

Our Ref: Chilt/IF12041 AR1

24th June 2012

Astra Door Controls Ltd
Unit 10
Astra Business Centre
Roman Way
Preston
PR2 5AP

The details of the sponsor of test report Chilt/IF11041 are held on file by Chiltern International Fire Ltd. This report is additional to that issued as Chilt/IF11041 on 30 July 2012 and the original report shall remain valid and is not replaced by the additional report.

Re: Indicative Fire Resistance Test to the temperature and pressure conditions of BS 476: Part 20: 1987, principles of BS 476: Part 22 and current FTSG Resolutions where applicable.

Introduction

This letter is to confirm the results of an indicative fire resistance test undertaken on 14th May 2012.

The specimen was supplied for test by the client and delivered in May 2012. Chiltern International Fire Limited (CIFL) installed the specimen into a refractory lined steel restraint frame on the front of a 1m x 1m vertical furnace.

The specimen consisted of a Nan Ya FD30 door leaf section, hung within a PVC door frame and fitted with a Astra 3003 series concealed door closer.

The overall size of the leaf was 981mm high x 911mm wide x 44mm thick.

Unexposed face prior to testing



Astra 3000 closer fitted



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Specification

Drawings of the specimen are shown in the Appendix.

Description of construction (refers to Figures 1 to 3 of the appendix)

Leaf : Nanya GRP Flush wood grain FD30

		Species/type	Dimensions (mm)	Density (kg/m ³)	Moisture (% w/w)	Key to figures
Stiles	Inner	Mixed wood [#] finger jointed lamels	30 wide x 40 thick	400-	-	1
	Outer	Mixed wood [#] finger jointed lamels	70 wide x 40 thick	600*	-	2
Top rail	Inner	Mixed wood [#]	30 wide x 40 thick	400-600*	-	3
	Outer	Mixed wood [#]	70 wide x 40 thick	400-600*	11.2	4
Core*		Phenolic foam	40 thick	75*	-	5
Facings		Moulded GRP	2 thick	-	-	6

* Stated by client, not checked by laboratory

Mixed wood consisting of pine, acacia and styrax

Door frame:

	Species/type	Dimensions (mm)	Density (kg/m ³)	Key to figures
Head and Jambs	PVC LB Plastics Sheerframe Product reference SK77950	60 wide x 70 deep including a 20 high x 23 deep integral stop	-	7
Frame reinforcement	Aluminium extrusion LB plastics product reference A171	29 wide x 37 deep x 2 thick	-	8

Intumescent materials and interruptions by hardware

	Make/type	Size (mm)	Location	Key to figures
Leaf – head and vertical edges	None fitted	-	-	-
Frame reveal - head and jambs	Antifire Product reference ES 302	30 x 2	Fitted in the frame reveal 7mm from the exposed face	9
Behind frame	Antifire Product reference ES 302	30 x 2	Fitted in the centre profile at the back of the frame	10
	2No. Antifire Product reference ES 102	10 x 2	Fitted in the profiles either side of centre at the back of the frame	11
Around hinges	-	-	Hinge blade fully interrupts seal in frame edge	-
Under hinges	Lorient Polyproducts Ltd MAP hinge packers	2 thick	Fitted under hinge blade on frame and leaf	-
Around closer reaction plate	Fully interrupted	-	Closer reaction plate fully interrupts seal in frame reveal	-
Under closer reaction plate and forend	Lorient Polyproducts Ltd MAP hinge packers	2 thick	Fitted under the forend and face plate	-
Buffer seal	Q Ion type rubber buffer seal	Nominally 11 x 6	Fitted to the upstand of the stop	12

Hardware

	Make/type	Size (mm)	Location	Key to figures
Hinges	PDS stainless steel bearing butt type	Blade size - 100x 40 (frame side), 100x 30 (leaf side)	Fitted 101mm and 780mm from the head of the leaf	13
Closer	Astra Door Controls 3003 concealed closer	264 x 30 (body size) 36 x 92 (forend size)	Fitted 490mm from the head of the leaf	14
Latch	None fitted	-	-	-

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Test conditions

The furnace temperature was measured using the average of 4No furnace thermocouples. The temperature and pressure were controlled to the conditions outlined in BS 476: Part 20: 1987

The pressure at the head of the specimen was maintained at 9.3Pa to simulate a leaf height of 2.1m.

