

Exova Warringtonfire
Holmesfield Road
Warrington
WA1 2DS
United Kingdom

T : +44 (0) 1925 655 116
F : +44 (0) 1925 655 419
E : warrington@exova.com
W: www.exova.com



Testing. Advising. Assuring.

Title:

The Fire Resistance
Performance Of A Non-
Loadbearing, Partition
Wall Assembly Tested In
Accordance With
BS EN 1364-1: 1999.

WF Report No:

199376



Prepared for:

Eurobond Laminates Ltd

Wentloog Corporate Park
Cardiff
CF3 2ER

Date:

23rd March 2011

Notified Body No:

0833



0249

Summary

Objective To determine the fire resistance performance of a non-loadbearing partition wall assembly when tested in accordance with BS EN 1364-1: 1999.

Test Sponsor Eurobond Laminates Ltd

Address Wentloog Corporate Park, Cardiff, CF3 2ER.

Summary of Tested Specimens The specimen had overall nominal dimensions of 3000 mm high by 3000 mm wide and was formed from three sections of steel faced composite panels, referenced 'Rainspan Panel'. The composite panels were formed from a core of 150 mm Rock Fibre, sandwiched between a nominally 0.7 mm thick steel internal sheet coated with white polyester (fire side) and a nominally 0.7 mm thick external sheet of steel, coated with Corus Colorcoat Prisma (none-fire side).

A face fixed rain screen referenced, 'Argeton Rainscreen Tile Cladding System' was fixed to the unexposed face Rainspan Panel assembly. The cladding system comprised of vertical aluminium support rails screw fixed to the external sheeting of the wall panels. Terracotta tiles were hung from support rails, retained by aluminium tile clips which were rivet fixed to the support rails. The cladding system was installed with a central gap to allow for gap and deflection measurements of the panel system.

The assembly was retained within the specimen support frame by means of screw fixed steel angles fitted around the perimeter on both faces, such that the assembly was fixed along both vertical edges and the lower horizontal edge, the upper horizontal edge was unrestrained.

Test Results:

Integrity Performance	Sustained flaming	133 minutes*
	Gap gauge	133 minutes*
	Cotton Pad	133 minutes*

Insulation Performance	Area 1 (unexposed face of cladding system)	133 minutes*
	Area 2 (unexposed face of Panelling)	133 minutes*

* The test duration. The test was discontinued after a period of 133 minutes.

Date of Test 4th February 2011

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Signatories



Responsible Officer
S. Gilfedder*
Testing Officer



Approved
A. Kearns*
Technical Manager



Head of Department
S. Hankey*
Operations Manager

* For and on behalf of Exova Warringtonfire.

Report Issued

Date : 23rd March 2011

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Test Procedure

Introduction

The partition wall assembly is required to provide a fire separating function and was therefore tested in accordance with BS EN 1364-1: 1999 'Fire resistance tests for non-loadbearing elements – Part 1: Walls'. This test report should be read in conjunction with that Standard and with BS EN 1363-1: 1999, 'Fire resistance tests – Part 1: General requirements' and BS EN 1363-2: 1999, 'Fire resistance tests – Part 2: Alternative and additional procedures'.

The specimen was judged on its ability to comply with the performance criteria for integrity and insulation, as required by BS EN 1364-1: 1999.

Fire Test Study Group/EGOLF

Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and 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.

Instruction to test

The test was conducted on the 4th February 2011 at the request of Eurobond Laminates Limited, the sponsor of the test.

The test was witnessed by Mr. H. Thomas, a representative of the test sponsor.

Test Specimen Construction

A comprehensive description of the test construction is given in the Schedule of Components. The description is based on a detailed survey of the specimens and information supplied by the sponsor of the test.

Installation

The specimen was installed into a refractory concrete lined steel restraint frame by representatives of the test sponsor on the 3rd and 4th February 2011.

Sampling

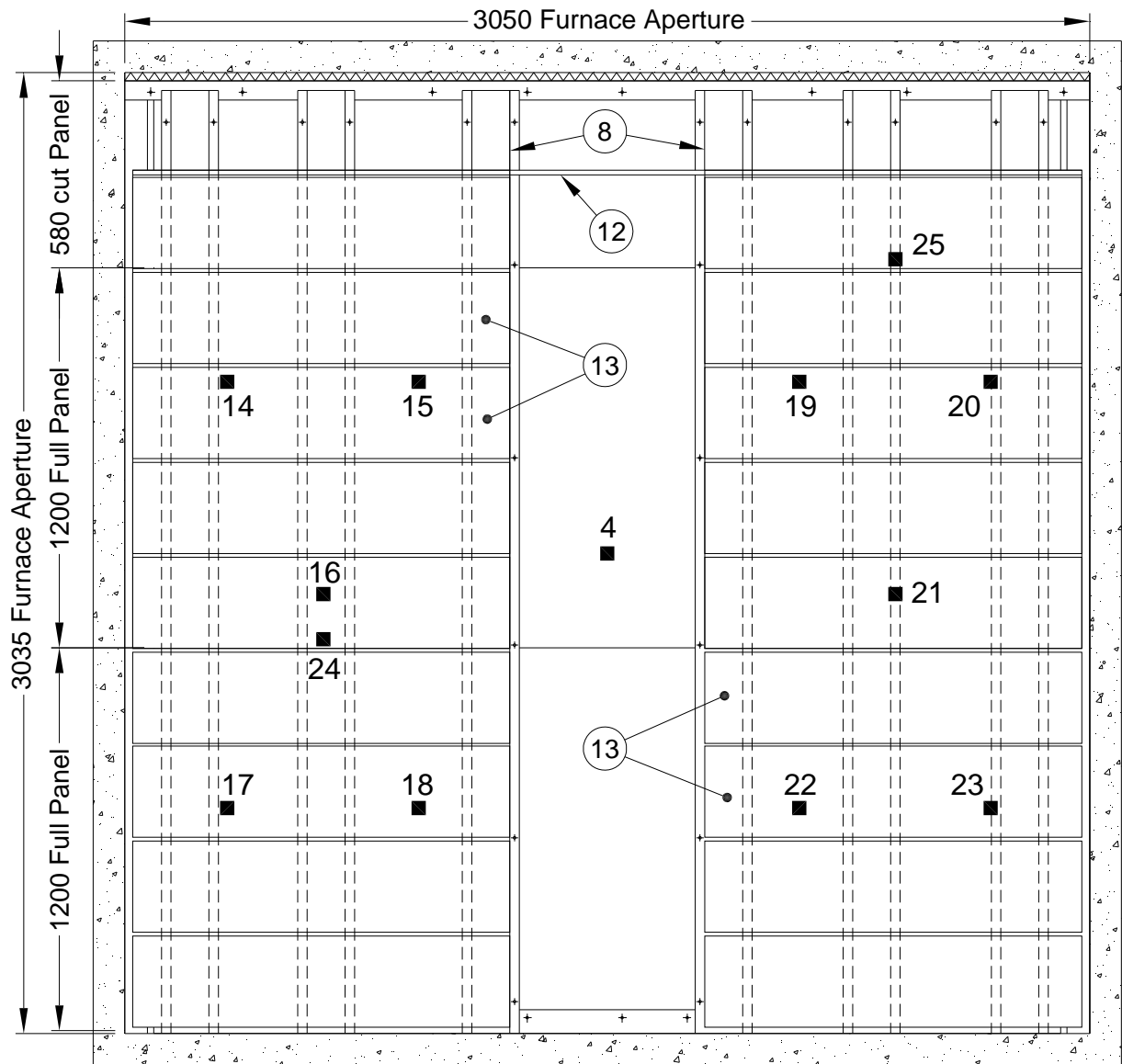
Exova Warringtonfire was not involved in the sampling or selection of the tested specimen or any of the components.

Conditioning

The specimens' storage, construction, and test preparation took place in the test laboratory over a total, combined time of 2 days. Throughout this period of time both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 5°C to 15°C and 39% to 67% respectively.

