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Title:

The Fire Resistance Performance Of A Combination Of Letter Plates, When Tested In Accordance With BS EN 1634-2: 2008, Method c) Method For Testing Non-Edge Mounted Items Of Building Hardware.

Date Of Test:

03 September 2024

Issue 3

20 May 2025

WF Report No:

546859/R

Prepared for:

Hoppe UK Limited

Gailey Park
Standeford
Wolverhampton
WV10 7GW

0249

This report supersedes the Issue 2 report on 29 April 2025.

Test Specimens

Summary of Tested Specimens

The Letter Plates referenced AR708HS was fitted on both leaves referenced Marksman 54 Core doorset associated construction with 0.5mm Interdens fitted around the letter plate and were installed such that they was tested from both sides.

The associated construction leaves had overall nominal dimensions of 655 mm wide x 1490 mm high x 54 mm thick. The door leaves were formed from a graduated density chipboard core. There were no hinges or locksets fitted to this.

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

Integrity	It is required that the specimens retain their separating function, without either causing ignition of a cotton pad when applied, or permitting the penetration of a gap gauge as specified in BS EN 1634-1: 2014, or resulting in sustained flaming on the unexposed surface. **These requirements were satisfied for the periods shown below:**			
	Doorset A		**Doorset B**	
Sustained flaming	72 minutes		73 minutes*	
Gap gauge	73 minutes	No failure*	73 minutes	No failure*
Cotton pad	72 minutes		73 minutes*	
Insulation (I_2)	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 with the exception that the limit for temperature rise for any frame member or transom member adjacent to the leaf/leaves of the doorset or openable window shall be 360°C. Insulation failure also occurs simultaneously with integrity failure as specified in BS EN 1634-1: 2014. **These requirements were satisfied for the period shown below:**			
Specimen	72 minutes	Due to integrity failure	73 minutes	No failure*
Insulation (I_1)	The test specimen shall be evaluated against the maximum temperature rise criterion specified in EN 1363-1: 2020 (180°C).			
	72 minutes		73 minutes	
	*Test was discontinued after a period of 73 minutes.			

Date of Test 03 September 2024

Quality Management

Issue No: 1	Issue Date: 15 October 2024
Responsible Officer: **P. White***	Approved By: **S. Whittle***
Signature Image	Signature Image
	

Issue No: 2	Re-issue Date: 29 April 2025
Responsible Officer: **P. White***	Approved By: **S. Whittle***
Signature Image	Signature Image
	
Reason for Revision: Page two summary stated the door leaf was 44mm however as per the schedule this was 54mm. amended	
Issue No: 3	Re-issue Date: 20 May 2025
Responsible Officer: **P. White***	Approved By: **S. Whittle***
Signature Image	Signature Image
	
Reason for Revision: Page two summary and drawings incorrect. Stated the Interdens around the letter plates where 0.8 mm however after client sent over sampling evidence this is now changed to 0.5 mm . Also corrected the core in the summary to be the reference of the graduated density chipboard core that was used as per the schedule of components.	

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

CONTENTS **PAGE NO.**

Test Conditions

Standard

BS EN 1634-1:2014+A1:2018 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for door and shutter assemblies and openable windows

Sampling

A representative of **Warringtonfire** sample selected the following components of the tested specimen:

Component	Sampling date	Sampling report reference
54mm Particleboard Door Blanks (linex Normapan E1)	27/10/2023	SCT23283B
Arrone TS008 Letterplate AR708HS-PCH	15/08/2024	A0-106117
Intumescent Tube 30 units sampled	15/08/2024	A0-106117
Intumescent Article No 2	15/08/2024	A0-106117
Intumescent Seal Article No 1	15/08/2024	A0-106117
Intumescent Article No 5	15/08/2024	A0-106117
Intumescent Seal Article No 4	15/08/2024	A0-106117

Copies of sampling reports are included in the Sample Report section.

Installation

The doorset was received on the 02 September 2024 and mounted within an aperture in a blockwork wall construction. Representatives of **WIA** conducted the installation on the 02 September 2024.

Conditioning

The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of 1 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 20.5^{o}C to 33.0^{o}C and 32.5% to 76.5% respectively.

Instruction to Test

The test was conducted on the 03 September 2024 at the request of Hoppe UK Limited, the test sponsor.

Representatives of the test sponsor Neil Harrison witnessed the test.

Pre-Test Conditioning

Prior to testing, the doorsets were subjected to appropriate mechanical pre-test conditioning in accordance with the requirement of EN 16034:2014, Annex A.

Ambient Temperature

The ambient air temperature in the vicinity of the test construction was 18ºC at the start of the test with a maximum variation of +2ºC 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 four plate thermometers, distributed over a plane 100 mm from the surface of the test construction.

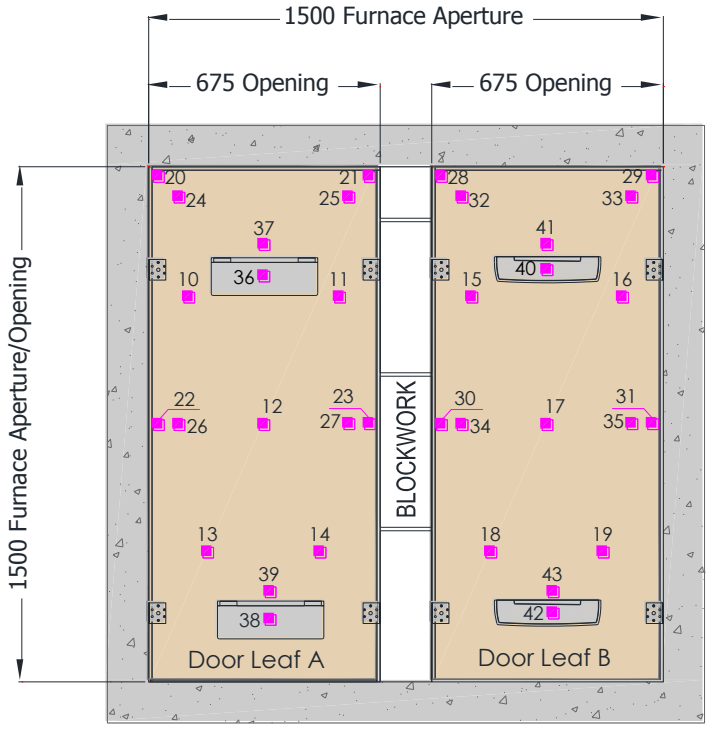
Thermocouples

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 Figure 1.

Furnace Pressure

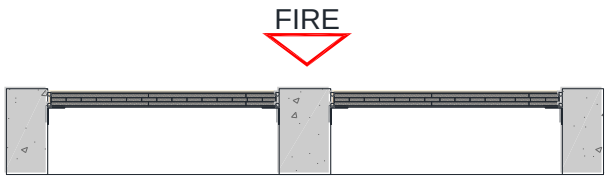
After the first five minutes of testing and for the remainder of the test, the furnace atmospheric pressure was controlled so that it complied with the requirements of BS EN 1363-1: 2012, clause 5.2.1 The calculated pressure differential relative to the laboratory atmosphere at the top of the specimen was 9.52 (± 5) Pa between 5 and 10 minutes and 9.52 (± 3) Pa thereafter.

Test Drawings



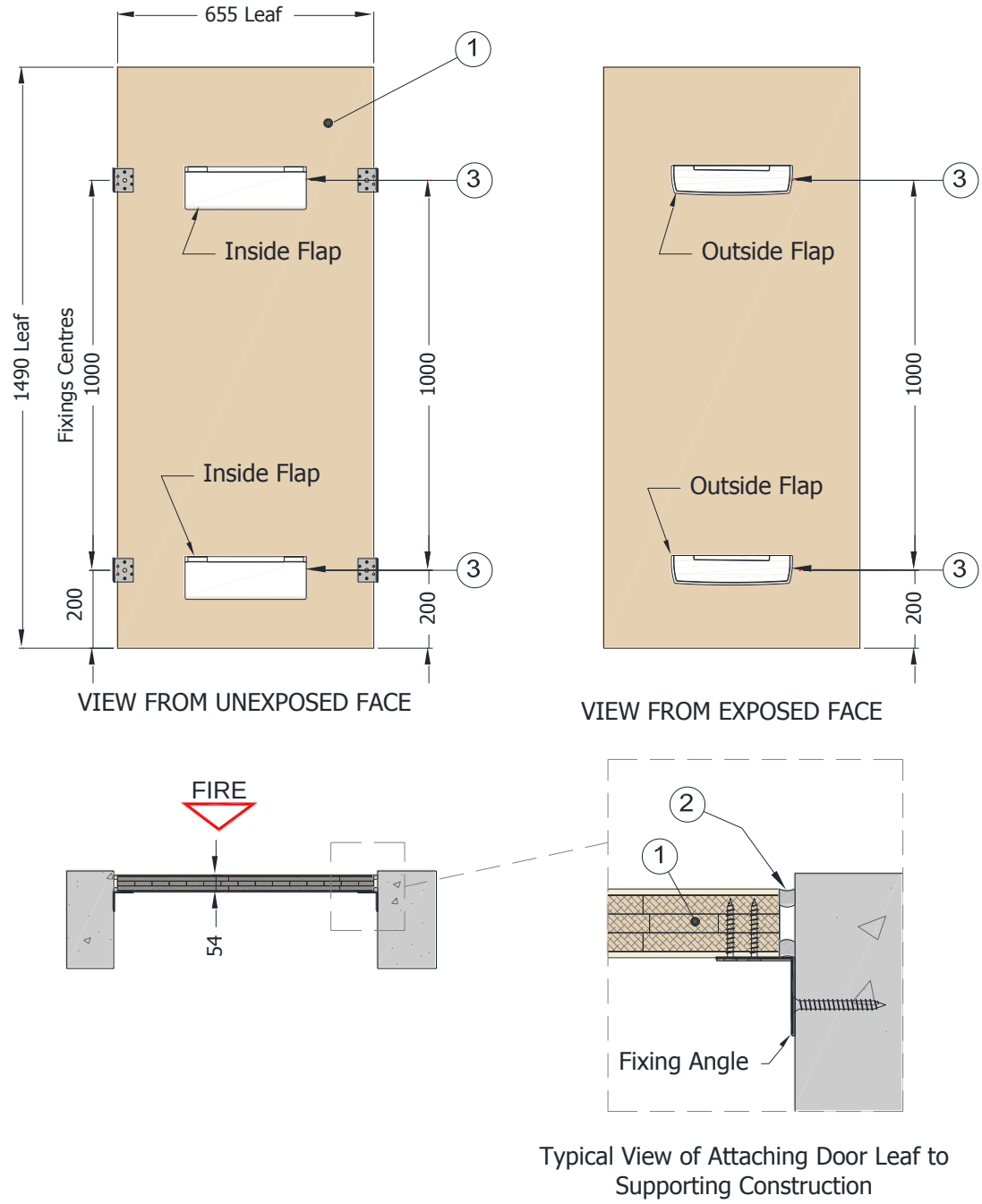
■ Positions of thermocouples

GENERAL ELEVATION OF TEST CONSTRUCTION
UNEXPOSED FACE



HORIZONTAL SECTION THROUGH TEST CONSTRUCTION

Figure 1 General Elevation of Test Construction – Unexposed Face



DETAILS OF DOOR LEAF A

Figure 2 Details of Door Leaf 'A'

