Test Report

The fire resistance performance of one timber, single acting double door assembly when tested in accordance with BS EN 1634-1:2014+A1:2018.

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Prepared For	Vistamatic Ltd Unit 4 62-70 Fowler Road Hainault Essex IG6 3UT

21542

Cairnmuir House, Cairnmuir Road,
East Kilbride, Glasgow G74 4GY
+44 (0)1355 433 122
info@uktestcert.com
uktestcert.com
Approved Body No: 8526

Trusted to ensure.

Change History

Issue Date	Revision	Created by	Authorised by	Description of Change
12/08/2025	A	AB	NS	Initial Issue

Signatories

	
Prepared by **Aditi Bapte*** Technical Officer	Authorised by **Nathan Small*** Senior Technical Officer

*For and on behalf of United Kingdom Testing and Certification.

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1 Executive Summary

1.1 Specimen Summary

The Specimen had overall nominal dimensions of 1904 mm wide by 2078 mm high, incorporating an equal pair of door leaves each with overall dimensions of 915 mm wide by 2040 mm high by 54 mm thick. The door leaves were formed from particle board and had 8.5 mm thick hardwood lippings/edge banding to all four edges.

The door leaves were hung in an Engineered Softwood frame each on three steel hinges and incorporated two vision panels, one with overall bead size of 269 mm wide by 1522 mm high on slave leaf and one with overall bead size of 421 mm wide by 819 mm high on primary leaf.

1.2 Specimen Verification

United Kingdom Testing and Certification carried out a comprehensive survey to verify the information provided by the Test Sponsor. This included verifying the materials, dimensions, and manufacturing methodologies of the test specimens, wherever possible. Refer to page 16 for full details of this survey.

1.3 Specimen Installation and Fixity

The Specimen was installed into the test construction by United Kingdom Testing and Certification. The specimen was installed such that the door leaf opened towards the heating conditions at the request of the Test Sponsor. The specimen was unlatched but bolted prior to the commencement of the test at the request of the Test Sponsor.

1.4 Specimen Conditioning

The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of three days. Throughout this period, both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 15.4 °C to 17.0 °C and 74.5 % to 88.2 % respectively.

1.5 Instruction to Test

The test was conducted on 17 July 2025 at the request of the Test Sponsor. The test was remotely witnessed by Mark Nash, a representative of the Test Sponsor.

1.6 Sampling

United Kingdom Testing and Certification were not involved in the sampling or selection of the test specimen or any of the components. The results obtained during the test apply to the specimens as received and test by United Kingdom Testing and Certification.

1.7 Summary of Expression of Results

Summary of results per the criterion specified in BS EN 1634-1:2014+A1:2018 § 11 for each specimen is presented in the table below. A detailed breakdown of the results for each specimen is contained within Section 8 on Page 39.

Integrity		Insulation	Radiation
Sustained Flaming	39 minutes	39 minutes	49 minutes*
Gap Gauge	43 minutes**		
Cotton Pad	39 minutes		

*The test was discontinued after a period of 49 minutes.

**Area blanked off.

2 Pre-test Examination

2.1 Operability Test

The Specimen was opened from fully closed to at least 90° and back again 25 times prior to the commencement of the test in accordance with BS EN 16034:2014 § A.2.2.

2.2 Self-Closing Test

The Specimen was opened to 30° ± 2°, held for 20 ± 2 seconds and released without shock and allowed to close at a maximum mean average speed of 300 mm/s to ensure that a closed position was achieved in accordance with BS EN 16034:2014 § A.4.1.

2.3 Closing Force Measurement

The door closing forces were measured and recorded three times. The results are presented below:

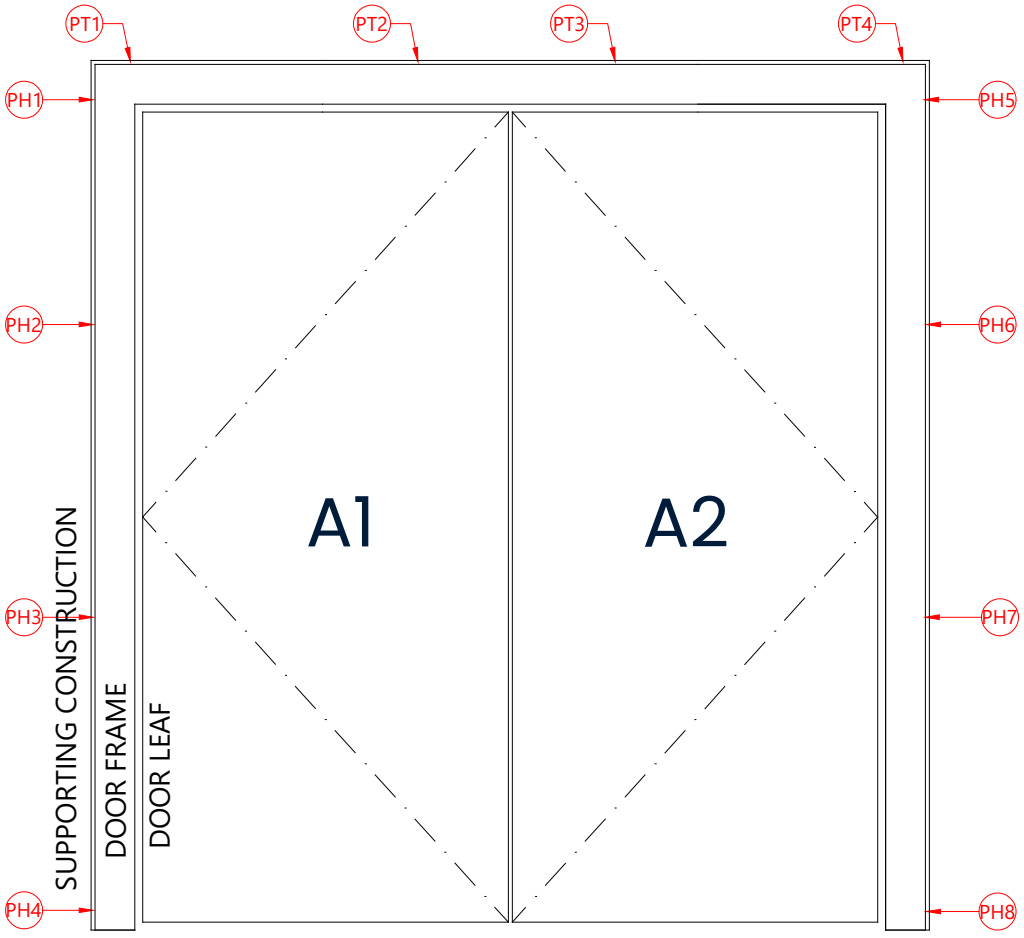
Measurement	Maximum Recorded Force (N)	Distance from Pivot to Measurement Location (m)	Moment (Nm)
Closing Force Specimen A1	43.8	0.80	35.04
Opening Force Specimen A1	62.8	0.80	50.24
Closing Force Specimen A2	46.2	0.80	36.96
Opening Force Specimen A2	53.4	0.80	42.72

2.4 Gap Measurements

All measurements are in millimeters (mm) unless stated otherwise, include structural opening perimeter gaps.

2.4.1 Structural Perimeter gaps

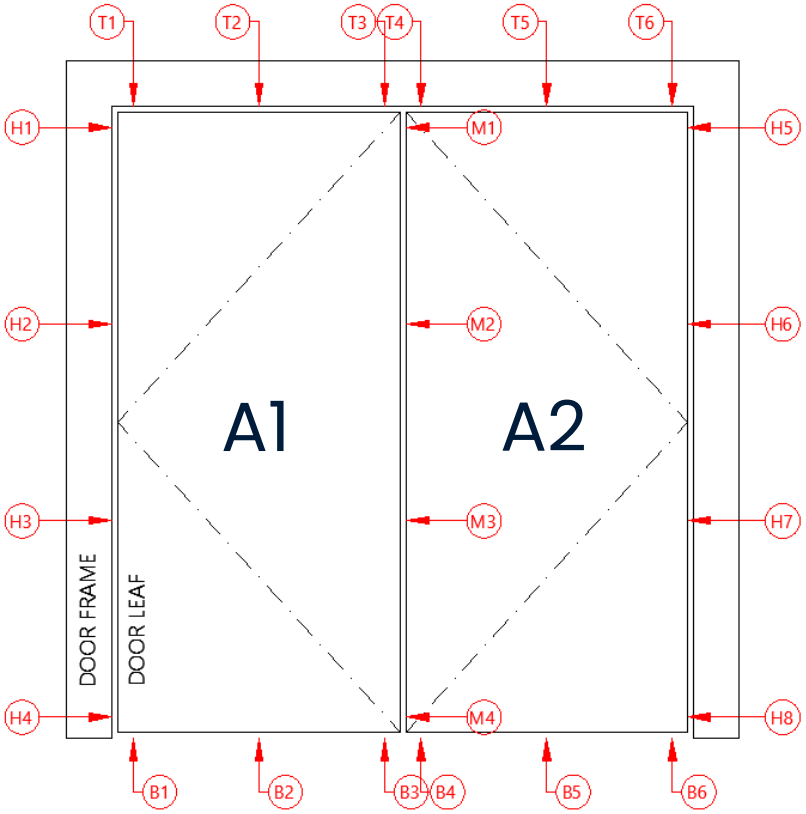
The gaps between the perimeter of the frame and the supporting construction were measured prior to the commencement of the test. This was measured from the annotated locations in the figure below. The measurements were taken from the Primary face.