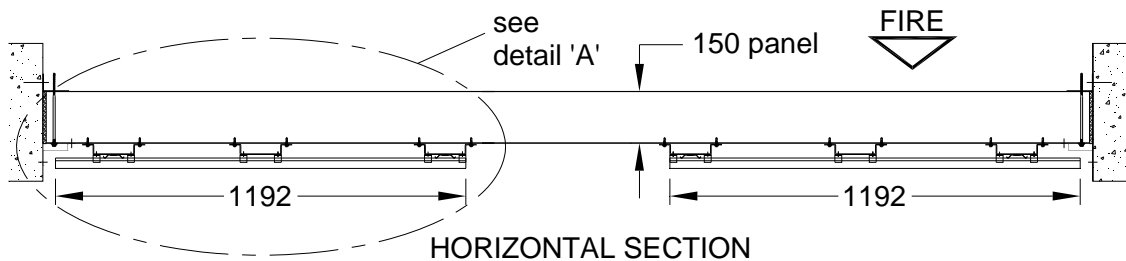
Test Specimen

Figure 1- General Elevation of Test Specimen and Unexposed Face Thermocouples



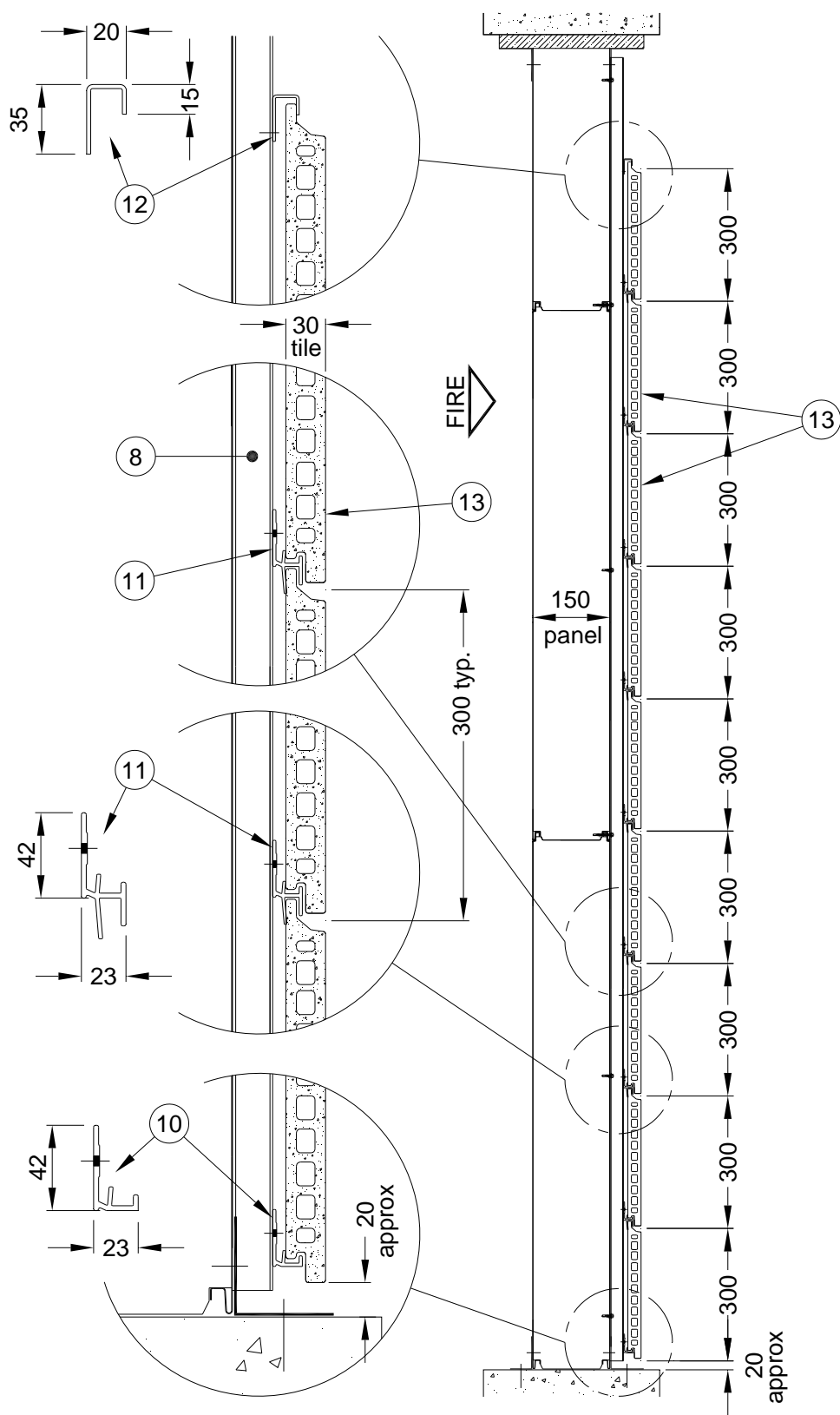
GENERAL ELEVATION OF UNEXPOSED FACE

■ Positions of thermocouples on tiles (Nos.14 to 25)