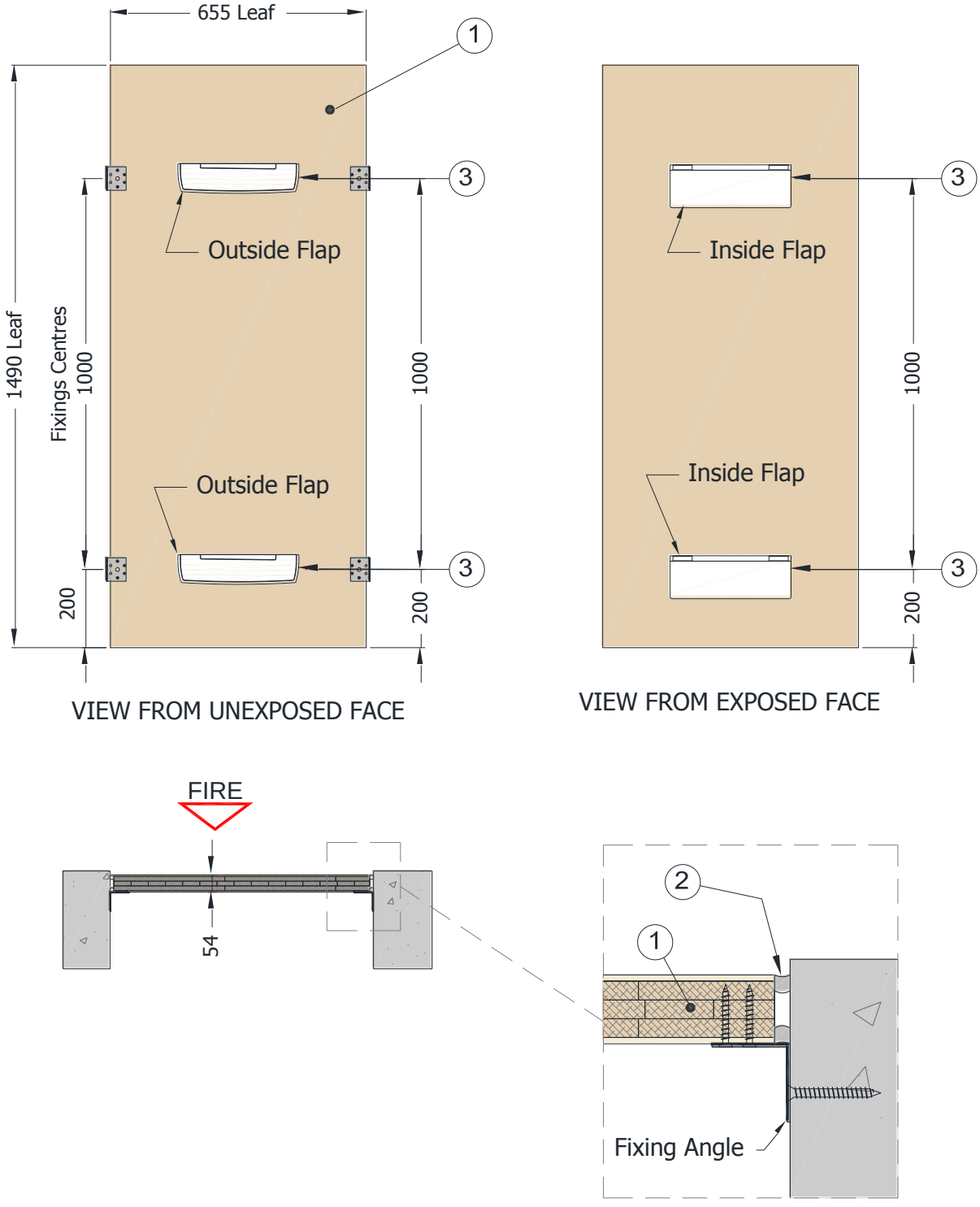
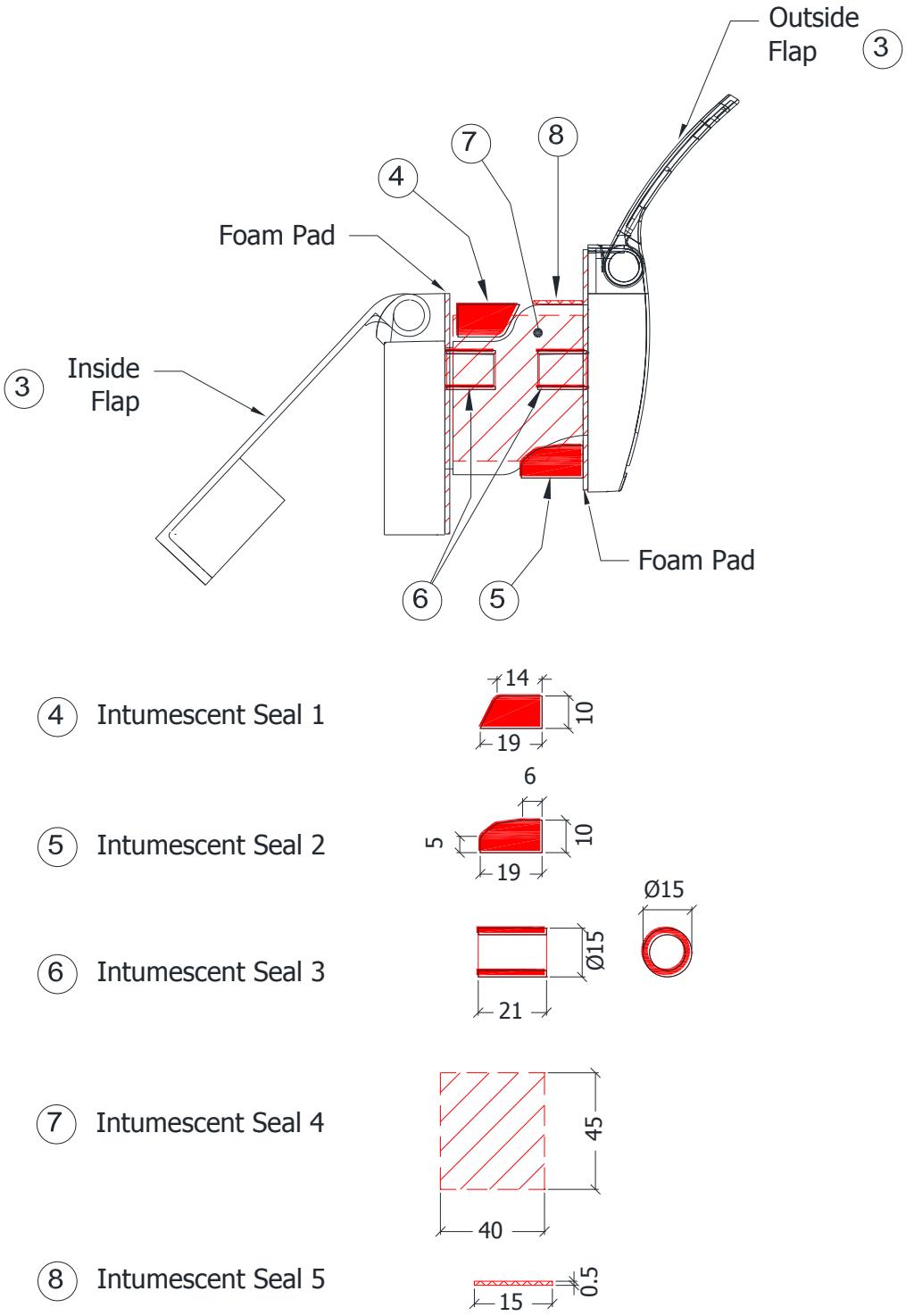


Figure 3 Details of Door Leaf 'B'



