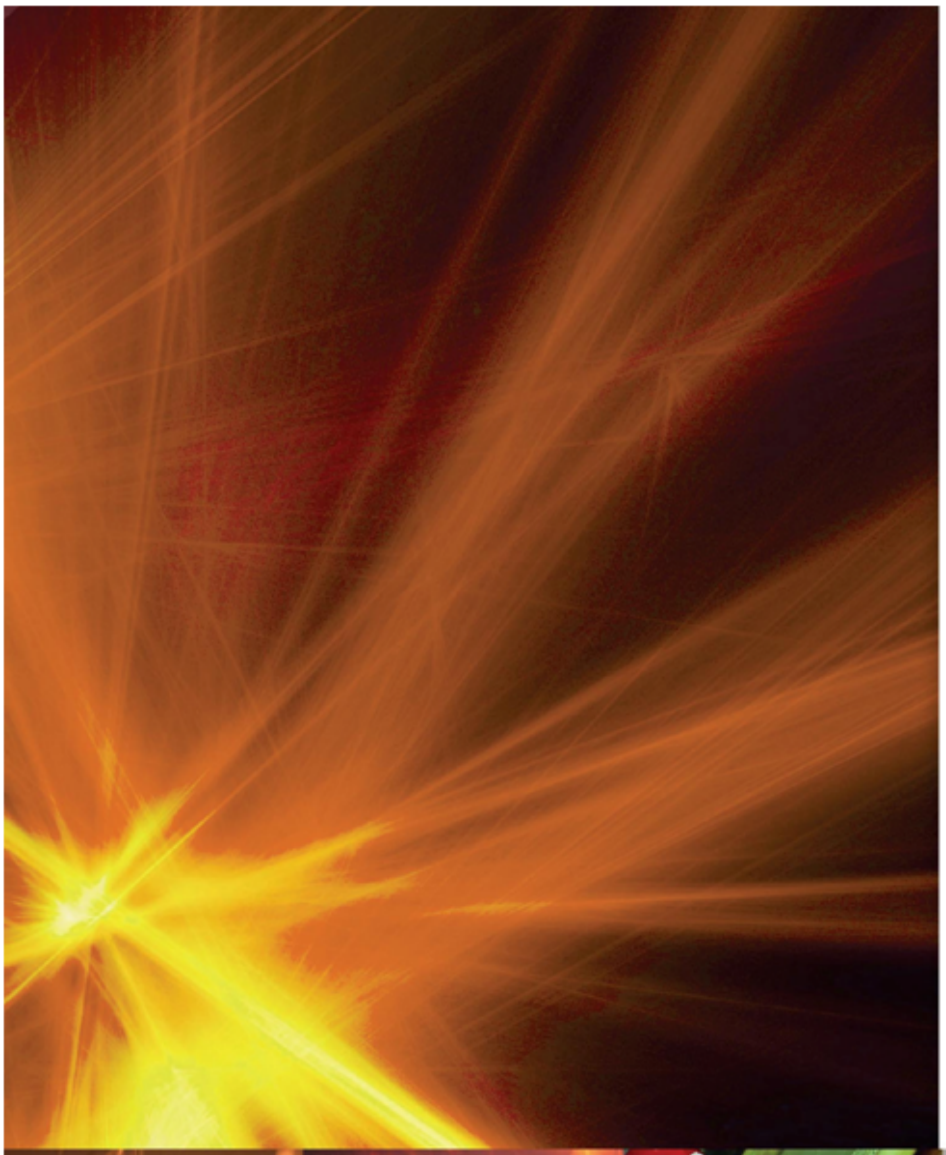

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CONFIDENTIAL

Report: Chilt/IF13036 Revision A

A fire resistance test performed on an insulated single leaf single acting steel access panel

Test conducted in accordance with BSEN 1634-1: 2008 and BSEN 1363-1 1999

Test date: 19th March 2013

Prepared for: Fire Proofing Services Ltd
Evolution House
Aston Road
Nuneaton
CV11 5EL

UKAS TESTING 1762

Contents

1 Summary of performance

The following performance was achieved from the specimen tested. Full details of the testing and specimen construction are described in the report.

Results:

Fire resistance test in accordance with BSEN 1634-1: 2008 and BSEN 1363-1: 1999

Times to failure

Integrity	
Cotton pad	29 (twenty nine) minutes**
Continuous flaming	132 (one hundred and thirty two) minutes*
Gap gauges	132 (one hundred and thirty two) minutes*
Insulation - 1 discrete area (steel)	
Average set	Not applicable
Maximum ≥ 100mm in from leaf edge	Not applicable
Maximum ≥ 25mm in from leaf edge	4 (four) minutes
Door frame ≥ 180ºc temp rise	5 (five) minutes
Door frame ≥ 360ºc temp rise	12 (twelve) minutes
Radiant Heat	
Time to reach 15Kw/m^2	132 (one hundred and thirty two) minutes*

* No failure of the test criteria had occurred at the termination of the test at 132 minutes.

** When classified under BSEN 13501-2: 2007+A1: 2009, this value for integrity failure will be disregarded as the element is being classified without an insulation performance.

Summary of specimen: Access panel – steel single leaf single acting

Leaf size: 1195mm high x 595mm wide x 24mm thick

Unexposed face prior to testing

2 Introduction

The access panel was installed into a medium density concrete blockwork supporting construction. In accordance with BS EN 14600: 2005 the leaf was pre-cycled before the fire test. The access panel leaf was installed opening in towards the furnace.

The access panel was not fitted with a self closing device.

3 Specimen verification

The access panel was delivered to Chiltern International Fire Ltd (CIFL) during March 2013. The component parts of the specimen were identified based on nominal information provided by the client. The conformity of the specimen against these nominal values has been verified and agreed by the laboratory insofar as the structure of the specimen allowed verification to take place. If possible, additional moisture content readings, species verification and density checks were performed on either the original specimen, or, samples provided by the sponsor. These details are outlined in the construction section of this report (section 6).

Details of the specimen are shown in the Appendix.

3.1 Conditioning

CIFL stored the specimen in climatic conditions approximate to those in normal service.

3.2 Sampling

CIFL were not involved in factory sampling of the components used for the specimen subject to this report.

4 Description of supporting construction

The supporting construction comprised a medium density concrete wall built in accordance with Clause 7.2.2. of BSEN 1363: Part 1, for a rigid supporting construction.

5 Description of specimen

The leaf of the access panel measured 1195mm high x 595mm wide x 24mm thick. The results of this test were obtained from an access panel fitted with engaged hardware. No self closing devices were fitted.