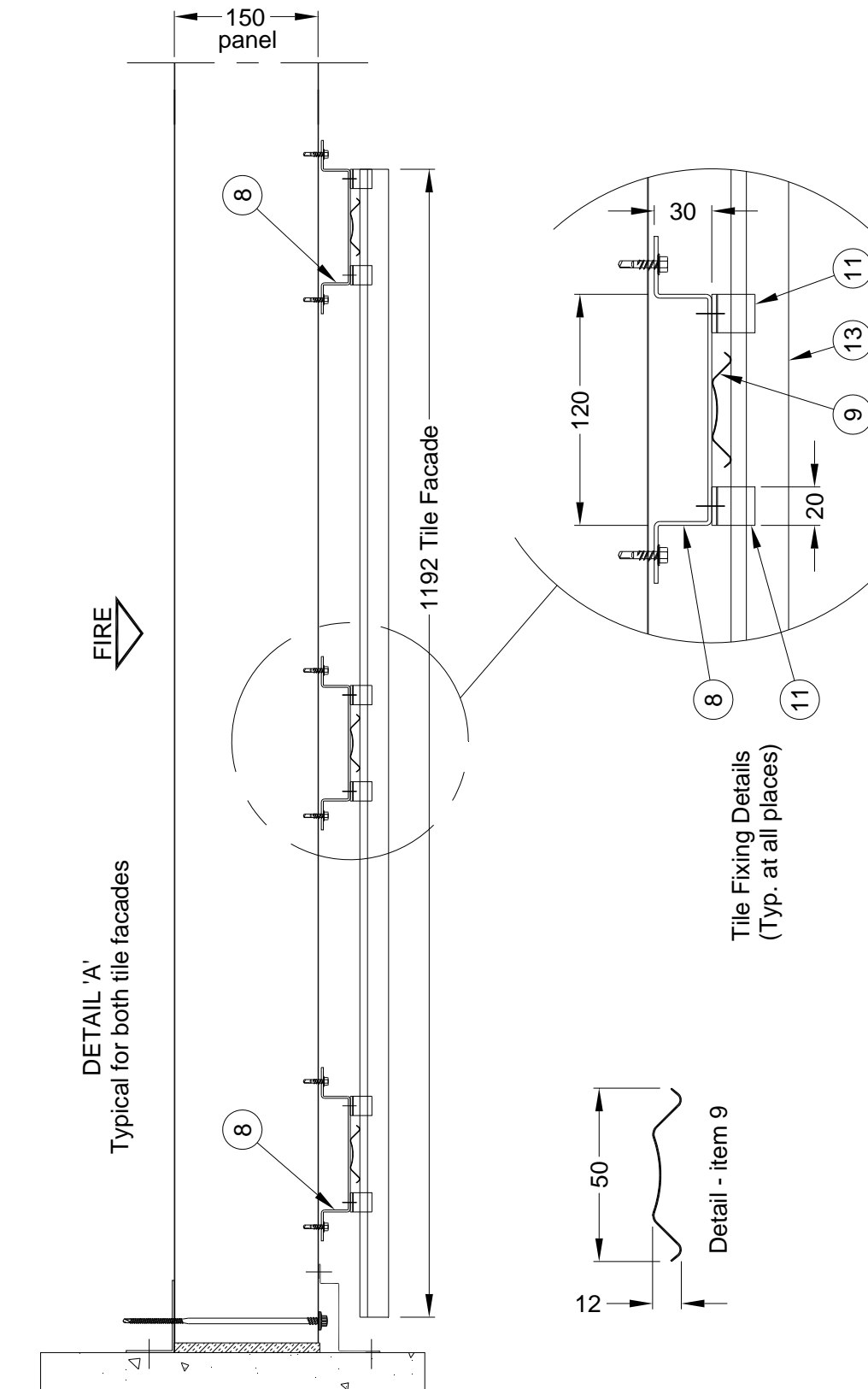
Do not scale. All dimensions are in mm

Figure 2 – Vertical Section Through Test Specimen Showing Tile System



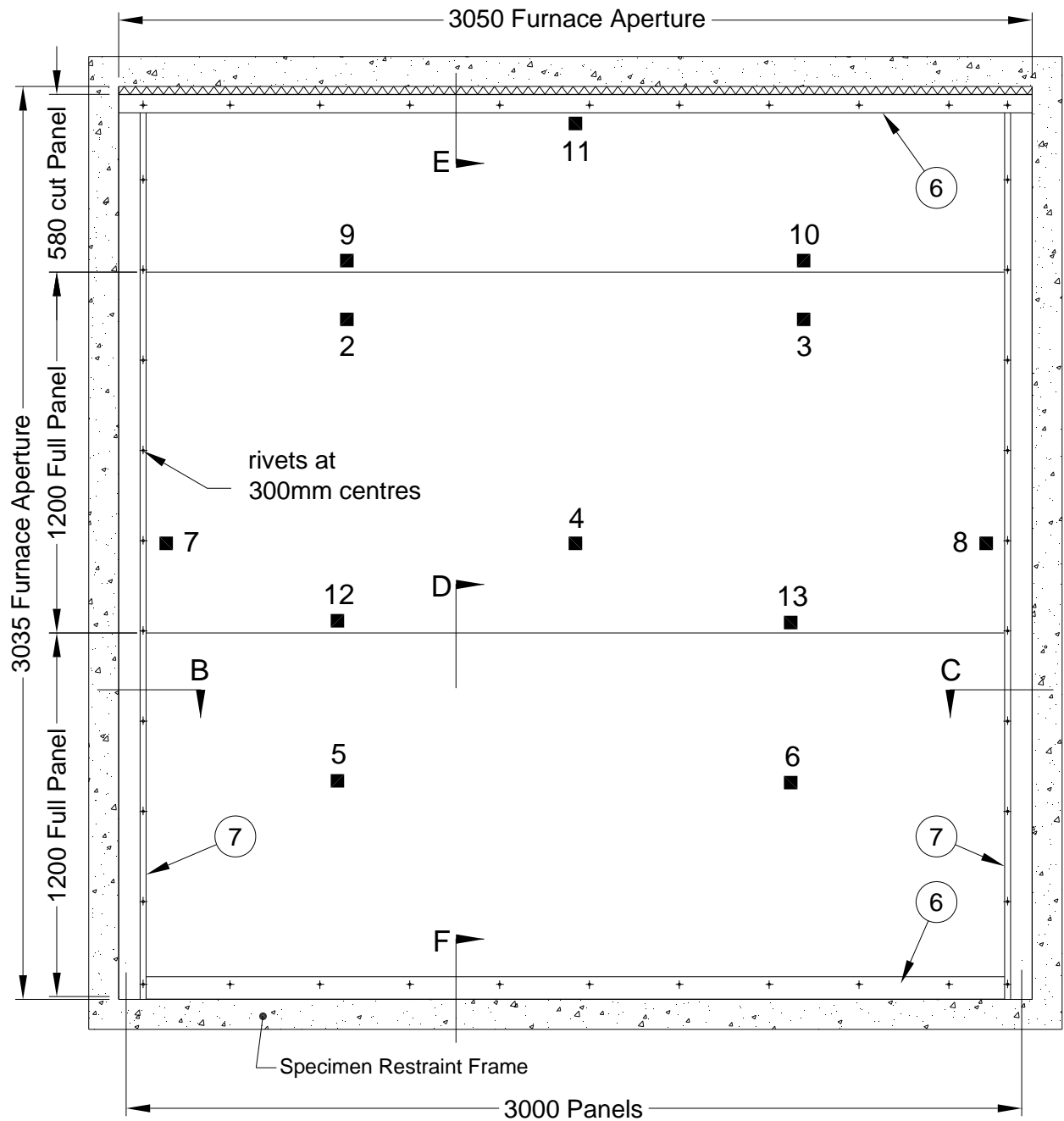
Do not scale. All dimensions are in mm

Figure 3 – Part Horizontal Section Through Test Specimen Showing Tile System



Do not scale. All dimensions are in mm

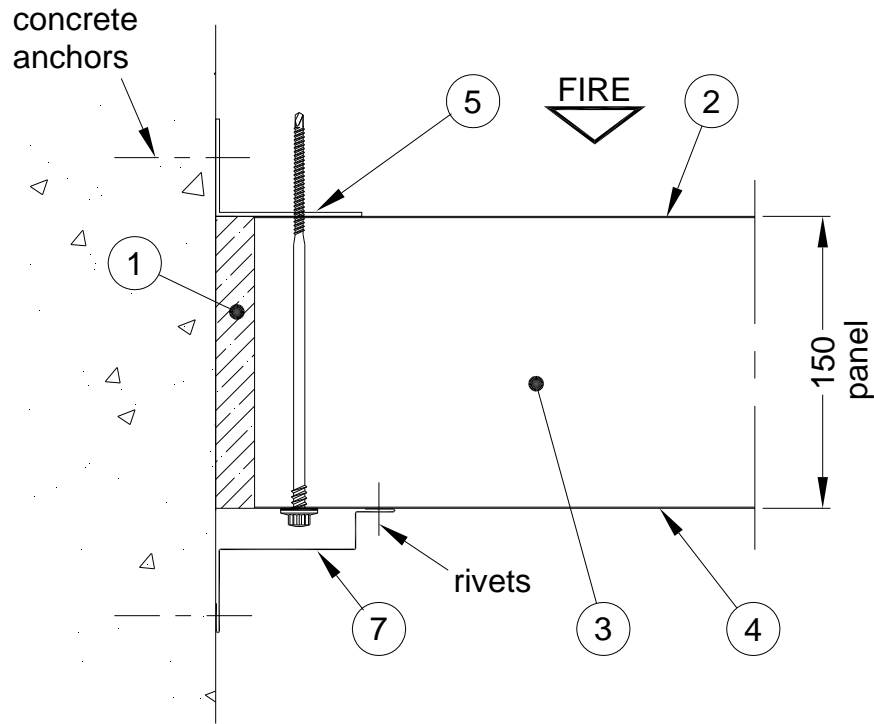
Figure 4 – General Elevation of Wall Panel Only, Showing Thermocouple Positions



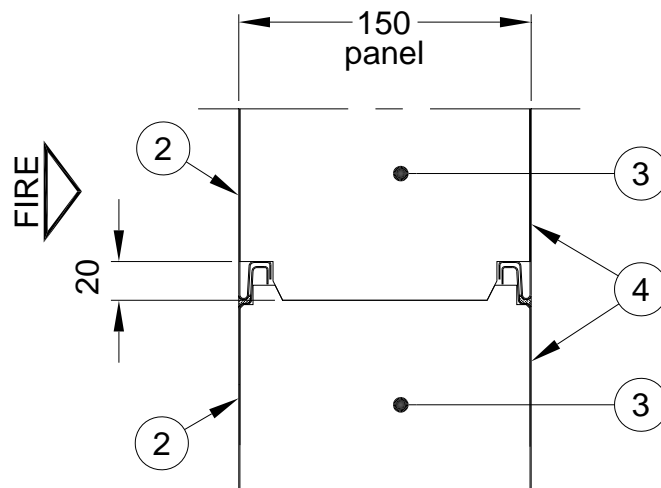
■ Positions of thermocouples on wall panel (Nos. 2 to 13)

