

Title:

The fire resistance performance of an asymmetric non-loadbearing, steel stud/timber stud partition system when tested in accordance with BS EN 1364-1:2015 and BS EN 1363-1: 2012

Date Of Test:

20/05/2021

Issue 1

10/02/2023

WF Report No:

WF 501438



Prepared for:

Hadley Industries Holding
Ltd
Downing Street
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 left edge of the partition remained unrestrained.

The size of the partition system was 3000mm high x 3000mm wide x 87mm deep overall and consisted of 60mm deep Hadley Group steel I studs fitted into 62mm deep Hadley Group head and base tracks. The partition was clad with 2 No. layers of 12.5mm Knauf Fireline on exposed face of the partition, coreboard slotted between I joists on unexposed face. 1 No. layer of Hadley Group flat strap was fitted behind the horizontal Fireline board joints.

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	73 (Seventy Three) minutes*
Sustained flaming	73 (Seventy Three) minutes*
Gap gauges	73 (Seventy Three) minutes*
Thermal Insulation	57 (Fifty Seven) minutes
Radiation (time to 15kW/m²)	73 (Seventy Three) minutes*

* No failure of this test criteria was observed at termination of the test at 73 minutes

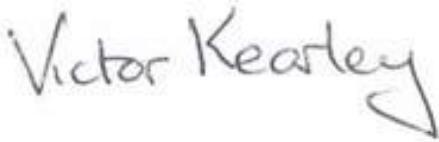
Date of Test 20/05/2021

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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: 10/02/2023

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Revision History

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Reason for Revision:	

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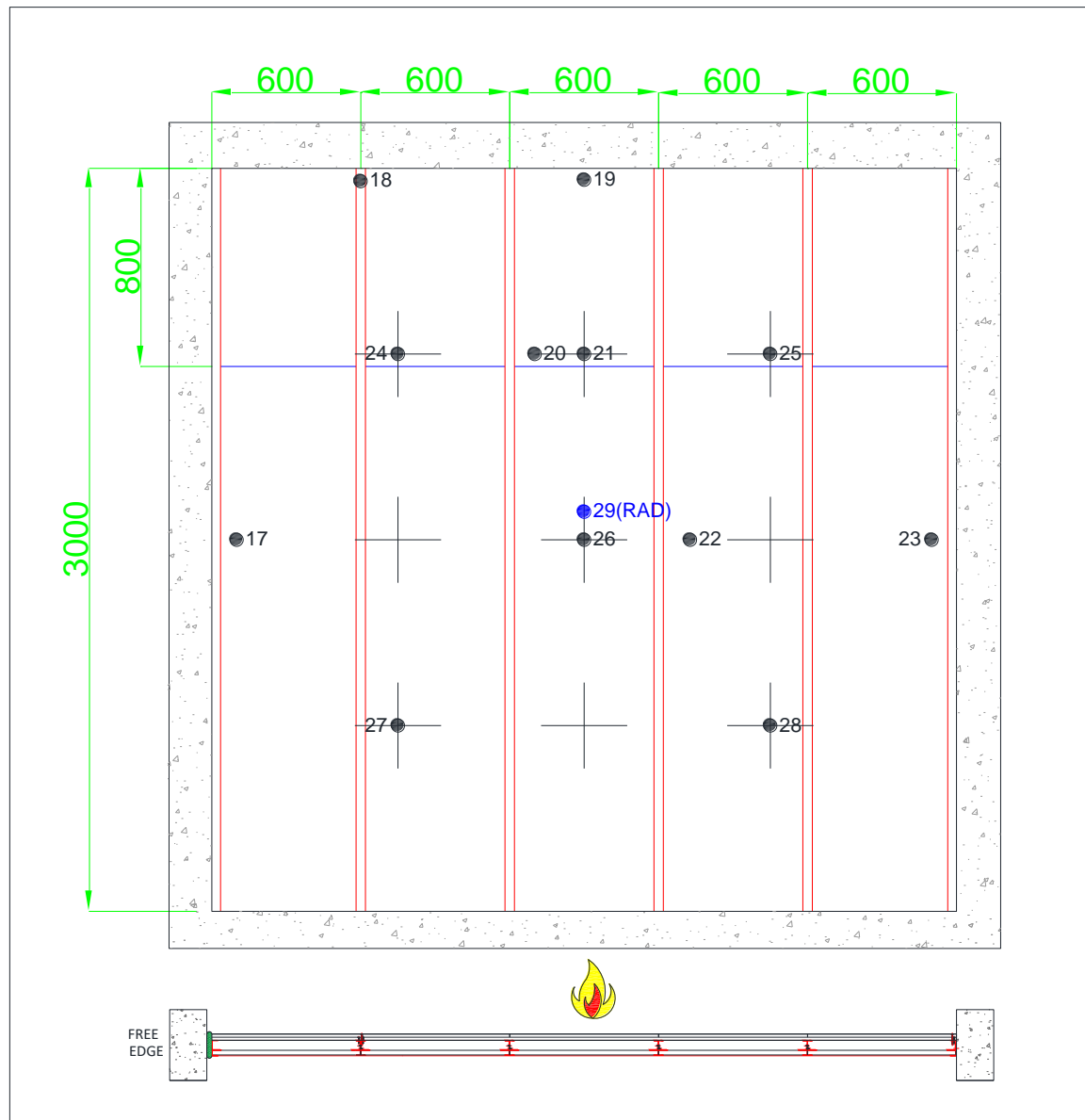
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Test Conditions

Standard	BS EN 1364-1, Fire resistance tests for non-loadbearing elements Part 1: Walls and BS EN 1363-1.
Sampling	Warringtonfire was not involved in the sampling or selection of the tested specimens or any of the components, and as such the results of this test apply to the sample as received.
Installation	The components were received during the month of April. 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: 2012 to establish a suitable conditioned level where possible.
Ambient Temperature	The ambient air temperature in the vicinity of the test construction was 15°C at the start of the test with a maximum variation of +1°C during the test.
Furnace	The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 2012 Clause 5.1 using eight 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 0.5m from the notional floor level, equating to a pressure of 20Pa at the head of the wall.

Test Specimen Drawings

Figure 1 – General Elevation of the Test Construction and Thermocouple Locations



- + : Furnace Thermocouples
- : Unexposed Face Thermocouples
- (blue) : Radiometer