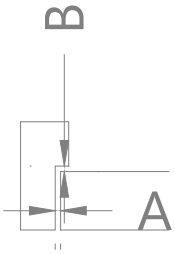


Perimeter Gaps							
PH1	6.7		PH5	9.5		PT1	15.6
PH2	10.5		PH6	7.7		PT2	14.6
PH3	13.5		PH7	4.4		PT3	13.8
PH4	19.0		PH8	3.0		PT4	13.5

2.4.2 Doorset Perimeter gaps

The gaps between the perimeter of the door leaf and the frame were measured prior to the commencement of the test.





	A	B			A			A	B
H1	2.5	0.1		M1	2.3		H5	3.1	0.1
H2	3.4	0.1		M2	2.3		H6	3.0	0.1
H3	3.4	0.1		M3	2.5		H7	2.8	0.1
H4	2.6	0.1		M4	2.8		H8	3.0	0.1
Mean	**3.0**			**Mean**	**2.5**		**Mean**	**3.0**	
Max	**3.4**			**Max**	**2.8**		**Max**	**3.1**	
Min	**2.5**			**Min**	**2.3**		**Min**	**2.8**	
	A	B		A	B		A		A
T1	3.1	0.1	T4	3.1	0.1	B1	3.0	B4	3.5
T2	3.1	0.1	T5	2.5	0.1	B2	3.0	B5	3.6
T3	3.1	0.1	T6	2.6	0.1	B3	3.0	B6	3.5
Mean	**3.1**		**Mean**	**2.7**		**Mean**	**3.0**	**Mean**	**3.5**
Max	**3.1**		**Max**	**3.1**		**Max**	**3.0**	**Max**	**3.6**
Min	**3.1**		**Min**	**2.5**		**Min**	**3.0**	**Min**	**3.5**

3 Test Specimen Drawings

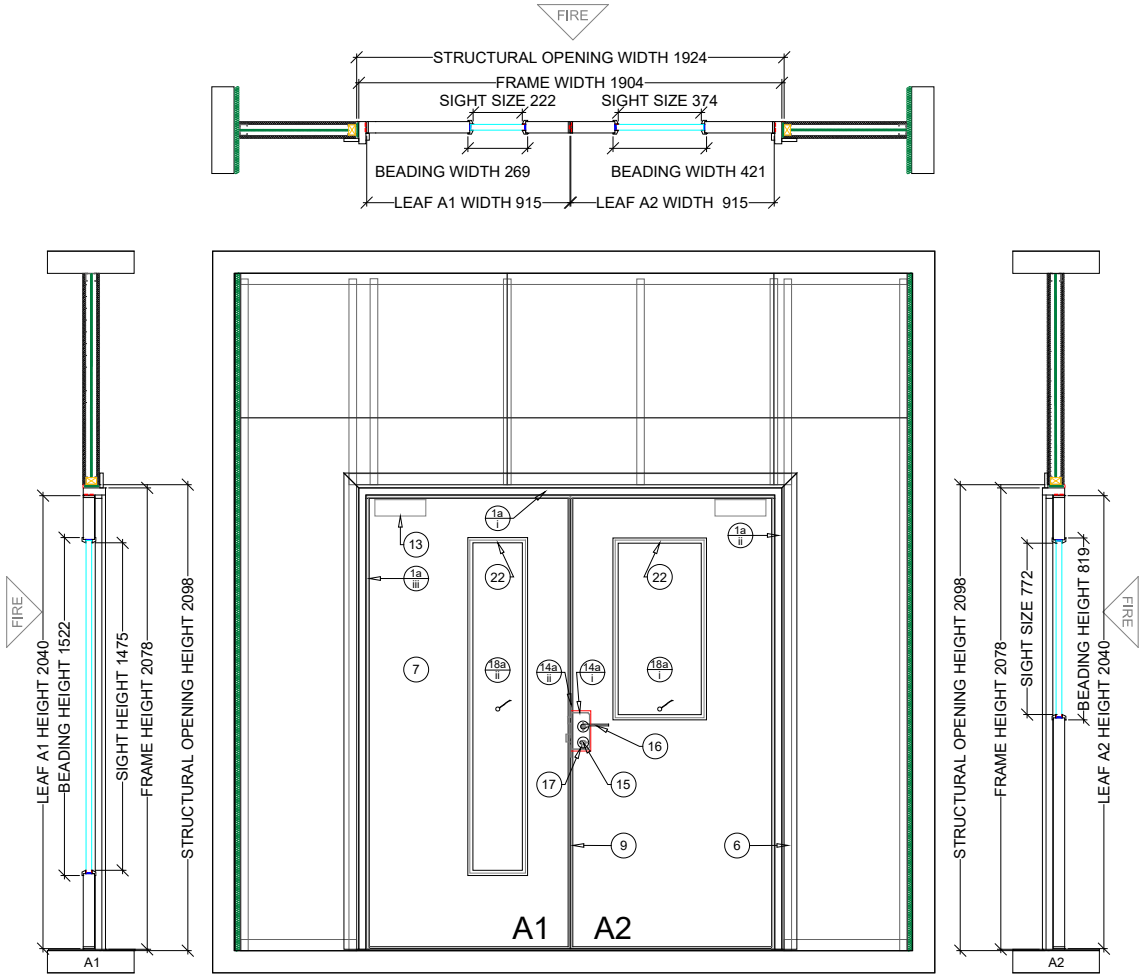


Figure 1 - General arrangement of test construction viewed from the unexposed surface