DETAILS OF INTUMESCENT STRIPS

Figure 4 Details of Intumescent Strips

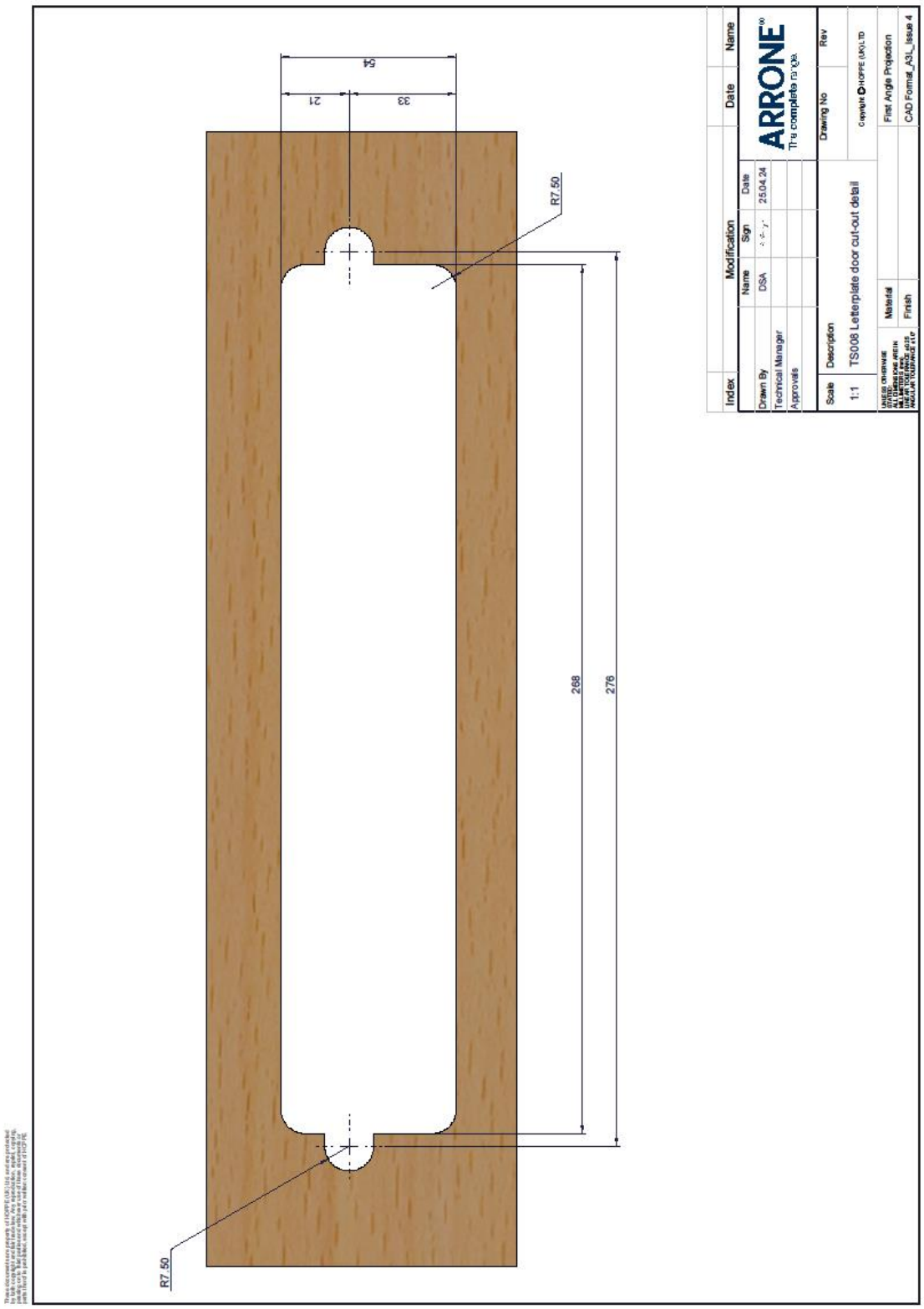


Figure 5 Client Inward Drawings – Details of Letterplate door leaf cut-out

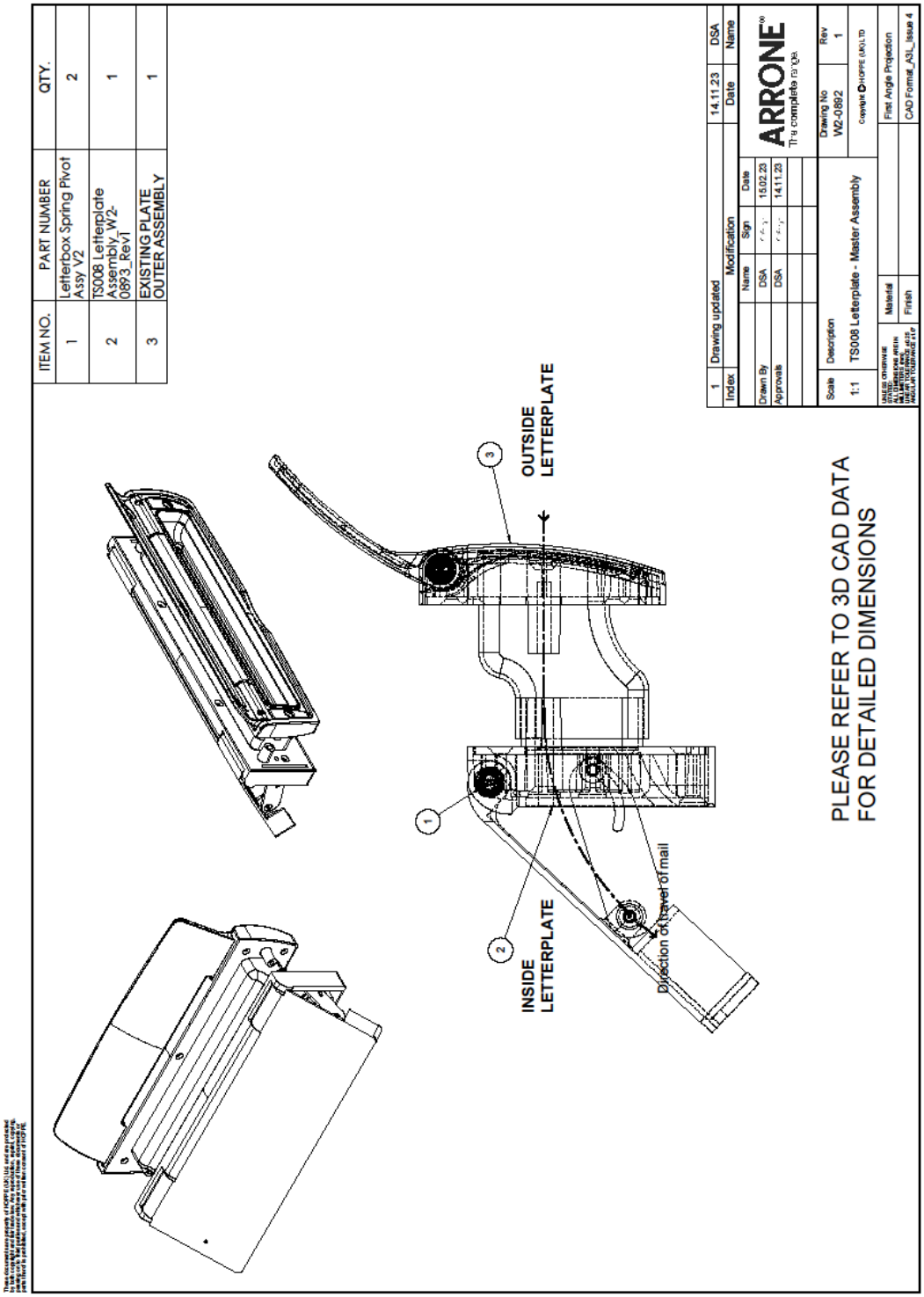


Figure 6 Client Inward Drawings – Letterplate Assembly

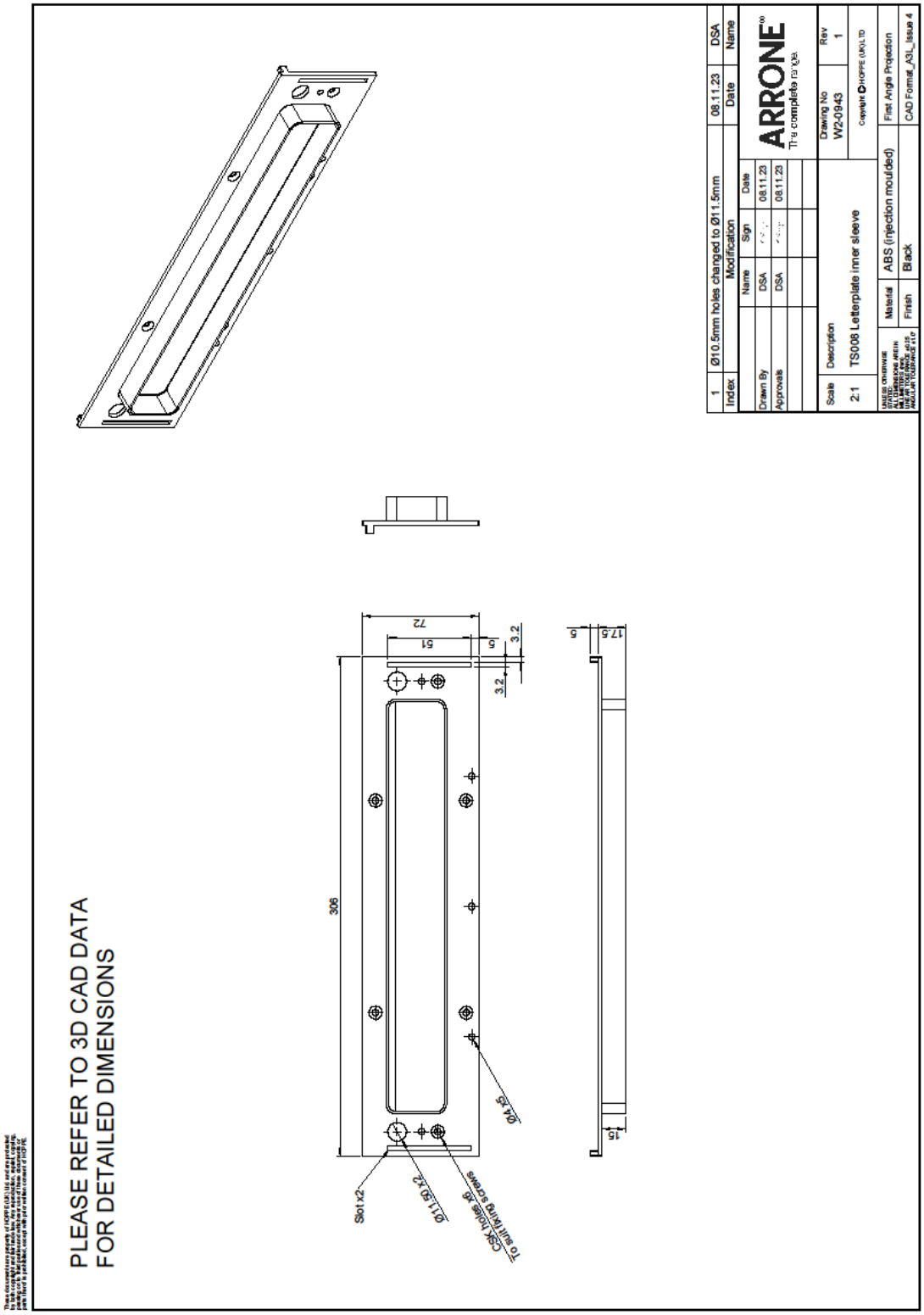


Figure 7 Client Inward Drawings – Letterplate Inner Sleeve

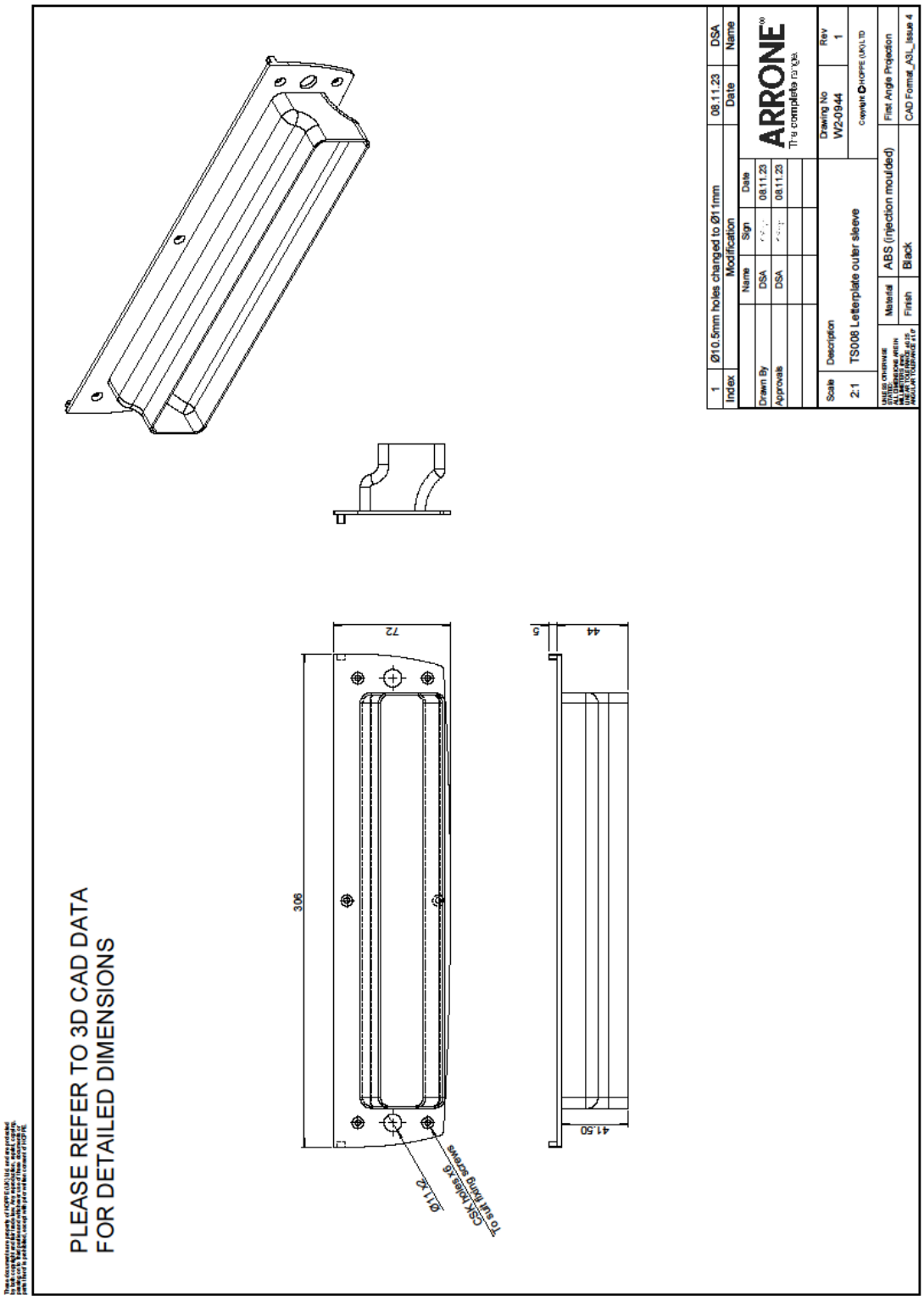


Figure 8 Client Inward Drawings – Letterplate Outer Sleeve

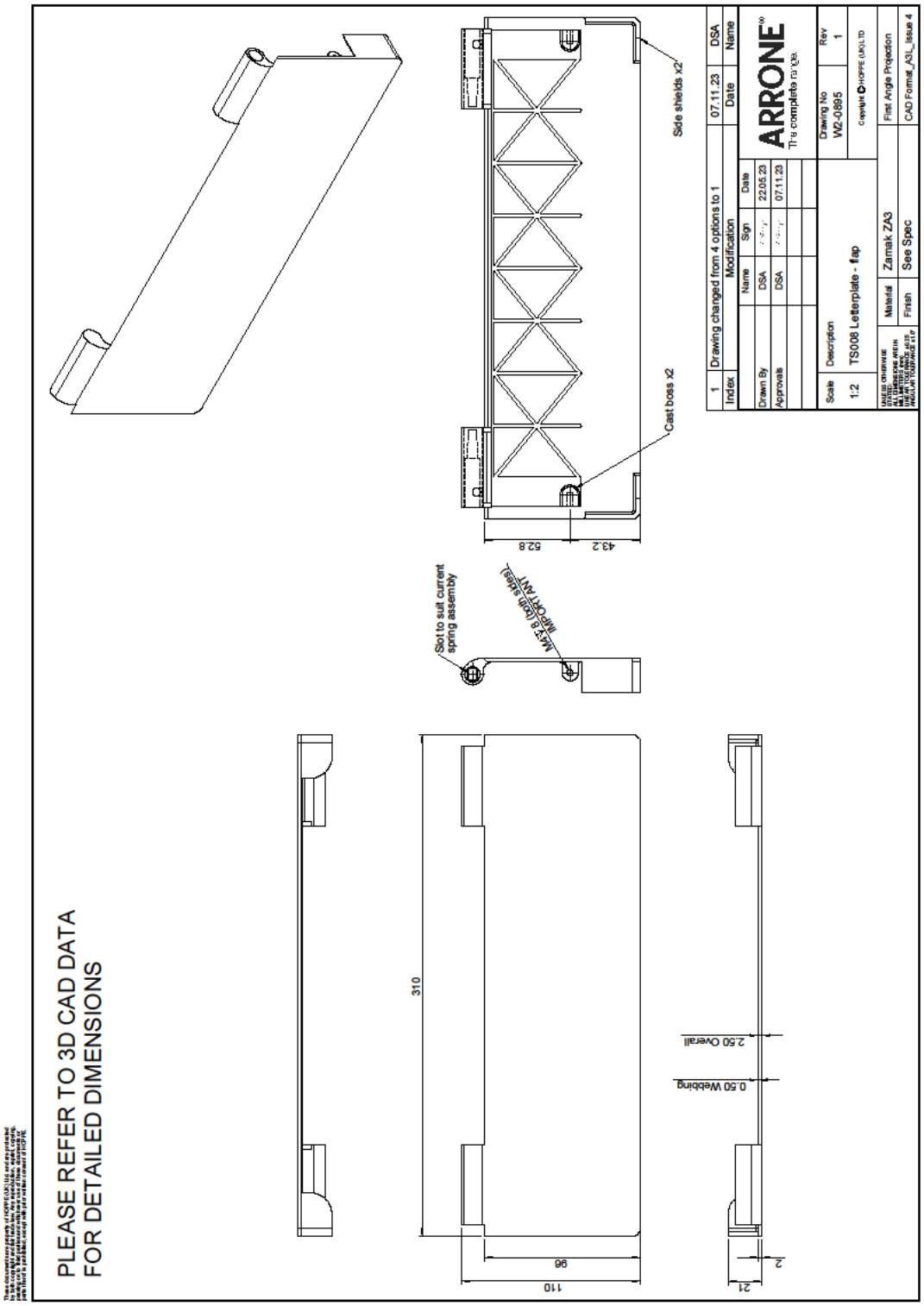


Figure 9 Client Inward Drawings – Letterplate Inside Flap

Schedule of Components

Table 1 details the schedule of components which describes the test specimen and lists the components used in the construction of the test specimen. These were provided by the test sponsor and surveyed by Warringtonfire.

All measurements were verified by Warringtonfire unless stated otherwise in the schedule of components. All components marked with an "*" have not been verified by Warringtonfire.

Table 1. Schedule of components

1. Door Leaf

Manufacturer	Wood International Agency Ltd
Door reference	Marksman™ 54
Q-Mark Certificate Number	3588
Average moisture content	
Leaf A	6.3%
Leaf B	6.2%
Overall size	1490 mm x 655 mm x 54 mm
Door Leaf Core	
i. Material	Graduated density chipboard
ii. Density	525 kg/m^3 +/- 15 kg/m^3 (Client sSated)
iii. Overall thickness	54 mm
Door Leaf Stiles/Rails/Lippings	n/a
Fixing method to supporting construction	Each door leaf retained with 4no. steel angles from unexposed face.
Fixings to Door Leaf	4 no. 4 mm x 40 mm stainless steel wood screws to each angle
Fixings to Supporting Construction	1 no or 2 no. 7.5 mm x 60 mm yellow-passivated concrete screws to each angle

2. Fire stopping

1. Frame to supporting construction fire stopping detail	