Do not scale. All dimensions are in mm

Figure 5 – Details of Wall Panel



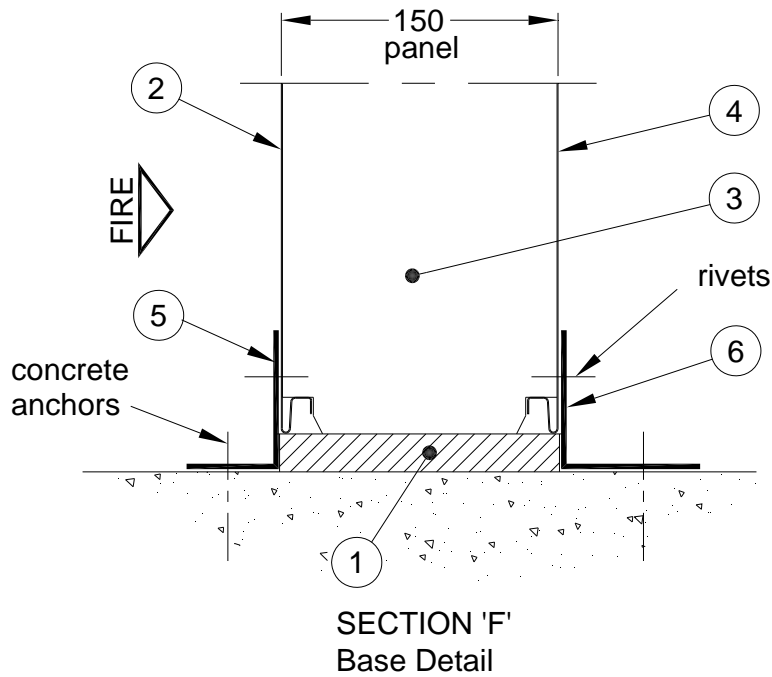
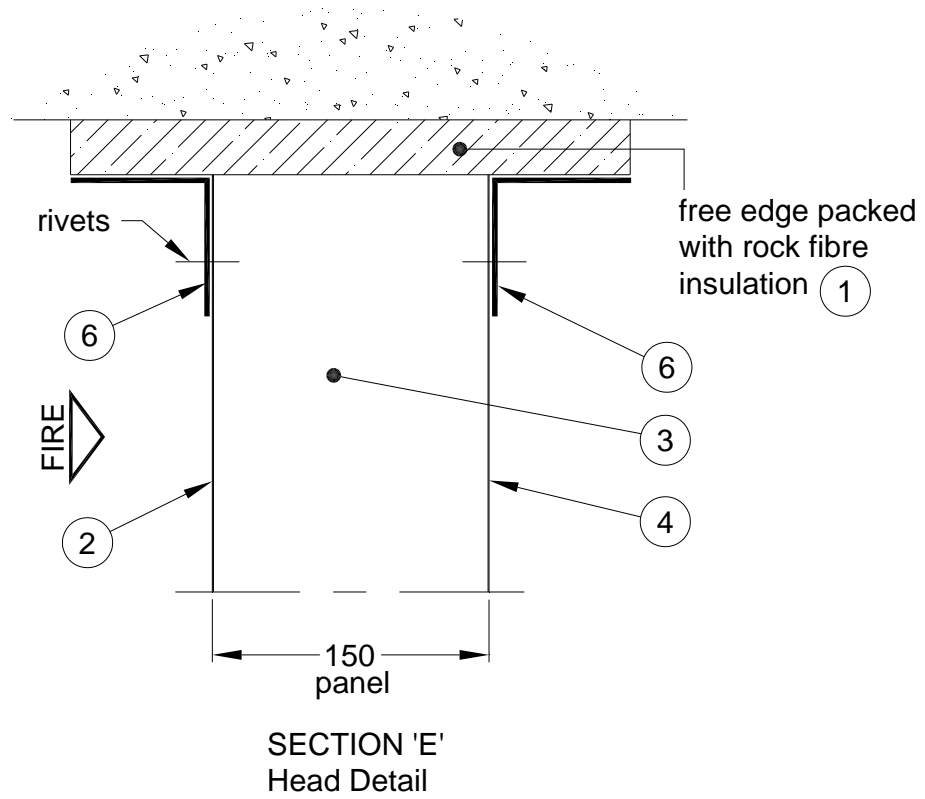
TYPICAL SECTION 'B' & 'C'
Vertical Panel Edge Detail



SECTION 'D'
Typical Panel Joint Detail

Do not scale. All dimensions are in mm

Figure 6 – Details of Wall Panel



Do not scale. All dimensions are in mm

Schedule of Components

(Refer to Figures 1 to 6)
 (All values are nominal unless stated otherwise)
 (All other details are as stated by the sponsor)

SPONSORS PANEL REFERENCE : **150mm Rainspan Panel**
SPONSORS TILE REFERENCE : **Argeton Rainscreen Tile Cladding System**

<u>Item</u>	<u>Description</u>
Details of Wall Panel (items 1 to 7)	
1. Perimeter Insulation	
Manufacturer	: Knauf Insulation
Reference	: Earthwool universal slab RS45
Material	: Rock fibre
Density	: 45 kg/m ³ (stated)
Fixing method	: Panels bedded on the insulation along the perimeter base and along both vertical perimeter edges. Free edge along perimeter head also packed with the insulation.
2. Internal Sheet	
Material	: Steel face coated with white polyester
Thickness	: 0.7 mm
Joint fixing	: Tongue and groove jointed
3. Insulation Core	
Reference	: Conrock 12.5
Material	: Rock fibre
Density	: 135 kg/m ³ (stated)
Thickness	: 150 mm
Fixing method	: Bonded to internal & external sheet using adhesive
Details of adhesive	
i. manufacturer	: Sika
ii. material type	: Two part adhesive
iii. application weight	: 360gsm (external sheet) 220gsm (internal sheet)
4. External Sheet	
Material	: Steel face coated with Corus Colorcoat Prisma
Thickness	: 0.7 mm
Joint fixing	: Tongue and groove jointed
5. Perimeter Angle Flashing (exposed face)	
Material	: Galvanised mild steel angle
Thickness	: 2 mm
Overall section size	: 50 mm x 75 mm
Location	: Fitted along base and vertical edges at exposed face
Details of Fixings to panel along verticals	
i. type	: Self tapping steel screws
ii. reference	: SFS intec SXC5 S16-5.5x163

<u>Item</u>	<u>Description</u>
5. continued	
iii. size	: 5.5 mm diameter x 163 mm long
iv. spacings	: Fitted from unexposed face of panels at 600 mm nominal centres (3 no. screws per full panel and 2 no. along cut panel).
Details of Fixings to panel along base	
i. type	: Stainless steel rivets
ii. reference	: SFS intec SSC-D-48100
iii. size	: 4.8 mm diameter x 10 mm long
iv. spacings	: 300 mm centres
Details of Fixings to concrete restraint frame	
i. type	: Concrete fastener
ii. reference	: SFS intec TDGR-S-S16-6.3x32-SDS
iii. size	: 6.3 mm diameter x 32 mm long
iv. spacings	: 300 mm centres along base and verticals only
6. Perimeter Angle Flashing	
Material	: Painted mild steel angle
Thickness	: 0.5 mm
Overall section size	: 75 mm x 75 mm with 15 mm return edges
Location	: Fitted along perimeter head and base at unexposed face. Also fitted along perimeter head at exposed face.
Details of Fixings to panel	
i. type	: Stainless steel rivets
ii. reference	: SFS intec SSC-D-48100
iii. size	: 4.8 mm diameter x 10 mm long
iv. spacings	: 300 mm centres
Details of Fixings to concrete restraint frame	
i. type	: Concrete fastener
ii. reference	: SFS intec TDGR-S-S16-6.3x32-SDS
iii. size	: 6.3 mm diameter x 32 mm long
iv. spacings	: 300 mm centres along base only
7. Corner Angle Flashing (unexposed face)	
Material	: Painted mild steel profiled plate
Thickness	: 0.7 mm
Location	: Fitted along vertical perimeter edges at unexposed face
Details of Fixings to panel	
i. type	: Stainless steel rivets
ii. reference	: SFS intec SSC-D-48100
iii. size	: 4.8 mm diameter x 10 mm long
iv. spacings	: 300 mm centres
Details of Fixings to concrete restraint frame	
i. type	: Concrete fastener
ii. reference	: SFS intec TDGR-S-S16-6.3x32-SDS
iii. size	: 6.3 mm diameter x 32 mm long
iv. spacings	: 300 mm centres