Viewed From Unexposed Face

Do not scale. All dimensions are in mm

Figure 2 –

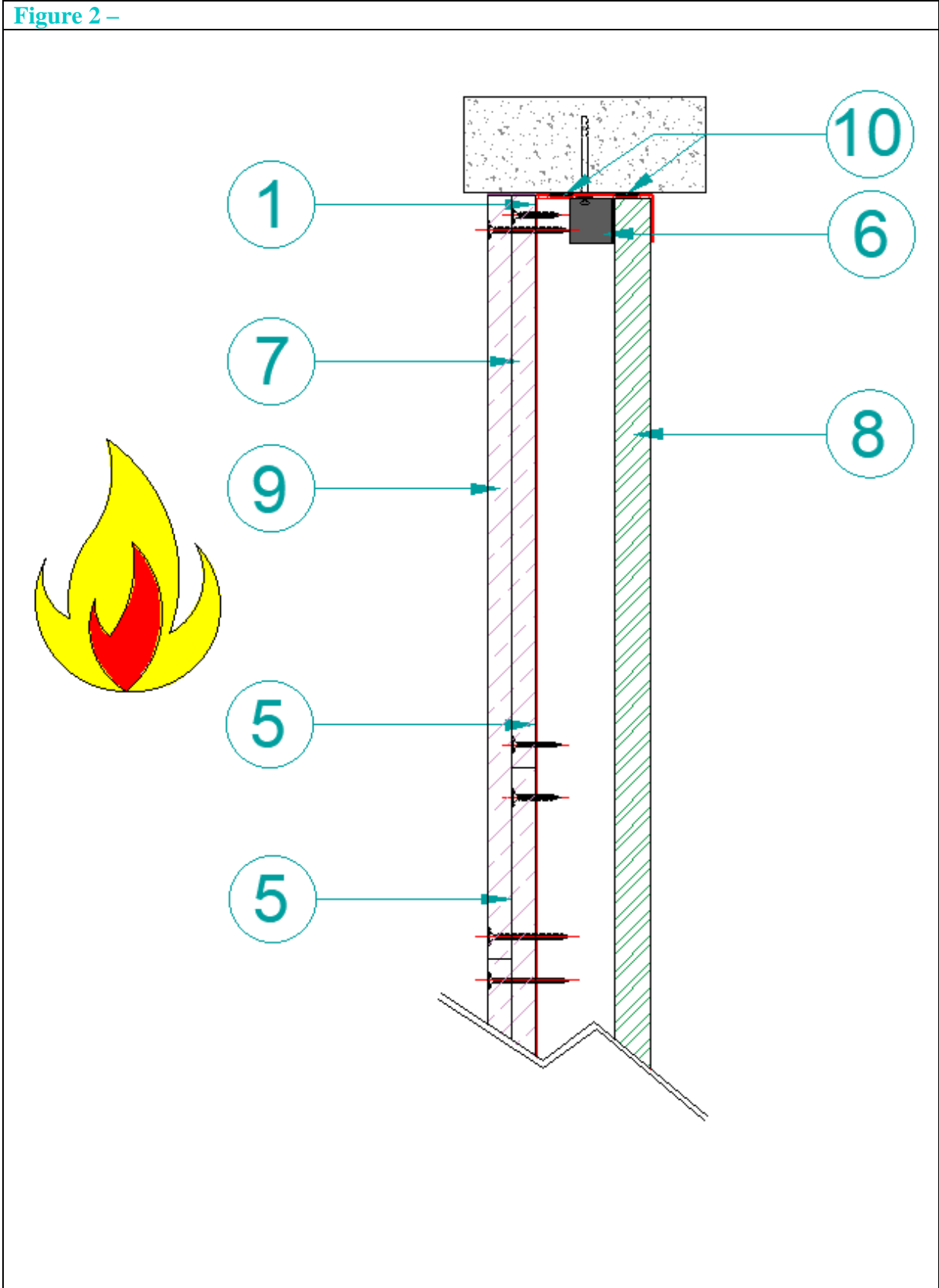


Figure 3 – Typical cross section of base track to restraint frame/supporting construction