6 Description of construction (refers to figures 1 - 4 of the appendix)

Access panel leaf

	Material	Dimensions (mm)	Density (kg/m³)	Key to figures
Facing	Profiled galvanised steel 'tray'	0.9 thick (see figures 2 and 3)	-	1
Leaf infill	Siniat (formally Lafarge) GTEC Soundbloc board, fixed to the leaf unexposed face with Evo-Stik Gripfill adhesive	12.5mm thick	-	2
Lock mounting channel	Profiled galvanised steel channel sections fitted at the closing edge	0.9 thick x 60 wide x 23 deep (see figures 2 and 3)	-	3

Access panel frame

	Species/type	Dimensions (mm)	Density (kg/m³)	Key to figures
Head, jambs and threshold	Profiled section galvanised steel (see figure 2)	0.9 thick x 45 wide x 73 deep including a 27 high x 20 wide integral stop and a 25 wide integral architrave	-	4
Stops - integral	-	-	-	-
Frame jointing detail	Butted - welded	-	-	-
Architrave - integral	None fitted	-	-	-
Frame fixings	Steel masonry fixings	4 No. pairs per jamb, 3No pairs per head and threshold, 10 x 80 long screws at 50mm from corners and at 250mm centres on horizontal edges, 370mm on vertical edges	-	-
Frame fire stopping	Intumescent acrylic mastic on both faces	Nominally 5mm wide sealing frame to supporting construction	-	-

Intumescent and sealing materials

	Make/type	Size (mm)	Location	Key to figures
Panel leaf	Envirograph graphite based intumescent seal Product ref: G10-10	10 x 2	Fitted on the unexposed face leaf profile (see figures 2 and 3)	5
Frame	Closed cell foam seal	8 x 4	Fitted on the frame stop	6

Hardware

	Make/type	Size (mm)	Location	Key to figures
Hinges	Fabricated spring loaded steel pins	Ø8	Fitted at top and bottom of the leaf	7
Closer	None fitted	-	-	-
Lock – engaged	2No. steel budget locks	lock body size 110 high x 35 wide x 17 deep	Fitted at 200mm from the head and threshold of the leaf (see figures 2 and 3)	8
Furniture	IP65 lock insert	30Ø	Fitted on the unexposed face appropriate to the budget locks	9

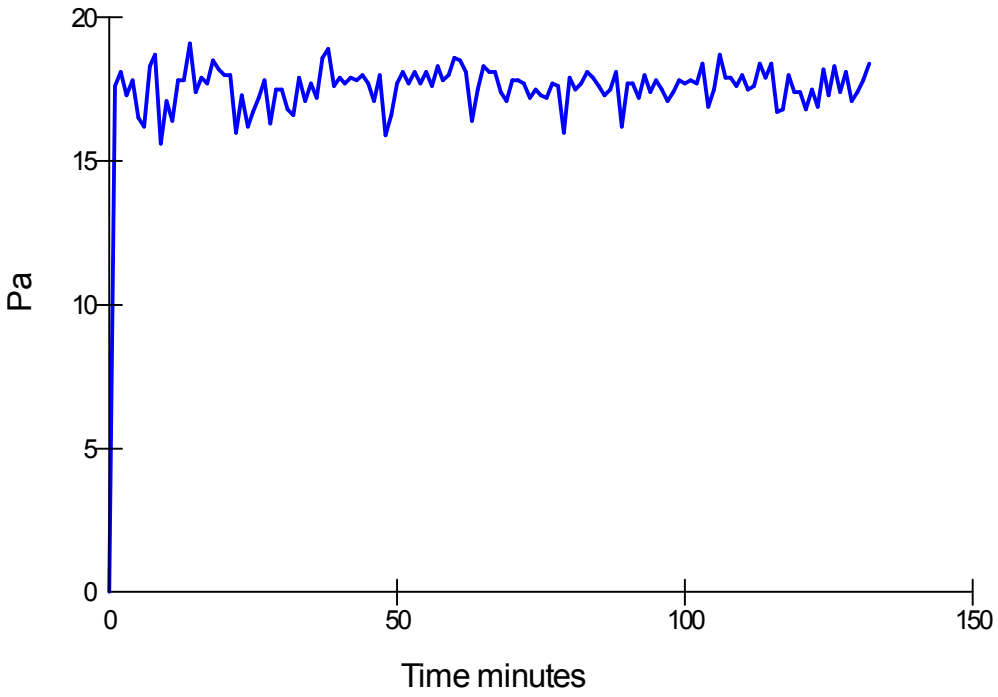
7 Test conditions

7.1 Ambient temperature

The ambient temperature of the test area at commencement of test was 10°C.

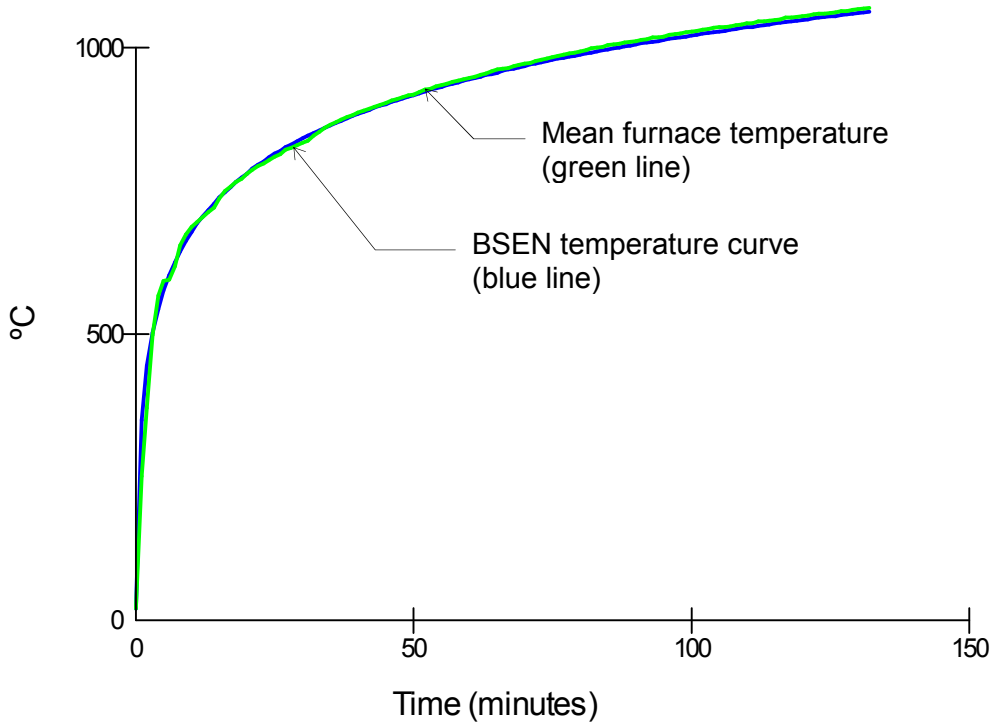
7.2 Pressure readings

After the first 5 minutes of the test, the furnace pressure was maintained at 18 ± 5 Pa and after 10 minutes was maintained at 18 ± 3 Pa with respect to atmosphere, equating to 20Pa at the head of the specimen. The pressure readings are shown graphically below:

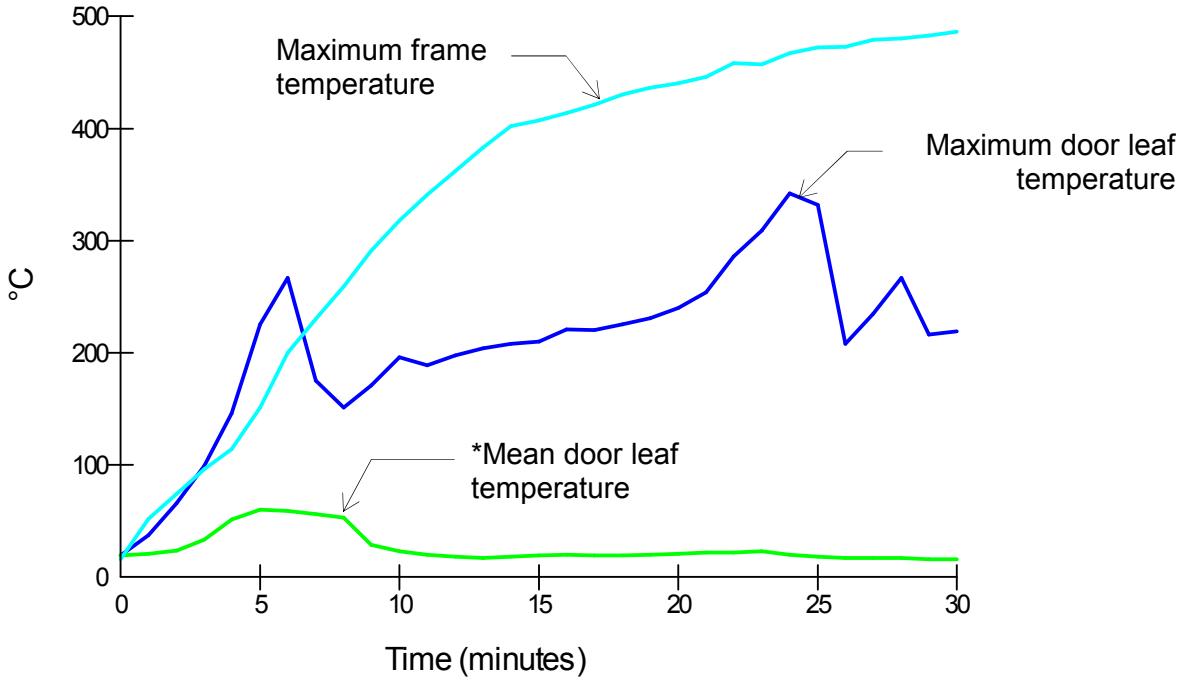


7.3 Furnace temperature

The furnace was controlled to follow the temperature/time relationship specified in BSEN 1363: Part 1: 1999 Section 5.1.1 as closely as possible, using the average of five plate thermocouples suitably distributed within the furnace. (See figure 4 of the appendix) The temperatures recorded are shown graphically below:



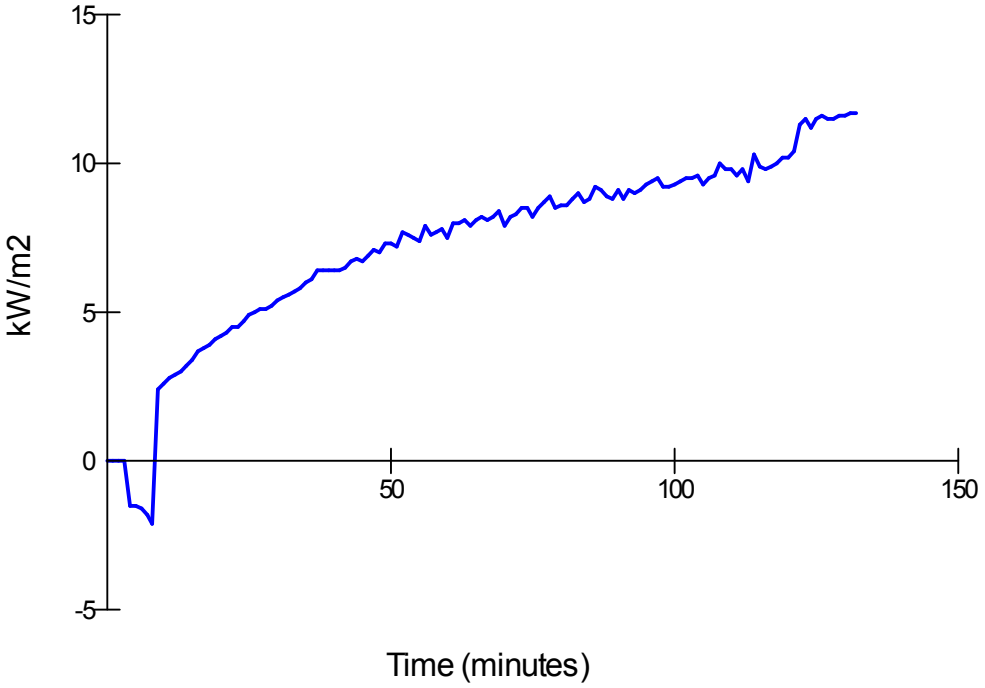
7.4 Unexposed face temperatures



* thermocouple malfunction at 3 minutes

7.5 Radiation

A radiometer was positioned at mid height and 1m away from the specimen. The readings recorded are shown graphically below:



7.6 Door distortion data

Due to the nature of the specimen being evaluated, no distortion measurements could be taken.

8 Observations

All comments relate to the unexposed face unless otherwise specified.

