

**Title:**

The Fire Resistance Performance Of Four Specimens Of Wall Mounted And Four Specimens Of Floor Mounted Linear Gap Sealing Systems, When Tested Generally In Accordance With EN 1366-4:2006+A1:2010

**Date Of Test:**

24<sup>th</sup> July 2020

**Issue 1:**

19<sup>th</sup> October 2020

**WF Report No:**

428941/R



**Prepared for:**

Manthorpe Building  
Products Ltd  
Manthorpe House  
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Derbyshire  
DE5 3ND

# Test Specimen

## Summary of Tested Specimen

For the purpose of the test the wall specimens were referenced A to D and the floor specimens were referenced E to H.

The section of wall had overall dimensions of 11800 mm wide by 1800 mm high and 150 mm thick, of which the centre 1500 mm wide by 1500 mm high was subjected to the test conditions. The wall was made up of aerated blockwork and autoclaved aerated concrete lintels arranged to provide four linear gaps of 160 mm wide and 1000 mm in length.

The section of floor had overall dimensions of 2220 mm long by 1725 mm wide by 150 mm thick of which the centre 2000 mm long by 1500 mm was subjected to the test conditions. The floor was made up of autoclaved aerated concrete lintels autoclaved aerated concrete lintels arranged to provide four linear gaps of 160 mm wide and 1000 mm in length.

Specific details of each of the seals are given in the tables below:

## Wall Specimens

Specimen	Substrate	Seal Details
A	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Standard Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the exposed face
B	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Standard Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the unexposed face
C	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Rebated Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the exposed face
D	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Rebated Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the unexposed face

## Floor Specimens

Specimen	Substrate	Seal Details
E	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Rebated Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the exposed face
F	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Rebated Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the unexposed face
G	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Standard Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the unexposed face
H	Concrete to Concrete	Manthorpe Building Products Ltd REDSHIELD® Standard Cavity Barrier, comprising of a mineral rock fibre insulation within a plastic case, friction fit, installed flush with the exposed face

*Detailed drawings of the test specimen(s) and a comprehensive description of the test construction based on a detailed survey of the specimen(s) 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

<b>Integrity</b>	It is required that the specimen retains its separating function, without either causing ignition of a cotton pad when applied as specified in BS EN 1363-1: 2020, or resulting in sustained flaming on the unexposed surface.																																								
<b>Insulation</b>	The requirements of the standard are that the maximum temperature rise shall not be greater than 180°C. Insulation failure also occurs simultaneously with integrity failure as specified in BS EN 1363-1: 2020.																																								
<b>Test Results</b>	<table border="1"> <thead> <tr> <th rowspan="2">Specimen</th> <th colspan="2">Integrity (minutes)</th> <th rowspan="2">Insulation (minutes)</th> </tr> <tr> <th>Cotton Pad</th> <th>Sustained flame</th> </tr> </thead> <tbody> <tr> <td><b>A</b></td> <td>46</td> <td>46<sup>#</sup></td> <td>34</td> </tr> <tr> <td><b>B</b></td> <td>64</td> <td>66*</td> <td>57</td> </tr> <tr> <td><b>C</b></td> <td>37</td> <td>37</td> <td>32</td> </tr> <tr> <td><b>D</b></td> <td>66*</td> <td>66*</td> <td>48</td> </tr> <tr> <td><b>E</b></td> <td>66*</td> <td>66*</td> <td>61</td> </tr> <tr> <td><b>F</b></td> <td>42</td> <td>44<sup>#</sup></td> <td>42</td> </tr> <tr> <td><b>G</b></td> <td>44</td> <td>44</td> <td>44</td> </tr> <tr> <td><b>H</b></td> <td>39</td> <td>39</td> <td>35</td> </tr> </tbody> </table> <p><sup>#</sup>Specimen blanked off to allow the test to continue. *Test was discontinued after a period of 66 minutes.</p>			Specimen	Integrity (minutes)		Insulation (minutes)	Cotton Pad	Sustained flame	<b>A</b>	46	46 <sup>#</sup>	34	<b>B</b>	64	66*	57	<b>C</b>	37	37	32	<b>D</b>	66*	66*	48	<b>E</b>	66*	66*	61	<b>F</b>	42	44 <sup>#</sup>	42	<b>G</b>	44	44	44	<b>H</b>	39	39	35
Specimen	Integrity (minutes)		Insulation (minutes)																																						
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<b>A</b>	46	46 <sup>#</sup>	34																																						
<b>B</b>	64	66*	57																																						
<b>C</b>	37	37	32																																						
<b>D</b>	66*	66*	48																																						
<b>E</b>	66*	66*	61																																						
<b>F</b>	42	44 <sup>#</sup>	42																																						
<b>G</b>	44	44	44																																						
<b>H</b>	39	39	35																																						

**Date of Test** 24<sup>th</sup> July 2020

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# Signatories

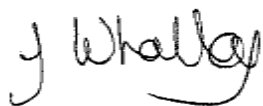
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Responsible Officer