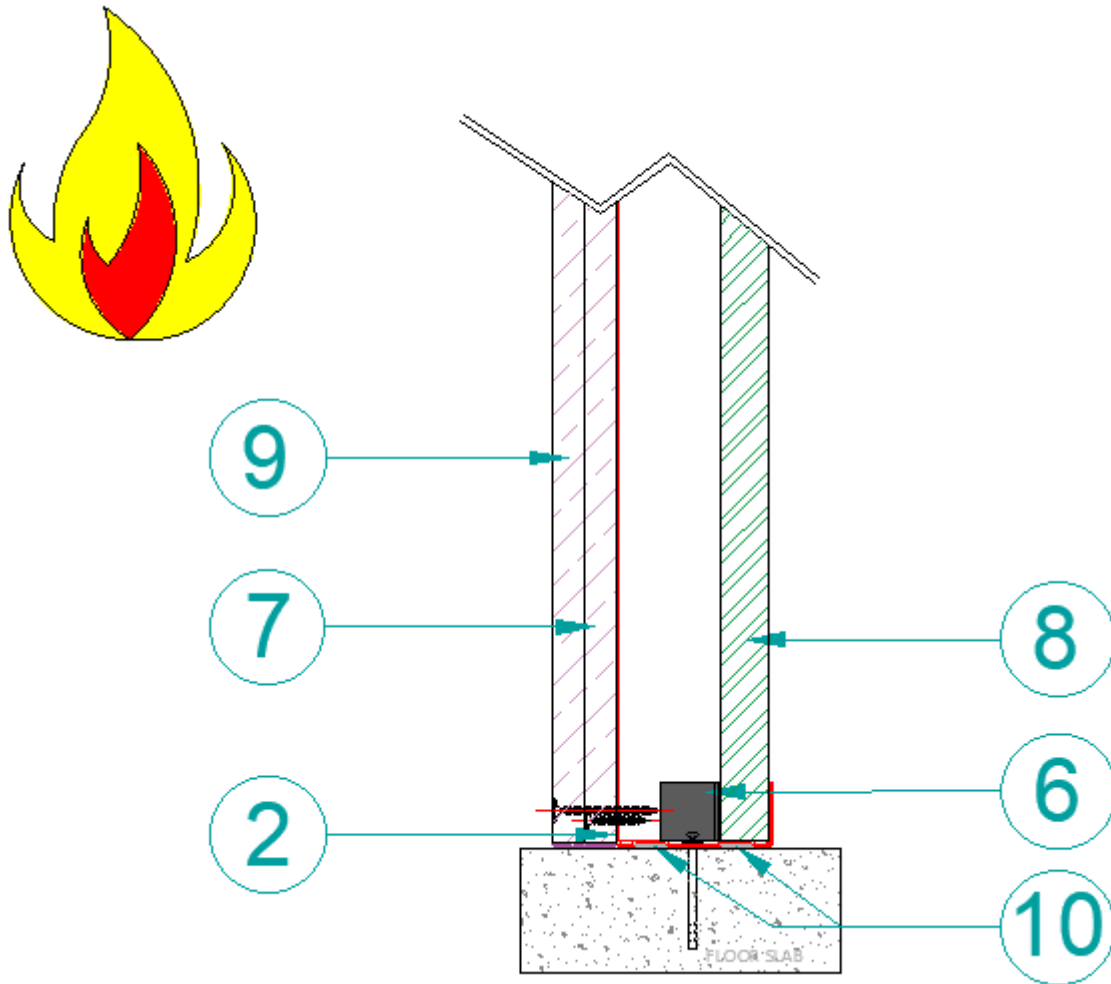


Figure 4 – Typical cross section of vertical stud to board junction

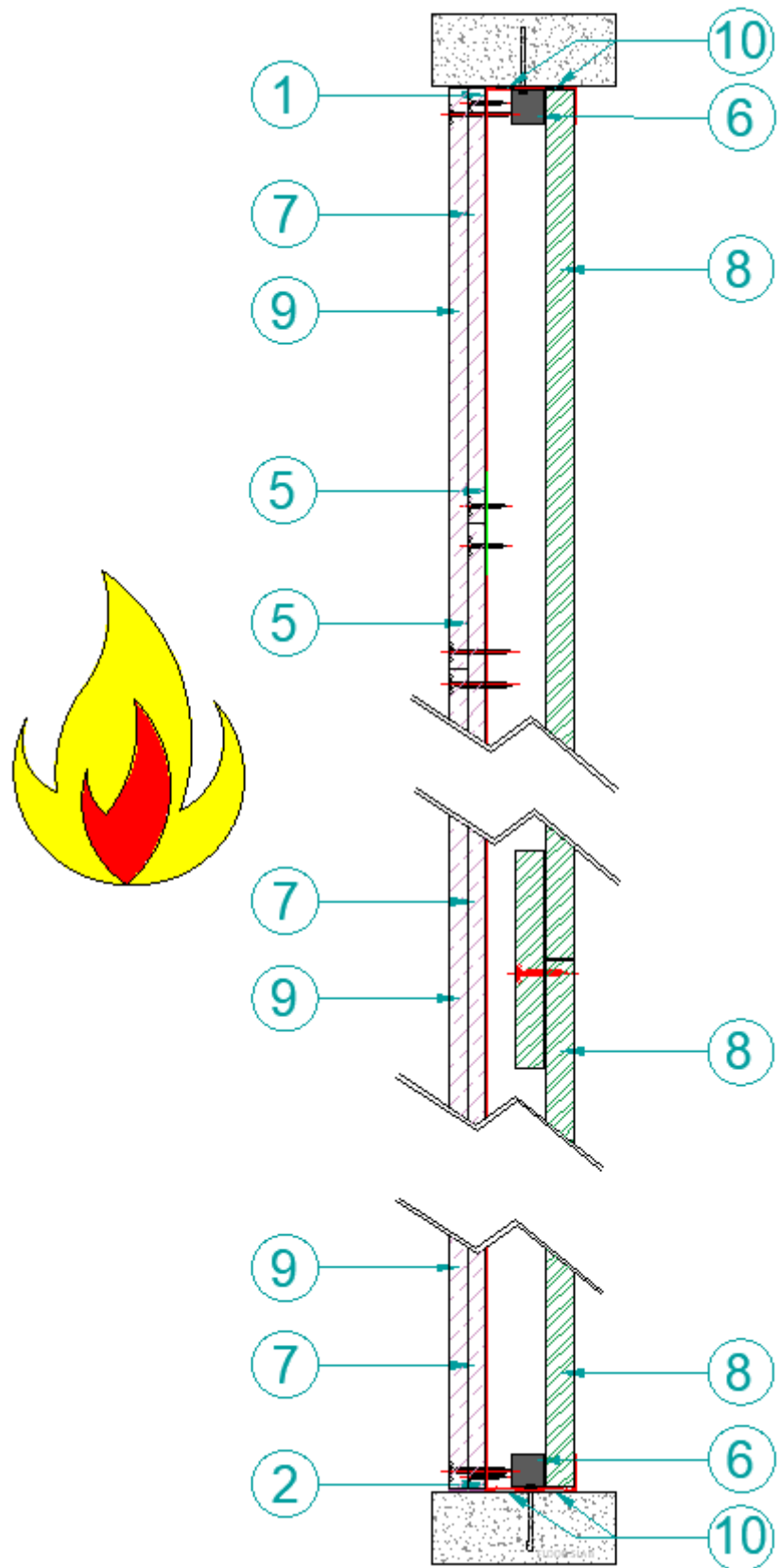
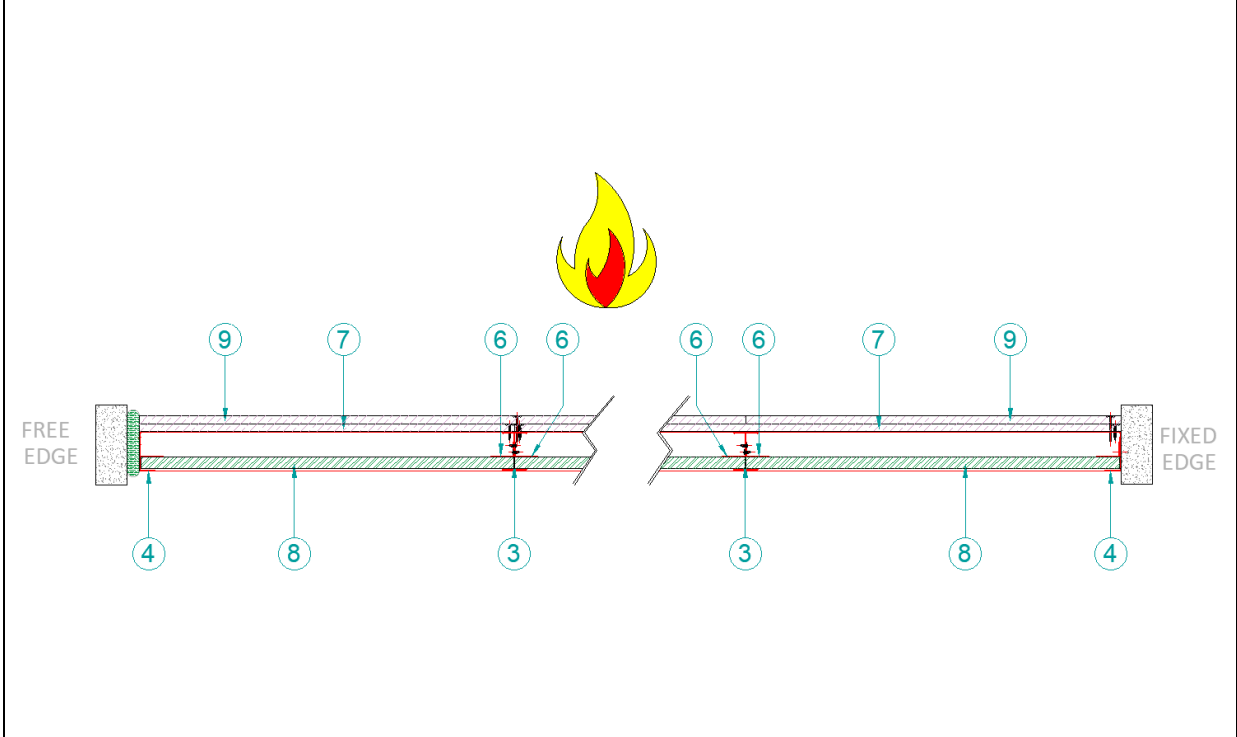


Figure 5 – Horizontal Cross Section



Schedule of Components

(Refer to Figures 1 to 5)

(All values are nominal unless stated otherwise)

* Stated by sponsor, not verified by laboratory

Internal Framing

<u>Item</u>		<u>Description</u>
1. Head Track		
Manufacturer or Supplier	:	Hadley Group
Reference	:	62mm Hadley track
Material	:	Steel
Overall size		
i. Depth	:	62mm*
ii. Height	:	25mm*
iii. Thickness	:	0.55mm*
Fixing Method to restraint frame and centres	:	Hadley track to be used at the head and the base of the partition. Using Hadley C studs at abutments. Lay the track on 2 continuous beads of sealant. Secure with fixings at 600mm centres and 50mm from the end of channel.
Details of fixings to Restraint frame	:	
i. Manufacturer	:	Kingfisher International
ii. Reference	:	Easydrive
iii. Type & material	:	Zinc-plated carbon steel
iv. Overall size	:	7.5mm x 60mm
v. Spacing	:	600mm

<u>Item</u>		<u>Description</u>
2. Base Track		
Manufacturer or Supplier	:	Hadley Group
Reference	:	62mm Hadley track
Material	:	Steel
Overall size		
i. Depth	:	62mm*
ii. Height	:	25mm*
iii. Thickness	:	0.55mm*
Fixing Method to restraint frame and centres	:	Hadley track to be used at the head and the base of the partition. Using Hadley C studs at abutments. Lay the track on 2 continuous beads of sealant. Secure with fixings at 600mm centres and 50mm from the end of channel.
Details of fixings to Restraint frame	:	
i. Manufacturer	:	Kingfisher International
ii. Reference	:	Easydrive
iii. Type & material	:	Zinc-plated carbon steel
iv. Overall size	:	7.5mm x 60mm
v. Spacing	:	600mm
3. Vertical Studs		
Manufacturer or Supplier	:	Hadley
Reference	:	60mm Hadley I studs
Material	:	Steel
Location and Spacing	:	600mm centres*
Overall size		
i. Depth	:	32mm*
ii. Width	:	60mm*
iii. Height	:	3000mm*
Fixing Method to Head and Base Track (If applicable)	:	
Details of fixings to Head and Base Track (If applicable)	:	N/A – studs are friction fitted into head/base track, fixings not required*

Item		Description
4. Vertical Stud (fixed and free edges)		
Manufacture	:	Hadley Group
Reference	:	62mm Hadley U Track
Material	:	Steel
Location	:	
Overall size		
i. Depth	:	62mm*
ii. Height	:	25mm*
iii. Thickness	:	0.55mm*
Details of fixings to Restraint frame (fixed edge only)		
i. Manufacturer	:	Kingfisher International
ii. Reference	:	Easydrive
iii. Type & material	:	Zinc-plated carbon steel
iv. Overall size	:	7.5mm x 60mm
v. Spacing	:	600mm