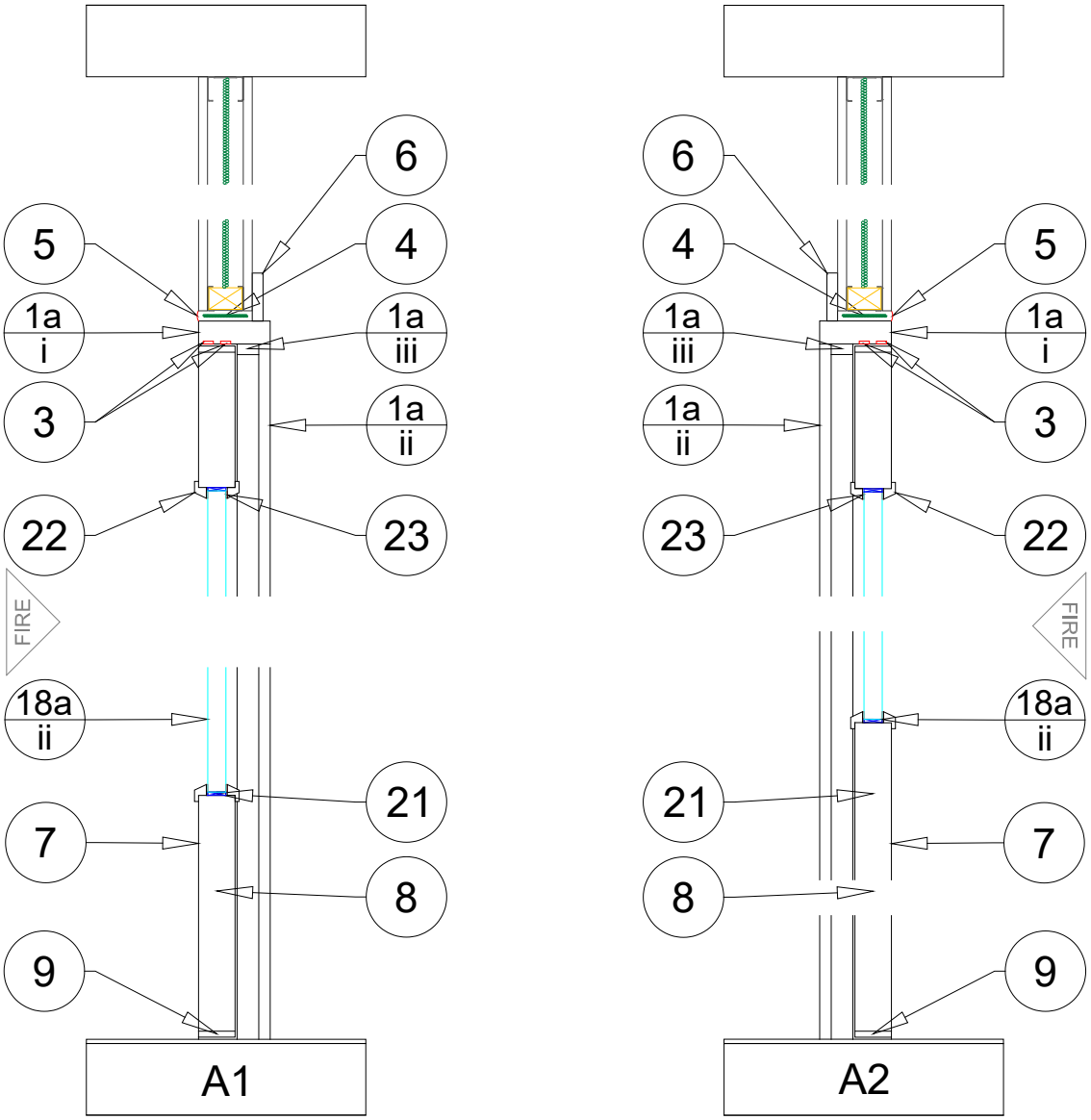


Figure 2 - Typical vertical section through The Specimen

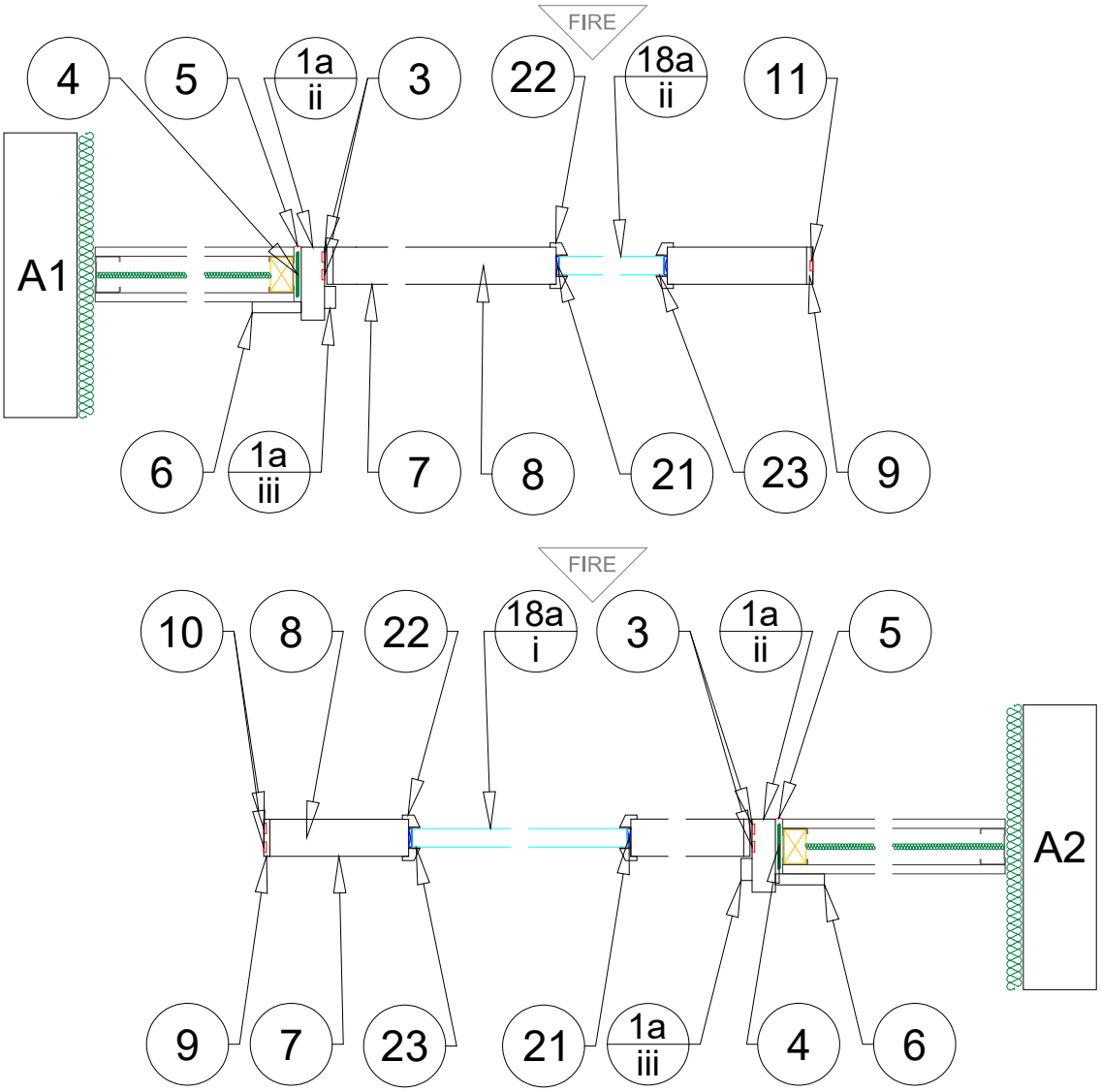


Figure 3 - Typical horizontal section through The Specimen

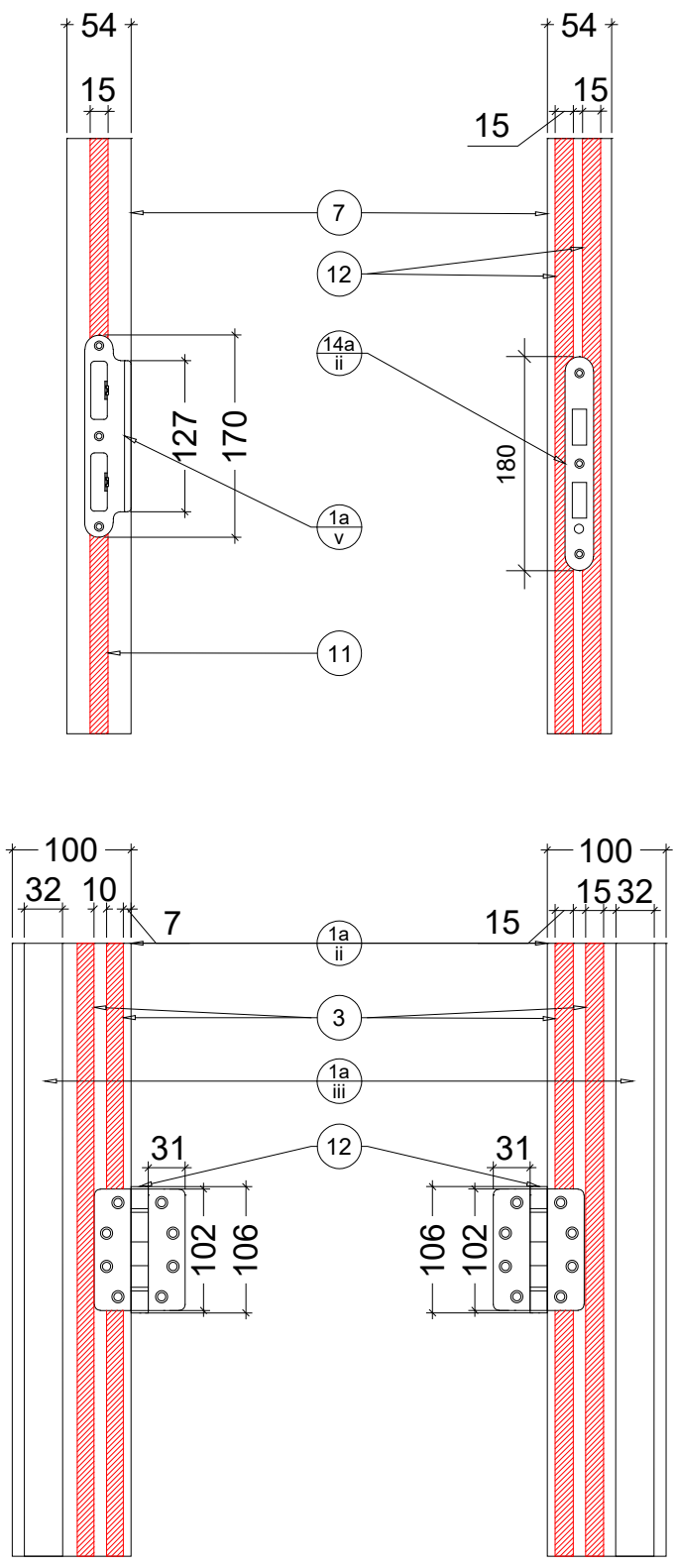


Figure 4 - Hardware intumescent interruptions

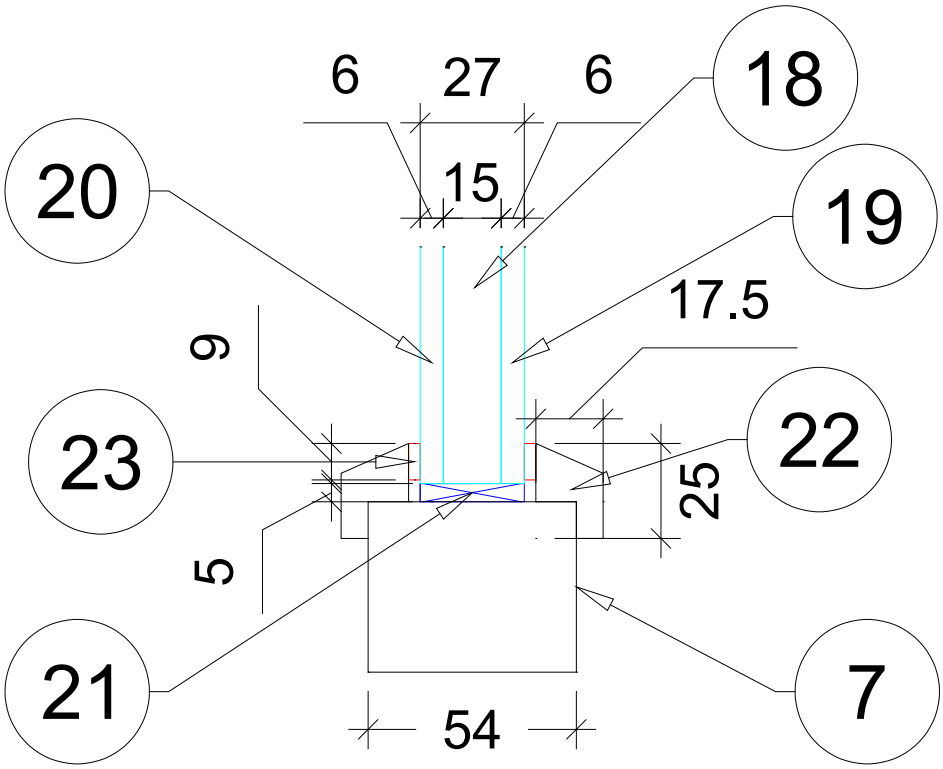


Figure 5 – Vision Panel Detail

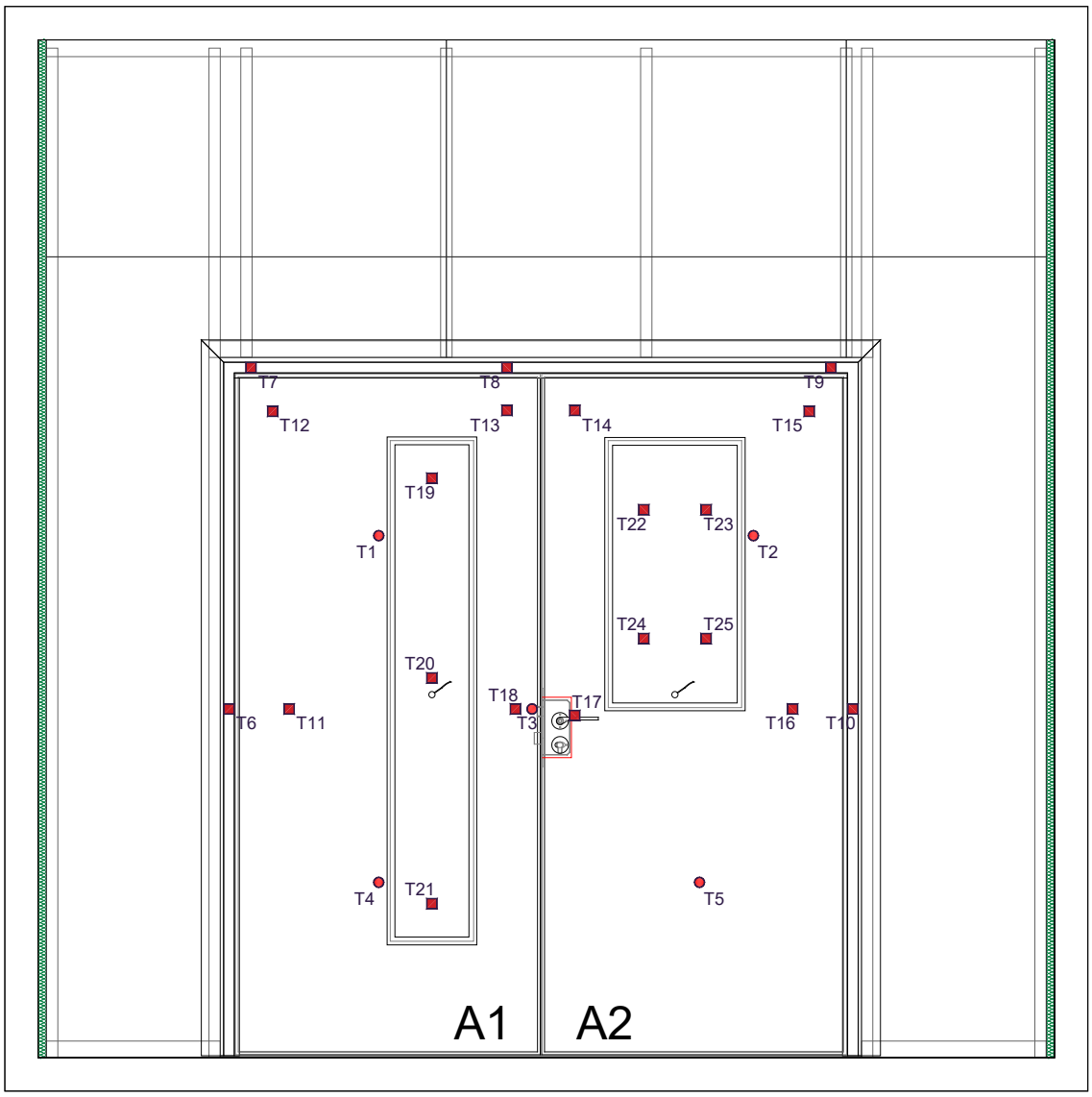


Figure 6 - Layout of instrumentation viewed from the unexposed surface of the test construction

4 Technical Schedule

4.1 Specimen

1. Frame	
Manufacturer	DorSuite Ltd [1]
Reference	Engineered Redwood [1]
a. Material	
i. Frame	Engineered Redwood [1]
ii. Stop	MDF
Density	500-520 kg/m^3 [1]
Moisture content	11.3 – 12 % (Laboratory Measurement)
Orientation to heating conditions	Opening towards
b. Overall size	1904 mm wide x 2078 mm high
i. Frame (Head)	100 mm wide x 32 mm thick
ii. Frame (Jambs)	100 mm wide x 32 mm thick
iii. Stop	32 mm wide x 12 mm deep
Jamb to Head jointing method, fixing detail and location	Housed butt joint with PVA & 2 No. Ø 0.5 mm x 60 mm long wood screws [1]
Stop to Frame jointing method, fixing detail and location	Pinned with 1.6 mm gauge x 38 mm long steel pins @ 300 mm centres [1]
2. Frame Fixing Method to Supporting Construction	
Manufacturer	Spax [1]
Reference	4Cut [1]
Type & material	Passivated Steel [1]
Overall size	Ø 5 mm x 80 mm long
Location relative to frame reveal	60 mm in
Spacing	150 mm from top corner of jamb, 150 mm from bottom corner of jamb and at no more than 600 mm centres