**D. Whittle\***

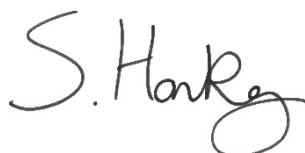
Technical Officer



Approved

**J. Whalley\***

Technical Officer



Head of Department

**S. Hankey\***

Business Unit Head

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

Report Issued

**Date:** 19<sup>th</sup> October 2020

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# Revision History

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

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# Test Conditions

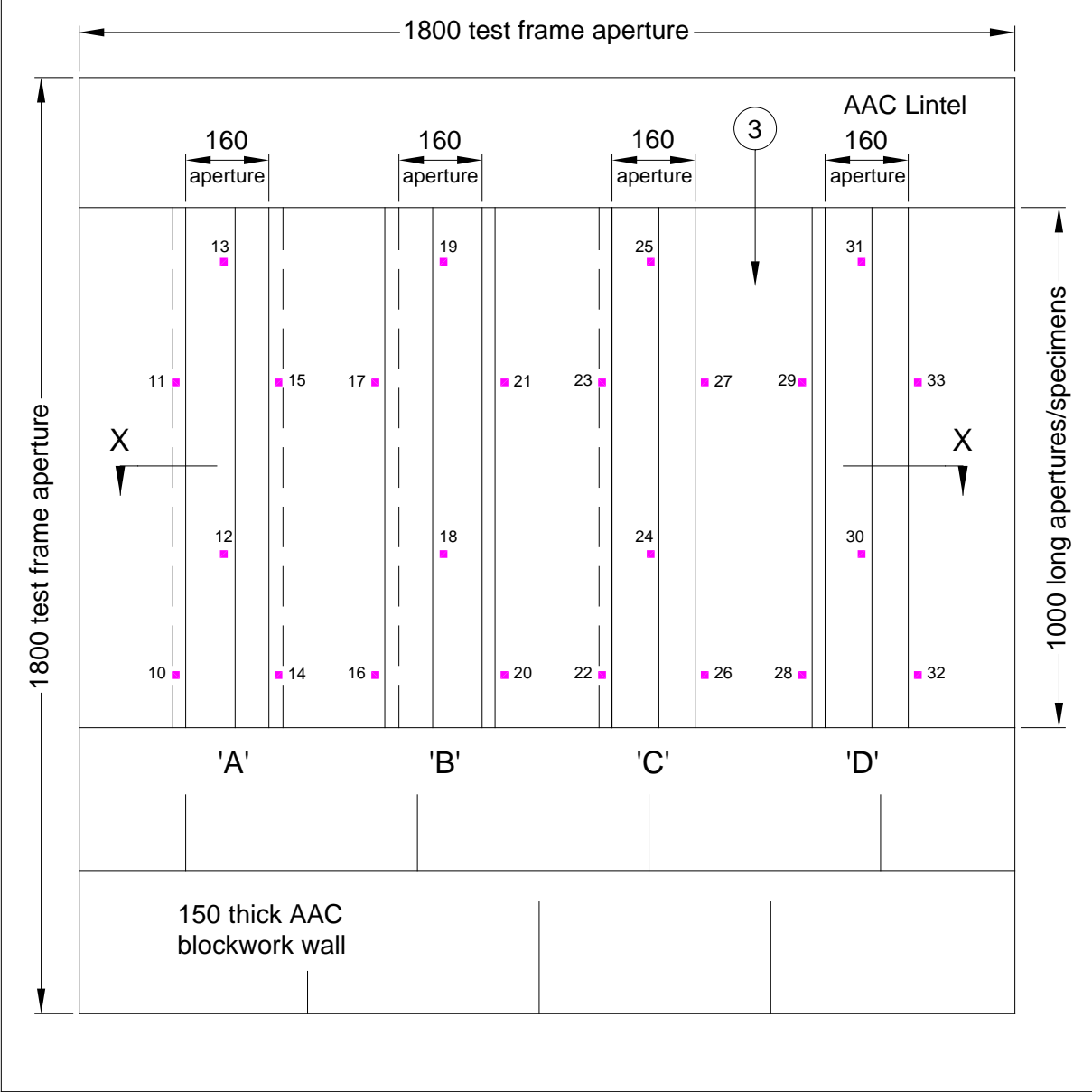
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<b>Standard</b>	<p>BS EN 1366-4: 2006 +A1:2010 Fire resistance tests for service installations – Part 4: Linear joint seals</p> <p>The specimens were deemed to be generally in accordance with EN 1366-4: 2006 +A1:2010 as they did not satisfy the requirement for a length to width ratio of 10:1.</p>
<b>Sampling</b>	<p><b>Warringtonfire</b> was not involved in the sampling or selection of the tested specimen or any of the components.</p> <p>The results obtained during the test only apply to the test samples as provided by the test sponsor.</p>
<b>Installation</b>	<p><b>Warringtonfire</b> supplied the wall and floor constructions. The gap sealing systems were provided by a representative of the test sponsor and installed by representatives of <b>Warringtonfire</b> on the 20<sup>th</sup> July 2020.</p>
<b>Conditioning</b>	<p>The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of 5 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 18.5°C to 30.5°C and 35% to 69% respectively.</p>
<b>Instruction to Test</b>	<p>The test was conducted on the 24 July 2020 at the request of Manthorpe Building Products Ltd, the test sponsor.</p> <p>Mr. M. Challinor a representative of the test sponsor witnessed the test.</p>
<b>Ambient Temperature</b>	<p>The ambient air temperature in the vicinity of the test construction was 23°C at the start of the test with a maximum variation of +3°C during the test.</p>
<b>Furnace</b>	<p>The furnace was controlled so that its mean temperature complied with the requirements of BS EN 1363-1: 2020 Clause 5.1 using four plate thermometers, distributed over a plane 100 mm from the surface of the vertical test construction and four plate thermometers, distributed over a plane 100 mm from the surface of the horizontal test construction.</p>
<b>Thermocouples</b>	<p>Thermocouples were provided to monitor the unexposed surface of the specimens. 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 Figures 1 and 3.</p>
<b>Furnace Pressure</b>	<p>After the first five minutes of testing and for the remainder of the test, the furnace atmospheric pressure was controlled so that it complied with the requirements of BS EN 1363-1: 2020, clause 5.2.1 The calculated pressure differential relative to the laboratory atmosphere at mid height of wall specimens was 15 (± 5) and at position 100 mm below the underside of the floor assembly the differential pressure was calculated to be 20 (± 5) Pa between 5 and 10 minutes and (± 3) Pa respectively thereafter.</p>



# Test Specimen Drawings

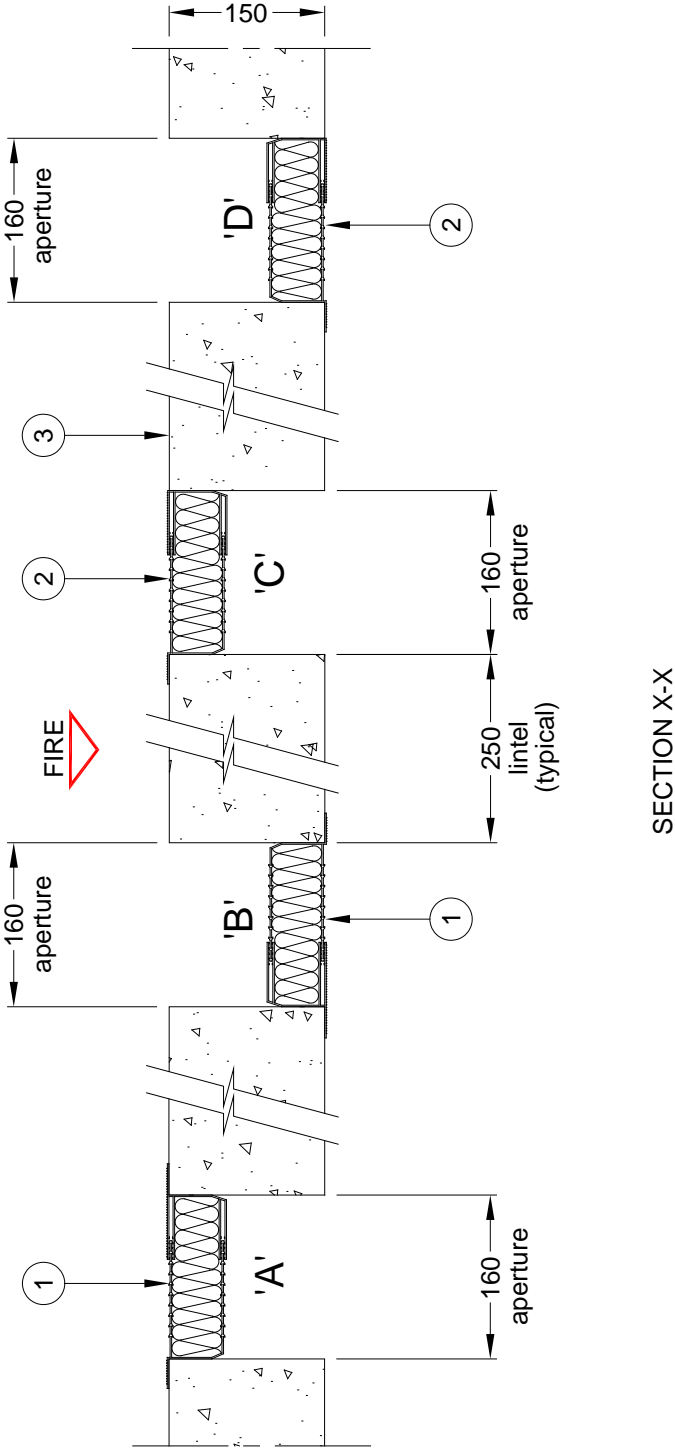
**Figure 1- General elevation of wall specimens 'A' to 'D' and unexposed face thermocouples**



