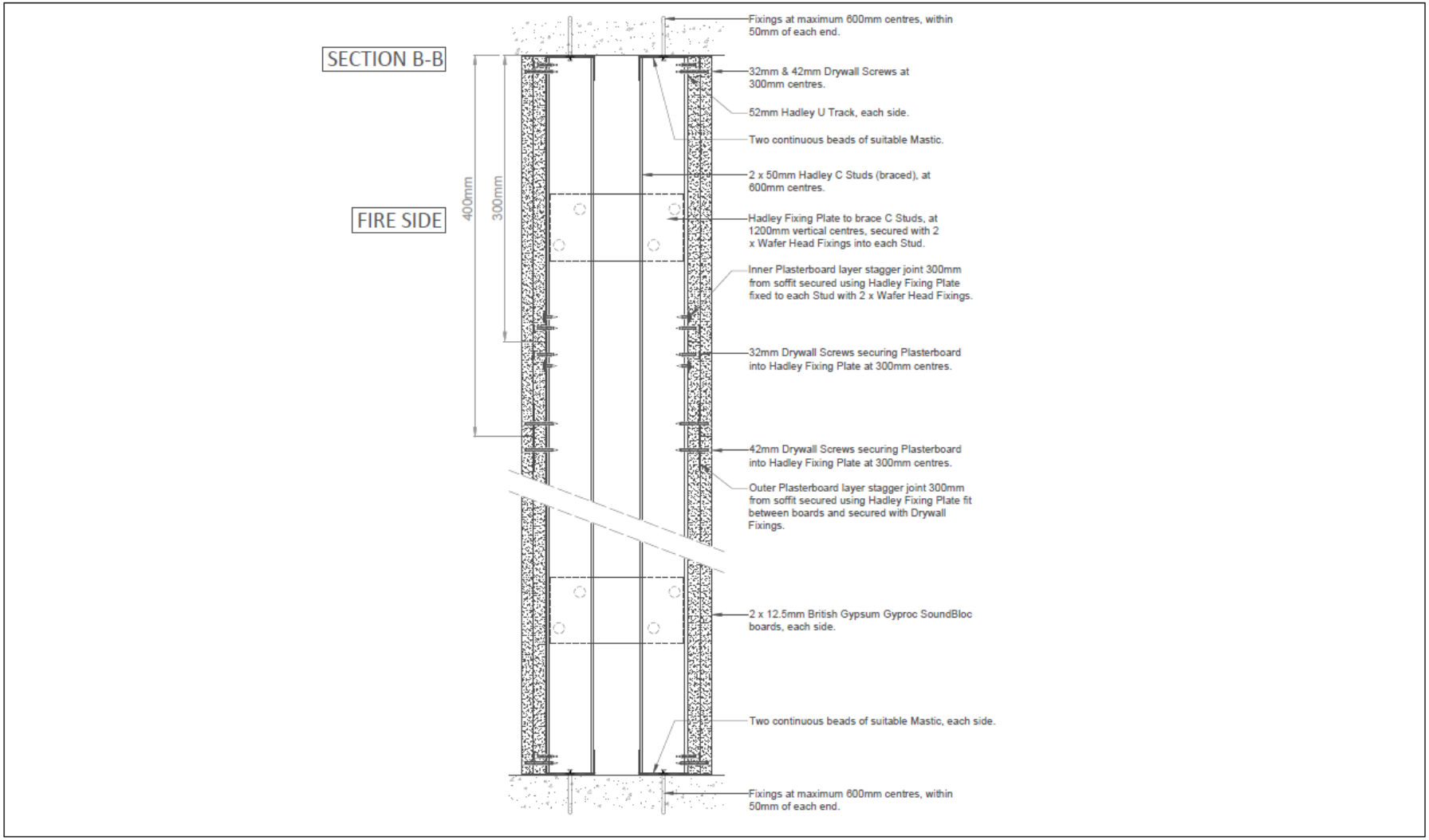
Field of Direct Application

BS EN 1363-1:2020, Fire resistance tests - Part 1: General requirements, states within Section 12.1, Clause v) that “The field of direct application of the results for the specimen being evaluated, either in the form of the full text from the appropriate standard, or only those clauses which are relevant for the specimen tested” shall be included within the test report. The full text of the field of direct application for the results of the specimen being evaluated herein, can be found within the appropriate test standard, which is referenced on the front cover of this report.