Does the fixing penetrate intumescent seal within frame reveal	No
Packing Material	Certitek DP01
Packing Material Dimension	100 mm long x 30 mm Wide x Various thicknesses (1 mm, 2 mm, 3 mm & 5 mm)
3. Intumescent to frame reveal	
Quantity	2
Manufacturer	Pyroplex [1]
Reference	Fire Only 8700 [1]
Material	Graphite [1]
Overall section size	15 mm wide x 4 mm thick
Application method	Adhesive strip to back
Location (relative to the opening face of the door leaf)	9 mm from opening face 10 mm in between
4. Frame to supporting construction fire stopping detail	
Manufacturer	Knauf
Reference	Rocksilk – RS45
Density	45 kg/m^3 [1]
Material	Mineral Wool [1]
Overall section size	10 mm wide at jambs, 15 mm wide at head x 80 mm deep
Application method	Friction fitted withing the frame perimeter
5. Sealant to fire stopping detail	
Manufacturer	Certitek
Reference	DM-01
Material	Acrylic Intumescent Mastic [1]
Overall section size	Ø 10 mm bead at jambs, Ø 15 mm bead at head
Application method	Cartridge gunned
Location	Both Faces around the architraves

6. Architrave	
Manufacturer	DorSuite Ltd [1]
Reference	MDF Architraves [1]
Material	MDF [1]
Overall section size	70 mm wide x 15 mm thick
Location	unexposed side of frame
Application method, fixings and fixing frequency required	Pinned with 1.8 mm gauge x 50 mm long steel pins @ 300 mm centres.
7. Door Leaf	
Manufacturer	Halspan (Held in commercial Confidence) 3
Reference	Halspan Optima 54 (Held in commercial Confidence) 3
Supplier	DorSuite Ltd [1]
Supplier Ref	Epicore 54 [1]
Quantity of leaves on doorset	2
Glazing location relative to the head and closing edge	200 mm from the head of the leaf and 200 mm from the closing edge of the leaf
Overall leaf size supplied for testing	915 mm wide x 2040 mm high x 54 mm thick
Door Undercut (Top of cill / bottom of frame)	3 mm
8. Core element	
Manufacturer	Halspan (Held in commercial Confidence) [3]
Reference	Halspan Optima 54 (Held in commercial Confidence) [3]
Supplier	DorSuite Ltd [1]
Supplier Ref	Epicore 54 [1]
Material	Particle Board [1]
Location	Core [1]
Density	600-620 kg/m^3 [1]
9. Lippings / Edge banding	

Manufacturer	DorSuite Ltd [1]
Reference	LIP-0000 [1]
Material	Sapele [1]
Density	600-640 kg/m^3 [1]
Moisture content	9.6 – 11.5 % (Laboratory Measurement)
Overall size	8.0 mm deep x 54 mm wide
Fixing method	Adhered on [1]
Location	All edges of the door leaf
a. Adhesives	Polyurethane [1]
i. Manufacturer	Henkel [1]
ii. Type	PUR [1]
iii. Curing method	Moisture Cured [1]
10. Intumescent to Primary Leaf Edge	
Quantity	2
Manufacturer	Pyroplex [1]
Reference	Fire Only 8500 [1]
Material	Graphite [1]
Overall section size	15 mm wide x 4 mm thick
Application method	Adhesive strip to back
Location (relative to the opening face of the door leaf)	Central to leaf, set 10 mm apart
11. Intumescent to Secondary Leaf Edge	
Quantity	1
Manufacturer	Pyroplex [1]
Reference	Fire Only 8500 [1]
Material	Graphite [1]
Overall section size	15 mm wide x 4 mm thick

Application method	Adhesive strip to back
Location (relative to the opening face of the door leaf)	Central to leaf
12. Hinges	
Manufacturer	ZOO Hardware (Held in commercial Confidence) 3
Reference	ZHSS243RS Class 13 (Held in commercial Confidence) 3
Supplier	DorSuite Ltd [1]
Reference	(0023229) 102 x 76mm Grade 13 Radius Ball Bearing Butt Hinge – GE [1]
Quantity	3 per door
Primary material	Stainless Steel
Type	Grade 13 concealed hinges [1]
a. Size	
i. Knuckle	Ø 14.5 mm x 106 mm high
ii. Blades	102 mm high x 31 mm wide x 3 mm thick
b. Fixings	
i. Type	Countersunk Screws
ii. Material	Stainless Steel
iii. Size	4 no. Ø 5 mm x 30 mm long, to frame 4 no. Ø 5 mm x 50 mm long, to leaf
iv. Number off per blade	4
Position of each hinge relative to the head of the leaf	120 mm, 935 mm, 1748 mm
Details of intumescent protection	1 mm mono ammonium phosphate hinge pads
Interruptions to Intumescent within the frame reveal	Fully interrupted (1 intumescent)
13. Door Closer	
Manufacturer	Rutland (Held in commercial Confidence) 3
Reference	TS9205 (Held in commercial Confidence) 3

Supplier	DorSuite Ltd [1]
Supplier Reference	Size 2-5 Scissor Arm Door Closer, Semi Radius Cover c/2 Backcheck & Delayed Action – SNP (0029463) [1]
a. Material	
i. Body	Mild Steel [1]
ii. Closer arm	Mild Steel [1]
iii. Cover	Stainless Steel [1]
Configuration	Figure 1
b. Overall size	
i. Body	55 mm high x 235 mm wide x 38 mm deep
ii. Cover	70 mm high x 270 mm wide x 40 mm deep
Fixing method	4 No Ø 4.8 mm x 50 mm long on body and 2 No Ø 4.8 mm x 50 mm long on bracket into frame
14. Lockset / Latch 1	
Manufacturer	Zoo Hardware (Held in commercial Confidence) 3
Reference	Din Euro Sashlock ZDL7255RSS (Held in commercial Confidence) [3]
Supplier	DorSuite Ltd [1]
Supplier Reference	Din 72mm Radius Forend Euro Sashlock, 55mm Backset – SSS (0013733) [1]
a. Material	
i. Lockcase	Stainless Steel [1]
ii. Forend plate	Stainless Steel [1]
iii. Latch bolt	Stainless Steel [1]
iv. Lock bolt	Stainless Steel [1]
v. keeper	Stainless Steel [1]
b. Overall sizes	
i. Central Lockcase	165 mm high x 15 mm wide x 80 mm deep
ii. Forend plate	230 mm high x 22 mm wide x 3 mm thick

iii. Latch bolt	30 mm high x 12 mm wide x 12 mm projection
iv. Lock bolt	35 mm high x 9 mm wide x 20 mm single projection
v. Keeper	170 mm high x 24 mm wide x 3 mm thick with 20 mm wide x 130 mm high tongue
c. Fixing method	
i. Forend plate	2 No. Ø 3.8 mm x 21 mm long steel screws
ii. Keeper	3 No. Ø 3.8 mm x 21 mm long steel screws
Operation of latch bolt	Disengaged
Operation of lock bolt	Disengaged
d. Details of intumescent protection	
i. Central Lockcase	1 mm mono ammonium phosphate
ii. Forend plate	1 mm mono ammonium phosphate
iii. Keeper	1 mm mono ammonium phosphate
Interruptions to Intumescent within the frame reveal	Keeper fully interrupts
Location of centre of the spindle relative to the bottom of the leaf	Centre of the spindle measures 1000 mm from the bottom of the leaf
15. Cylinder with thumbturn	
Manufacturer	ZOO Hardware (Held in commercial Confidence) 3
Reference	Vier V5EP60CTSCE (Held in commercial Confidence) 3
Supplier	DorSuite Ltd [1]
Supplier Reference	35/35mm Euro Key to Differ Cylinder and Turn - SC (0029533) [1]
Material	Stainless Steel [1]
Overall size	16.5 mm wide x 70 mm deep x 32 mm high
Fixing method	Ø 4.8 mm x 60 mm long screws
16. Lever handles	
Manufacturer	Carlisle Brass (Confidential) 3