AAC = Autoclaved Aerated Concrete  
■ Positions of thermocouples

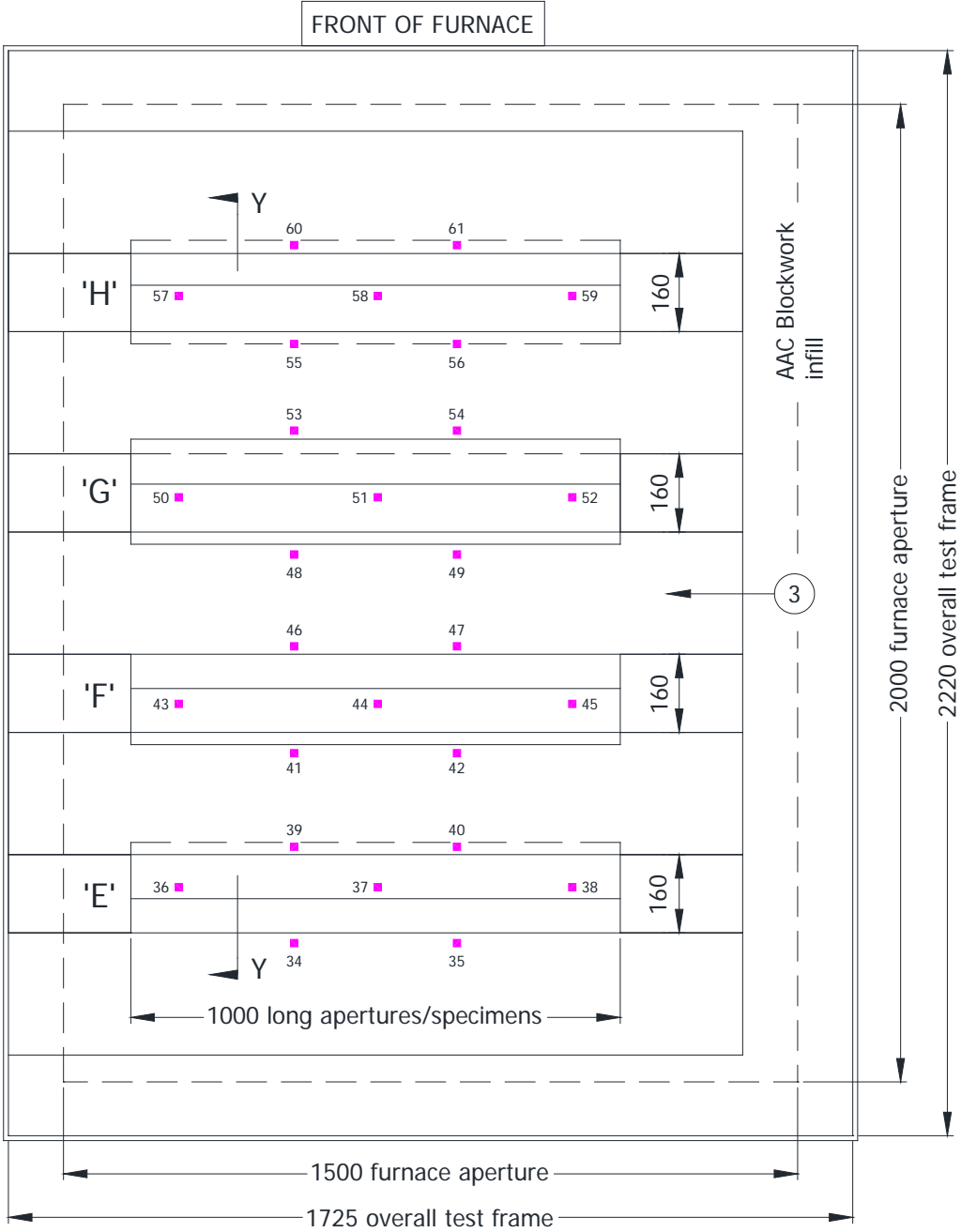
Do not scale. All dimensions are in mm

Figure 2 – Details of wall Specimens 'A' to 'D'