<u>Item</u>	<u>Description</u>
Details of Tile System (items 8 to 13)	
8. Vertical Support Rails	
Material	: Extruded aluminium top hat section with two flanges, with pairs of pre-drilled holes at 300 mm vertical centres along full height of top hat for fixing tile clips.
Thickness	: 2 mm
Overall section size	: 120 mm wide x 30 mm deep top hat, with 25 mm wide flanges.
Length	: Approximately cut to suit full height of wall panel
Fixing method	: Anchored to the external sheet of the wall panels using 6 no. coarse thread 'Tek' screws through each flange. (2 no. 5.5 mm x 50 mm long screws used at the wall panel joints and 4 no. 5.5 mm x 25 mm long screws used at 120 mm in from head and base of wall panel, and also at central position of each full panel).
9. Vertical Drainage Profiles	
Material	: Spring steel
Thickness	: 0.45 mm
Overall section size	: See Figure 3
Fixing method	: Continuous length friction fit between support rails and tiles.
10. Bottom Tile Clip	
Material	: Extruded aluminium, with pre-drilled hole for fixing to top hat support rails.
Nominal Thickness	: 2 mm – 2.5 mm
Overall section size	: See Figure 2
Width	: 20 mm
Location	: To support the bottom most tile
Fixing method	: Single 4.8 mm diameter x 12 mm long stainless steel rivet per clip.
11. Standard Tile Clip	
Material	: Extruded aluminium, with pre-drilled hole for fixing to top hat support rails.
Nominal Thickness	: 2 mm – 2.5 mm
Overall section size	: See Figure 2
Width	: 20 mm
Location	: Positioned to support two abutting tiles
Fixing method	: Single 4.8 diameter x 12 mm long stainless steel rivet per clip.
12. Top Tile Retaining Profile	
Material	: Extruded aluminium
Nominal Thickness	: 2 mm
Overall section size	: See Figure 2
Length	: 2750 mm approx (spanning across the top of both tile facades).
Location	: Positioned to retain the uppermost tile
Fixing method	: Screw fixed to each support rail (item 8) using a 5.5 mm diameter x 25 mm long stainless steel coarse thread 'Tek' screw.

Item**Description****13. Tiles**

Material	:	Terracotta
Nominal Thickness	:	30 mm
Nominal overall size	:	1192 mm long x 288 mm wide (face dimensions) 1200 mm long x 300 mm wide (module dimensions)
Quantity	:	9 no. tiles per side of panels
Fixing method	:	Tile clips (items 10, 11 and 12)

Instrumentation

General	The instrumentation was provided in accordance with the requirements of the Standard.
Furnace	The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 1999 Clause 5.1 using nine plate thermometers, distributed over a plane 100 mm from the surface of the test construction.
Thermocouple Allocation	<p>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 as follows:</p> <p>The locations and reference numbers of the various unexposed surface thermocouples are shown in Figures 1 and 4.</p>
Roving Thermocouple	A roving thermocouple was available to measure temperatures on the unexposed surface of the specimen at any position which might appear to be hotter than the temperatures indicated by the fixed thermocouples.
Integrity Criteria	Cotton pads and gap gauges were available to evaluate the integrity of the specimens.
Furnace Pressure	The furnace atmospheric pressure was controlled so that it complied with the requirements of BS EN 1363-1: 1999. Clause 5.2. The calculated pressure differential relative to the laboratory atmosphere at the head of the specimen was 20 (+0 -3) Pa.

Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	The ambient air temperature in the vicinity of the test construction was 14°C at the start of the test with a maximum variation of 3°C during the test.
00	00	The test commences.
01	06	Popping sounds can be heard.
02	45	Flaming is visible across the exposed face of the assembly.
05	35	Faint smoke / steam release is visible across the head of the assembly.
13	31	Smoke release at the head is now only visible in the top left hand corner.
30	00	No significant visible change.
40	00	The exposed face of the assembly glows orange, the exposed face of the panels faces bow into the furnace at mid-width. No gaps are visible along the joints.
60	00	No significant visible change to the unexposed face of the assembly.
90	00	Slight smoke release continues in the top left hand corner of the assembly.
97	00	The exposed face of the assembly glows bright yellow. It is now difficult to make observations from the exposed face due to the glare.
107	30	The top half lower panel bows in slightly, away from the vertical support rails, visually 3 to 5 mm.
133	16	No significant visible change to the unexposed face of the assembly, The test is discontinued at the sponsor's request.

Test Photographs

The exposed face of the test construction prior to testing



The unexposed face of the test construction prior to testing



The unexposed face of the test construction after a test duration of 30 minutes



The unexposed face of the test construction after a test duration of 60 minutes



The unexposed face of the test construction after a test duration of 120 minutes



The unexposed face of the test construction after a test duration of 132 minutes



The exposed face of the test construction immediately after the test



Temperature and Deflection Data

Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	21
5	576	610
10	678	684
15	739	734
20	781	785
25	815	815
30	842	839
35	865	861
40	885	880
45	902	907
50	918	922
55	932	932
60	945	943
65	957	956
70	968	973
75	979	979
80	988	992
85	998	996
90	1006	1011
95	1014	1017
100	1022	1022
105	1029	1026
110	1036	1040
115	1043	1048
120	1049	1049
125	1055	1055
130	1061	1062
133	1064	1064

Individual And Mean Temperatures Recorded On The Unexposed Surface Of Panelling

Time Mins	T/C Number 2 Deg. C	T/C Number 3 Deg. C	T/C Number 4 Deg. C	T/C Number 5 Deg. C	T/C Number 6 Deg. C	Mean Temp. Deg. C
0	14	12	17	15	15	15
5	14	12	17	15	15	15
10	14	12	17	15	15	15
15	15	11	18	15	15	15
20	17	8	20	17	17	16
25	21	*	23	20	20	21
30	25	25	26	23	24	25
35	27	27	27	25	26	26
40	28	28	28	27	28	28
45	29	29	28	28	29	29
50	29	29	28	29	29	29
55	29	31	29	29	30	30
60	33	35	33	30	33	33
65	38	41	38	33	37	37
70	44	48	43	37	42	43
75	52	56	49	42	47	49
80	59	66	56	47	53	56
85	70	78	64	53	59	65
90	81	87	71	59	64	72
95	89	95	78	64	74	80
100	96	102	84	74	82	88
105	102	108	89	82	89	94
110	108	113	93	89	95	100
115	113	117	96	95	101	104
120	117	122	99	101	106	109
125	121	126	102	106	110	113
130	126	129	105	111	115	117
133	128	131	106	114	117	119

Individual Temperatures Recorded On The Unexposed Surface Of The Panelling Adjacent To The Horizontal Joints

Time Mins	T/C Number 9 Deg. C	T/C Number 10 Deg. C	T/C Number 12 Deg. C	T/C Number 13 Deg. C
0	16	16	17	16
5	16	16	17	16
10	18	17	17	16
15	24	22	18	17
20	29	29	21	20
25	33	32	25	24
30	35	34	29	28
35	36	35	30	29
40	36	35	32	30
45	36	35	32	31
50	36	36	33	32
55	38	40	35	34
60	42	44	38	38
65	47	51	43	43
70	53	58	48	49
75	58	66	55	56
80	66	77	61	63
85	77	87	68	71
90	88	95	76	80
95	96	103	84	88
100	102	109	90	94
105	108	115	96	100
110	113	119	102	105
115	118	123	107	109
120	122	127	111	113
125	126	130	115	117
130	130	134	118	120
133	133	136	120	121

Individual Temperatures Recorded On The Unexposed Surface Of The Panelling Adjacent To The Perimeter Edges

Time Mins	T/C Number 7 Deg. C	T/C Number 8 Deg. C	T/C Number 11 Deg. C
0	15	16	19
5	15	16	19
10	17	16	22
15	18	17	26
20	21	19	31
25	25	24	35
30	29	29	37
35	31	32	38
40	32	34	39
45	33	35	38
50	34	37	39
55	35	39	42
60	37	42	46
65	40	47	51
70	45	53	56
75	51	59	62
80	57	64	68
85	62	69	77
90	66	74	84
95	70	78	91
100	74	84	97
105	78	91	102
110	83	96	106
115	89	102	110
120	95	108	114
125	100	112	118
130	105	116	121
133	108	118	124