Time (minutes)	Comments
00.00	Test started.
02.30	There is smoke issuing from the head of the leaf.
03.50	The plasterboard has fallen away taking off thermocouples 15 and 17- 29.
06.00	There is smoke issuing from the perimeter of the leaf.
11.40	The leaf is glowing at the top closing corner of the leaf.
15.10	The unexposed face of the leaf has discoloured.
16.00	The intumescent seal at the perimeter of the frame has fully reacted.
20.00	The head of the leaf is glowing.
21.00	The top half of the hanging edge of the leaf is glowing.
22.00	The top half of the closing edge of the leaf is glowing.
25.00	All smoke issuing has stopped.
* 29.03	A cotton pad integrity test was performed at the middle of the leaf which resulted in ignition of the cotton pad thereby constituting **integrity failure.***
31.00	All unexposed thermocouples are removed.
33.00	The top third of the leaf is glowing.
38.30	The top half of the leaf is glowing.
39.20	There is a glow visible around the latch position.
41.00	The hanging edge of the leaf is glowing.
41.30	The closing edge of the leaf is glowing.
43.45	The threshold of the leaf is glowing.
48.00	The top two thirds of the leaf is glowing.
55.00	The entire leaf face is glowing.
69.20	The frame at the closing edge of the leaf is glowing.

73.00 There is a glow visible at the bottom latch position.

90.00 No change.

132.00 Test terminated.

* When classified under BSEN 13501-2: 2007+A1: 2009, this value for integrity failure will be disregarded as the element is being classified without an insulation performance.

9 Expression of results

Integrity	
Cotton pad	29 (twenty nine) minutes**
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Gap gauges	132 (one hundred and thirty two) minutes*
Insulation - 1 discrete area (steel)	
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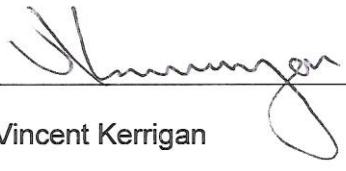
Radiant Heat	
Time to reach 15Kw/m^2	132 (one hundred and thirty two) minutes*

* No failure of the test criteria had occurred at the termination of the test at 132 minutes.
** When classified under BSEN 13501-2: 2007+A1: 2009, this value for integrity failure will be disregarded as the element is being classified without an insulation performance.

10 Limitations

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. CIFL 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.

Signature:		
Name:	Robert Axe	Vincent Kerrigan
Title:	Deputy Head of Section – Fire Resistance	Technical Manager
Date of issue:	19.06.2013	19-06-2013

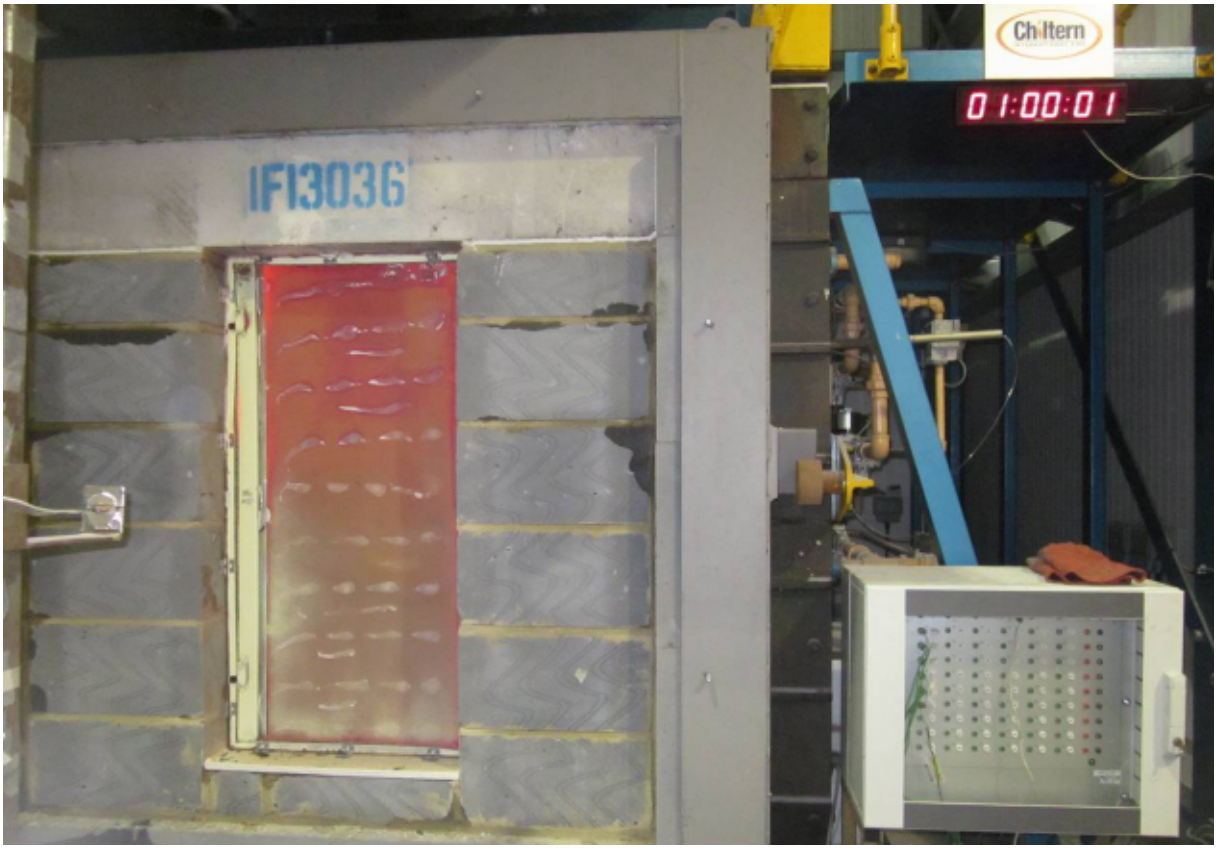
Revision A- June 2013 – change to client drawing – page 17