Do not scale. All dimensions are in mm

**Figure 3 – General plan of floor specimens 'E' and 'H' and unexposed face thermocouples**

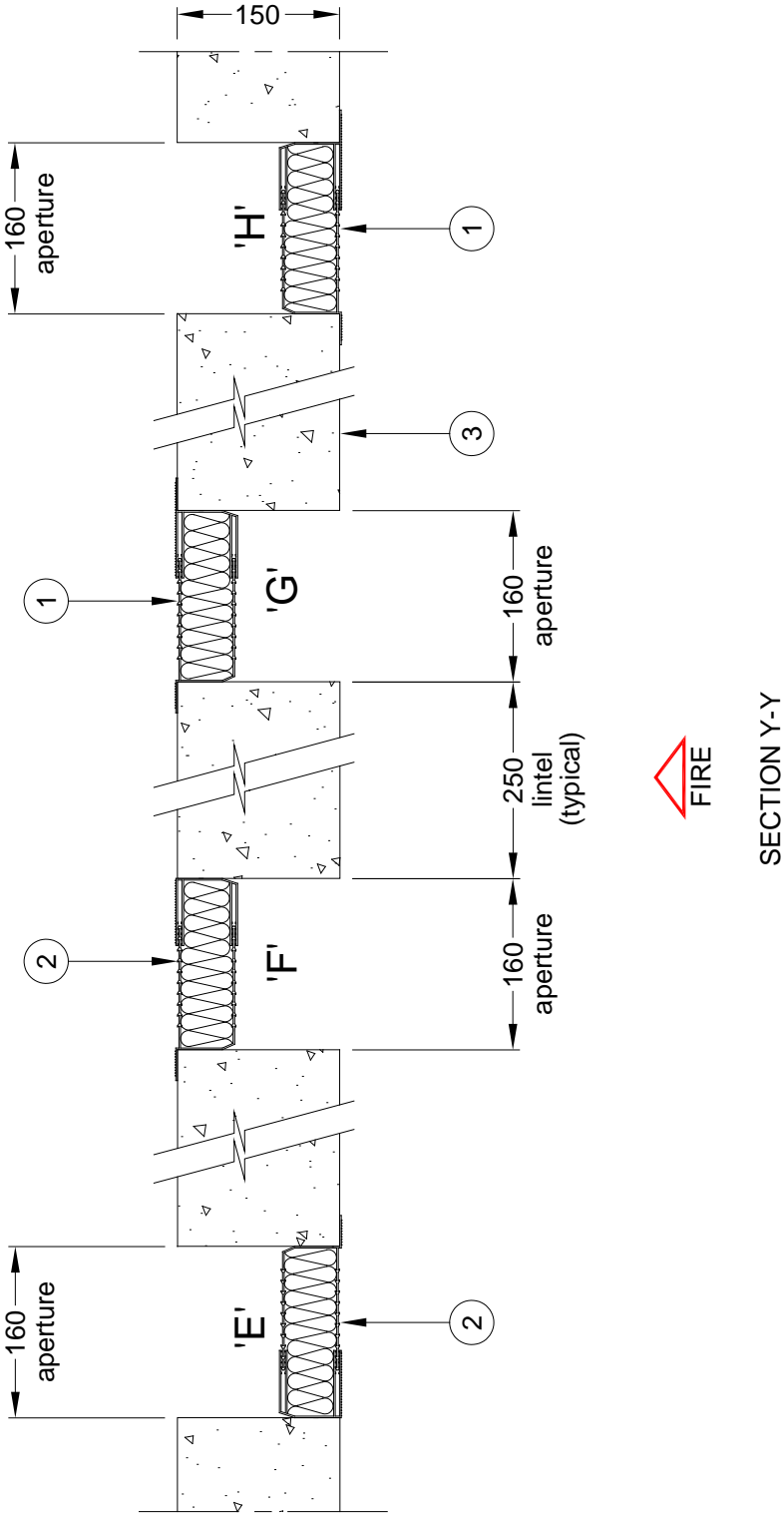


AAC = Autoclaved Aerated Concrete  
■ Positions of thermocouples

GENERAL PLAN VIEW OF UNEXPOSED FACE  
SHOWING FLOOR SPECIMENS 'E' TO 'H'

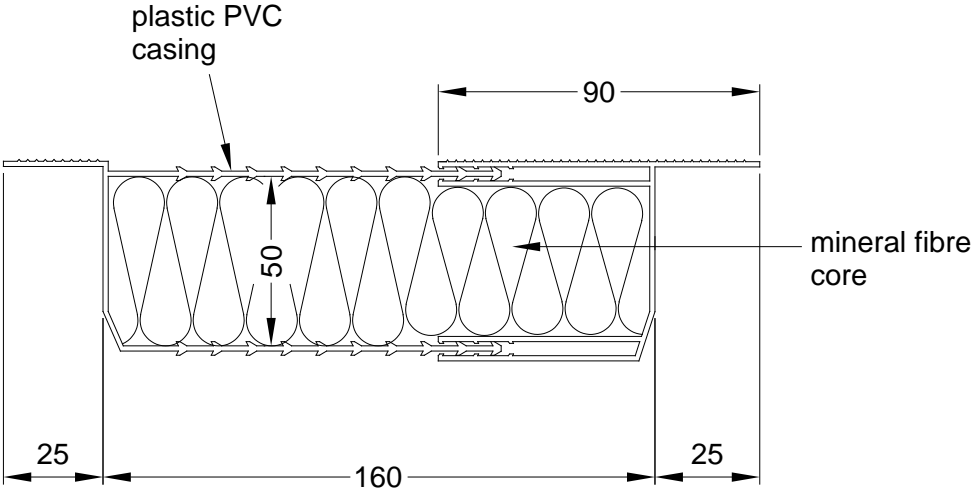
Do not scale. All dimensions are in mm

Figure 4 – Details of floor specimens 'E' and 'H'

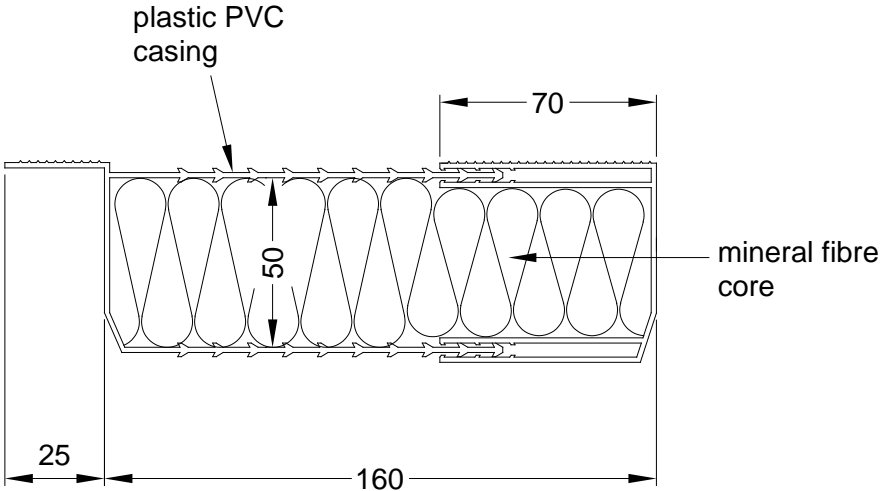


Do not scale. All dimensions are in mm

**Figure 5 – Details of REDSHIELD Cavity barriers**



**DETAIL - ITEM 1  
STANDARD RED/130/160**



**DETAIL - ITEM 2  
REBATED RED/130/160-R**

Do not scale. All dimensions are in mm

# Schedule of Components

---

(Refer to Figures 1 to 5)

(All values are nominal unless stated otherwise)

(All other details are as stated by the sponsor)