Individual Temperatures Recorded On The Unexposed Surface Of The Cladding System

Time Mins	T/C Number 14 Deg. C	T/C Number 15 Deg. C	T/C Number 16 Deg. C	T/C Number 17 Deg. C	T/C Number 18 Deg. C
0	16	12	13	13	13
5	16	12	13	13	13
10	16	12	13	13	13
15	16	12	13	13	13
20	16	12	13	13	13
25	16	12	13	13	13
30	16	12	13	13	13
35	16	12	13	13	13
40	16	12	13	14	14
45	17	12	14	14	14
50	17	13	14	14	14
55	17	13	14	14	14
60	17	13	15	15	15
65	18	13	15	15	15
70	18	14	15	15	15
75	18	14	16	16	16
80	19	15	16	16	16
85	20	16	17	17	16
90	21	17	18	17	17
95	22	19	19	18	18
100	24	20	20	19	18
105	25	22	21	20	19
110	27	24	22	21	20
115	29	26	23	22	21
120	31	28	25	23	23
125	33	30	26	24	24
130	35	32	27	25	25
133	36	33	27	26	26

**Individual Temperatures Recorded On The Unexposed Surface Of The Cladding System
(Continued)**

Time Mins	T/C Number 19 Deg. C	T/C Number 20 Deg. C	T/C Number 21 Deg. C	T/C Number 22 Deg. C	T/C Number 23 Deg. C
0	12	12	12	15	15
5	12	12	12	15	15
10	12	12	13	15	15
15	12	12	13	15	15
20	12	12	13	15	15
25	12	12	13	15	15
30	12	12	13	15	15
35	12	12	13	16	15
40	13	12	13	16	15
45	13	13	14	16	16
50	13	13	14	16	16
55	13	13	14	17	16
60	13	13	15	17	16
65	14	14	15	17	17
70	14	14	15	17	17
75	15	15	16	18	17
80	16	15	17	18	18
85	17	16	17	19	18
90	18	17	18	20	19
95	20	19	19	20	19
100	22	20	20	21	20
105	24	22	22	22	20
110	26	24	23	23	21
115	28	26	24	24	22
120	31	28	25	25	23
125	33	30	27	26	23
130	35	32	28	28	24
133	36	33	28	28	25

Mean Temperature Recorded On The Unexposed Surface Of The Cladding System

Time Mins	Mean Temp. Deg. C
0	13
5	13
10	13
15	13
20	13
25	13
30	13
35	14
40	14
45	14
50	14
55	15
60	15
65	15
70	15
75	16
80	17
85	17
90	18
95	19
100	20
105	22
110	23
115	25
120	26
125	28
130	29
133	30

Individual Temperatures Recorded On The Unexposed Surface Of The Cladding System Adjacent To Joints in the Tiling

Time Mins	T/C Number 24 Deg. C	T/C Number 25 Deg. C
0	15	15
5	15	15
10	15	15
15	16	15
20	16	15
25	15	15
30	16	15
35	16	16
40	16	16
45	16	17
50	16	17
55	17	18
60	17	18
65	17	19
70	18	19
75	18	20
80	19	21
85	19	22
90	20	24
95	20	25
100	21	27
105	21	29
110	22	31
115	23	34
120	24	36
125	24	39
130	25	41
133	25	42

Vertical Deflection Of The Specimen During The Test

VERTICAL

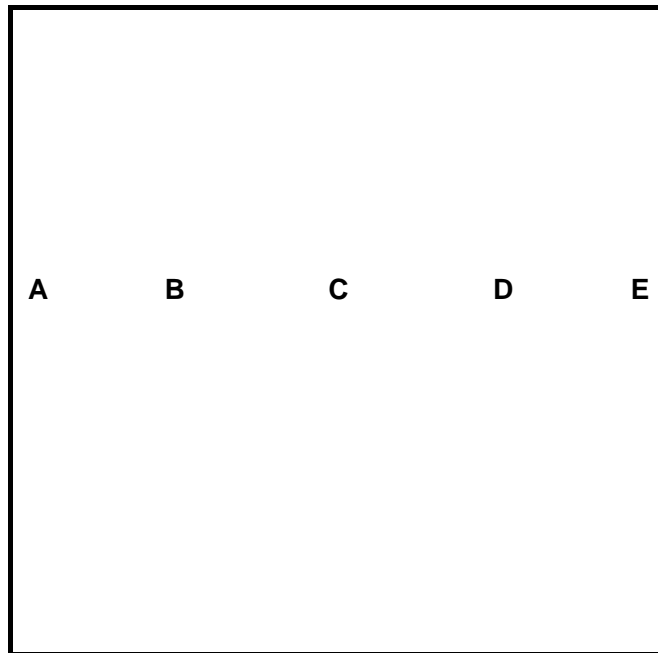
A
B
C
D
E
F
G

TIME mins	A	B	C	D	E	F	G
0	0	0	0	0	0	0	0
10	10	0	1	6	8	6	4
20	18	8	6	8	7	7	1
30	18	9	7	4	6	6	2
40	14	7	5	10	6	7	2
50	16	10	6	8	6	7	2
60	17	7	6	5	6	6	2
70	23	4	7	7	6	7	2
80	20	9	6	8	5	7	2
90	20	6	8	8	6	8	1
100	15	8	7	10	6	9	2
110	19	9	8	8	5	9	1
120	21	9	9	10	6	10	2
130	17	6	8	8	6	9	3

Positive deflections indicate movement towards the furnace chamber

Horizontal Deflection Of The Specimen During The Test

HORIZONTAL



TIME mins	A	B	C	D	E
0	0	0	0	0	0
10	-4	4	10	7	-5
20	-3	5	7	5	-2
30	-3	2	4	4	-8
40	-6	5	8	4	-6
50	-6	3	7	3	-6
60	-4	3	5	5	-5
70	-5	4	7	4	0
80	-3	4	8	4	-5
90	-4	4	10	7	-3
100	-4	6	10	9	-3
110	-5	4	11	7	-3
120	-2	2	10	7	-2
130	-4	5	12	8	-6

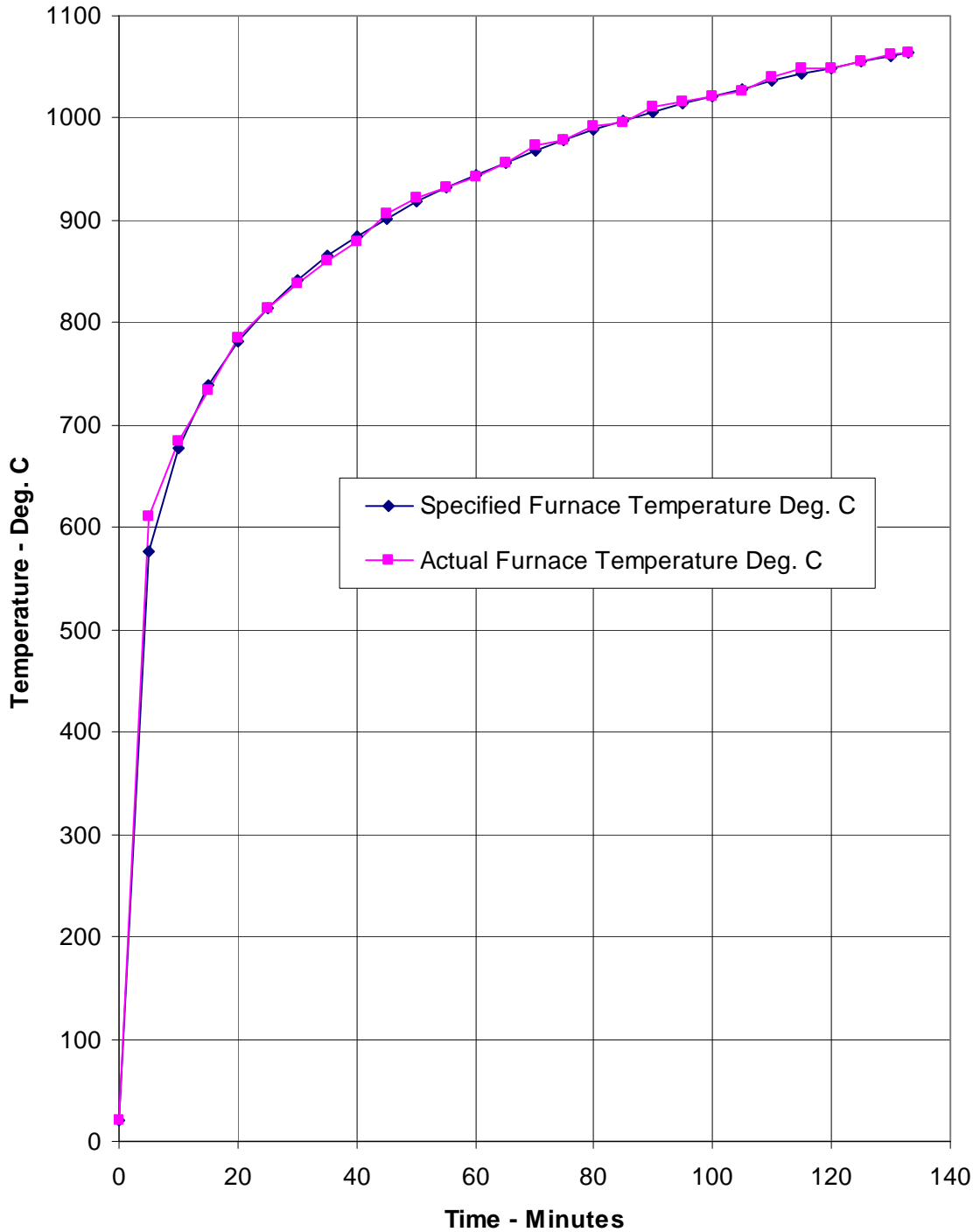
Positive deflections indicate movement towards the furnace chamber