Photographs

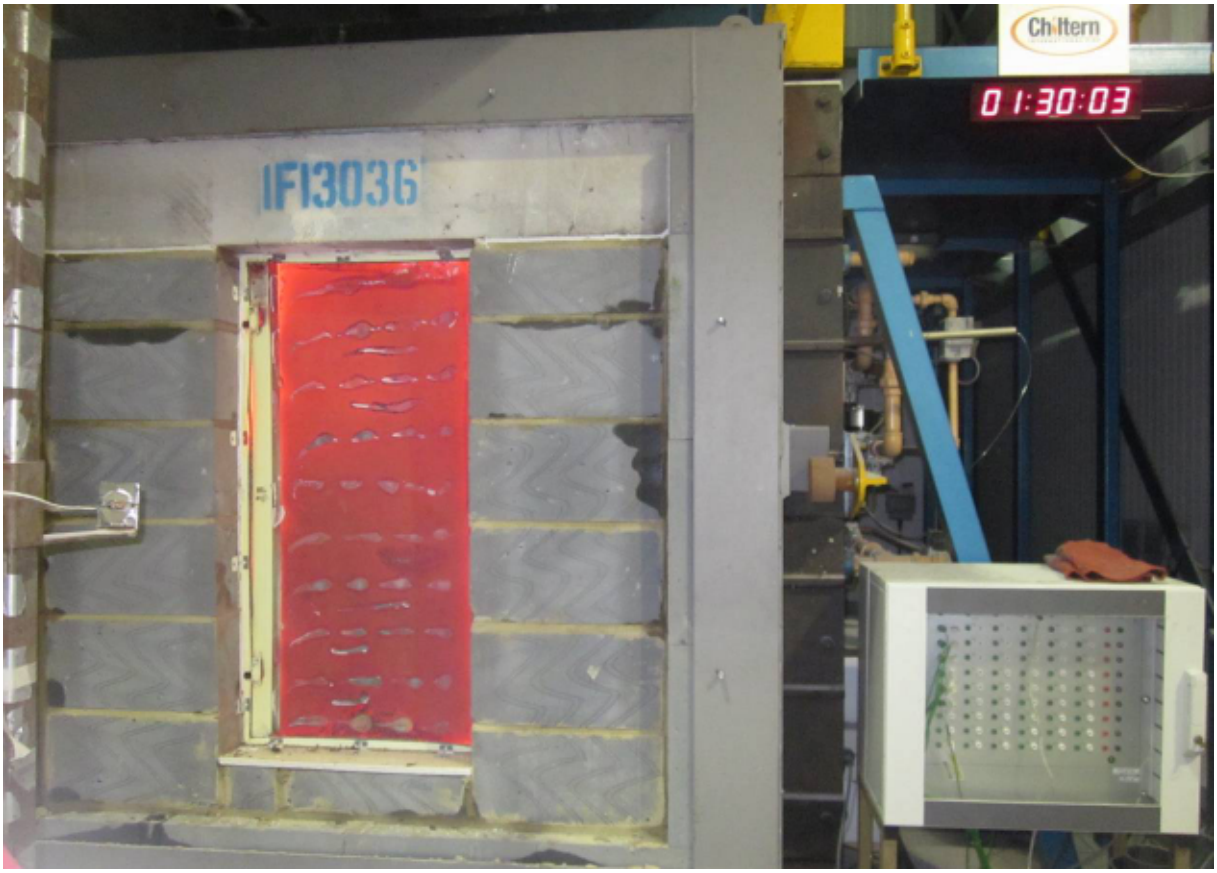
At start of test

After 30 minutes

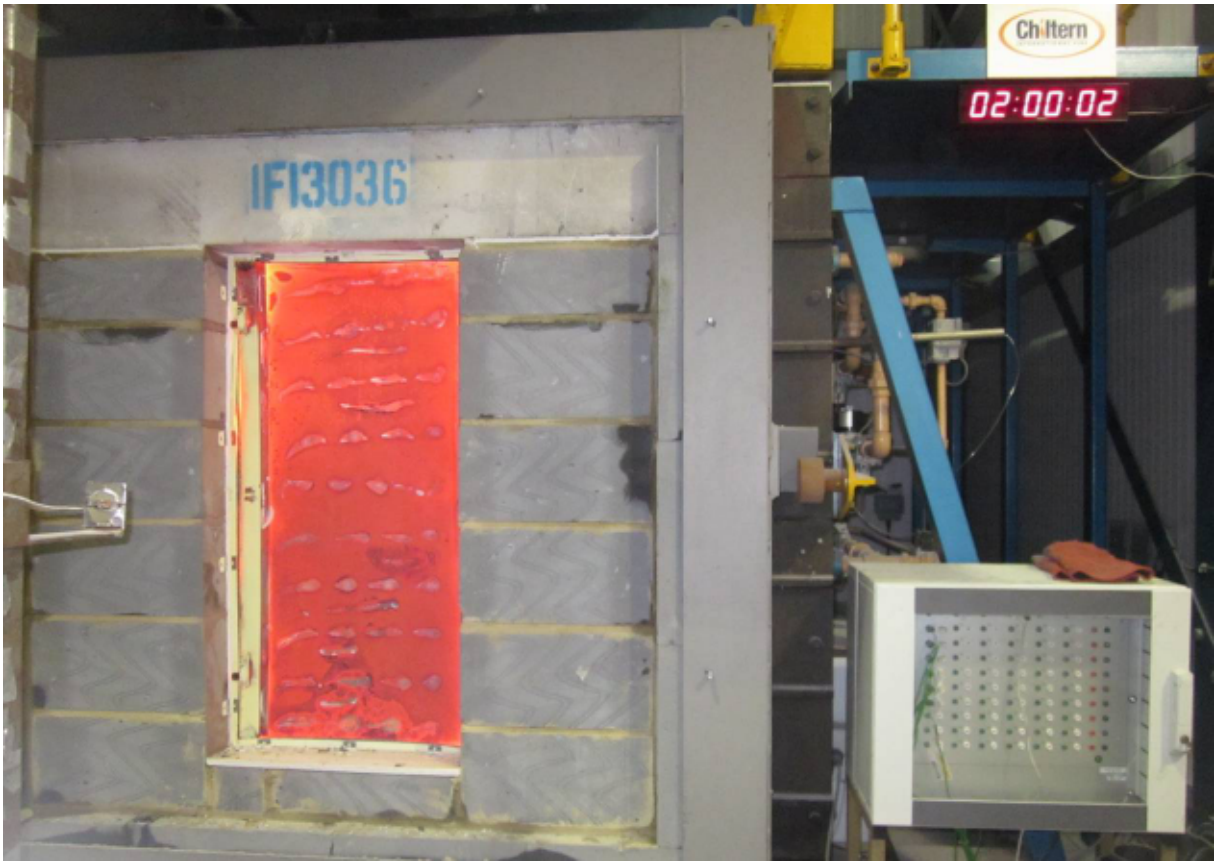
After 60 minutes



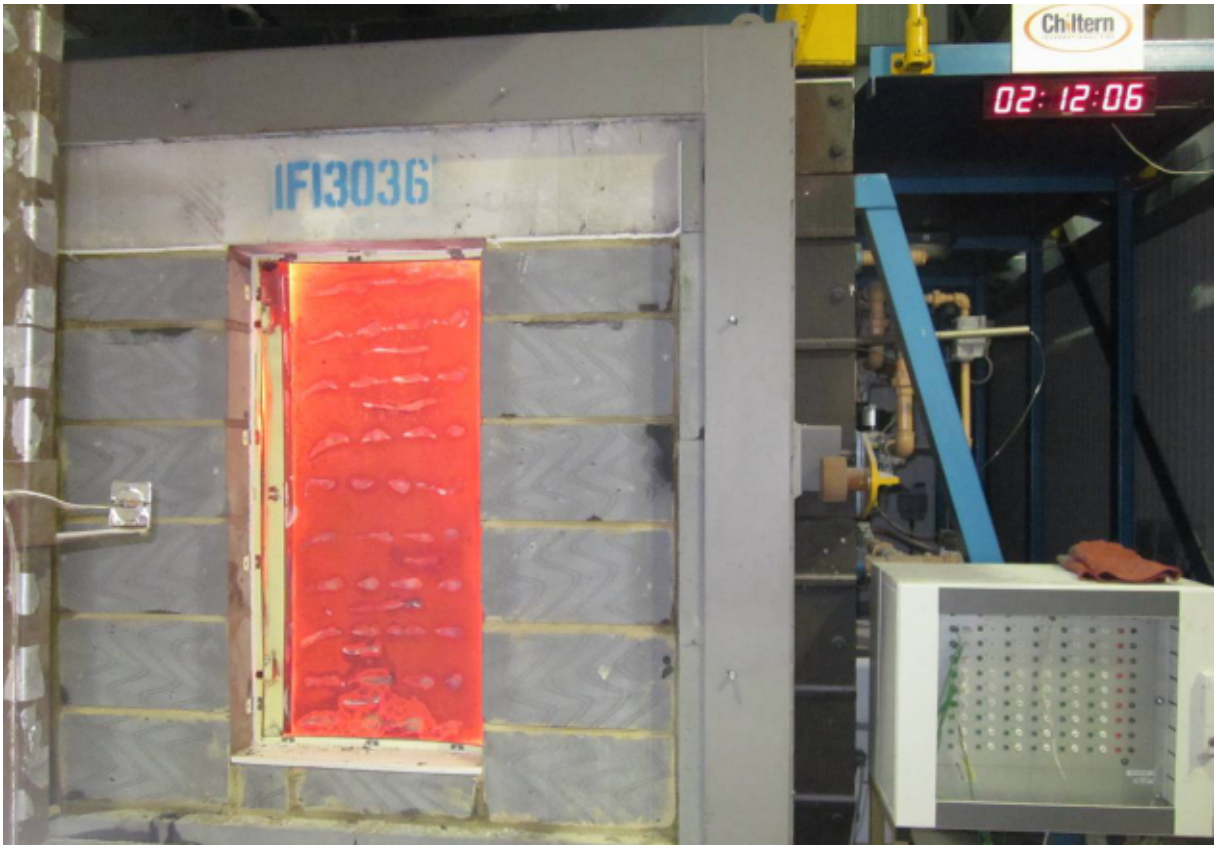