Item		Description
5. Flat Strap (If Applicable)		
Manufacturer	:	Hadley Group
Reference	:	Hadley 70mm Flat Strap
Material	:	Steel
Location	:	Behind horizontal joints in Firepanel. For joint on inner layer 300mm from top For joint on outer layer 400mm from top (2.4m lengths need to be butt jointed) On Coreboard side shaftwall jointing detail as per attached detail. Including 2 layers of sealant, 19x19mm angle and 32mm drywall fixings at 300mm centres.
Overall size		
iv. Height	:	70mm*
v. Length	:	2400mm
vi. Thickness	:	0.55mm*
Fixing Method to vertical studs	:	Wafer head screws
Details of fixings to vertical studs		
vi. Manufacturer	:	Evolution*
vii. Reference	:	Evolution Drywall Wafer Head Screws*
viii. Type & material	:	Wafer Head Screws*
ix. Overall size	:	4.2mm x 13mm*
x. Location	:	300mm centres

<u>Item</u>		<u>Description</u>
6. Bracket		
Manufacturer or Supplier	:	Hadley Group
Reference	:	Hadley shaft core angle bracket
Material	:	Steel
Location	:	Bracket to be installed at 600mm centres – one angle bracket both sides of I stud to create a flange for the Coreboard to sit within. Fixed both sides through the stud using a wafer head. As per detail
Overall size		
i. Depth	:	37mm*
ii. Height	:	23mm*
iii. Thickness	:	0.55mm*
Fixing Method to restraint frame and centres	:	Wafer head fixings
Details of fixings to Restraint frame		
i. Manufacturer	:	Evolution
ii. Reference	:	Evolution Drywall Wafer Head Screws*
iii. Type & material	:	Wafer Head Screws*
iv. Overall size	:	4.2mm x 13mm*
v. Location	:	In angle holes provided

Cladding Material

7. First Layer of board applied to the internal framing exposed face		
Manufacturer	:	Knauf
Reference	:	12.5mm Firepanel
Material	:	Gypsum plasterboard
Batch Reference/ Number	:	Unknown
Individual board dimension	:	12.5mm x 3000mm x 1200mm
Moisture Content (%)	:	< 2%
Board Weight (kg/m ²)	:	10.0
Application method	:	Screw fixed
Fixing Method to restraint frame and centres	:	Screw fixed using drywall screws at 300mm centres
Details of fixings to Internal framing		
i. Manufacturer	:	Evolution
ii. Reference	:	Evolution Drywall Screws*
iii. Type & material	:	Drywall Screws*
iv. Overall size	:	3.9mmx 32mm*
v. Spacing	:	300mm

8. First Layer of board applied to the internal framing unexposed face		
Manufacturer	:	Knauf
Reference	:	19mm Coreboard*
Material	:	Gypsum plasterboard
Batch Reference/ Number	:	Unknown
Individual board dimension	:	19mm X 3000mm X 600mm*
Moisture Content (%)	:	< 2%
Board Weight (kg/m ²)	:	16.0*
Joint Reinforcement	:	Horizontal joint in the boards at 800mm from the head of the wall. The joint is reinforced by 150mm wide strip of 19mm coreboard behind the joint fixed with 19x19mm angle and 32mm screws at 300mm centres
Application method	:	Friction fixed no screws between back flange of Hadley I stud and Hadley shaft angle bracket
Fixing Method to restraint frame and centres	:	
Details of fixings to Internal framing		
i. Manufacturer	:	
ii. Reference	:	
iii. Type & material	:	
iv. Overall size	:	
v. Spacing	:	

9. Second Layer of board applied to the internal framing exposed face		
Manufacturer	:	Knauf
Reference	:	12.5mm Firepanel*
Material	:	Gypsum plasterboard
Individual board dimension	:	12.5mm X 3000mm X 1200mm*
Moisture Content (%)	:	< 2%
Board Weight (kg/m ²)	:	10.0
Application method	:	Screw fixed
Fixing Method to restraint frame and centres	:	Screw fixed using drywall screws at 300mm centres
Details of fixings to Internal framing		
i. Manufacturer	:	Evolution
ii. Reference	:	Evolution Drywall Screw*
iii. Type & material	:	Drywall Screws*
iv. Overall size	:	3.9mm x 42mm*
v. Spacing	:	300mm

Sealing Materials

10. Sealant		
Manufacturer	:	Everbuild
Reference	:	Everflex Fire Mate intumescent sealant
Material	:	Sealant*
Location	:	2 continuous beads under the head and base track and under board abutments
Nominal Application thickness	:	10mm

Tape and Fill

11. Jointing tape		
Manufacturer	:	Knauf
Reference	:	Jointing Tape
Material	:	Paper Tape
Location	:	Fitted over the plasterboard joints on the exposed side

12. Jointing Compound		
Manufacturer	:	Knauf
Reference	:	Fill & Finish 20kg
Material	:	Mixture of calcium carbonate, perlite, water based polymer emulsion, thickeners and water
Location	:	Fitted over the plasterboard joints on the exposed side
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.
06:30	There is smoke issuing all across the head from in between the board and the head track
09:40	On the exposed face, the tape and fill on both board joints is beginning to fall off
20:12	On the exposed face, all the tape and fill off both board joints has fallen off and exposed approximately 5 mm gap on the right and approximately 4 mm gap on the left
23:27	There is an increase in the smoke issuing across the head track
28:20	On the exposed face, the left board joint has increased by approximately 3 mm to approximately 7 mm
28:40	On the exposed face, the right side board joint gap has increased by approximately 4 mm to approximately 9 mm
36:30	There is smoke issuing approximately 1200 mm up on the fixed edge
40:00	There is smoke issuing at the horizontal board joint at second shaft board from the left on the right corner
42:13	There is smoke issuing at the right corner of every shaft board on the horizontal joint
47:50	There is a discolouration on the top right board
48:45	There is a discolouration on all boards above the horizontal joint
51:00	A gap has developed on the centre board at the horizontal joint
51:53	A gap has developed in the left corner of the top right board
54:19	There is a discolouration on the centre shaft board
73:00	Test terminated.



Test Photographs

The unexposed face prior to testing



The unexposed face after a test duration of 15 minutes



<p>The unexposed face after a test duration of 30 minutes</p>		
<p>The unexposed face after a test duration of 45 minutes</p>		
<p>The unexposed face Smoke issuing and discolouration on the head track</p>		

The exposed
face after the
completion of
the test



20/05/2021

Temperature and Deflection Data

Mean furnace temperature, together with the temperature/time relationship specified in BS EN 1363-1: 2012

Time min	Mean Furn °C	ISO834 °C
0	20	20
1	259	349
2	360	445
3	469	502
4	572	544
5	601	576
6	621	603
7	627	626
8	636	645
9	657	663
10	676	678
11	691	693
12	702	705
13	714	717
14	724	728
15	732	739
16	745	748
17	755	757
18	765	766
19	776	774
20	783	781
21	793	789
22	801	796
23	806	802
24	813	809
25	817	815
26	822	820
27	826	826
28	832	831
29	837	837
30	840	842
31	847	847
32	852	851
33	853	856
34	859	860
35	862	865
36	865	869

Time	Mean Furn	ISO834
37	869	873
38	873	877
39	878	881
40	880	885
41	884	888
42	888	892
43	889	896
44	892	899
45	896	902
46	900	906
47	902	909
48	905	912
49	908	915
50	913	918
51	913	921
52	918	924
53	922	927
54	923	930
55	926	932
56	929	935
57	933	938
58	933	940
59	936	943
60	942	945
61	942	948
62	945	950
63	947	953
64	949	955
65	952	957
66	954	960
67	956	962
68	957	964
69	959	966
70	961	968
71	965	971
72	967	973
73	967	975