Joint Gap Measurements Recorded During The Test

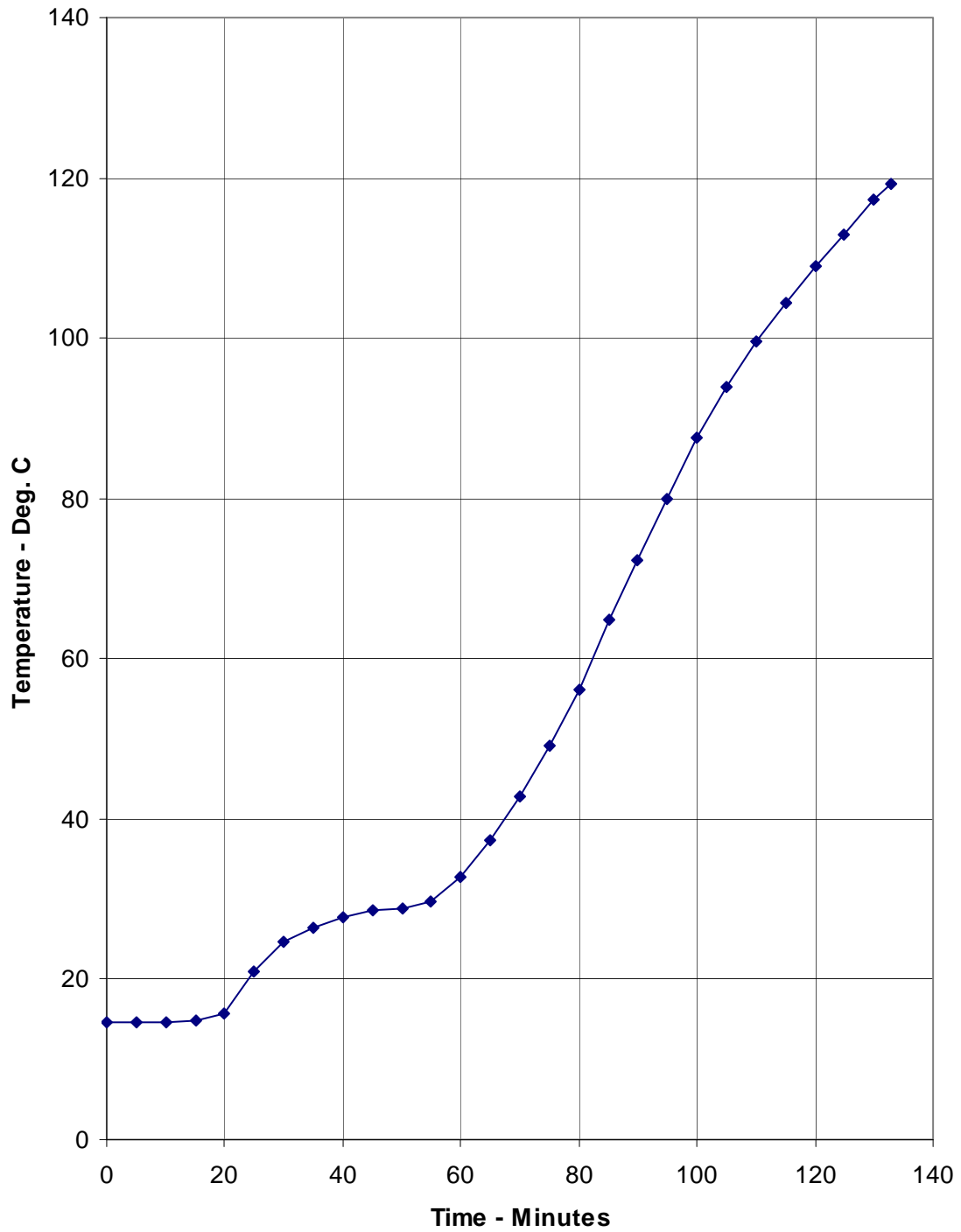
A
B

TIME mins	A	B
0	1.9	2.2
10	1.9	2.4
20	2.0	2.4
30	2.0	2.0
40	2.0	2.4
50	1.9	2.5
60	1.9	2.5
70	1.9	2.4
80	2.1	2.4
90	2.0	2.6
100	2.2	2.3
110	2.1	2.4
120	2.6	2.6
130	2.2	2.5

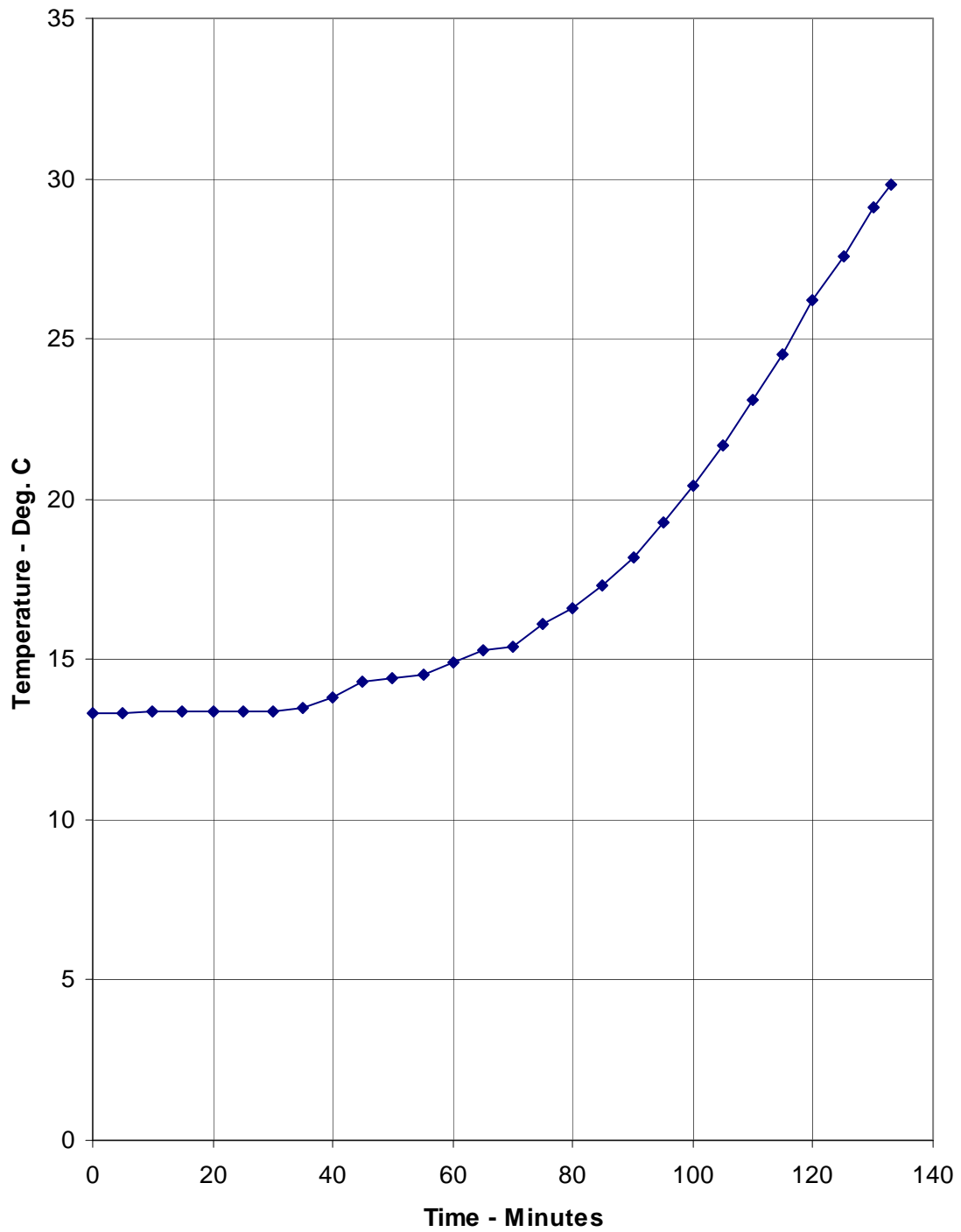
Graph Showing Mean Furnace Temperature, Together With The Temperature/Time Relationship Specified In The Standard