After 90 minutes



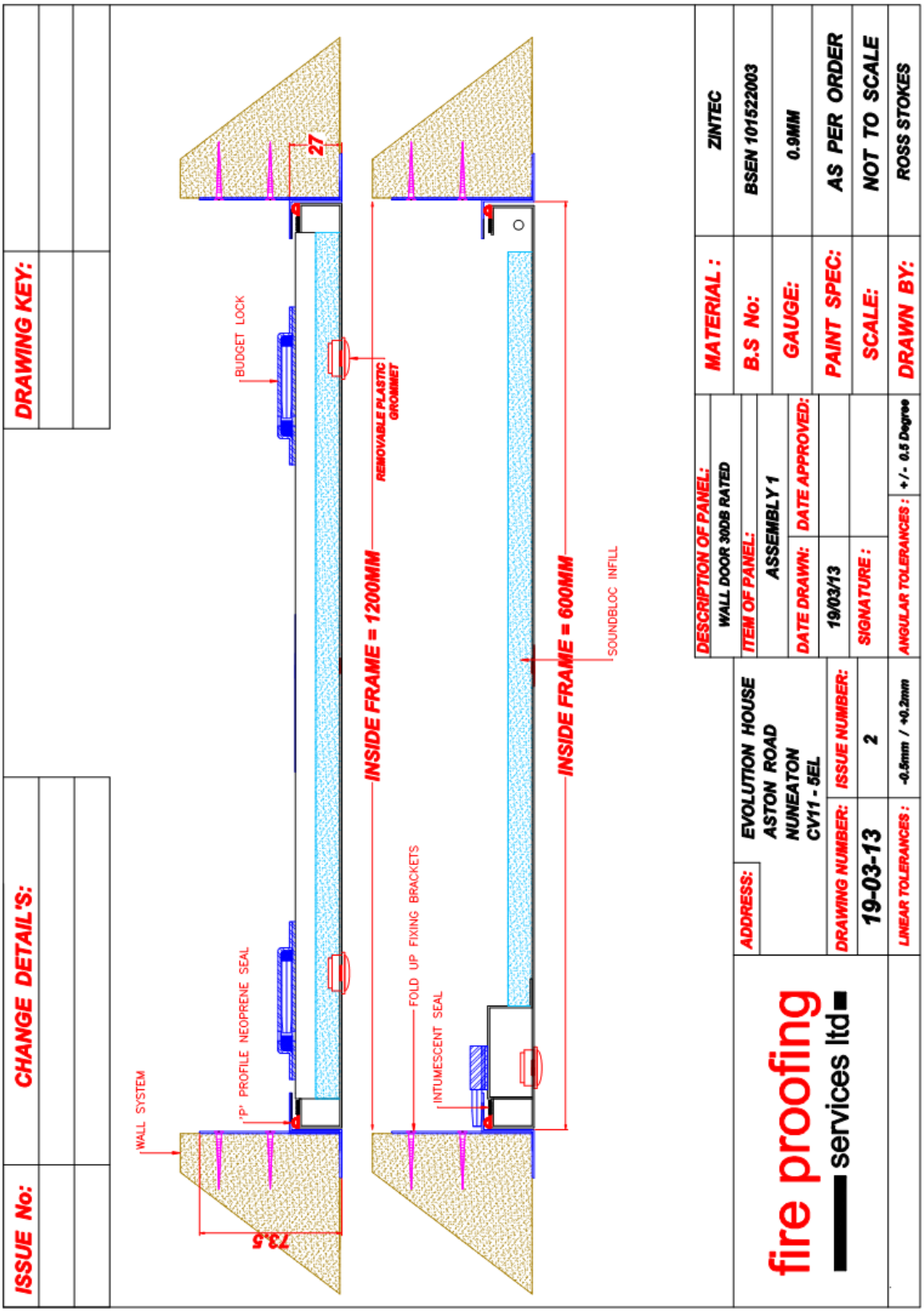
After 120 minutes

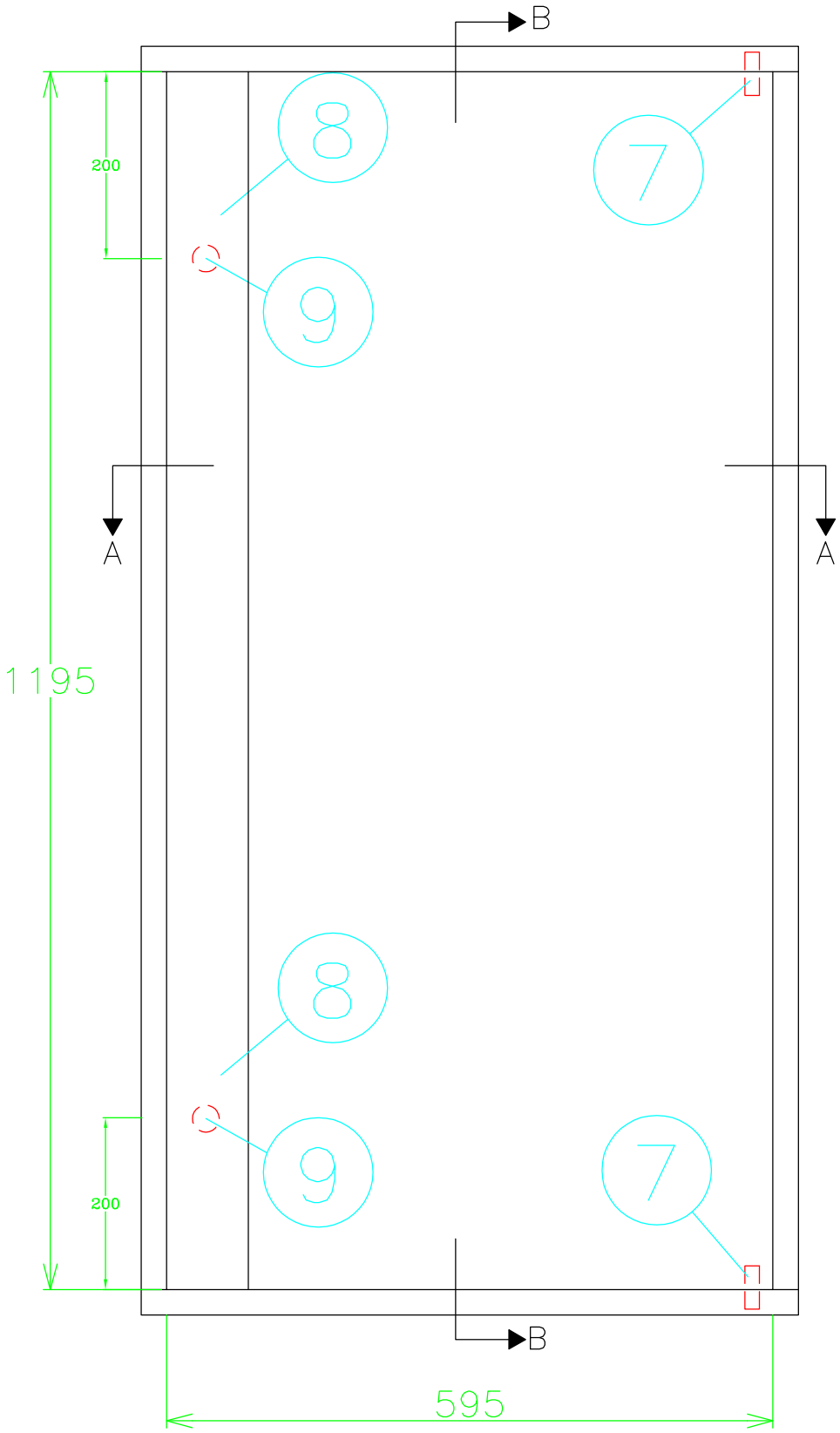


After 132 minutes



Appendix – clients drawings and figures 1 - 4