Reference	SC240G9T (Confidential) 3
Supplier	DorSuite Ltd [1]
Supplier Reference	(0029349) 19 mm Dia Return to Door Lever on 8 mm Spring Rose - SSS [1]
Material	Stainless Steel [1]
Overall size	140 mm long x 18.7 mm thick x 65 mm projection
Fixing method, fixing material, sizes, quantity and location	2 no. bolt through Ø 3.88 mm x 52.96 mm long (cut down from 60.02) and 4 no. Ø 3.69 mm x 19.69 mm long screws
Details of intumescent protection	N/A
17. Escutcheon	
Manufacturer	ZOO Hardware (Confidential) 3
Reference	SCS003SS (Confidential) 3
Supplier	DorSuite Ltd [1]
Supplier Reference	8 mm Oval and Euro Profile Escutcheon – G304 SSS (0108663) [1]
Material	Mild Steel [1]
Overall size	Ø 52 mm x 8.5 mm projection
Location	Applied to both faces
Fixing method	2 No. Ø 3.2 mm x 25 mm long Wood screws
Details of intumescent protection	N/A
18. Glazing units	
Manufacturer	Vistamatic [1]
Reference	VS2/VSO2 – Vistamatic panel with operation both sides [1]
a. Overall size	
i. Glazing unit 1	800 mm high x 400 mm wide x 27 mm thick [1]
ii. Glazing unit 2	1500 mm high x 500 mm wide x 27 mm thick [1]
Aperture location relative to the head and closing edge of the leaf	200 mm from the head of the leaf and 200 mm from the closing edge of the leaf
b. Orientation	

i. Glazing unit 1	Pyrostop facing the non-exposed side
ii. Glazing unit 2	Pyrostop facing the exposed side
c. Sight size	
i. Glazing unit 1	772 mm high x 374 mm wide
ii. Glazing unit 2	1475 mm high x 222 mm wide
d. Location	
iii. Glazing unit 1	On Primary leaf A2
iv. Glazing unit 2	On Salve leaf A1
Expansion allowance	4 mm [1]
19. Glass (to Unit 2 exposed face and Unit 1 Unexposed face)	
Manufacturer	Pilkington [1]
Reference	15 mm Pyrostop [1]
Thickness	15 mm thick
20. Glass (to Unit 1 exposed face and Unit 2 Unexposed face)	
Manufacturer	Express Toughening / Vistamatic [1]
Reference	6 mm Clear Toughened Glass [1]
Thickness	6 mm thick
21. Glass spacer	
Manufacturer	Vistamatic [1]
Reference	VS2/VSO2 – Vistamatic panel with operation both sides [1]
Material	Aluminium Spacer Bar [1]
Overall size	5.5 mm thick [1]
Fixing method	N/A
a. Presence of Adhesives to seal unit	Yes
i. Location	Hot Melt – perimeter seal [1]
ii. Manufacturer	Bostik [1]

iii. Type	Butyl [1]
22. Beading	
Manufacturer	DorSuite [1]
Reference	Bolection bead [1]
Material	Sapele [1]
Density	520 kg/m^3 [1]
Moisture content	9.2 – 10.2 % (Laboratory Measurement)
Overall size	17.5 mm wide x 25 mm high
Cross Section Size	17.5 mm wide x 25 mm high
Fixing method, fixing material and sizes	Senco Ø 1.8 mm x 50 mm long Pins in from corners and @ Max 150 mm centres inserted at 25-30° to the plane of glass.
23. Glazing Intumescent	
Manufacturer	Seal Tight Solutions [1]
Reference	STS 103GT [1]
Material	Closed Cell foam tape [1]
Overall size	10 mm wide x 3 mm thick [1]
Fixing method	Adhesive strip to back [1]

4.2 Supporting Construction

24. **Construction As Per BS EN 1363-1:2020 § 7.2.2.4**	
Intended Resistance	EI30
Group	A
Timber Inserts to Studs	Jambs Only
25. Head/ Floor Track	
Supplier/ Manufacturer	Knauf UK
Reference	Knauf U-Channel
Type & Material	Steel U-Channel
Dimensions	52 mm deep x 25 mm wide x 3000 mm long x 0.55 mm thick
Fixing Method	Screw fixed to head and base of the restraint frame
a. Fixing	
i. Supplier	United Kingdom Testing and Certification
ii. Reference	TX Countersunk concrete screw
iii. Material	Steel
iv. Dimension	Ø 7.5 mm x 100 mm at the head Ø 7.5 mm x 60 mm at base long self-tapping screws staggered at max 600 mm centres
26. Studs	
Manufacturer	Knauf UK
Reference	Knauf C stud
Type & Material	Steel C-Stud
Dimensions	52 mm deep x 25 mm wide x 3000 mm long x 0.55 mm thick
Fixing Method	Friction fitted to the head/ floor track, with the fixed edge stud at 600 mm centres
a. Fixing	
i. Supplier	United Kingdom Testing and Certification
ii. Reference	TX Countersunk concrete screw

iii. Material	Steel
iv. Dimension	Ø 7.5 mm x 50 mm long self-tapping screws staggered at max 600 mm centres
v. Location	Fixed edge stud only
27. Lining(s)	
Manufacturer	Knauf UK
Reference	Knauf Firepanel
Type & Material	Paper faced, gypsum plasterboard type F
Density	10 kg/m^2 [2]
Layer Quantity	1
Dimensions	12.5 mm thick x 1200 mm wide x 2400 mm high
Fixing method	Fixed on the face of the boards into C-studs at 300 C/C
a. Fixings	
i. Supplier	United Kingdom Testing and Certification
ii. Reference	Gyproc Jackpoint Screws
iii. Material	Steel
iv. Dimension	Ø 3.8 mm x 25/32/42 mm
v. Location	Fixed edge stud only
Joints Filled & Taped With	Knauf Fill & Finish Light Plasterboard Joint Filler Ready Mixed and Knauf Tape.
28. Wall Insulation	
Manufacturer	Knauf Insulation Ltd.
Reference	Knauf Insulation Rocksilk® RS45 Building Slab
Type & Material	Rock mineral wool slab
Dimensions	1200 mm high x 600 mm wide x 50 mm thick slab sections
Density	45 kg/m^3 (± 10 kg/m^3) [2]
Fixing Method	Compression Fitted
Locations	Centrally Located in the wall

29. **Board for Simulated Floor Level**	
Manufacturer	British Gypsum
Reference	Glasroc F MultiBoard 6mm
Density	833 kg/m^3 [2]
Dimensions	6 mm thick x 1324 mm long x 575 mm wide
Fixing(s)	Compression fitted between restraint frame and specimen.
30. Free Edge Gasket	
Manufacturer	Knauf Insulation Ltd.
Reference	Knauf Insulation Rocksilk® RS60 Building Slab
Type & Material	Rock mineral wool slab
Dimensions	1200 mm high x 600 mm wide x 50 mm thick slab sections
Density	45 kg/m^3 (± 10 kg/m^3) [2]
Location	At the free edge of the supporting construction

All dimensions are in millimetres (mm) unless otherwise stated.

1. Information provided by the Test Sponsor. Not verified by United Kingdom Testing and Certification.

2. Nominal value.

3. Information is commercial in confidence. Full details are retained on file by United Kingdom Testing and Certification.

5 Specimen Photographs

Figure 7 - Item 11

Figure 8 - Item 9

Figure 9 - Item 10

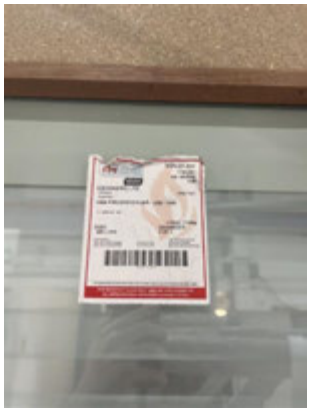


Figure 10 - Item 18a i

Figure 11 - Item 22

Figure 12 - Item 18a ii

Figure 13- Item 15

Figure 14 - Item 16

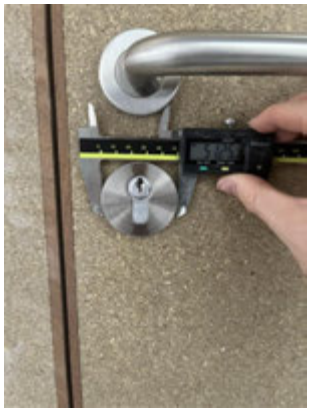


Figure 15 - Item 17

6 Test Procedure

6.1 Ambient Temperature

The ambient air temperature in the vicinity of the test construction was 20.4°C at the start of the test with a maximum variation of ± 3.4°C during the test.