Manufacturer	Sealed Tight Solutions
Reference	ST88
Material	Intumescent mastic
Overall dimension	Approximately 10 mm wide x 10mm deep
Application method	Gun applied
Location	Applied between the Door Leaf and supporting construction on both sides

3. Hardware

3. Letterplate	
Manufacturer	Hoppe UK
Reference	AR708HS
Material	
i. Inner Sleeve	Injection moulded ABS, black
ii. Outer Sleeve	Injection moulded ABS, black
iii. Outside Flap	Zamak ZA3, white
iv. Inside Flap	Zamak ZA3, white
Overall size	
i. Inner Sleeve	72 mm x 306 mm x 22.5 mm thick, Figure 7 for details
ii. Outer Sleeve	72 mm x 306 mm x 44 mm thick, Figure 8 for details
iii. Outside Flap	76 mm x 310 mm x 19 mm thick
iv. Inside Flap	110 mm x 310 mm x 21 mm thick, Figure 9 for details
v. Cut out size	54 mm high x 268 mm wide, Figure 5 for details
vi. Footprint	96 mm high x 310 mm wide x 21 mm thick
Fixing method	Inside Flap connected with Outside Flap through Knock - In Pins with 2no M5 x 50 mm Bolts. Inside Flap fixed to Door Leaf with additional 5no 3.5 x 30 mm wood screws.
Details of intumescent protection	Graphite / MAP strips with 1.5 mm foam pad, Figure 4 for details
Location (relative to the opening face of the door leaf)	Top letterplate fitted 1200 mm from the base of door leaf, Bottom letterplate fitted 200 mm from the base of door leaf and centrally in width of door leaf
4. Letter plate Intumescent Seal [1]	
Supplier/Manufacturer	Mann McGowan
Reference	Intumescent 1
Material	Graphite based, black
Overall size	19 mm x 10 mm x 245 mm
Fixing method	Self-adhesive to outer sleeve
5. Letter plate Intumescent Seal [2]	
Supplier/Manufacturer	Mann McGowan
Reference	Intumescent 2
Material	Graphite based, black
Overall size	19 mm x 10 mm x 245 mm
Fixing method	Self-adhesive to outer sleeve