<u>Item</u>	<u>Description</u>
<b>1. Cavity barrier</b>	
Manufacturer	: Manthorpe Building Products Ltd
Reference	: REDSHIELD <sup>®</sup> Standard Cavity Barrier
Material	: Mineral rock fibre insulating core within a plastics case
Details of Core	
i. reference	: Rockwool (lamella)
ii. density	: 100 kg/m <sup>3</sup> (stated)
iii. length	: 1000 mm
Details of Casing	
i. material	: Extruded PVCu plastic (colour, red)
ii. length	: 1000 mm
Fixing Method	: Friction fitted within the cavity so the 'extensions' of the plastic case sat flush with the supporting construction
<b>2. Cavity barrier</b>	
Manufacturer	: Manthorpe Building Products Ltd
Reference	: REDSHIELD <sup>®</sup> Rebated Cavity Barrier
Material	: Mineral rock fibre insulating core within a plastics case
Details of Core	
i. reference	: Rockwool (lamella)
ii. density	: 100 kg/m <sup>3</sup> (stated)
iii. length	: 1000 mm
Details of Casing	
i. material	: Extruded PVCu plastic (colour, red)
ii. length	: 1000 mm
Fixing Method	: Friction fitted within the cavity so the 'extension' of the plastic case sat flush with the supporting construction
<b>3. Masonry wall and floor</b>	
Material	: Autoclaved aerated concrete lintels
Density	: 670 kg/m <sup>3</sup>
Thickness	: 150 mm
Bedding material	: Sand and cement mortar
Cavity aperture sizes	: 160 mm wide x 1000 mm long

# Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
00	00	<b>The Test Commences.</b>
02	00	Smoke/steam release from all specimens.
07	00	The plastic cases of all specimens has burnt away on the exposed face.
11	00	The plastic case of Specimen A has started to distort and melt.
11	50	Small sections of the plastic case of Specimen B have started to melt away at the base of the specimen.
13	30	All the plastic cases of Specimens A to D have begun to melt.
17	00	All the plastic cases of Specimens E to H have begun to melt.
25	00	Glowing at the head of Specimen C.
29	00	Glowing at one edge of Specimen H.
29	30	Glowing at the head of Specimen A.
36	15	Cotton pad applied to the glowing on Specimen A. Cotton pad discoloured but failed to ignite.
37	30	<b>Specimen C partially detached from the aperture at the head. Sustained flame is visible, integrity failure is deemed to have occurred.</b>
39	40	<b>Specimen H partially detached from the aperture at one end. Sustained flame is visible, integrity failure is deemed to have occurred.</b>
40	00	Glowing at the head of Specimen B.
42	00	<b>Cotton pad applied to the glowing on Specimen F. Cotton pad ignited, integrity failure is deemed to have occurred.</b>
44	00	<b>Specimens C, F and H blanked off to allow the test to continue.</b>
44	44	<b>Specimen G partially detached from the aperture at the head. Sustained flame is visible, integrity failure is deemed to have occurred. Specimen blanked off to allow the test to continue.</b>
46	00	Glowing at one end of Specimen E.
46	40	<b>Cotton pad applied to the glowing on Specimen A. Cotton pad ignited, integrity failure is deemed to have occurred. Specimen blanked off to allow the test to continue.</b>

Time

mins secs

51	00	Cotton pad applied to the glowing on Specimen B. Cotton pad discoloured but failed to ignite.
53	00	Distorting to the plastic case of Specimen E.
54	20	Distorting to the plastic case of Specimens B and D.
58	00	Cotton pad applied to the glowing on Specimen E. Cotton pad discoloured but failed to ignite.
59	40	Cotton pad applied to the glowing on Specimen B. Cotton pad discoloured but failed to ignite.
59	45	Plastic case has detached from the head of Specimen B.
64	10	<b>Cotton pad applied to the glowing on Specimen B. Cotton pad ignited, integrity failure is deemed to have occurred.</b>
64	50	Glowing at the head of Specimen D.
66	40	<b>The Test is Discontinued at the sponsors request</b>

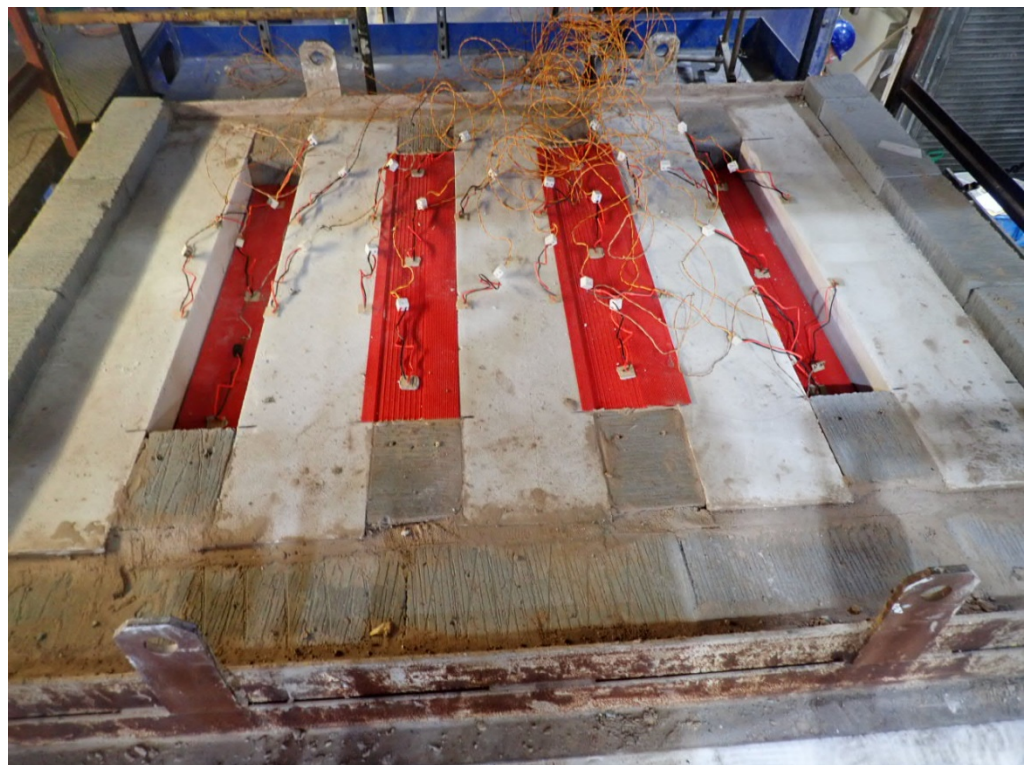


# Test Photographs

The unexposed face of the wall assembly prior to testing



The unexposed face of the floor assembly prior to testing



The unexposed face of the wall assembly after a test duration of 30 minutes



The unexposed face of the floor assembly after a test duration of 30 minutes



The unexposed face of the wall assembly after a test duration of 66 minutes



The unexposed face of the floor assembly after a test duration of 66 minutes



The exposed face  
of the wall  
assembly  
immediately after  
the test



# Temperature and Deflection Data

Mean furnace temperature, together with the temperature/time relationship specified in BS EN 1363-1: 2020