6.2 Heating Conditions

The Specimen were subject to heating conditions in accordance with BS EN 1363-1:2020 § 5.1. This was monitored and controlled for the duration of the test using type K thermocouples which were distributed across a vertical plane 100 ± 50 mm from the exposed surface of the test construction. The resulting Time-Temperature distribution is presented in Figure 24.

6.3 Pressure Conditions

The Specimen were subject to a pressure regime in accordance with BS EN 1363-1:2020 § 5.2. The calculated pressure differential relative to the laboratory atmospheric pressure at a height of 365, 1612 and 2850 mm from the furnace floor level was -1.1, 9.4 and 20.0 Pa respectively which equates to 0 Pa at a height of 500 mm from the furnace floor level. The furnace was maintained at these pressures within ± 5 Pa five minutes after the commencement of the test and ± 3 Pa ten minutes after the commencement of the test and for the remainder of the test duration. The pressure deviated from the specified conditions on no instances throughout the duration of the test. The Time-Pressure distribution is presented in Figure 25.

6.4 Unexposed Surface Temperature

A roving thermocouple was available for the evaluation of the maximum temperature rise of the unexposed surface of the specimens for the duration of the test. Any measurements using the roving thermocouple are presented on page 32.

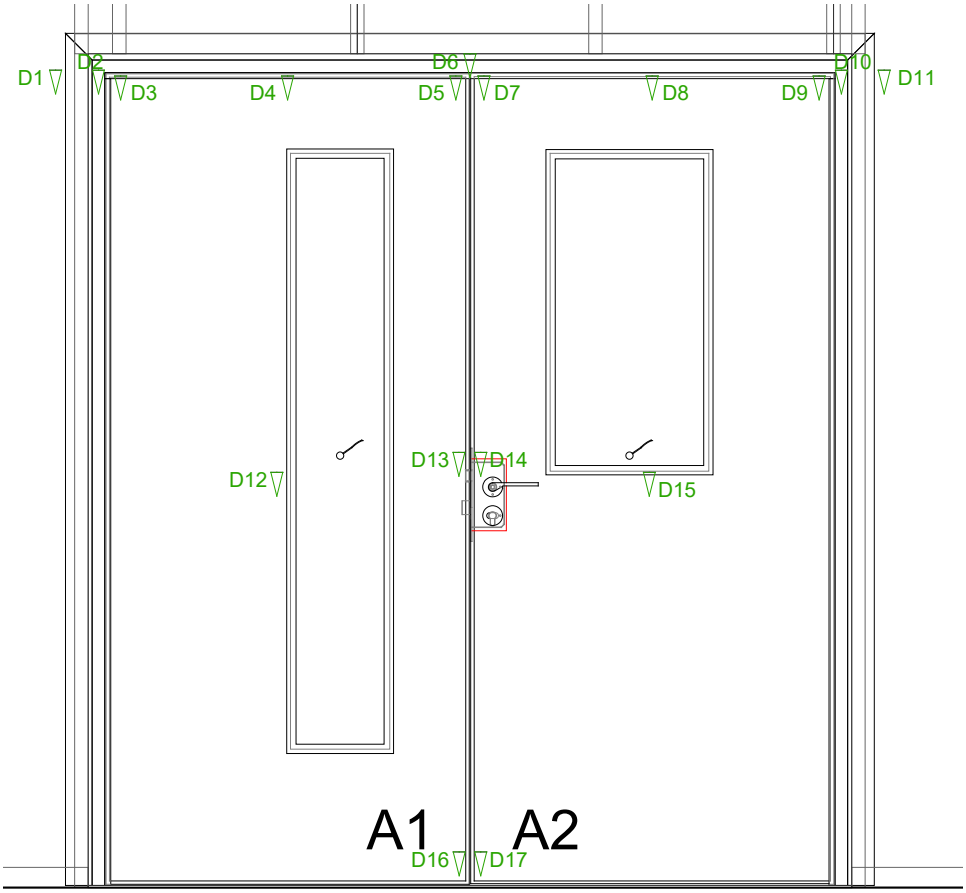
Disc thermocouples were affixed to the unexposed surface of The Specimen in accordance with BS EN 1634-1:2014+A1:2018 § 9.1.2 to measure and monitor the maximum and the mean temperature rise of the unexposed surface of The Specimen for the duration of the test. A summary of the measurements is presented in Figure 26 and the locations of these thermocouples is illustrated in Figure 6.

6.5 Radiation

The Radiant Heat of The Specimen was measured using 180° field of view, water cooled heat flux meters that were positioned at the geometric center of The Specimen at a distance of 1000 mm from the unexposed surface. Measurements were recorded for the duration of the test and a summary of the recorded measurements is presented in Figure 27.

6.6 Deflection

All measurements are in millimeters (mm) unless stated otherwise. Positive values indicate movement towards the heating conditions.



Time (mins)	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	3	2	2	3	7	0	2	2	-1	3	3	-1	-2	-3	-3	-1	-4
20	4	5	7	9	27	4	12	8	8	42	7	0	2	-3	-2	1	-4
25	16	16	20	18	38	17	22	17	16	50	18	1	2	-1	0	0	-5
30	25	25	28	26	45	21	30	24	25	59	23	3	3	2	3	-1	-6
40	36	42	41	40	58	39	44	37	38	72	34	3	1	-2	2	-1	-5

6.7 Observations

HH	MM	SS	E[1]	U[2]	Observation
00	**00**	**00**			**The test commences.**
00	00	15		X	Smoke/Steam releases from the leading edge and the head.
00	04	40		X	Vision panels getting opaque.
00	06	19		X	Smoke/Steam releases from the glass panel on the slave leaf and escutcheon.
00	10	55		X	Liquid running down from the beading on the slave leaf.
00	11	24		X	Discoloration on the leading edge.
00	22	50		X	Door leaves slightly curved away from the furnace.
00	30	50		X	Smoke/Steam releases from both vision panel.
00	32	10		X	Intumescent falling from the glass on the slave leaf.
00	37	40		X	Primary leaf vision panel outer glass cracking.
00	39	00		X	Flicker of flame is observed on vision panel beading on the primary leaf.
00	**39**	**10**		**X**	**Cotton pad test applied below the beading of the vision panel on the primary leaf. Cotton ad ignited. Cotton pad integrity failure and by virtue insulation failure is deemed to have occurred.**
00	**39**	**20**		**X**	**A flame emits and sustains for more than 10 seconds on top edge of the vision panel on primary leaf. Sustained flame failure.**
00	**43**	**43**		**X**	**Vision panel on primary leaf blanked off. Gap gauge criteria can no longer be assessed.**
00	46	08		X	Flicker of flame is observed on vision panel on the slave leaf.
00	**46**	**30**		**X**	**Cotton pad test applied at mid height of the vision panel on the slave leaf. Cotton pad ignited. Cotton pad integrity failure.**
00	**48**	**00**		**X**	**A flame emits and sustains for more than 10 seconds at the beading around the vision panel on slave leaf. Sustained flame failure.**

[1] Viewed from exposed surface of the test construction.
[2] Viewed from unexposed surface of the test construction.

HH	MM	SS	E[3]	U[4]	Observation
00	**49**	**45**			**The test is discontinued at the request of the Test Sponsor.**

[3] Viewed from exposed surface of the test construction.
[4] Viewed from unexposed surface of the test construction.