6. Letter plate Intumescent Seal [3]	
Supplier/Manufacturer	Mann McGowan
Reference	Intumescent 3
Material	Graphite based, black
Thickness	2 mm
Overall size	Diameter 15 x 21 mm
Fixing method	Cover fixing tubes of Outer and Inner Flaps
7. Letter plate Intumescent Seal [4]	
Supplier/Manufacturer	Mann McGowan
Reference	Intumescent 4
Material	Graphite based, black
Thickness	2 mm
Overall size	40 mm x 45 mm
Fixing method	Self-adhesive to outer sleeve
8. Letter plate Intumescent Seal [5]	
Supplier/Manufacturer	Mann McGowan
Reference	Intumescent 5
Material	MAP, white
Thickness	0.5 mm
Overall size	15 mm x 245 mm
Fixing method	Self-adhesive to outer sleeve

Supporting Construction

9. Lightweight Blockwork	
Manufacturer	THERMALITE
Reference	THERMALITE Shield
Material	Lightweight concrete blocks
Thickness	
150 mm block	150 mm wide x 215 mm high x 440 mm long
Density	884 kg/m^3 (measured)
Fixing method	Ordinary sand/cement mortar, mix 3:1
10. AAC Concrete Lintel	
Type	Steel reinforced concrete lintel
Material	Steel reinforced autoclaved aerated concrete
Overall size	
Size	150 mm wide x 250 mm high x 3000 mm long
Density	550 ~ 650 kg/m^3 (stated)
Fixing method	Ordinary sand/cement mortar, mix 3:1

Test Observations

Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
00	00	**The Test Commences.**
03	00	Steam/smoke from the letter plate on Leaf A
08	10	Steam/smoke from both letter plates on Leaf A
10	00	Fluid is dripping from the top letter plate on Leaf A
12	00	Steam/smoke increased on Leaf A from both letterplates.
17	00	Steam/Smoke from top letterplate on Leaf B
23	00	Brown discolouration above the bottom letter plate on Leaf A
63	00	Steam/smoke increasing across both specimens and discolouration has worsened
72	00	**Sustained flaming at the letter plate on Leaf A. Flaming was continuous for greater than 10 seconds therefore sustained flaming and cotton pad integrity failures are deemed to have occurred.** Leaf B starting to glow at the top of the top letter plate.
73	00	**The Test is Discontinued at the sponsors request**

Test Photographs

The exposed face of the doorsets prior to the start of the test

The unexposed face of the doorsets prior to the start of the test

The unexposed face of the doorsets after a test duration of 20 minutes

The unexposed face of the doorsets after a test duration of 40 minutes

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

The unexposed face of the doorsets after a test duration of 72 minutes

The exposed face of the doorsets shortly after the test

Temperature and Deflection Data

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

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	27
2	445	371
4	544	560
6	603	598
8	645	631
10	678	666
12	705	695
14	728	745
16	748	744
18	766	770
20	781	785
22	796	817
24	809	818
26	820	824
28	831	835
30	842	845
32	851	854
34	860	860
36	869	869
38	877	878
40	885	885
42	892	894
44	899	903
46	906	909
48	912	915
50	918	921
52	924	927
54	930	932
56	935	937
58	940	944
60	945	949
62	950	953
64	955	961
66	960	962
68	964	964
70	968	970
72	973	974

Individual And Mean Temperatures Recorded On The Unexposed Surface Of Doorset A

Time Mins	T/C Number 10 Deg. C	T/C Number 11 Deg. C	T/C Number 12 Deg. C	T/C Number 13 Deg. C	T/C Number 14 Deg. C	Mean Temp Deg. C
0	22	21	21	21	21	21
2	21	22	21	21	21	21
4	21	21	21	21	21	21
6	22	22	21	21	21	21
8	22	22	21	21	21	21
10	22	22	22	22	21	22
12	25	23	23	25	23	24
14	29	27	26	29	27	28
16	35	31	29	35	32	32
18	41	36	33	41	37	38
20	45	41	37	45	42	42
22	49	44	40	49	46	46
24	53	48	43	52	49	49
26	55	51	46	55	52	52
28	57	53	49	56	53	54
30	59	55	51	58	55	56
32	61	57	54	60	57	58
34	62	59	56	62	58	59
36	64	60	58	63	59	61
38	65	61	60	64	60	62
40	67	62	62	66	62	64
42	68	64	63	67	62	65
44	69	65	65	68	64	66
46	71	66	67	70	65	68
48	72	68	68	71	66	69
50	73	70	69	73	68	71
52	75	71	71	74	69	72
54	76	72	73	76	70	73
56	77	73	74	78	71	75
58	79	75	76	79	73	76
60	80	77	78	81	75	78
62	82	78	80	83	76	80
64	83	80	81	84	78	81
66	85	82	83	87	79	83
68	87	83	85	88	81	85
70	89	85	87	90	82	87
72	90	87	89	93	85	89

Individual And Mean Temperatures Recorded On The Unexposed Surface Of Doorset B

Time Mins	T/C Number 15 Deg. C	T/C Number 16 Deg. C	T/C Number 17 Deg. C	T/C Number 18 Deg. C	T/C Number 19 Deg. C	Mean Temp Deg. C
0	21	21	21	21	21	21
2	21	21	21	21	21	21
4	22	21	21	21	21	21
6	22	22	21	21	21	21
8	22	22	22	21	21	22
10	23	22	22	23	22	22
12	26	26	23	26	24	25
14	32	31	25	30	29	29
16	38	37	28	36	34	35
18	43	42	32	41	39	39
20	47	46	36	46	43	44
22	50	50	39	49	47	47
24	53	52	42	52	49	50
26	55	54	45	54	52	52
28	57	56	47	56	54	54
30	58	58	50	58	55	56
32	59	59	52	59	57	57
34	61	60	54	61	58	59
36	62	61	56	63	59	60
38	63	62	58	64	61	62
40	64	63	60	65	62	63
42	65	64	61	67	63	64
44	67	65	63	69	65	66
46	68	66	65	70	66	67
48	69	68	67	71	67	68
50	70	69	69	72	69	70
52	72	70	71	73	70	71
54	73	71	72	75	72	73
56	74	72	73	77	73	74
58	76	73	75	79	74	75
60	77	75	77	80	76	77
62	79	77	78	81	78	79
64	80	78	80	82	80	80
66	82	80	82	84	81	82
68	84	81	83	86	84	84
70	86	83	85	88	86	86
72	87	84	87	89	89	87

Individual Temperatures Recorded On The Door Leaf 100 mm Away From The Edges On Doorset A

Time Mins	T/C Number 24 Deg. C	T/C Number 25 Deg. C	T/C Number 26 Deg. C	T/C Number 27 Deg. C
0	21	21	21	21
2	21	21	21	21
4	21	21	21	21
6	21	21	21	22
8	22	21	21	22
10	22	22	22	22
12	26	24	24	25
14	31	28	28	28
16	38	33	33	33
18	45	38	38	38
20	50	43	43	42
22	54	46	47	45
24	58	50	50	48
26	60	52	53	50
28	62	54	56	53
30	64	56	58	54
32	65	58	60	56
34	66	60	62	58
36	67	62	63	60
38	68	63	65	61
40	69	65	66	63
42	70	66	67	64
44	71	68	68	65
46	72	69	70	67
48	73	71	71	68
50	74	72	72	70
52	75	73	73	71
54	76	75	75	72
56	77	76	77	74
58	79	78	78	75
60	80	80	80	77
62	82	81	81	79
64	83	83	83	81
66	84	84	85	82
68	86	87	87	84
70	88	88	89	85
72	89	90	91	87

Individual Temperatures Recorded On The Door Leaf 100 mm Away From The Edges On Doorset B

Time Mins	T/C Number 32 Deg. C	T/C Number 33 Deg. C	T/C Number 34 Deg. C	T/C Number 35 Deg. C
0	21	21	21	21
2	21	21	21	21
4	21	21	21	21
6	21	21	21	22
8	21	22	21	22
10	23	23	22	22
12	27	26	24	24
14	34	32	28	27
16	40	38	32	31
18	46	44	37	36
20	50	49	41	40
22	54	53	44	44
24	56	56	47	47
26	58	58	50	50
28	60	60	52	52
30	61	61	54	55
32	63	62	56	56
34	64	63	58	58
36	65	63	60	60
38	66	64	62	61
40	67	65	63	63
42	69	66	65	64
44	70	67	67	66
46	71	68	68	67
48	72	69	70	68
50	73	70	71	70
52	74	71	73	71
54	75	72	74	73
56	76	74	76	74
58	78	75	78	75
60	79	76	79	77
62	80	78	81	78
64	82	79	82	80
66	78	81	84	82
68	80	82	86	83
70	84	84	89	85
72	88	87	91	88

Individual Temperatures Recorded On The Door Leaf 25 mm Away From The Edges Of Doorset A

Time Mins	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	21	21	21	21
2	21	21	21	21
4	21	21	21	21
6	21	21	21	21
8	22	22	21	21
10	24	23	22	22
12	26	25	24	25
14	31	28	28	29
16	37	33	33	35
18	43	38	39	41
20	50	43	44	46
22	55	48	49	51
24	59	53	53	54
26	63	58	56	58
28	66	63	59	60
30	68	67	61	63
32	71	70	63	65
34	72	72	65	67
36	73	73	67	68
38	75	75	68	70
40	76	76	69	71
42	76	76	70	72
44	77	77	71	73
46	78	78	72	74
48	79	78	73	75
50	79	79	74	76
52	80	80	75	76
54	81	80	77	77
56	81	81	78	78
58	82	82	79	79
60	83	83	80	80
62	83	84	81	81
64	84	87	83	82
66	85	87	84	84
68	85	87	86	85
70	86	88	87	86
72	87	89	89	87