Individual And Mean Temperatures Recorded On The Unexposed Face

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

Time	Chan 24	Chan 25	Chan 26	Chan 27	Chan 28	Mean
min	°C	°C	°C	°C	°C	°C
49	38	25	65	61	69	52
50	39	26	67	61	70	53
51	41	26	69	61	71	54
52	42	26	71	62	72	55
53	43	26	72	64	73	56
54	46	27	72	66	74	57
55	47	27	72	67	74	57
56	48	26	73	69	75	58
57	50	26	73	70	75	59
58	51	26	73	70	75	59
59	52	27	73	70	75	59
60	54	28	73	71	76	60
61	58	27	73	71	76	61
62	60	28	73	71	76	62
63	57	27	73	71	76	61
64	59	29	74	71	76	62
65	58	29	74	71	77	62
66	60	28	74	71	77	62
67	60	29	75	71	78	63
68	56	28	75	71	78	62
69	58	27	76	72	79	62
70	59	28	77	72	80	63
71	59	29	78	73	80	64
72	58	29	78	73	81	64
73	55	29	79	74	82	64

Maximum Temperatures Recorded On The Unexposed Face

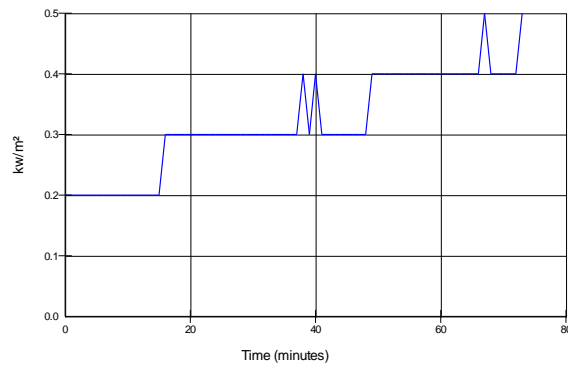
Time	Chan 17	Chan 18	Chan 19	Chan 20	Chan 21	Chan 22	Chan 23
min	°C	°C	°C	°C	°C	°C	°C
0	18	21	20	18	18	19	18
1	18	21	20	18	19	19	18
2	18	21	20	18	18	19	18
3	18	21	20	18	19	19	18
4	18	21	20	18	19	19	18
5	18	23	20	18	19	19	18
6	19	26	21	18	19	19	18
7	19	31	23	18	19	20	19
8	19	37	26	19	19	21	19
9	20	44	33	19	19	23	20
10	21	51	39	20	20	24	21
11	23	57	40	20	20	26	22
12	24	61	46	21	21	27	22
13	25	65	49	23	21	29	23
14	25	67	50	23	22	31	24
15	26	69	53	25	23	33	25
16	27	70	54	26	24	35	26
17	19	71	55	28	25	36	27
18	19	71	56	29	26	38	27
19	27	72	57	30	26	39	28
20	34	73	59	32	27	40	29
21	37	74	59	33	28	42	30
22	39	75	61	34	29	43	30
23	41	76	61	36	30	44	31
24	42	77	63	38	31	46	32
25	44	78	66	40	33	48	34
26	46	79	68	43	34	49	35
27	47	79	68	44	35	51	36
28	49	80	69	45	36	52	37
29	50	81	68	47	37	54	39
30	51	81	69	49	38	55	41
31	53	82	69	50	39	57	44
32	54	83	70	52	40	58	49
33	55	83	72	54	42	60	52
34	56	83	74	57	43	60	55
35	57	83	71	57	44	61	57
36	58	83	72	58	45	62	57
37	58	83	72	58	46	63	58
38	59	83	73	61	47	63	59

Time	Chan 17	Chan 18	Chan 19	Chan 20	Chan 21	Chan 22	Chan 23
min	°C	°C	°C	°C	°C	°C	°C
39	59	83	73	62	48	64	60
40	60	83	73	65	49	64	60
41	60	82	72	65	50	65	60
42	61	82	71	65	51	65	62
43	61	82	71	67	51	65	62
44	61	82	70	67	51	65	62
45	61	83	72	70	52	66	62
46	61	88	72	67	52	67	62
47	61	93	73	66	60	68	61
48	61	99	75	69	66	70	57
49	61	102	76	69	68	72	55
50	61	105	77	71	68	73	54
51	61	108	79	73	69	74	53
52	61	113	80	78	72	75	54
53	63	119	81	83	75	75	55
54	64	132	83	86	79	75	57
55	66	147	85	89	82	76	57
56	68	165	85	95	85	76	58
57	69	188	86	97	89	76	57
58	70	206	87	98	91	76	57
59	71	222	89	102	94	77	57
60	71	236	90	105	97	77	58
61	71	253	91	108	95	77	58
62	72	271	93	113	129	78	59
63	72	288	96	117	99	78	60
64	72	306	111	101	51	78	63
65	72	321	122	95	50	79	65
66	73	338	128	93	48	80	66
67	73	355	124	90	48	80	67
68	73	370	121	90	47	81	67
69	73	381	115	91	46	82	68
70	73	389	111	89	47	84	68
71	74	398	109	89	47	85	70
72	74	410	108	91	48	86	70
73	74	423	107	92	47	88	70

Recorded Radiation Intensity From The Partition Specimen

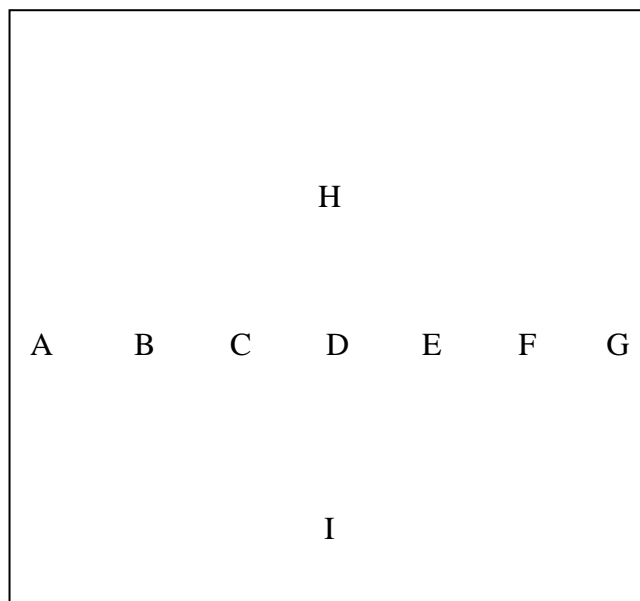
Time min	Max Rad kW/m ²
0	0.2
1	0.2
2	0.2
3	0.2
4	0.2
5	0.2
6	0.2
7	0.2
8	0.2
9	0.2
10	0.2
11	0.2
12	0.2
13	0.2
14	0.2
15	0.2
16	0.3
17	0.3
18	0.3
19	0.3
20	0.3
21	0.3
22	0.3
23	0.3
24	0.3
25	0.3
26	0.3
27	0.3
28	0.3
29	0.3
30	0.3
31	0.3
32	0.3
33	0.3
34	0.3
35	0.3
36	0.3

Time	Max Rad
37	0.3
38	0.4
39	0.3
40	0.4
41	0.3
42	0.3
43	0.3
44	0.3
45	0.3
46	0.3
47	0.3
48	0.3
49	0.4
50	0.4
51	0.4
52	0.4
53	0.4
54	0.4
55	0.4
56	0.4
57	0.4
58	0.4
59	0.4
60	0.4
61	0.4
62	0.4
63	0.4
64	0.4
65	0.4
66	0.4
67	0.5
68	0.4
69	0.4
70	0.4
71	0.4
72	0.4
73	0.5