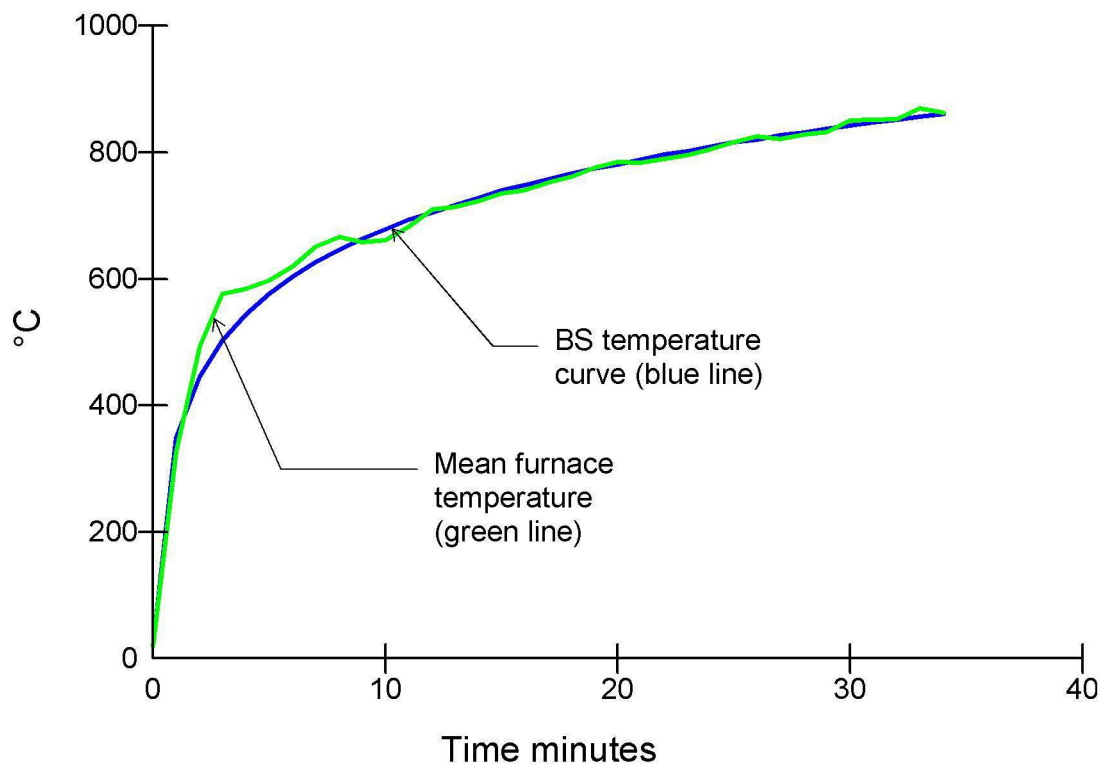
The ambient temperature of the laboratory at the start of the test was 12°C.

The temperature of the unexposed face of the specimen was measured by means of three thermocouples fixed to the leaf and three thermocouples fixed to the frame. The thermocouple positions are shown in figure 3 of the appendix. The temperatures were recorded and are shown graphically below:

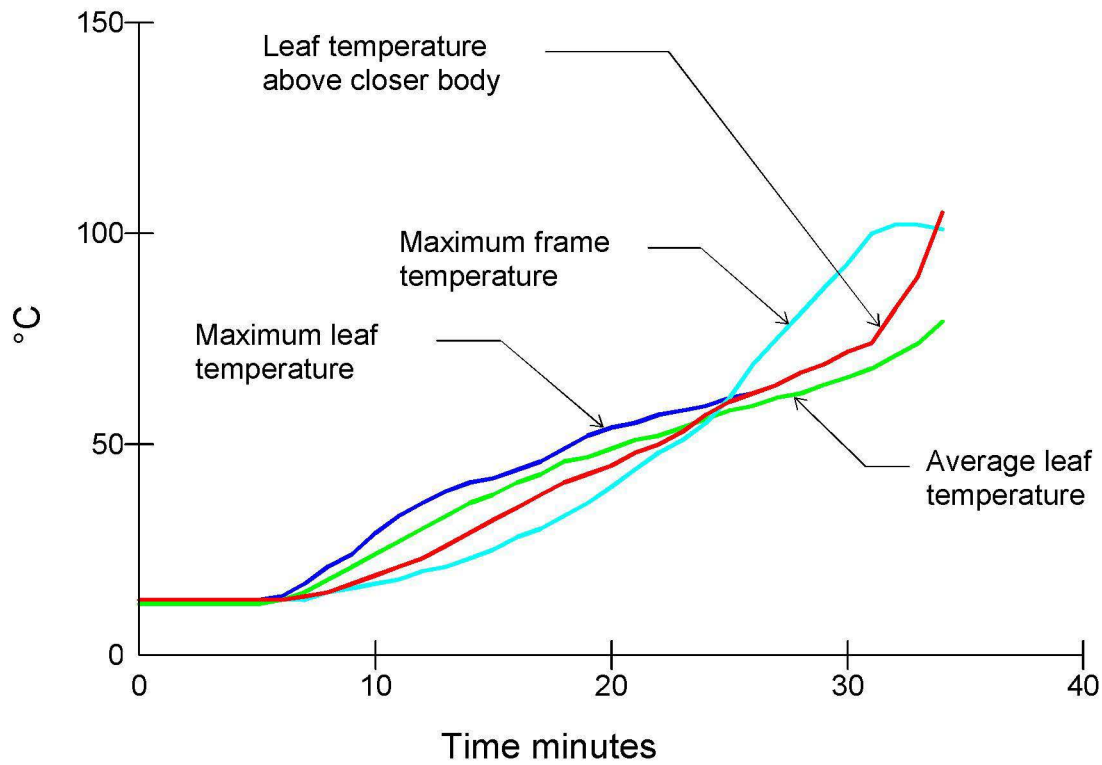
Test results

The following data and observations were recorded during the test.

Furnace temperature curve



Unexposed face temperature curves



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Observations

All comments relate to the unexposed face unless otherwise specified.


Time (minutes)	Comments
0.00	Test started.
02.30	There is smoke issuing from the head of the leaf.
04.00	There is smoke issuing from the leaf/frame gaps.
06.00	The smoke issuing has stopped, except for the top closing corner and top hanging corner of the leaf.
23.20	There is an increase in the level of smoke issuing from the head of the leaf.
24.55	There is a glow visible from the top closing corner of the leaf.
27.01	A cotton pad integrity test was performed on the top closing corner of the leaf, no failure.
27.30	The head of the door frame is starting to soften and slump down.
28.02	A cotton pad integrity test was performed on the top closing corner of the leaf, no failure.
30.10	A cotton pad integrity test was performed on the top closing corner of the leaf, no failure.
31.15	A cotton pad integrity test was performed on the top closing corner of the leaf, no failure.
31.20	The head of the leaf has melted and fallen away.
32.00	There is intermittent flaming from the head of the leaf.
32.10	There is a glow visible from the closer position of the leaf.
33.07	There is intermittent flaming from the closer position of the leaf.
33.35	A cotton pad integrity test was performed on the closer position, no failure.
33.55	There is flaming for in excess of ten seconds at the head of the leaf.
34.00	Test terminated

Primary Observations

Time (minutes)	Comments
24.55	There is a glow visible from the top closing corner of the leaf.
31.15	A cotton pad integrity test was performed on the top closing corner of the leaf, no failure.
32.00	There is intermittent flaming from the head of the leaf.
32.10	There is a glow visible from the closer position of the leaf.
33.07	There is intermittent flaming from the closer position of the leaf.
33.35	A cotton pad integrity test was performed on the closer position, no failure.
33.55	There is flaming for in excess of ten seconds at the head of the leaf.
34.00	Test terminated

Whilst this report relates to an investigation, which utilised the exposure conditions given in BS476: Part 20: 1987, the full requirements of the test standard were not complied with. The information is provided for the test sponsor's information and should not be used to demonstrate performance against the standard nor compliance with regulatory requirements.