Individual Temperatures Recorded On The Door Leaf 25 mm Away From The Edges Of Doorset B

Time Mins	T/C Number 28 Deg. C	T/C Number 29 Deg. C	T/C Number 30 Deg. C	T/C Number 31 Deg. C
0	21	21	21	21
2	21	21	21	21
4	21	21	21	21
6	21	21	21	21
8	22	21	21	21
10	23	23	22	22
12	27	26	25	23
14	30	28	30	26
16	36	33	34	31
18	43	38	39	37
20	50	43	43	42
22	57	48	47	47
24	63	53	50	51
26	67	57	53	55
28	70	61	55	58
30	72	65	57	61
32	73	68	59	63
34	70	71	61	65
36	72	73	62	67
38	73	75	64	68
40	74	76	65	68
42	75	77	66	69
44	76	78	67	70
46	77	78	68	71
48	77	79	69	72
50	78	79	70	72
52	79	79	71	73
54	80	79	72	75
56	81	79	74	76
58	81	80	75	77
60	83	82	76	78
62	83	84	77	79
64	83	85	78	80
66	84	85	79	81
68	85	85	81	83
70	86	85	82	84
72	87	85	83	84

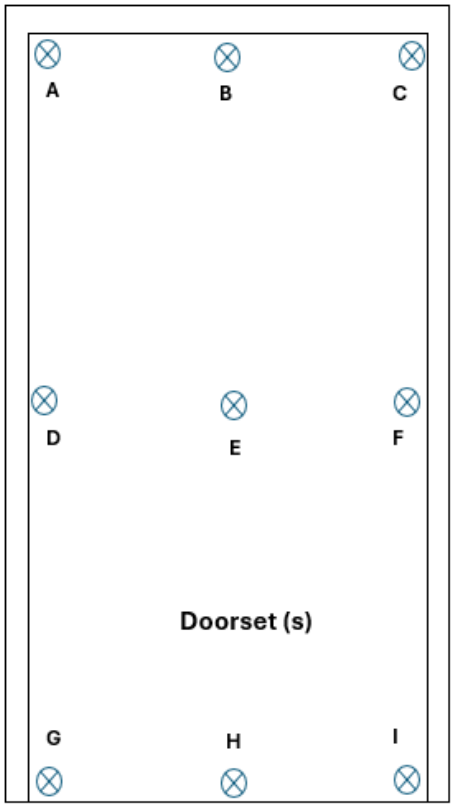
Individual Temperatures Recorded On The Letter Plates And Above On Leaf A

Time Mins	T/C Number 36 Deg. C	T/C Number 38 Deg. C	T/C Number 37 Deg. C	T/C Number 39 Deg. C
0	20	21	21	21
2	24	21	21	21
4	50	23	24	21
6	57	26	28	22
8	73	39	37	23
10	83	54	46	27
12	88	54	58	31
14	89	57	58	37
16	90	69	63	45
18	91	68	61	51
20	92	68	64	56
22	92	69	64	60
24	92	71	66	64
26	93	73	68	67
28	94	75	70	69
30	96	76	73	72
32	99	78	75	74
34	104	81	77	76
36	109	84	79	79
38	114	87	80	81
40	119	90	82	83
42	123	93	83	85
44	127	97	85	88
46	131	100	87	90
48	135	104	89	92
50	139	109	90	94
52	143	114	93	97
54	147	119	95	100
56	152	123	98	103
58	157	129	102	107
60	162	136	107	114
62	167	142	113	121
64	172	149	122	131
66	179	157	134	142
68	189	165	148	154
70	199	172	165	167
72	208	181	222	179

Individual Temperatures Recorded On The Letter Plates And Above On Leaf B

Time Mins	T/C Number 40 Deg. C	T/C Number 42 Deg. C	T/C Number 41 Deg. C	T/C Number 43 Deg. C
0	21	21	21	21
2	22	21	22	21
4	25	22	22	21
6	36	28	22	21
8	52	41	25	23
10	65	56	27	26
12	117	68	48	31
14	142	67	55	36
16	126	73	58	42
18	115	75	59	48
20	108	74	61	52
22	106	75	64	56
24	106	78	67	59
26	107	79	69	61
28	109	83	70	64
30	111	86	72	66
32	114	90	73	67
34	117	95	74	69
36	122	99	75	71
38	127	103	76	72
40	132	109	77	74
42	138	115	78	76
44	144	122	79	78
46	150	129	81	80
48	155	136	82	81
50	159	143	83	83
52	164	151	84	84
54	168	159	85	87
56	174	167	87	89
58	179	175	88	92
60	184	182	89	93
62	189	189	91	95
64	194	197	93	97
66	199	204	95	100
68	207	212	98	103
70	213	218	119	108
72	216	226	168	116

Horizontal Deflections Of Leaf A



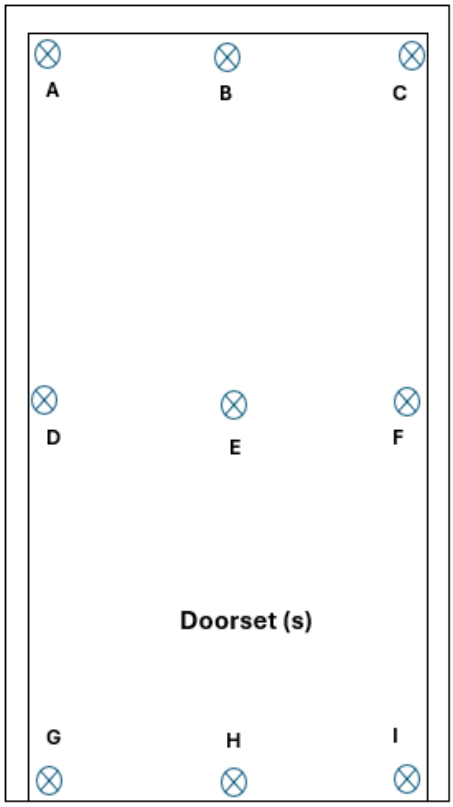
⊗ Positions of deflection measurements

Leaf A									
Deflections - mn									
Time-Mins	A	B	C	D	E	F	G	H	I
0	0	0	0	0	0	0	0	0	0
10	3	-10	-3	-1	-12	-1	-6	-6	-2
20	-6	0	1	-3	-11	-2	-4	-5	-6
30	1	-1	7	0	-3	-1	-2	-6	-2
40	4	2	7	3	-5	1	1	-6	2
50	0	0	0	0	0	0	0	0	0
60	7	-8	8	0	-12	-2	0	-7	4
70	10	-8	9	1	-18	*	-8	-12	6