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	33
2	445	502
4	544	536
6	603	590
8	645	648
10	678	674
12	705	699
14	728	738
16	748	749
18	766	756
20	781	795
22	796	788
24	809	811
26	820	827
28	832	834
30	842	836
32	851	853
34	860	865
36	869	875
38	877	886
40	885	887
42	892	886
44	899	892
46	906	905
48	912	910
50	918	913
52	924	917
54	930	922
56	935	929
58	940	935
60	945	941
62	950	946
64	955	951
66	960	955

**Individual temperatures recorded on the unexposed surface of Specimen A  
and adjacent to Specimen A**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number
	10	11	12	13	14	15
	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C
0	23	23	24	24	23	24
2	23	26	28	31	24	25
4	23	26	33	39	24	25
6	23	27	37	48	24	25
8	23	26	48	58	24	25
10	23	26	61	*	24	25
12	23	26	72	80	25	25
14	24	26	93	100	25	26
16	24	26	115	112	25	26
18	24	26	132	124	25	26
20	24	27	148	112	25	26
22	25	27	160	106	26	27
24	25	28	169	127	26	27
26	25	28	171	150	26	27
28	25	29	171	161	27	28
30	26	29	172	166	27	28
32	26	30	172	168	27	29
34	26	32	174	*	28	29
35	26	33	*	*	28	29
36	26	33	*	*	28	30
38	26	34	*	*	28	30
40	27	34	*	*	28	31
42	27	35	*	*	28	33
44	27	36	*	*	28	33
45	27	37	*	*	29	34
46	#	#	#	#	#	#

\*Thermocouple Malfunction

#Specimen Blanked Off

**Individual temperatures recorded on the unexposed surface of Specimen B  
and adjacent to Specimen B**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number
	16	17	18	19	20	21
	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C
0	24	24	24	25	24	24
2	27	25	24	30	55	25
4	26	25	24	37	41	25
6	27	25	24	44	38	25
8	28	25	24	59	37	25
10	29	26	25	69	37	25
12	31	26	25	84	37	25
14	33	27	25	112	37	26
16	32	28	25	125	39	28
18	33	29	25	139	39	29
20	33	31	25	153	40	32
22	33	31	25	166	41	36
24	35	35	26	175	43	38
26	36	36	26	180	44	41
28	37	39	26	182	45	44
30	39	42	27	182	46	46
32	40	44	27	182	48	49
34	42	46	27	182	49	52
36	43	48	28	185	50	55
38	45	49	28	184	51	57
40	47	50	28	184	54	58
42	50	52	28	191	54	60
44	53	54	27	191	58	62
46	57	55	31	188	60	64
48	60	57	38	187	60	67
50	65	58	48	189	62	68
52	66	59	57	191	64	70
54	68	60	63	192	66	72
56	69	61	67	193	68	72
57	70	61	69	194	68	73
58	71	63	70	*	69	73
60	71	64	73	*	71	75
62	72	65	76	*	73	80
64	72	65	78	*	74	81
66	72	66	80	*	75	81

\*Thermocouple Malfunction

**Individual temperatures recorded on the unexposed surface of Specimen C  
and adjacent to Specimen C**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number
	22	23	24	25	26	27
	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C
0	23	24	24	25	24	24
2	24	24	25	30	24	24
4	24	24	29	42	24	24
6	24	24	34	47	24	24
8	24	25	43	55	24	24
10	24	25	53	65	24	25
12	24	25	61	74	25	25
14	24	25	69	91	25	25
16	25	26	77	109	25	25
18	25	26	87	118	25	25
20	25	26	97	112	25	25
22	25	27	102	116	25	24
24	26	28	106	135	26	25
26	26	28	108	154	26	24
28	26	29	118	167	26	24
30	27	29	135	182	27	24
32	27	30	154	182	27	24
33	27	31	165	*	27	24
34	27	32	173	*	27	24
36	28	32	183	*	27	23
37	28	33	186	*	28	23
38	28	33	187	*	28	23
40	29	38	187	*	28	22
42	29	54	177	*	28	17
44	28	*	184	*	27	28
45	#	#	#	#	#	#

\*Thermocouple Malfunction

#Specimen Blanked Off



**Individual temperatures recorded on the unexposed surface of Specimen D  
and adjacent to Specimen D**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number
	28 Deg. C	29 Deg. C	30 Deg. C	31 Deg. C	32 Deg. C	33 Deg. C
0	23	24	24	25	24	23
2	24	25	25	32	26	23
4	24	25	28	33	26	23
6	24	25	32	44	27	23
8	24	25	40	55	27	23
10	24	26	49	65	29	24
12	24	27	56	72	30	24
14	24	28	63	79	31	24
16	24	28	70	92	34	25
18	25	30	75	108	35	25
20	24	31	86	117	38	26
22	24	32	99	127	43	26
24	25	34	108	136	45	27
26	24	36	114	145	50	27
28	24	38	122	151	53	28
30	25	40	129	163	56	28
32	25	43	138	170	59	29
34	25	45	147	175	62	29
36	25	47	151	178	65	30
38	24	49	155	181	68	32
40	25	51	165	185	70	33
42	25	54	172	190	71	34
44	25	56	182	186	73	34
46	25	58	197	171	75	38
48	25	60	204	155	76	38
49	25	60	205	149	77	39
50	25	61	205	143	78	39
52	25	63	201	135	79	40
54	24	65	196	129	81	41
56	25	66	189	124	81	42
58	26	68	185	121	82	42
60	25	69	183	120	83	42
62	26	70	180	120	84	42
64	26	71	177	121	85	43
66	26	73	176	122	86	44