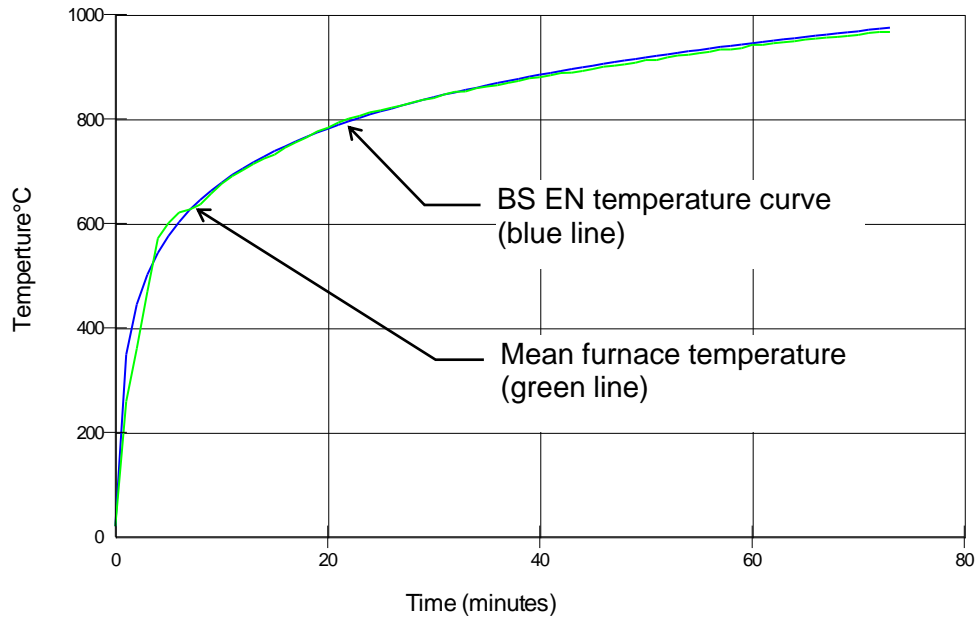
Horizontal Deflections Of The Partition Specimen

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.

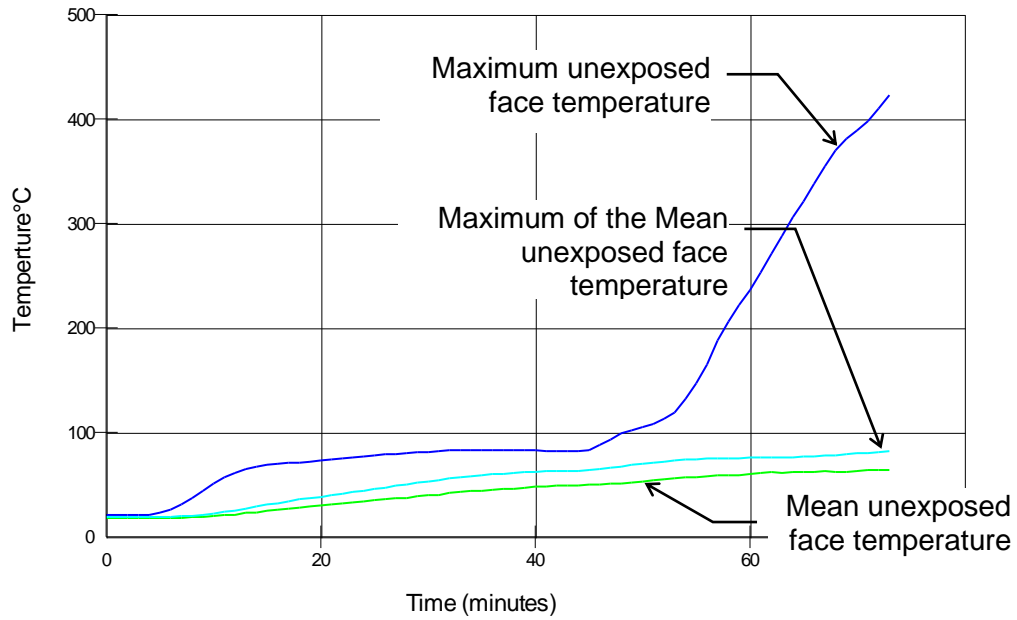


TIME mins	A	B	C	D	E	F	G	H	I
15	3	7	7	8	5	1	4	0	7
30	3	8	7	10	11	0	4	0	9
45	10	33	40	43	46	34	6	36	33
60	21	54	65	68	70	53	10	65	51

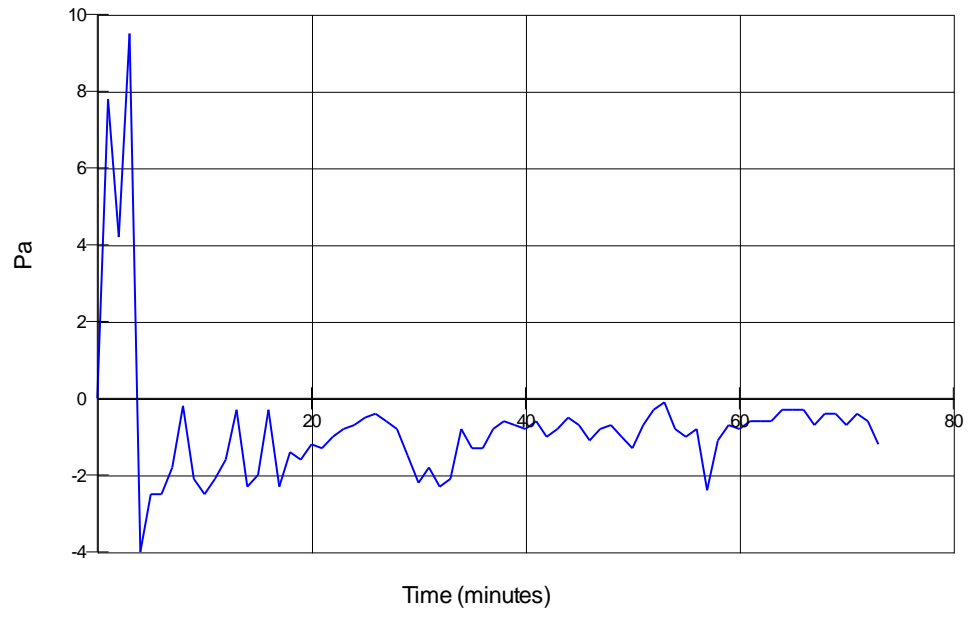
Graph showing mean furnace temperature, together with the temperature/time relationship specified in BS EN 1363-1: 2012



Graph Showing Mean and Maximum Temperatures Recorded On The Unexposed Surface



Graph showing recorded furnace pressure at 0.5m 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 legal owner, 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.