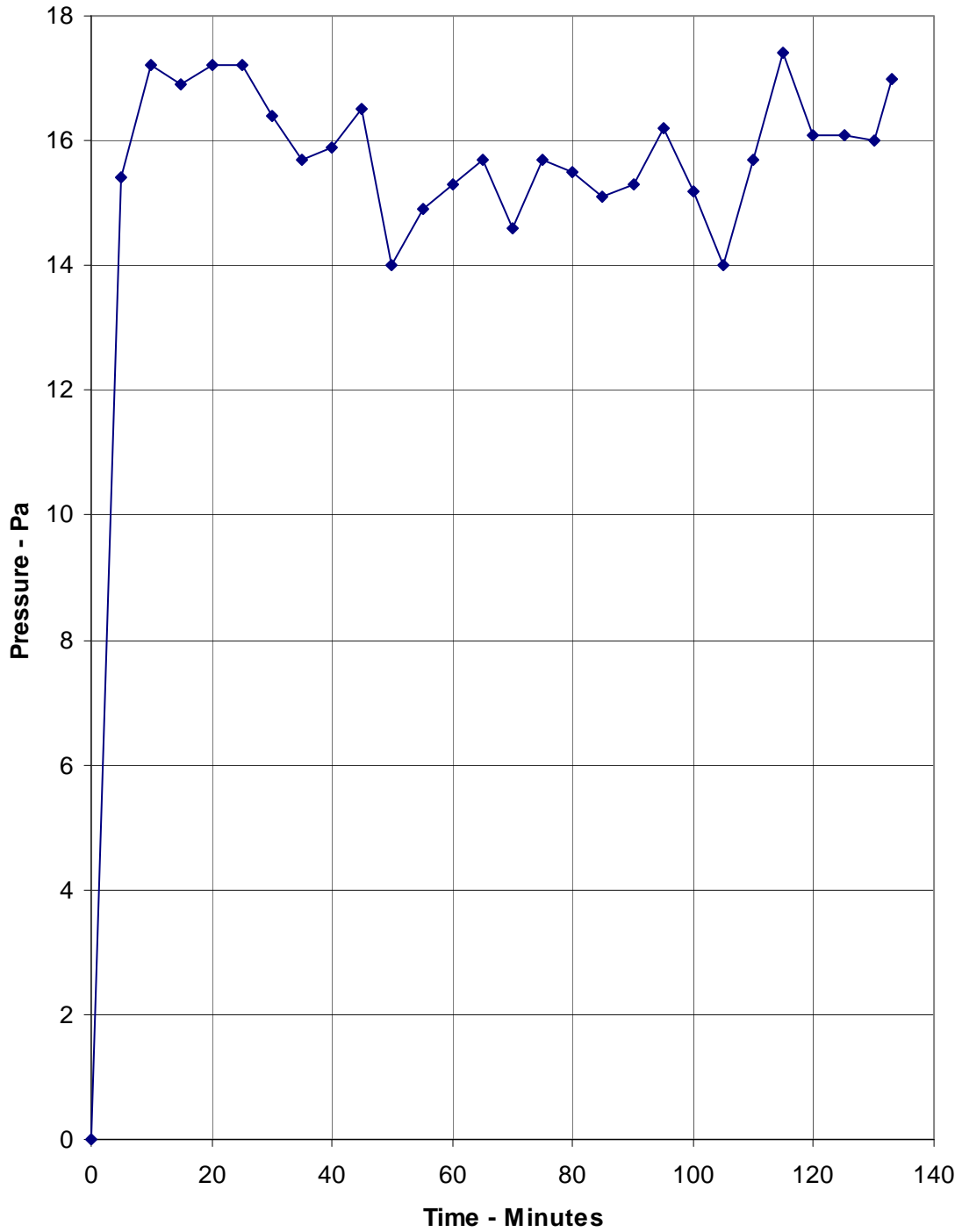
Graph Showing Mean Temperature Recorded On The Unexposed Surface Of The Panelling



Graph Showing Mean Temperature Recorded On The Unexposed Surface Of The Cladding System



Graph Showing Recorded Furnace Pressure At 300 mm Below The Head Of The Specimen



Performance Criteria and Test Results

Integrity Performance

It is required that the specimen retains its separating function, without:

- causing ignition of a cotton pad when applied
- permitting the penetration of a gap gauge as specified in BS EN 1363-1: 1999
- sustained flaming on the unexposed surface

These requirements were satisfied for the periods shown below:

Sustained flaming	133 minutes*
Gap gauge	133 minutes*
Cotton Pad	133 minutes*

Insulation

It is required that the mean temperature rise of the unexposed surface shall not be greater than 140°C and that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure.

Area 1 (unexposed face of cladding system) 133 minutes*

Area 2 (unexposed face of Panelling) 133 minutes*

* The test duration. The test was discontinued after a period of 133 minutes.

Ongoing 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 1363-1: 1999, and where appropriate BS EN 1363-2: 1999. Any significant deviation with respect to size, constructional details, loads, stresses, 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. Annex A of BS EN 1363-1: 1999, provides guidance information on the application of fire resistance tests and the interpretation of test data.

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.

Conclusions

Evaluation against objective A single specimen of a symmetrical, non-loadbearing partition wall assembly has been subjected to a fire resistance test in accordance with BS EN 1364-1: 1999, 'Fire resistance tests for non-loadbearing elements - Part 1: Walls', BS EN 1363-1: 1999, 'General requirements' and BS EN 1363-2: 1999, 'Alternative and additional procedures'.

The specimen was judged on its ability to comply with the performance criteria for integrity and insulation, as required by BS EN 1364-1: 1999 and achieved the results detailed below:

Integrity Performance	Sustained flaming	133 minutes*
	Gap gauge	133 minutes*
	Cotton Pad	133 minutes*
Insulation	Area 1 (unexposed face of cladding system)	133 minutes*
	Area 2 (unexposed face of Panelling)	133 minutes*

* The test duration. The test was discontinued after a period of 133 minutes.

Field of Direct Application

General

The field of direct application of results is restricted to governing the allowable changes to the test specimen following a successful fire resistance test. These variations can be introduced automatically without the need for the sponsor to seek additional evaluation, calculation or approval.

Materials And Constructions General

Unless otherwise stated in the following text the construction of the tested assembly shall be the same as that tested.

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.

The height of the construction may be decreased.

The thickness of the construction may be increased.

The thickness of component materials may be increased.

The linear dimensions (but not thickness) of boards or panels may be decreased.

The number of fixings used to attach the panels to supporting constructions may be increased but shall not be decreased and the distance between fixings may be reduced but shall not be increased.