**Individual temperatures recorded on the unexposed surface of Specimen E  
and adjacent to Specimen E**

Time Mins	T/C Number 34 Deg. C	T/C Number 35 Deg. C	T/C Number 36 Deg. C	T/C Number 37 Deg. C	T/C Number 38 Deg. C	T/C Number 39 Deg. C	T/C Number 40 Deg. C
0	21	21	21	21	21	21	21
2	*	21	26	*	*	22	22
4	*	21	35	*	*	22	22
6	*	22	40	*	*	22	22
8	*	22	47	*	*	22	22
10	*	22	57	*	*	22	22
12	*	22	67	*	*	22	22
14	*	23	85	*	*	23	23
16	*	23	105	*	*	23	23
18	*	24	120	24	66	23	24
20	*	24	131	111	72	24	24
22	*	25	94	121	77	24	25
24	*	25	92	132	82	25	26
26	*	26	92	141	73	25	26
28	*	26	95	147	63	26	27
30	*	27	93	154	56	27	27
32	*	27	92	161	54	27	28
34	*	28	101	164	49	27	29
36	*	28	103	169	47	28	30
38	*	30	104	165	46	30	31
40	*	32	97	167	49	32	34
42	*	33	108	171	53	32	34
44	*	33	104	194	42	32	34
46	*	35	92	187	45	40	37
48	*	36	84	183	56	37	37
50	*	36	90	182	57	37	38
52	*	37	94	166	59	38	38
54	*	38	91	183	60	38	40
56	*	39	92	185	58	38	40
58	*	40	159	162	52	39	41
60	*	40	102	182	41	39	41
61	*	40	102	184	39	40	42
62	*	40	104	*	36	40	42
64	*	41	103	*	29	40	43
66	*	42	99	*	25	41	43

\*Thermocouple Malfunction

**Individual temperatures recorded on the unexposed surface of Specimen F  
and adjacent to Specimen F**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number	Number
	41	42	43	44	45	46	47
	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C	Deg. C
0	18	20	22	22	22	21	22
2	19	20	23	22	22	*	23
4	19	20	26	25	25	*	23
6	19	20	31	30	31	*	23
8	19	20	37	36	36	*	23
10	19	20	44	43	43	*	24
12	19	21	54	55	54	*	25
14	20	21	65	65	65	*	28
16	20	22	72	71	70	*	31
18	21	22	84	79	75	*	35
20	22	23	102	96	91	*	38
22	23	25	107	105	100	*	41
24	25	26	113	111	103	44	46
26	27	28	122	117	109	47	49
28	30	31	132	125	114	50	51
30	32	32	141	135	121	52	54
32	34	34	147	144	129	54	56
34	36	37	152	153	126	56	57
36	38	39	155	161	*	57	58
37	40	41	157	165	*	58	59
38	41	42	159	169	*	60	60
40	45	46	162	177	*	63	63
42	47	48	162	179	*	63	64
43	48	49	163	179	*	64	64
44	#	#	#	#	#	#	#

\*Thermocouple Malfunction

#Specimen Blanked Off

**Individual temperatures recorded on the unexposed surface of Specimen G  
and adjacent to Specimen G**

Time Mins	T/C	T/C	T/C	T/C	T/C	T/C	T/C
	Number	Number	Number	Number	Number	Number	Number
	48 Deg. C	49 Deg. C	50 Deg. C	51 Deg. C	52 Deg. C	53 Deg. C	54 Deg. C
0	22	22	22	22	22	21	22
2	24	27	23	24	26	21	22
4	24	25	27	27	35	21	22
6	24	25	36	36	43	21	22
8	24	25	43	44	50	21	22
10	24	25	54	56	59	22	22
12	24	26	65	66	68	22	22
14	25	27	70	70	83	22	22
16	25	27	81	81	107	23	23
18	26	29	104	102	114	23	24
20	27	31	111	109	125	23	25
22	29	33	122	117	136	23	27
24	31	35	136	128	142	22	28
26	33	38	147	139	149	22	30
28	35	40	156	145	152	21	32
30	38	42	162	153	156	20	34
32	39	44	168	160	160	19	36
34	41	47	174	164	165	19	40
36	44	48	178	171	171	18	44
38	46	51	179	178	177	17	52
40	50	55	185	185	184	21	59
42	52	57	186	176	172	20	56
43	53	57	188	178	178	19	56
44	#	#	#	#	#	#	#

#Specimen Blanked Off

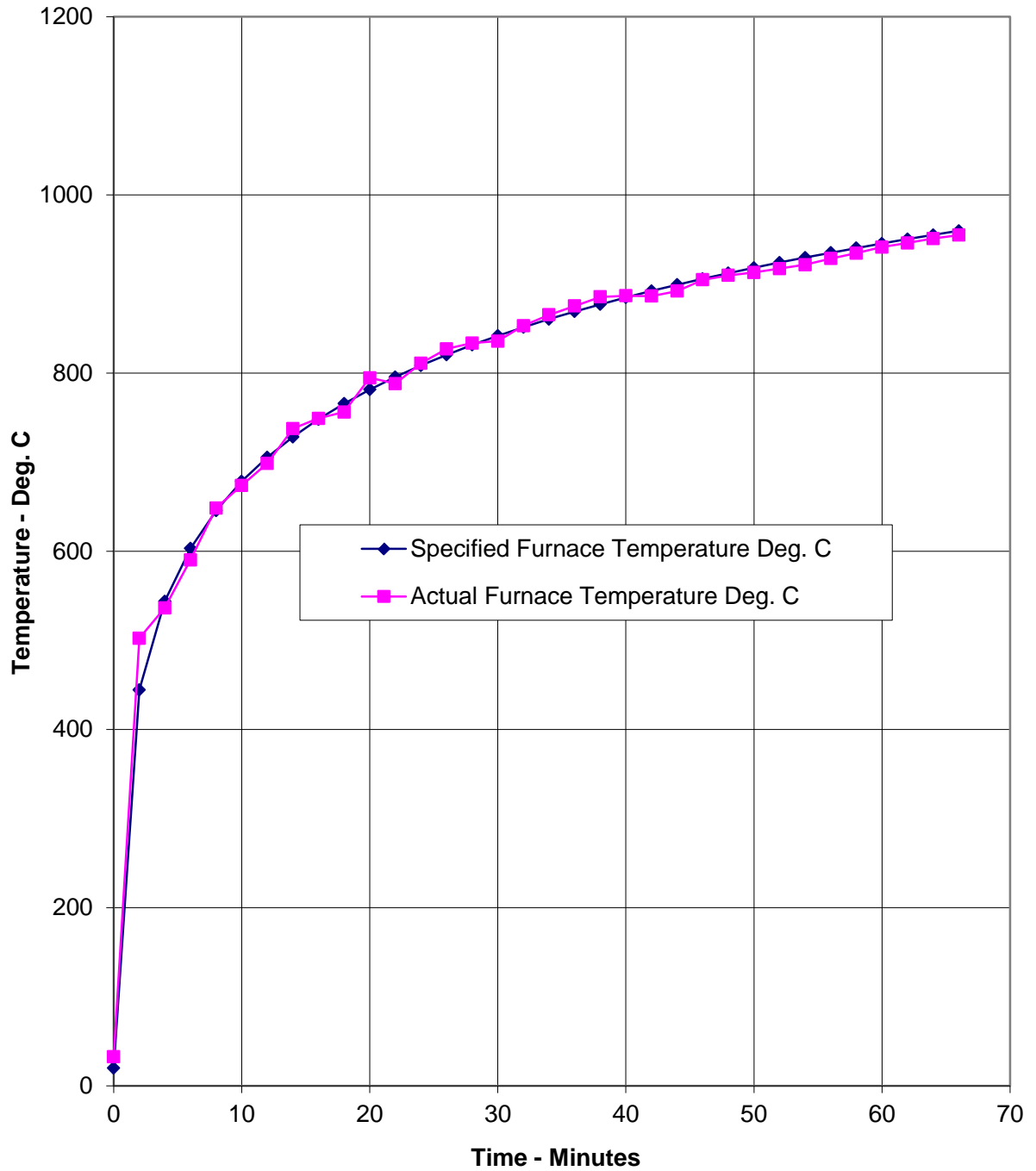
**Individual temperatures recorded on the unexposed surface of Specimen H  
and adjacent to Specimen H**