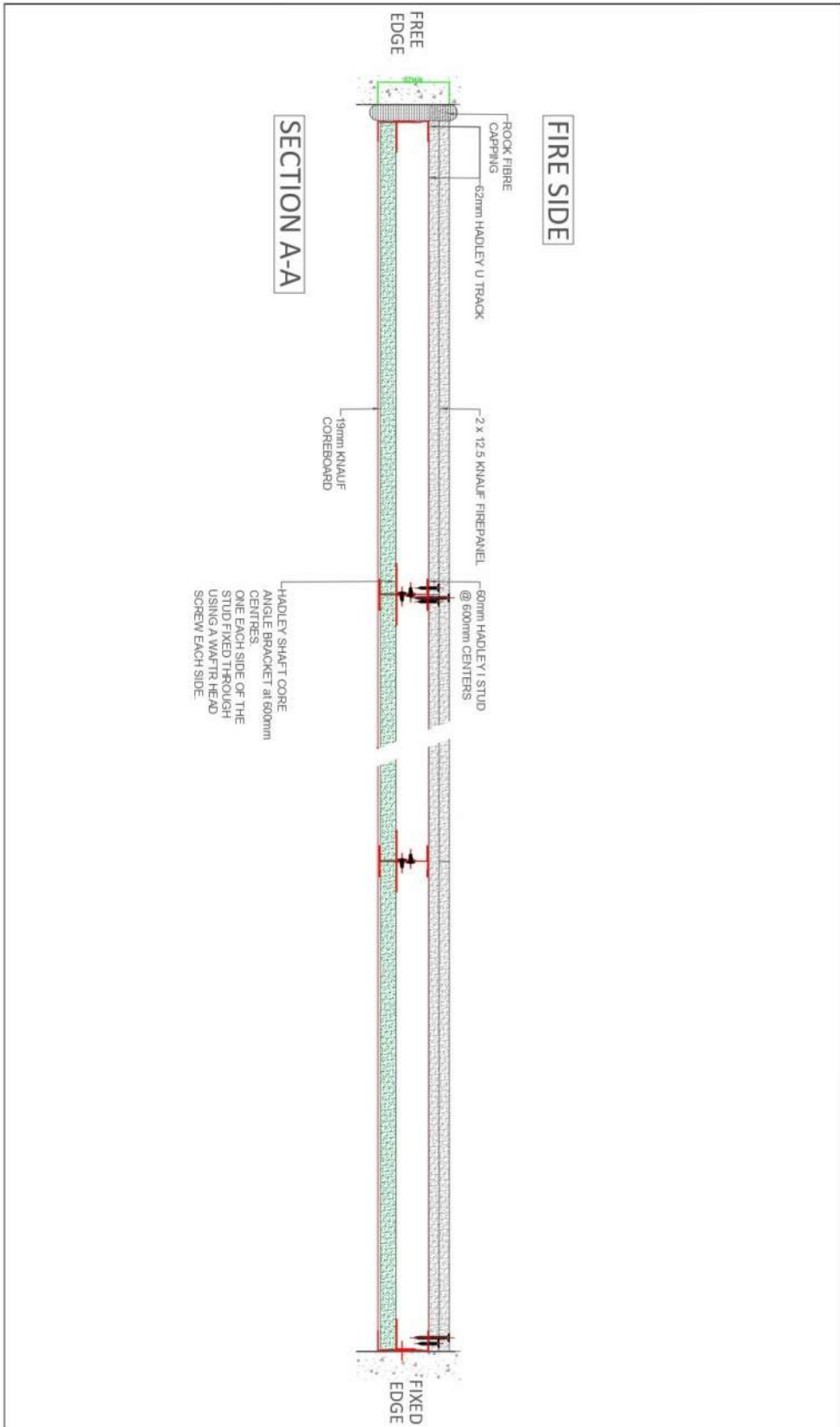
Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

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.

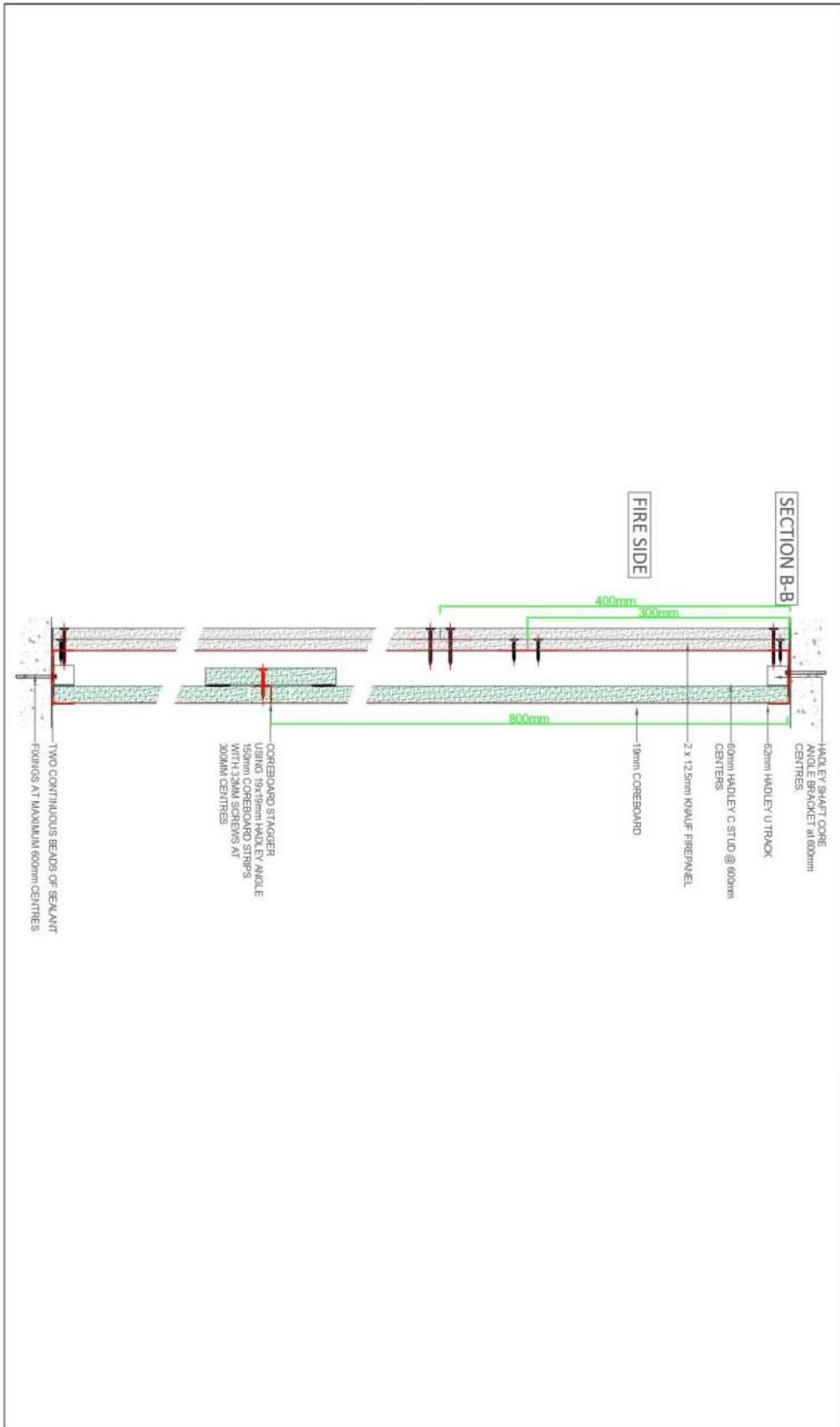
Field of Direct Application

BS EN 1363-1:2012, 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.