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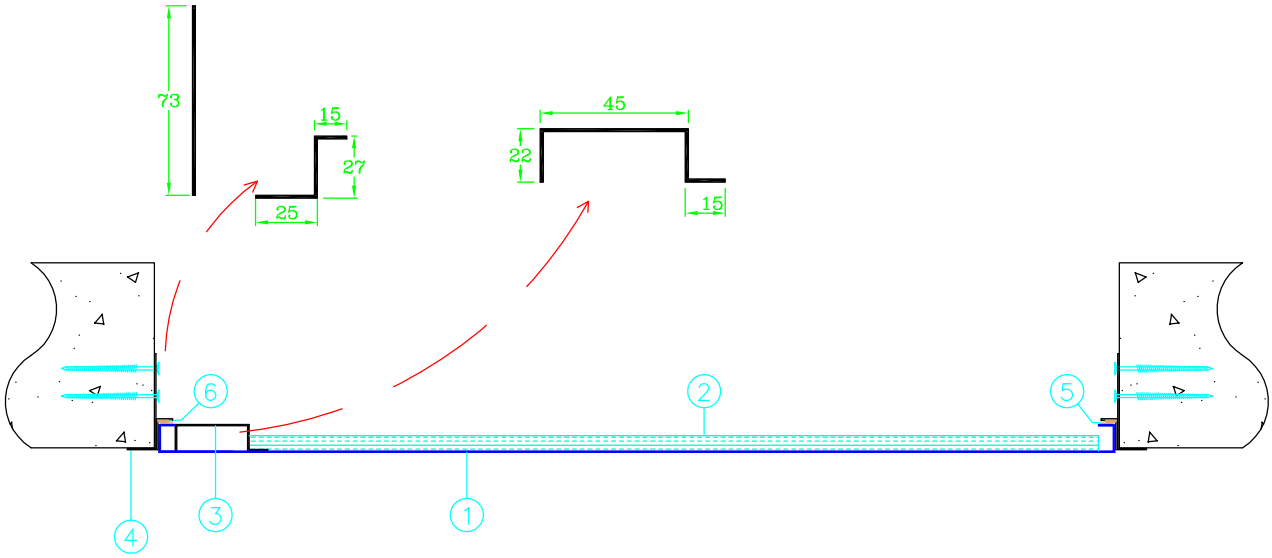
Title: Unexposed face elevation showing hardware positions (All dimensions in mm)