Client Drawings

(Note: Test wall was constructed with free edge on right hand side, when viewed from the unexposed face. U-track was used to brace C studs.)

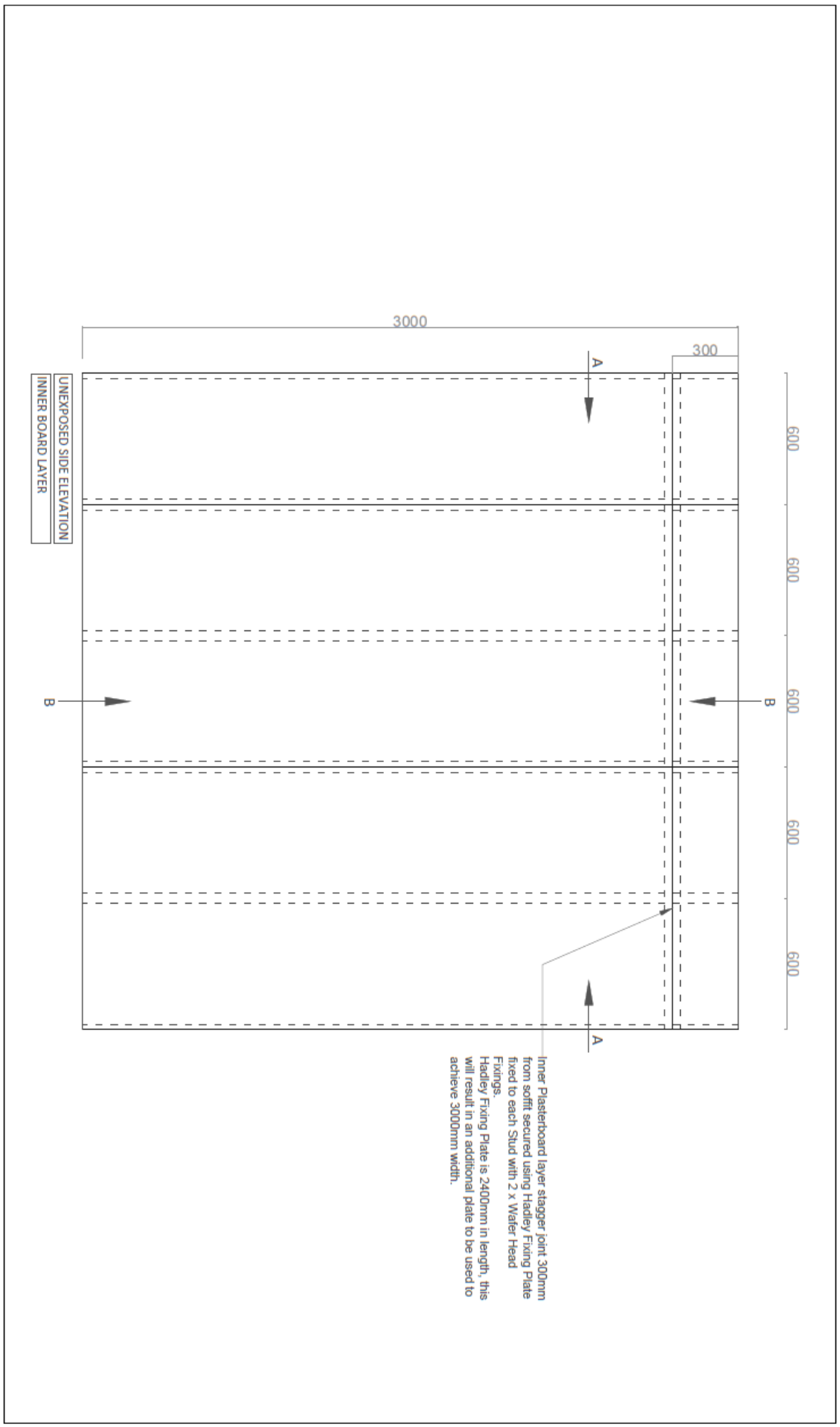


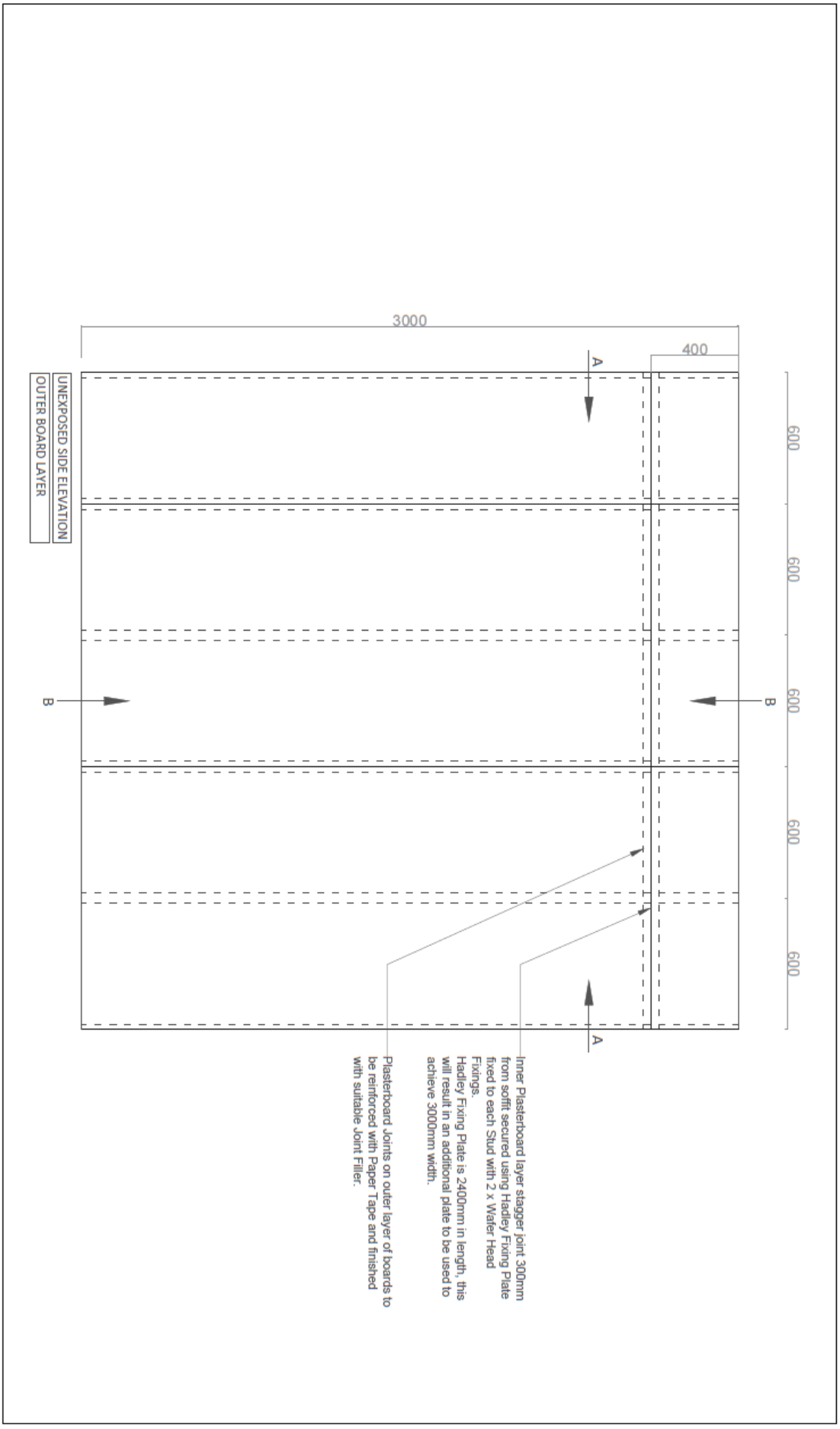


TITLE: VERTICAL CROSS SECTIONS (SECTION B-B)	DWG_NUMBER: HG-WFT-01-02		
SYSTEM: 2 x 12.5mm BRITISH GYPSUM GYPROC SOUNDBLOC BOARDS EACH SIDE OF 50mm HADLEY C STUDS (BRACED) AT 600mm CENTRES - TWIN FRAME SYSTEM	TEST_REF: 01	TEST_DATE: 05/04/2022	
	DATE: 20/01/2022	DRN: SD	SCALE: NTS