*Deflection Malfunction

Positive values indicate movement towards the furnace

Horizontal Deflections Of Leaf B

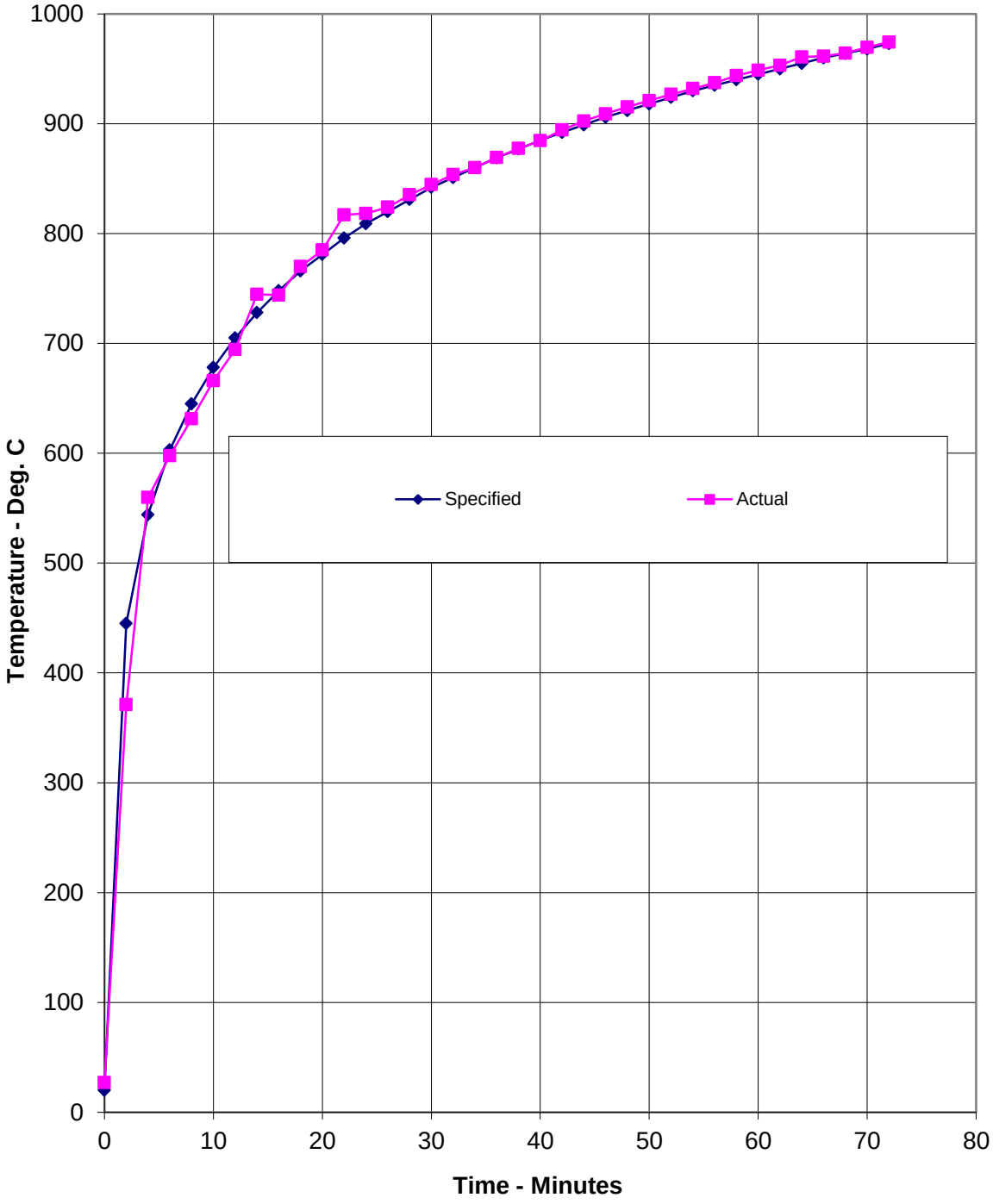


⊗ Positions of deflection measurements

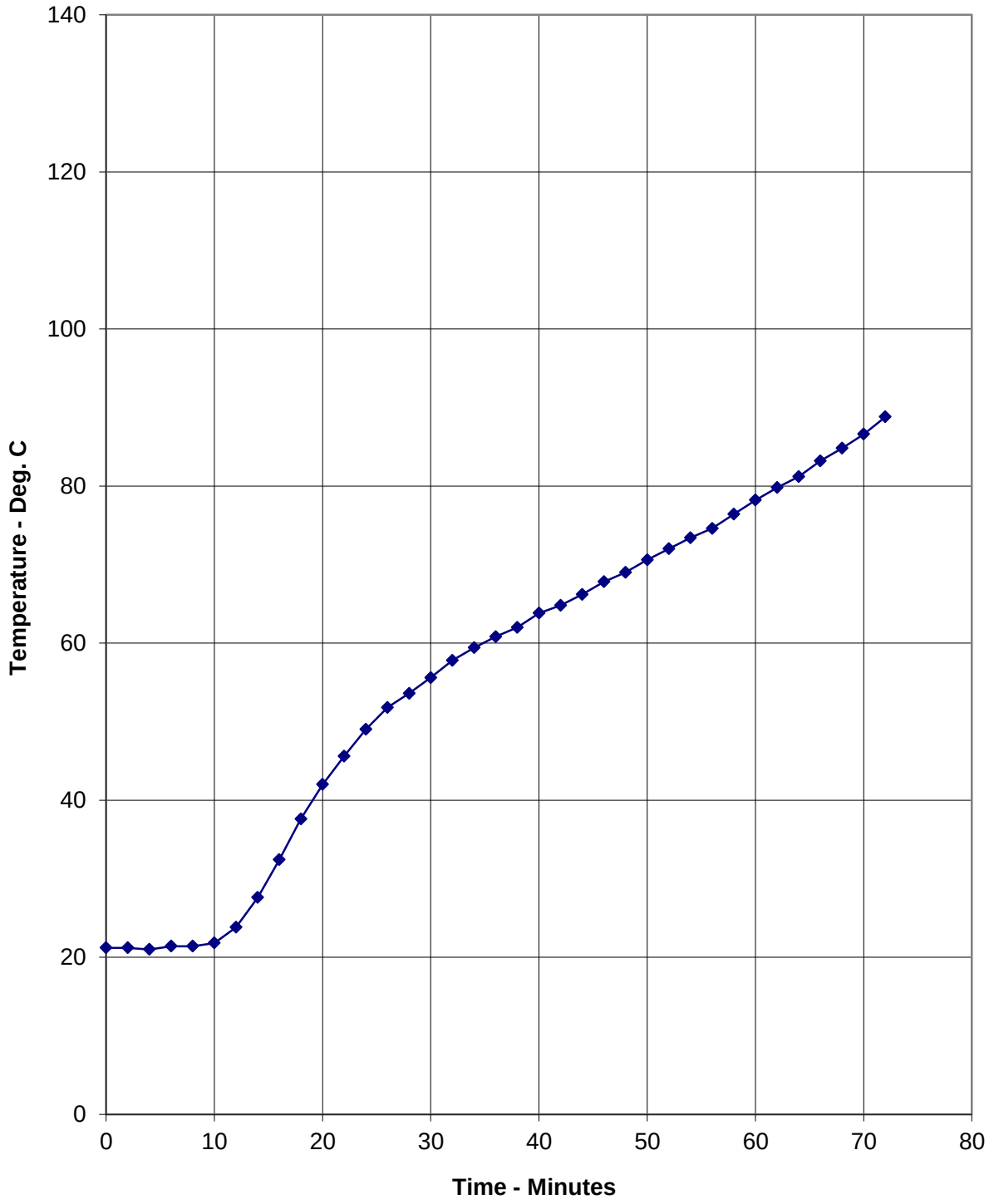
Leaf B									
Deflections - mm									
Time-Mins	A	B	C	D	E	F	G	H	I
0	0	0	0	0	0	0	0	0	0
10	-1	-15	-10	-5	-6	-4	-7	-7	-6
20	2	-8	0	-1	-6	-1	1	-2	-4
30	6	-9	4	-1	-5	-1	2	-3	0
40	7	-6	4	-2	-5	2	2	-1	1
50	0	0	0	0	0	0	0	0	0
60	6	-9	5	-4	-17	0	2	-7	4
70	6	-26	8	0	-19	-1	6	-5	4

Positive values indicate movement towards the furnace

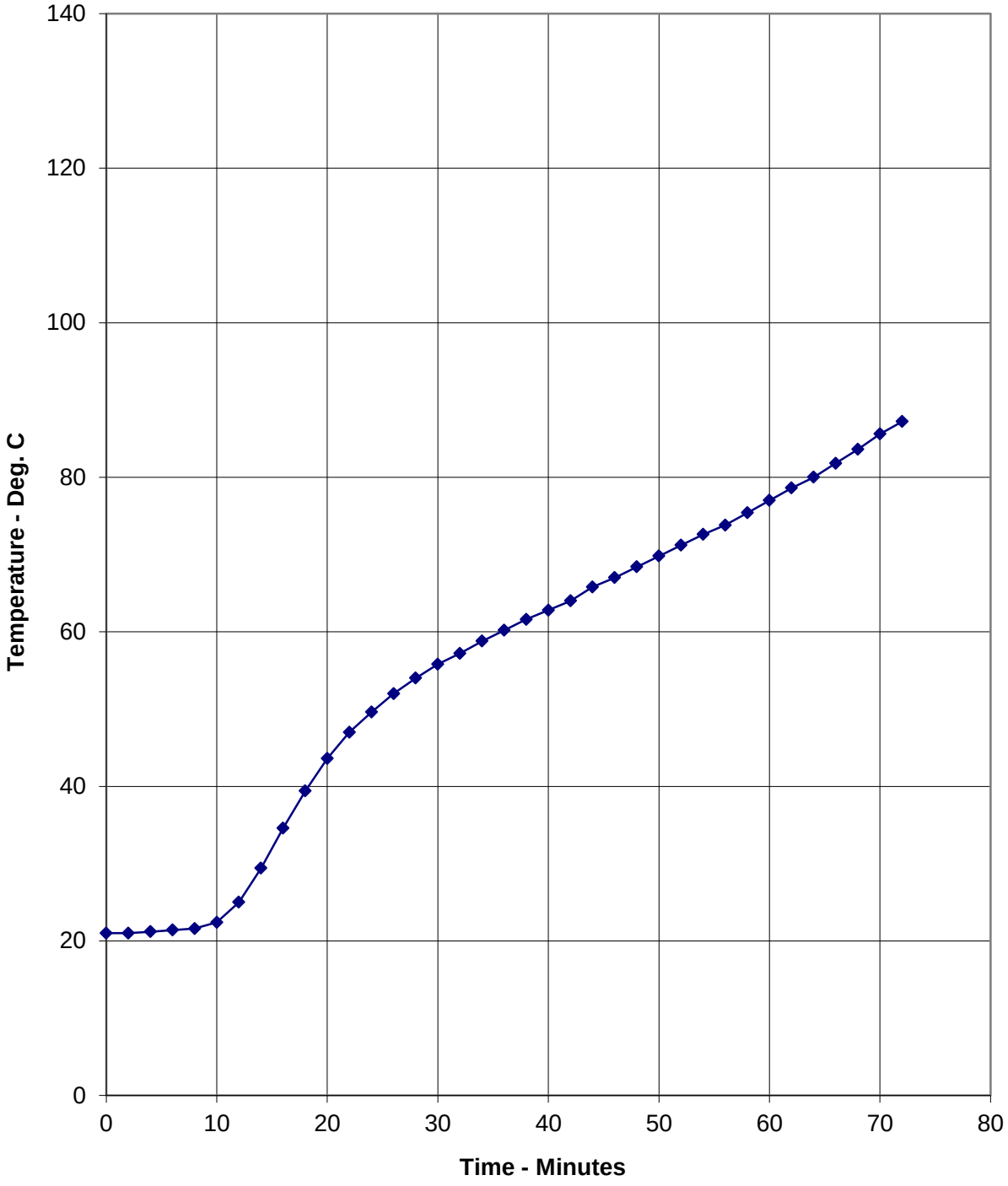
Graph showing mean furnace temperature, together with the temperature/time relationship specified in BS EN 1363-1: 2012