Time Mins	T/C Number 55 Deg. C	T/C Number 56 Deg. C	T/C Number 57 Deg. C	T/C Number 58 Deg. C	T/C Number 59 Deg. C	T/C Number 60 Deg. C	T/C Number 61 Deg. C
0	21	23	22	22	22	22	20
2	22	23	31	37	31	23	22
4	22	23	38	40	37	23	22
6	22	23	46	46	47	23	23
8	22	23	54	54	56	23	23
10	22	23	63	64	67	23	24
12	22	24	66	70	82	23	24
14	23	24	81	83	106	23	24
16	23	25	101	102	115	24	25
18	23	25	107	105	128	24	26
20	24	25	116	111	142	24	26
22	25	26	127	122	151	26	28
24	25	26	140	136	162	26	28
26	26	27	147	151	168	26	29
28	26	28	148	159	173	27	30
30	27	28	142	166	180	27	30
32	27	28	142	173	183	27	31
34	28	29	143	179	184	27	32
35	28	27	149	182	190	28	35
36	29	15	146	183	394	29	43
38	32	28	139	186	840	32	66
40	*	618	159	237	*	34	*
42	*	*	*	*	*	*	*
43	*	*	*	*	*	*	*
44	#	#	#	#	#	#	#

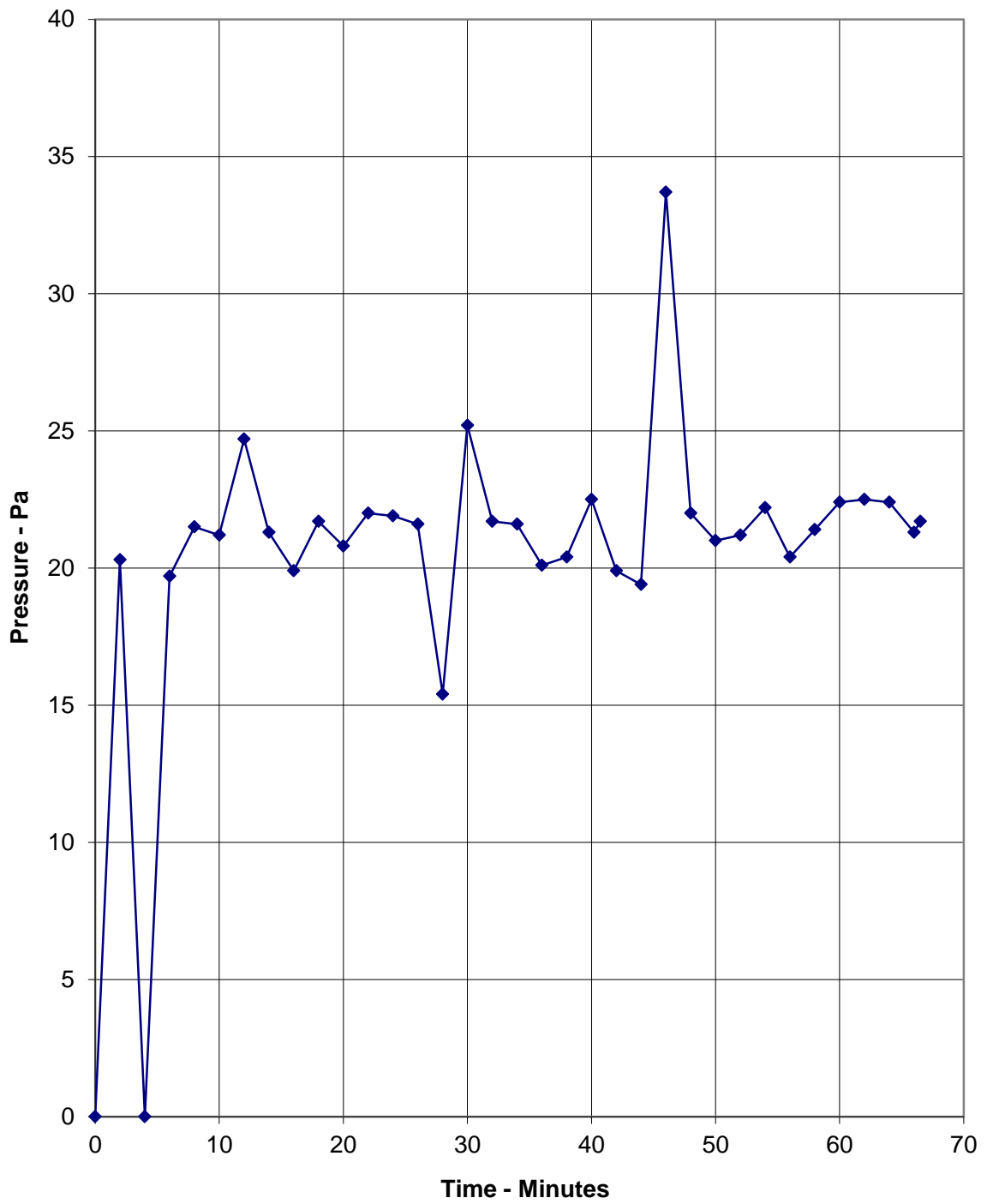
\*Thermocouple Malfunction

#Specimen Blanked Off

**Graph showing mean furnace temperature, together with the temperature/time relationship specified in BS EN 1363-1: 2020**



Graph showing recorded furnace pressure 300 mm above the head of the wall specimens



## On-going Implications

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### Limitations

The results relate only to the behaviour of the specimens 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 results may not be applicable to situations where the joint widths, sealant depths, orientations, supporting construction and backing material vary from those tested.

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