Date Drawn	Drawn By	Scale
15/04/13	ARD	NTS

Project No.	
Chilt/IF13036 Revision A	Appendix

Section A–A



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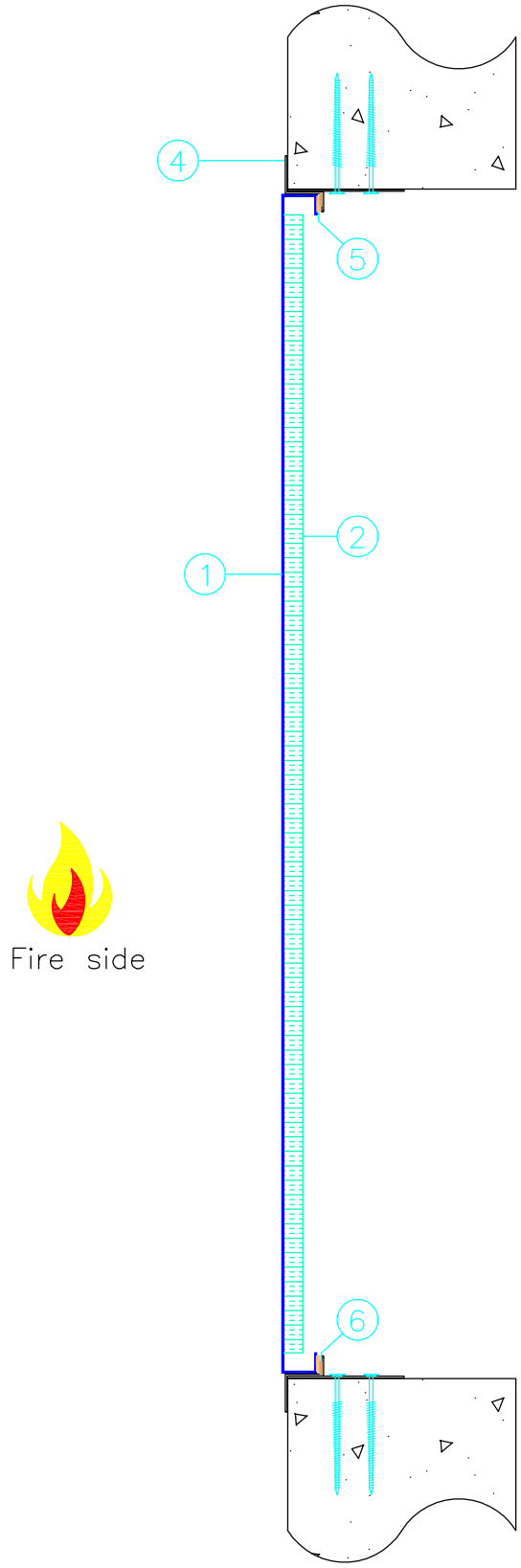
Title
Horizontal cross–section
(All dimensions in mm)

Date Drawn	Drawn By	Scale
15/04/13	ARD	NTS

Project No.	
Chilt/IF13036 Revision A	Appendix

Section B–B



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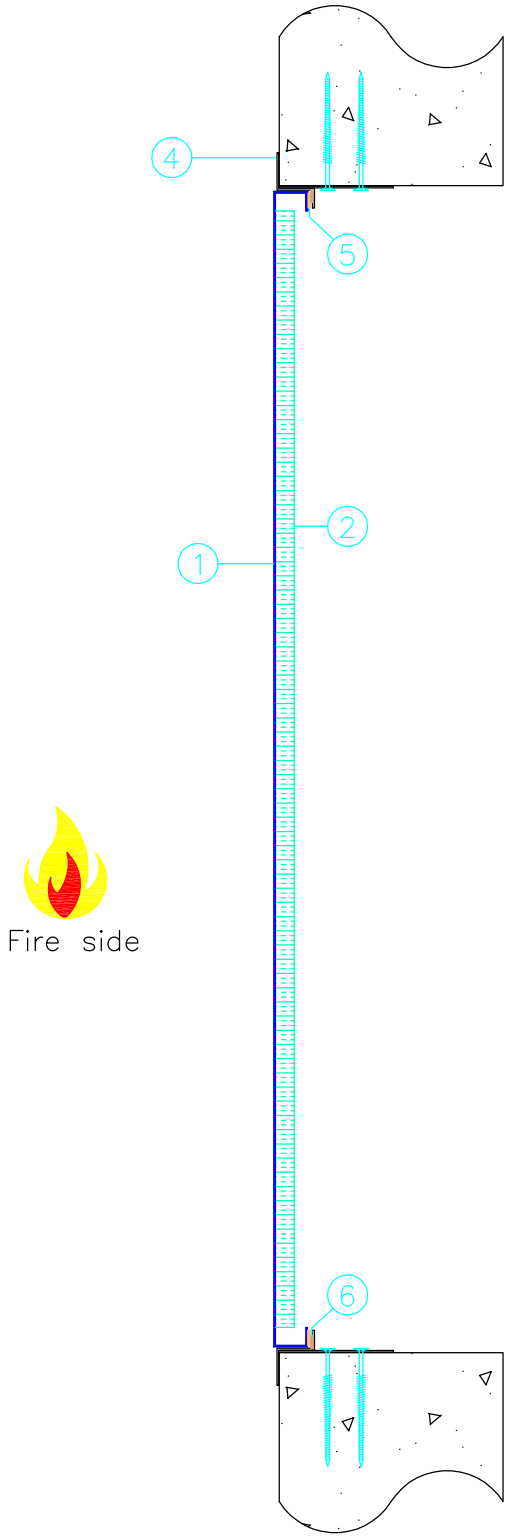
Title
Vertical cross–section
(All dimensions in mm)

Date Drawn	Drawn By	Scale
15/04/13	ARD	NTS

Project No.	
Chilt/IF13036 Revision A	Appendix

Section B–B



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Title: Furnace thermocouple positions

Date Drawn	Drawn By	Scale
15/04/13	ARD	NTS

Project No.	
Chilt/IF13036 Revision A	Appendix