The test was not conducted under the requirement of UKAS accreditation.



Ross Newman
Principal Test Engineer

26-07-2012



Vincent Kerrigan
Technical Manager

26-07-2012

Photographs

At start of test



After 10 minutes



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After 20 minutes



After 30 minutes



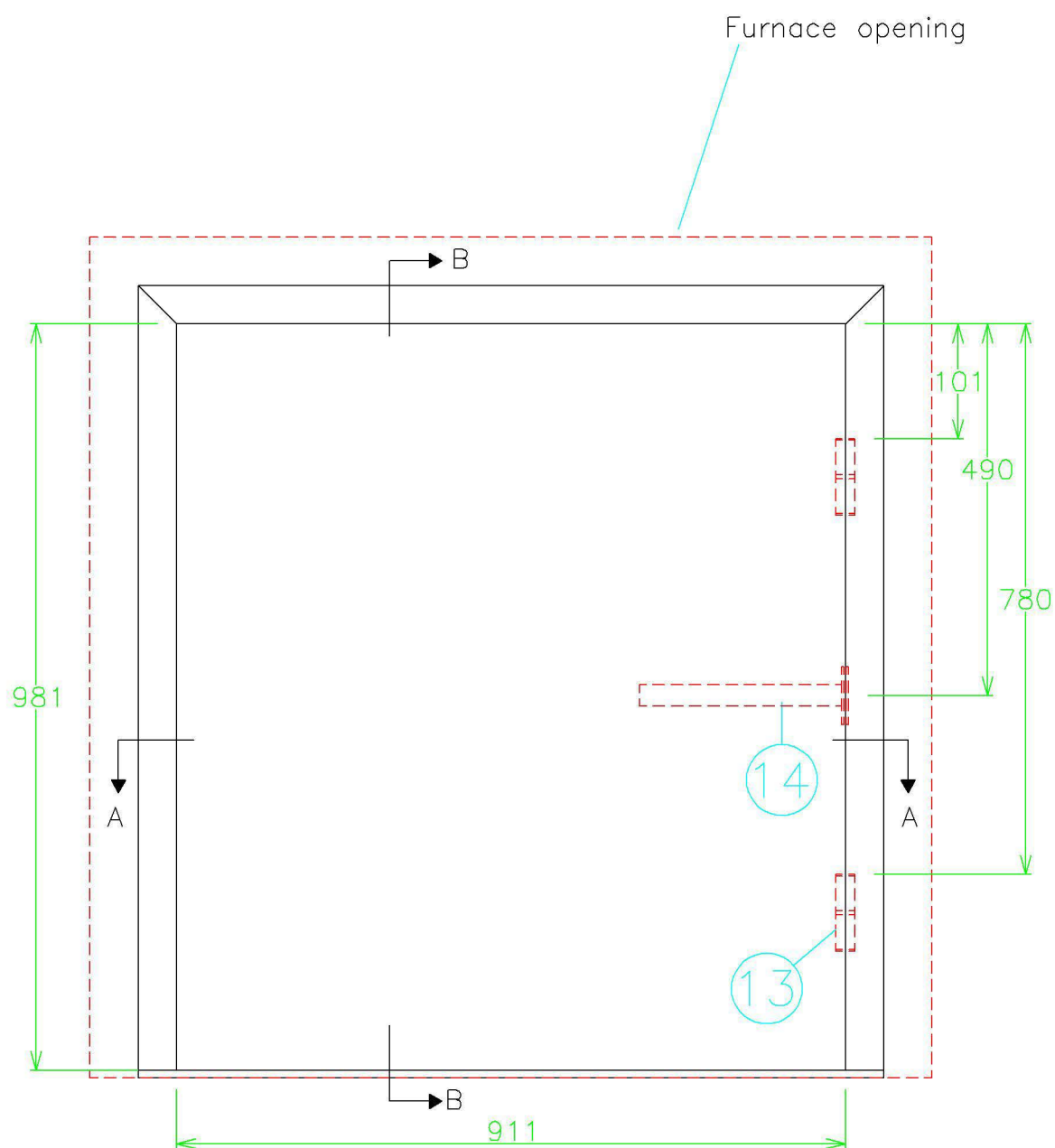
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Appendix - figures 1 to 3



Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.

Tel: [REDACTED] Fax: [REDACTED]

Title

Unexposed face elevation

(All dimensions in mm)

Date Drawn

01/06/12

Drawn By

ARD

Scale

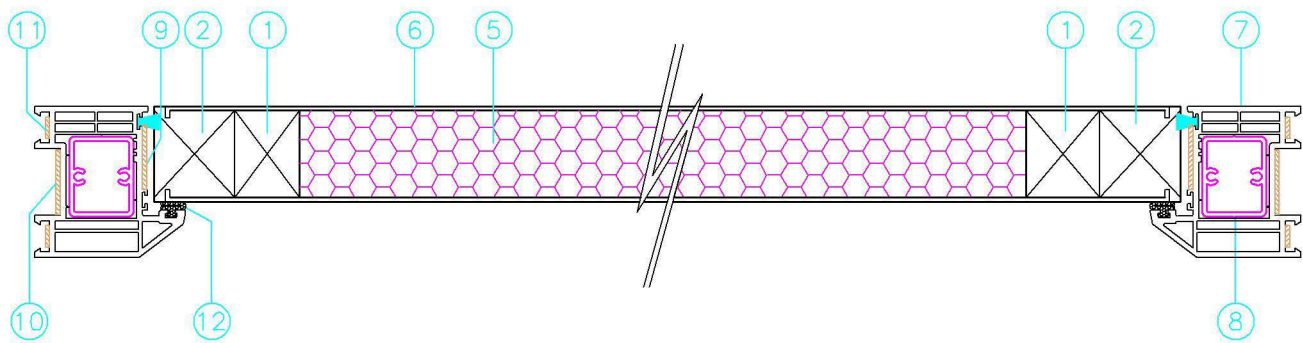
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Project No.

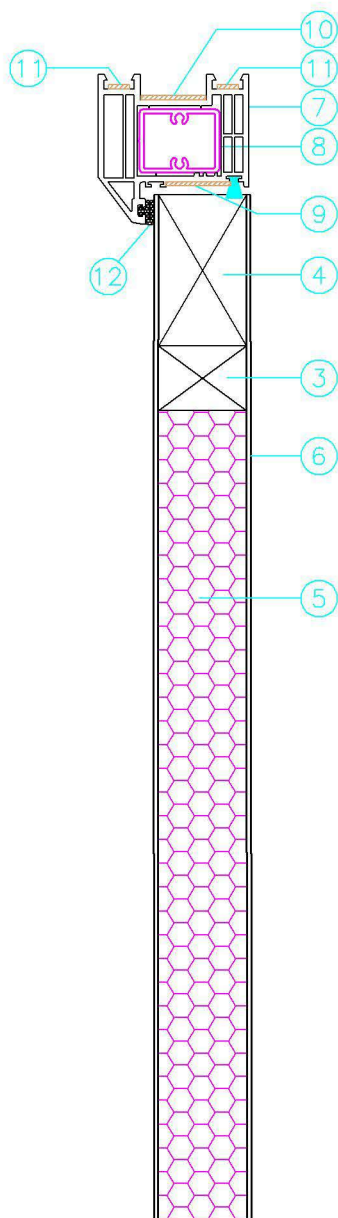
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Appendix