HADLEY GROUP

PHONE: +44 (0) 121 555 1300
FAX: +44 (0) 121 555 1300
EMAIL: ask.hadley@hadleygroup.com


3000
300
600
600
600
600
600
A
A
B
B
UNEXPOSED SIDE ELEVATION
INNER BOARD LAYER
Inner Plasterboard layer stagger joint 300mm from soffit secured using Hadley Fixing Plate fixed to each Stud with 2 x Wafer Head Fixings.
Hadley Fixing Plate is 2400mm in length, this will result in an additional plate to be used to achieve 3000mm width.
TITLE:
UNEXPOSED SIDE ELEVATION - INNER BOARD LAYER
SYSTEM:
2 x 12.5mm BRITISH GYPSUM GYPROC SOUNDBLOC BOARDS EACH SIDE OF 50mm HADLEY C STUDS (BRACED) AT 600mm CENTRES - TWIN FRAME SYSTEM
DWG_NUMBER:
HG-WFT-01-03
TEST_REF:
01
TEST_DATE:
05/04/2022
DATE:
20/01/2022
DRN:
SD
SCALE:
NTS
HADLEY GROUP
PHONE: +44 (0) 121 555 1300
FAX: +44 (0) 121 555 1300
EMAIL: ask.hadley@hadleygroup.com



TITLE: UNEXPOSED SIDE ELEVATION - OUTER BOARD LAYER

DWG_NUMBER: HG-WFT-01-04

SYSTEM: 2 x 12.5mm BRITISH GYPSUM GYPROC SOUNDBLOC BOARDS EACH SIDE OF 50mm HADLEY C STUDS (BRACED) AT 600mm CENTRES - TWIN FRAME SYSTEM