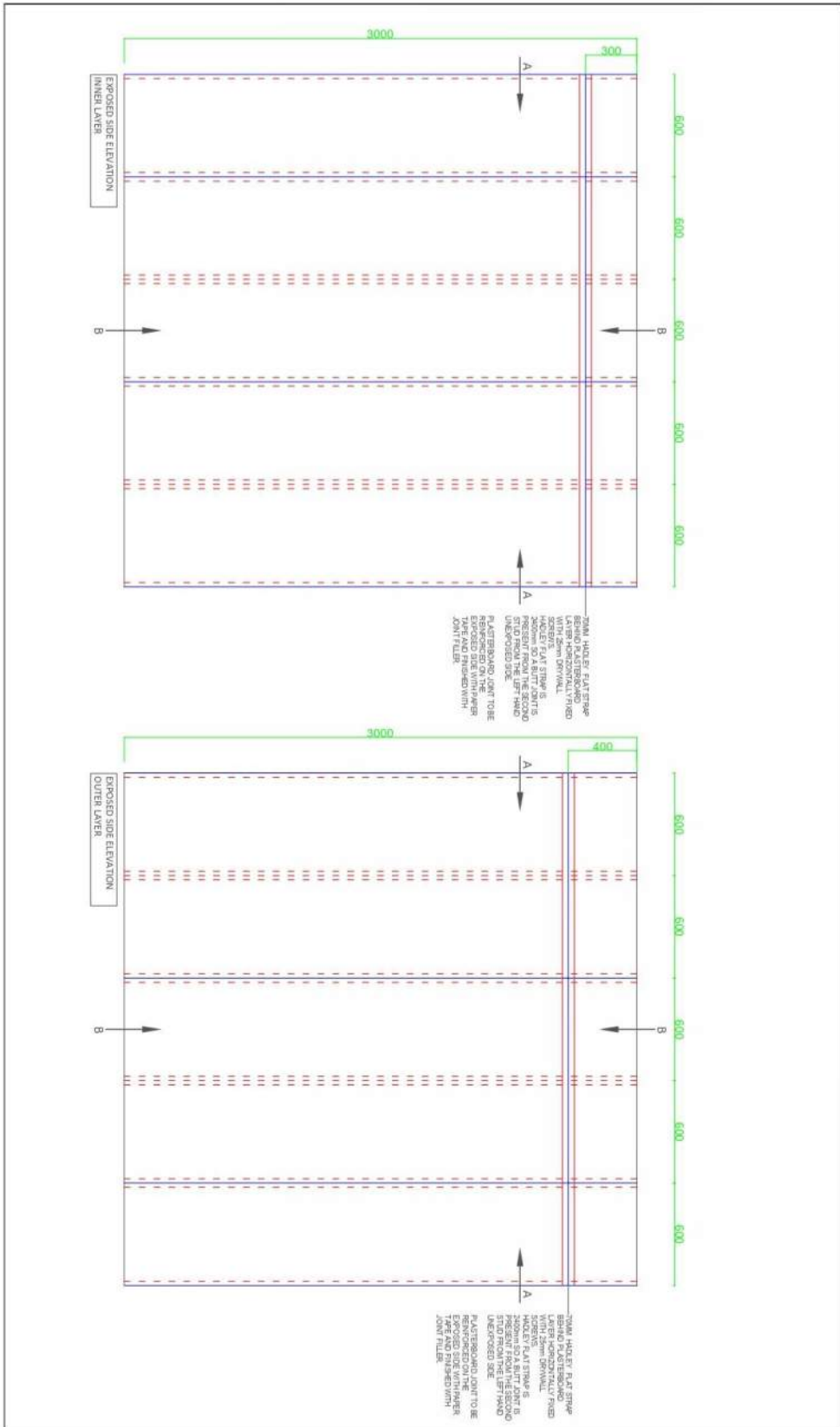
Client Drawings



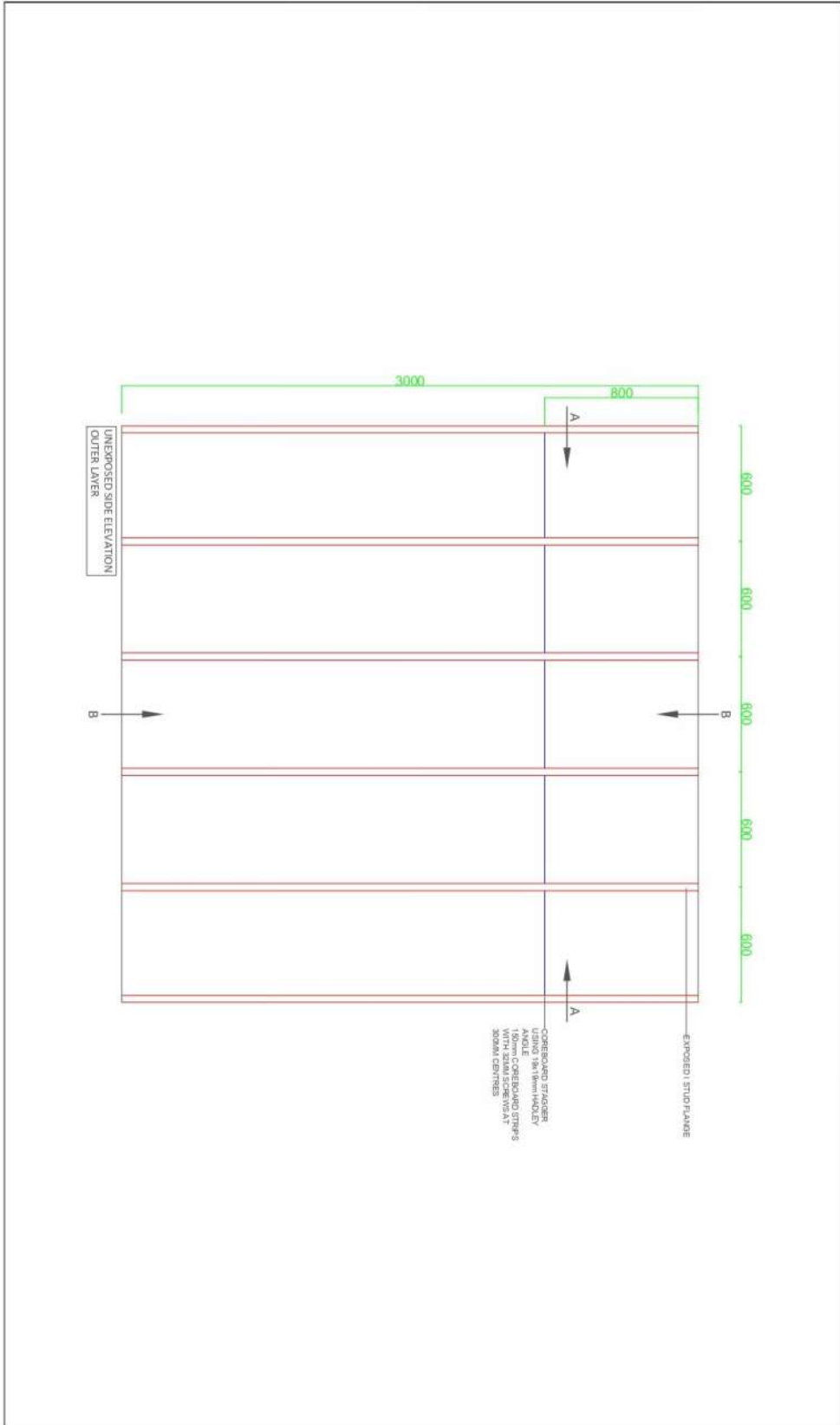
TITLE: HORIZONTAL CROSS SECTIONS (SECTION A-A)		DWG. NUMBER: F-WF-501438-1	
SYSTEM: 2 x 12.5mm KNAUF FIREPANEL TO EXPOSED SIDE WITH 19mm KNAUF COREBOARD ON 60mm HADLEY I STUDS AT 600mm CENTRES		TEST. REF.: WF 501429	TEST. DATE: 20/05/2021
DATE: 01/05/2021	DRN.: FM	SCALE: NTS	
HADLEY GROUP PHONE: +44 (0) 121 555 1300 FAX: +44 (0) 121 555 1300 EMAIL: ask.hadley@hadleygroup.com			



TITLE: VERTICAL CROSS SECTIONS (SECTION B-B)		DWG. NUMBER: F-WF-501438-2	
SYSTEM: 2 x 12.5mm KNAUF FIREPANEL TO EXPOSED SIDE WITH 19mm KNAUF COREBOARD ON 60mm HADLEY I STUDS AT 600mm CENTRES		TEST REF: WF 501429	TEST DATE: 20/05/2021
DATE: 01/05/2021	DRN: FM	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 DWG. NUMBER: F-WF-501438-3		TEST REF: WF 501429 DATE: 01/05/2021		TEST DATE: 20/05/2021 SCALE: NTS	
SYSTEM: 2 x 12.5mm KNAUF FIREPANEL TO EXPOSED SIDE WITH 19mm KNAUF COREBOARD ON 60mm HADLEY I STUDS AT 600mm CENTRES		DWN: FM	DRN: FM	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		DWG. NUMBER: F-WF-501438-4	
SYSTEM: 2 x 12.5mm KNAUF FIREPANEL TO EXPOSED SIDE WITH 19mm KNAUF COREBOARD ON 60mm HADLEY I STUDS AT 600mm CENTRES		TEST_REF: WF 501429	TEST_DATE: 20/05/2021
DATE: 01/05/2021	DRN: FM	SCALE: NTS	
HADLEY GROUP PHONE: +44 (0) 121 555 1300 FAX: +44 (0) 121 555 1300 EMAIL: ask.hadley@hadleygroup.com			