Section A – A

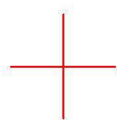
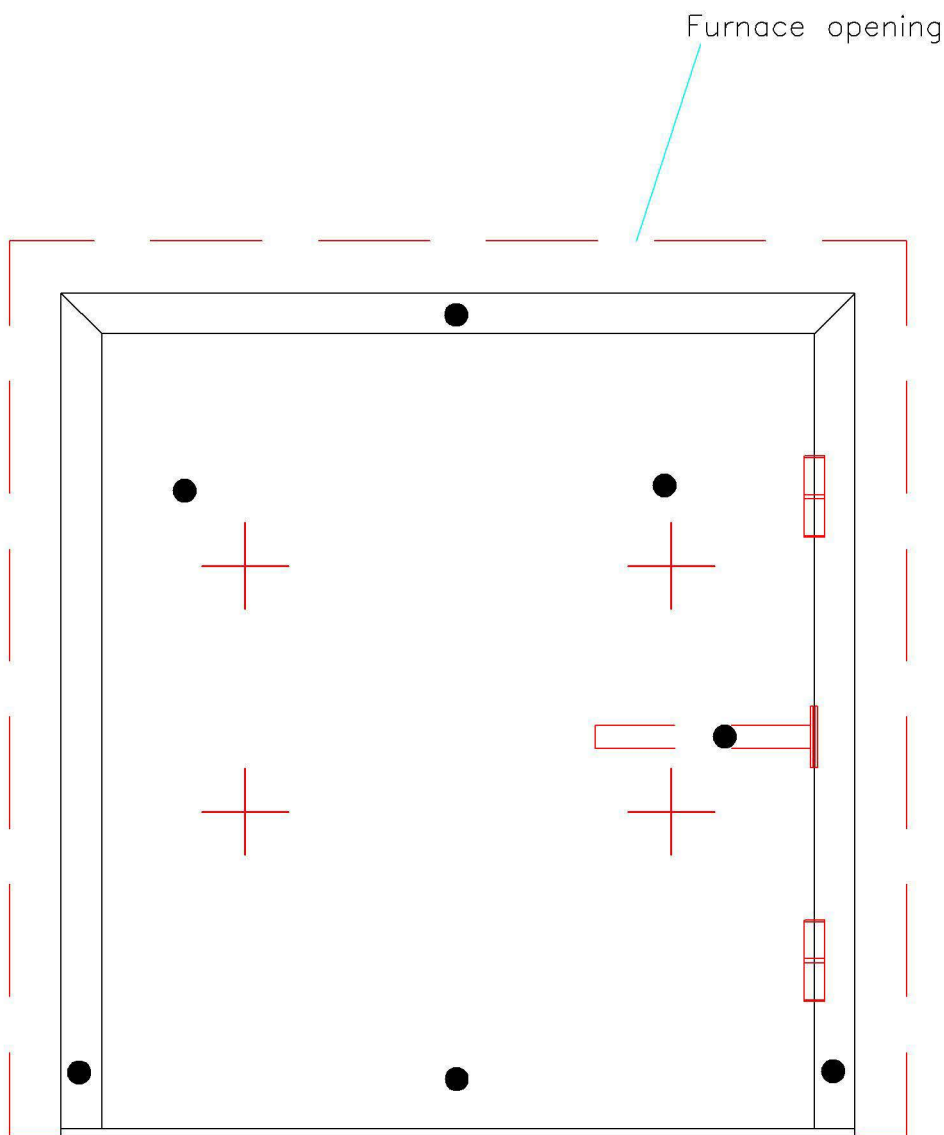


Section B – B



Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.
Tel: [REDACTED] Fax: [REDACTED]

Title Horizontal and vertical cross sections		
Date Drawn 01/06/12	Drawn By ARD	Scale NTS
Project No. Chilt/12041 AR1		Appendix



: Furnace Thermocouples



: Unexposed Face Thermocouples



Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.

Tel: [REDACTED] Fax: [REDACTED]

Title
Thermocouple positions

Date Drawn 01/06/12	Drawn By ARD	Scale NTS
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