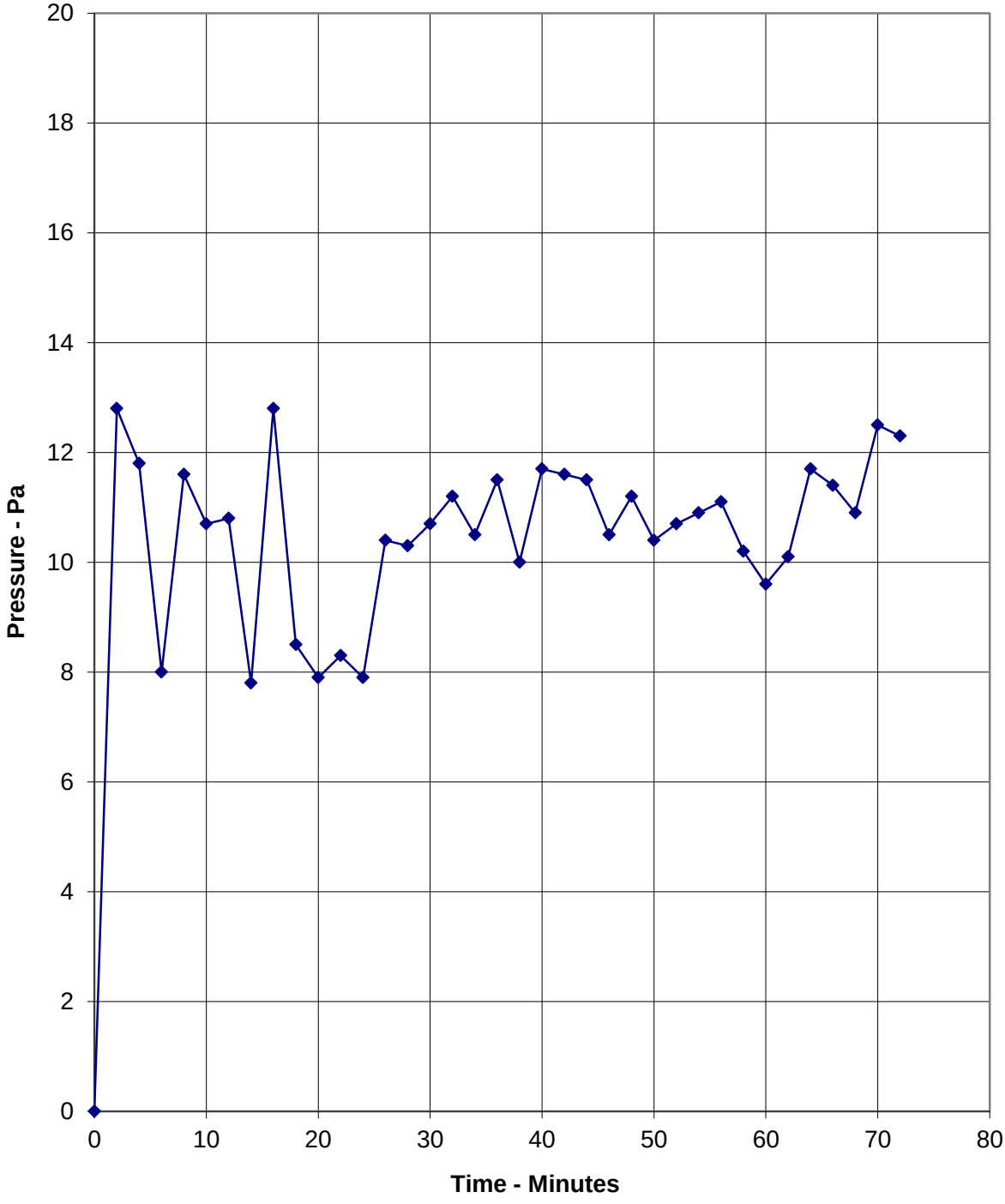
Graph Showing Mean Temperatures Recorded On The Unexposed Surface Of Leaf A



Graph Showing Mean Temperatures Recorded On The Unexposed Surface Of Leaf B



Graph showing recorded furnace pressure at the head of the Doorset



On-going Implications

Limitations

This report details the method of construction, the test conditions and the results obtained when the specific elements of construction described herein were tested following the procedure outlined in BS EN 1363-1: 2012, 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: 2012, 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.

This report supersedes the Issue 2 report on 29 April 2025

EGOLF

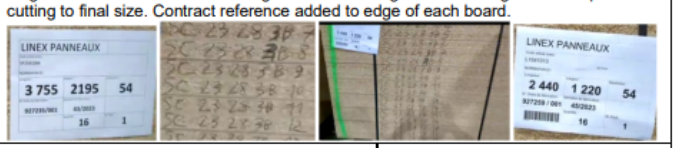
Certain aspects of some fire test specifications are open to different interpretations. EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed

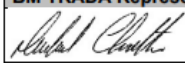
Sample Report

bmtrada Proud to be part of element	**SAMPLING VISIT REPORT**	Company Name	**Wood International Agency Ltd**
		Establishment No.	**047/21200. CO**
		BM TRADA Notified Body ID: **1224**	

Company Head Office Address	**Wood International Agency Ltd** **Woods House** **16 King Edward Road** **Brentwood** **Essex** **CM5 0RQ**	**Contact Name**	**Neil Harrison**
		Telephone	**+44 (0) 1277 232991**
		Email Address	**doors@woodia.co.uk**

Location where sampling was conducted if different from Head Office Address	**Visit Date**	**BMT Representative**
Linex Panneaux S.A.S, ZA Caux Multi-Pôles, 76190 Allouville-Bellefosse, France.	27/10/2023	Michael Chorlton

Requirement	**Evidence / Comments**
Opening Meeting (names of those present)	Neil Harrison (WIAL, Partial) / Mr Xavier Demailly (Linex). Remote sampling from live production.
Contract Reference	SCT23283B
Technical Specification document / FoA reference Photographs to be taken of all critical areas highlighted in the Technical Specification	Basic system recipe available (Held on file) WIAL technical datasheet (Draft version) WIAD-MMN54-SPA-002-A1-P1 Rev B. A specification has also been drafted in BM TRADA "Scope" format which must be read in conjunction with this report.
Description of product(s) sampled	54mm Particleboard door blanks (Linex Normapan E1)
Product identification / reference numbers / codes	Linex NORMAPAN 54 – Wood International product will be referenced as MARKSMAN 54
Batch number(s)	927235 main batch translated to works order 927259.
Date of manufacture	Boards run 27 October 2023. Cut 07 November 2023
Quantity of stock and size of sample(s) taken	19No. Linex Normapan at 1220mm wide x 2440mm high x 54mm thick
Traceability of material records ie Purchase Orders and delivery notes	Works order detail: 927235 (Line 19) of current press plan & Works order 927259. Recipe confirmed and added to Specification for use under Q-Mark, Inspection / Laboratory report: 08/11/23 23.268 for 927259 on file.
Example of sampler's markings applied to the product(s) (contract reference, signature of client, date of manufacture)	Initial traceability (Mother boards to Daughter boards) via Linex batch number due to length of run and time between stages. Paint marking added to daughter board prio to cutting to final size. Contract reference added to edge of each board. 
Confirmation of minimum mandatory video/live checks undertaken	☐ ~~Glazing assembly (where applicable)~~ ☐ ~~Finished doorset with markings~~ ☐ ~~Hardware prep and fitting (where applicable)~~ ☐ ~~Sampling pack discussion~~
Details of any further FPC processes witnessed during the visit.	In-Process controls verified on control room monitors. Laboratory tests to EN312.
Determine the essential characteristics of the product and confirm the details of in-process checks conducted on the sample to ensure conformity.	Manufacturing recipe (held on file), FPC manual, in process inspection and final laboratory testing to demonstrate compliance with requirements. Key points: Density nominally 525kg/m³ with reported value 526. Moisture content 7 – 10% with reported value 8.3% plus Swelling, Internal bond strength, bending strength & modulus of elasticity and surface soundness.
State any items from the Technical Specification / FoA that were **not** witnessed and require further lab sampling	☐ ~~Side screen / overpanel~~ ☐ ~~Handles~~ ☐ ~~Other (see tech spec marked with 'not seen')~~ ☐ ~~Door closer~~ ☐ ~~Frame re-assembly~~
Confirm any clauses within the Technical Specification that were found to be different on the sampled product/s. ***Non-conformances may be raised for pre-cert and audit test sampling***	None
Closing Meeting (names of those present)	No formalised closing meeting possible. Draft sampling report sent for approval and signing.

Declaration	I declare that the product/s witnessed during this sampling visit are representative of normal production.
Company Representative Name (Print)	**Company Representative Position**
Sent to Linex Panneaux and WIAL for approval. Neil Harrison	Director
BM TRADA Representative Signature	**Company Representative Signature**
	

Sample Report

warringtonfire
Proud to be part of element

Sample Report

This report provides a record of the information relating to samples taken by Warringtonfire Testing and Certification Limited trading, or its agent, for certification of the products detailed below.

Job No.	A0-106117
Certificate Number (if applicable)	—
Manufacturer	NINGBO TAANBAO HENGKE IMPORT & EXPORT CO. LTD.
Manufacturing site	508 FENGMING ROAD, XIEPU TOWN, 315204 ZHENHAI, CHINA.
Place of sampling	Hoppe Limited, Gailey Park, Gravelly Way, Standeford, Wolverhampton. WV1 7GW.
Traceability information	Date/time of production: Production unit/line: SAMPLED FROM STOCK. Batch number: BATCH No. 2924563 Shift:
Product Details: • Name • Product Number (if applicable) • Description	ARRONE TS008 LETTERPLATE AR708HS-PCH & INTUMESCENT ELEMENTS (SUB-COMPONENTS) WERE ALSO SAMPLED - SEE BELOW DETAILS.
Marking of the product by the manufacturer e.g. label, batch number and date of manufacture	PRODUCT IDENTIFIED WITH HOPPE PRODUCT LABEL.
Marking of the samples by Warringtonfire Testing and Certification Limited	Job No: AO-106117 Date: 15/08/2024 Signature or initials: AW
Stock/batch quantity from which samples selected and sample quantity	STOCK QTY 8 UNITS STOCK LOCATION 99999. SAMPLED QTY 8 UNITS.
Results of tests and/or inspections during manufacture	SAMPLED FROM STOCK - AS PER ORDER CONFIRMATION 7102605O-1 (SEE ATTACHED).
Essential characteristics to be tested i.e. Test Reference	FIRE RESISTANCE
Samples to be dispatched by manufacturer to *** within *** weeks/month(s)	TO BE DESPATCHED BY 19/8/24
Date of sampling	15/08/2024
Warringtonfire Testing and Certification Limited UK Approved Body Number	1121

INTUMESCENT SEALING – SUB-COMPONENTS. (MANN MCGUGAN FABRICATIONS) SUPPLIER.

15 x 11 INTUMESCENT TUBE 30 UNITS. SAMPLED (CLIENT REQUIRES 2 ADDITIONAL TUBE TO FOLLOW)
INTUMESCENT SEAL ARTICLE No 2 – SAMPLE QTY 10 UNITS – TOTAL BATCH SIZE 19.
INTUMESCENT SEAL ARTICLE No 1 – SAMPLE QTY 10 UNITS – TOTAL BATCH SIZE 160
INTUMESCENT SEAL ARTICLE No 5 – SAMPLE QTY 8 UNITS – TOTAL BATCH SIZE 18
INTUMESCENT SEAL ARTICLE No 4 – SAMPLE QTY 30 UNITS – TOTAL BATCH SIZE 100.