TEST_REF: 01

TEST_DATE: 05/04/2022

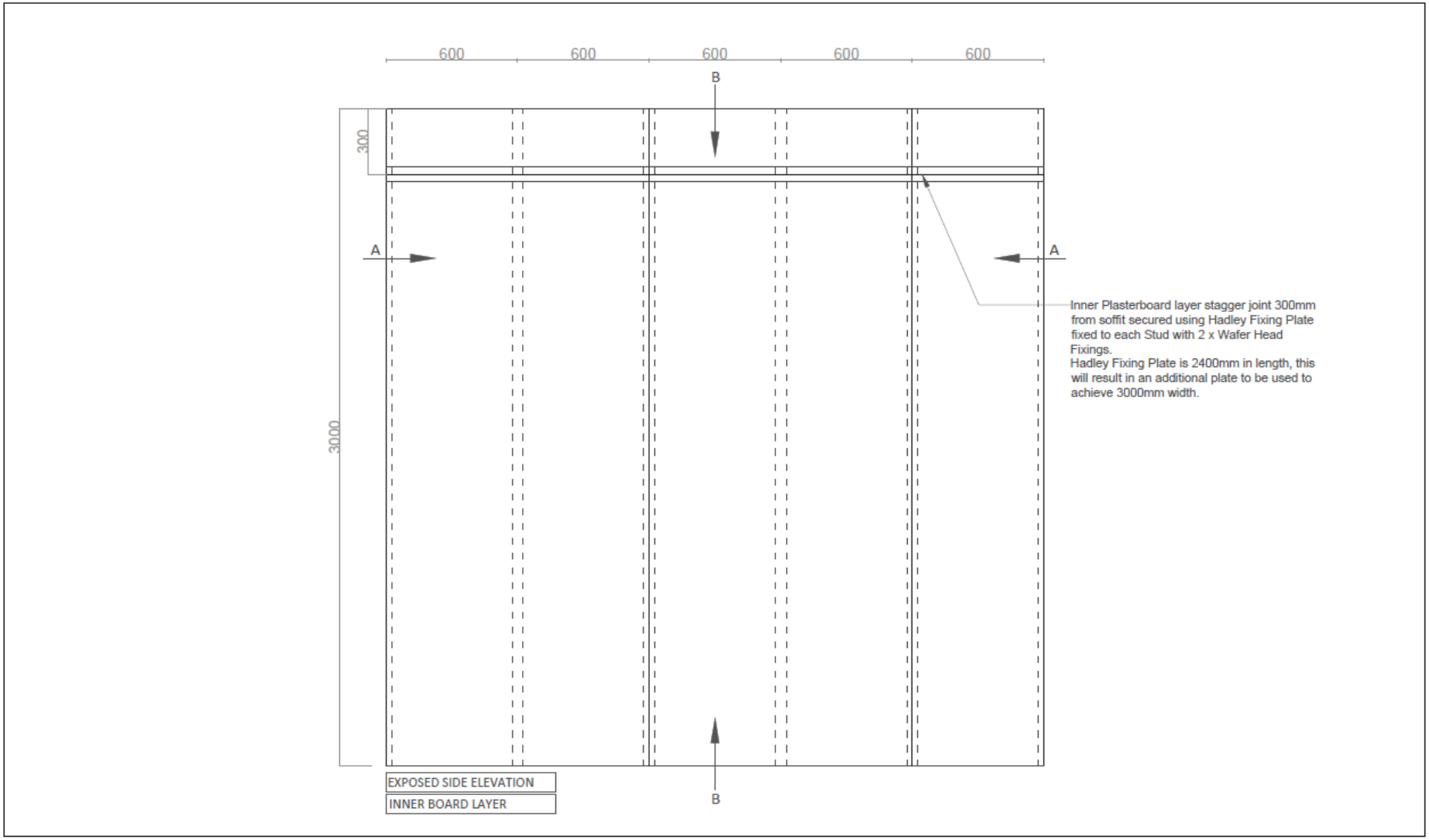
DATE: 20/01/2022

DRN: SD

SCALE: NTS

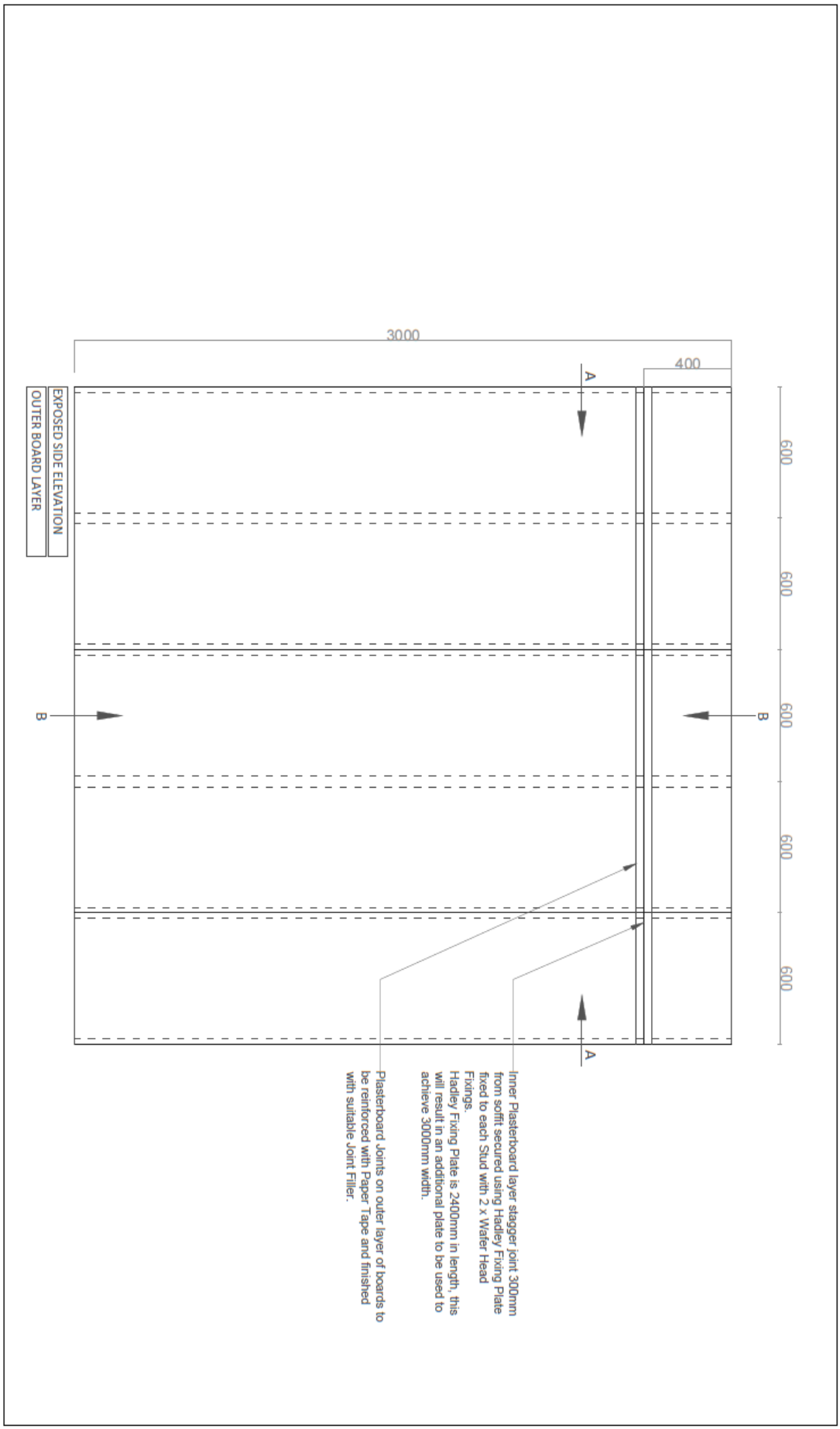
HADLEY GROUP

PHONE: +44 (0) 121 555 1300
FAX: +44 (0) 121 555 1300
EMAIL: ask.hadleygroup@hadleygroup.com



TITLE: EXPOSED SIDE ELEVATION - INNER BOARD LAYER	DWG_NUMBER: HG-WFT-01-05		
SYSTEM: 2 x 12.5mm BRITISH GYPSUM GYPROC SOUNDBLOC BOARDS EACH SIDE OF 50mm HADLEY C STUDS (BRACED) AT 600mm CENTRES - TWIN FRAME SYSTEM	TEST_REF: 01	TEST_DATE: 05/04/2022	
	DATE: 20/01/2022	DRN: SD	SCALE: NTS

HADLEY GROUP
PHONE: +44 (0) 121 555 1300
FAX: +44 (0) 121 555 1300
EMAIL: ask.hadley@hadleygroup.com



TITLE: EXPOSED SIDE ELEVATION - INNER BOARD LAYER

DWG_NUMBER: HG-WFT-01-06

SYSTEM: 2 x 12.5mm BRITISH GYPSUM GYPROC SOUNDBLOC BOARDS EACH SIDE OF 50mm HADLEY C STUDS (BRACED) AT 600mm CENTRES - TWIN FRAME SYSTEM

TEST_REF:	TEST_DATE:
01	05/04/2022

DATE:	DRN:	SCALE:
20/01/2022	SD	NTS

HADLEY GROUP

PHONE: +44 (0) 121 555 1300
FAX: +44 (0) 121 555 1300
EMAIL: ask.hadley@hadleygroup.com