6.9 Test Images

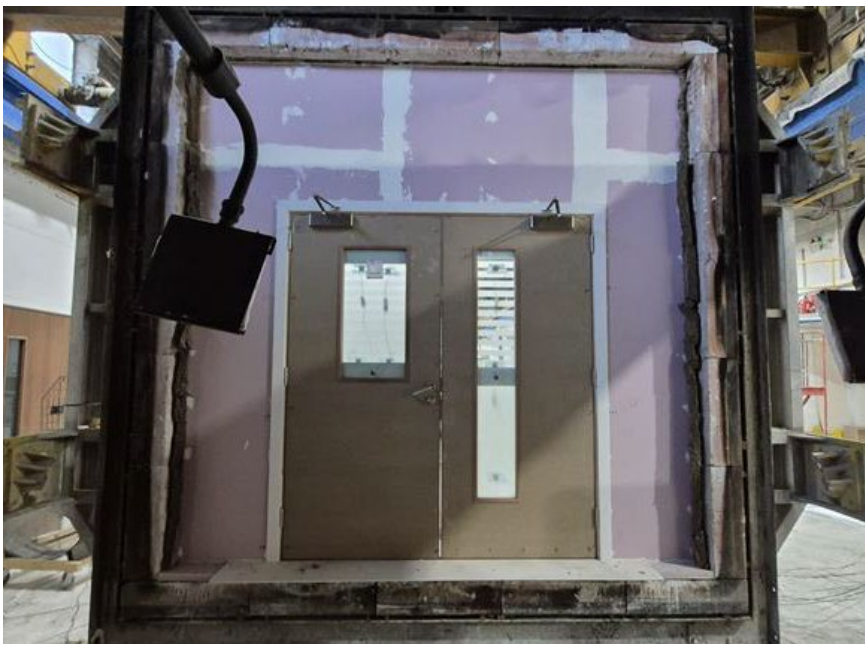


Figure 16 – The exposed surface of the test construction prior to commencement of the test

Figure 17 - The unexposed surface of the test construction prior to the commencement of the test

Figure 18 - The unexposed surface of the test construction after a test duration of 10 minutes

Figure 19 - The unexposed surface of the test construction after a test duration of 20 minutes

Figure 20 - The unexposed surface of the test construction after a test duration of 25 minutes

Figure 21 - The unexposed surface of the test construction after a test duration of 30 minutes

Figure 22 - The unexposed surface of the test construction after a test duration of 40 minutes

Figure 23 - The exposed surface of the test construction after the test was discontinued

7 On-going Implications

7.1 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, and where appropriate BS EN 1363-2. 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 and should be the subject to design appraisal by a competent individual.

Guidance on the field of direct application can be found in BS EN 1634-1:2014+A1:2018 § 13 and can be applied following the identification of classification(s).

7.2 Accuracy of Results

Due to 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.

No statement of conformity with the testing specifications is made or implied in this report. However, measurement results are reviewed, where applicable, to establish where measurement results exceed the control parameters established in the relevant resistance to fire test standard.

7.3 European Group of Organisations for Fire Testing (EGOLF)

Certain aspects of some fire test specifications are open to different interpretations. EGOLF have identified several such areas and have agreed resolutions which define common agreement of interpretations between fire test laboratories which are members of the Group. The following resolutions have been followed when conducting this test:

1. EGOLF AGREEMENT 034-2018 – Use of cotton pad in fire resistance tests.
2. EGOLF AGREEMENT 036-2018 – Discontinuity-different interpretations.
3. EGOLF Recommendation 013-2017 – Content of statements of ‘Field of direct application’ in test reports.

8 Detailed Expression of Results

The Specimen satisfied the performance criterion specified in BS EN 1634-1:2014+A1:2018 § 11 for the following intervals:

Performances		Criteria	Time (completed minute)	Failure Criteria Exceeded
Integrity		Ignition of a cotton pad	39 minutes	
		Sustained flaming	39 minutes	
		Cracks or openings in excess of given dimensions	43 minutes	Area blanked off**
Insulation – Specimen	Normal procedure:	Average temperature, increase of Δ140°C	39 minutes	Due to integrity failure
		Maximum temperature on leaf/leaves, increase of Δ 180 °C	39 minutes	Due to integrity failure
		Maximum temperature on the frame adjacent to leaf/leaves, increase of Δ 360 °C	39 minutes	Due to integrity failure
Insulation – Discrete Area	Glazed area	Maximum temperature for this discrete area, increase of Δ 180 °C	39 minutes	Due to integrity failure
Radiation	Specimen	Maximum or average radiation value > 5 kw/m^2	49 minutes	No Failure*
		Maximum or average radiation value > 10 kw/m^2	49 minutes	No Failure*
		Maximum or average radiation value > 15 kw/m^2	49 minutes	No Failure*
		Maximum or average radiation value > 20 kw/m^2	49 minutes	No Failure*
		Maximum or average radiation value > 25 kw/m^2	49 minutes	No Failure*

*The test was discontinued after a period of 49 minutes.

**Area blanked off.

9 Figures

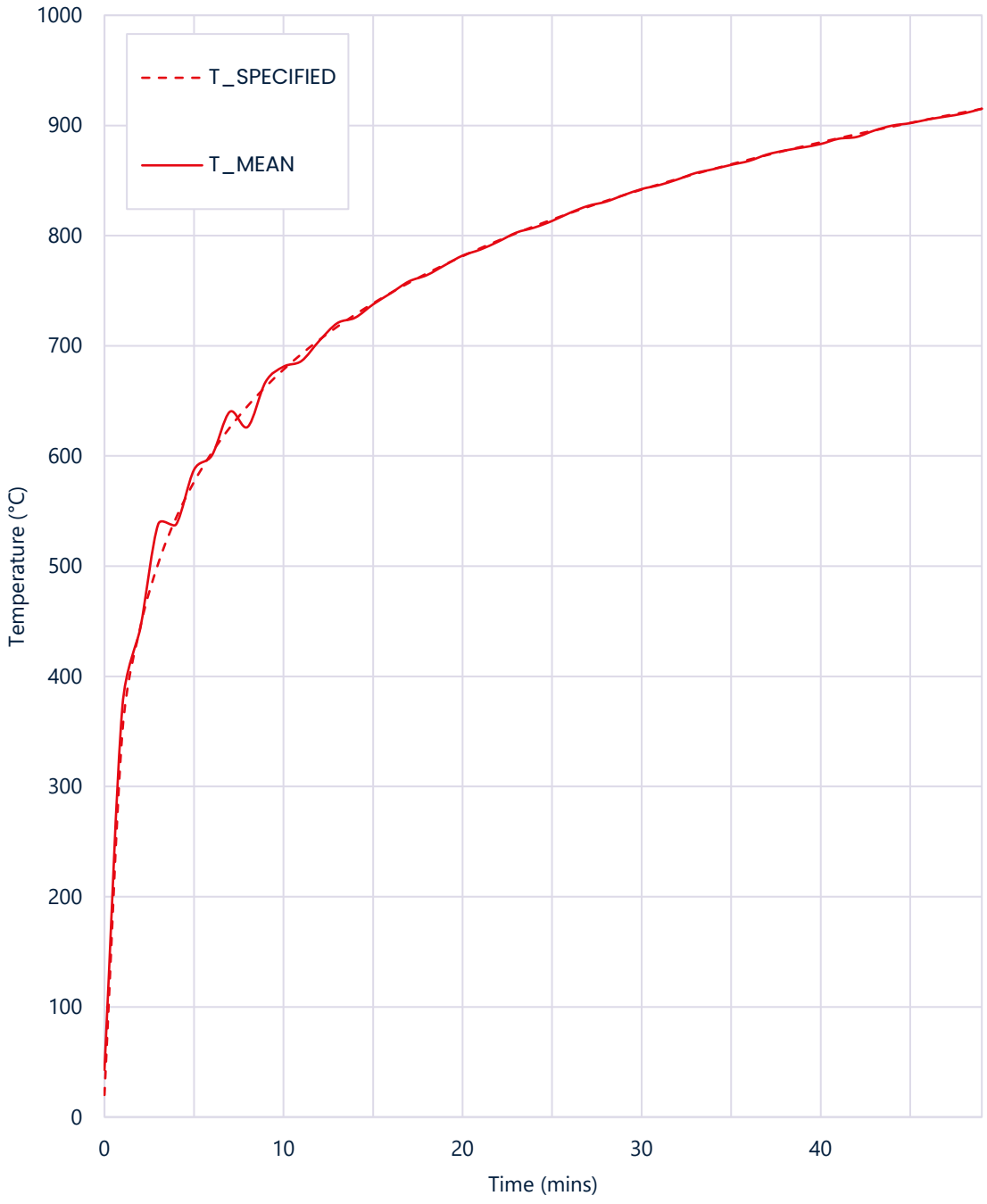


Figure 24 – Graph presenting the Time-Temperature distribution of the furnace

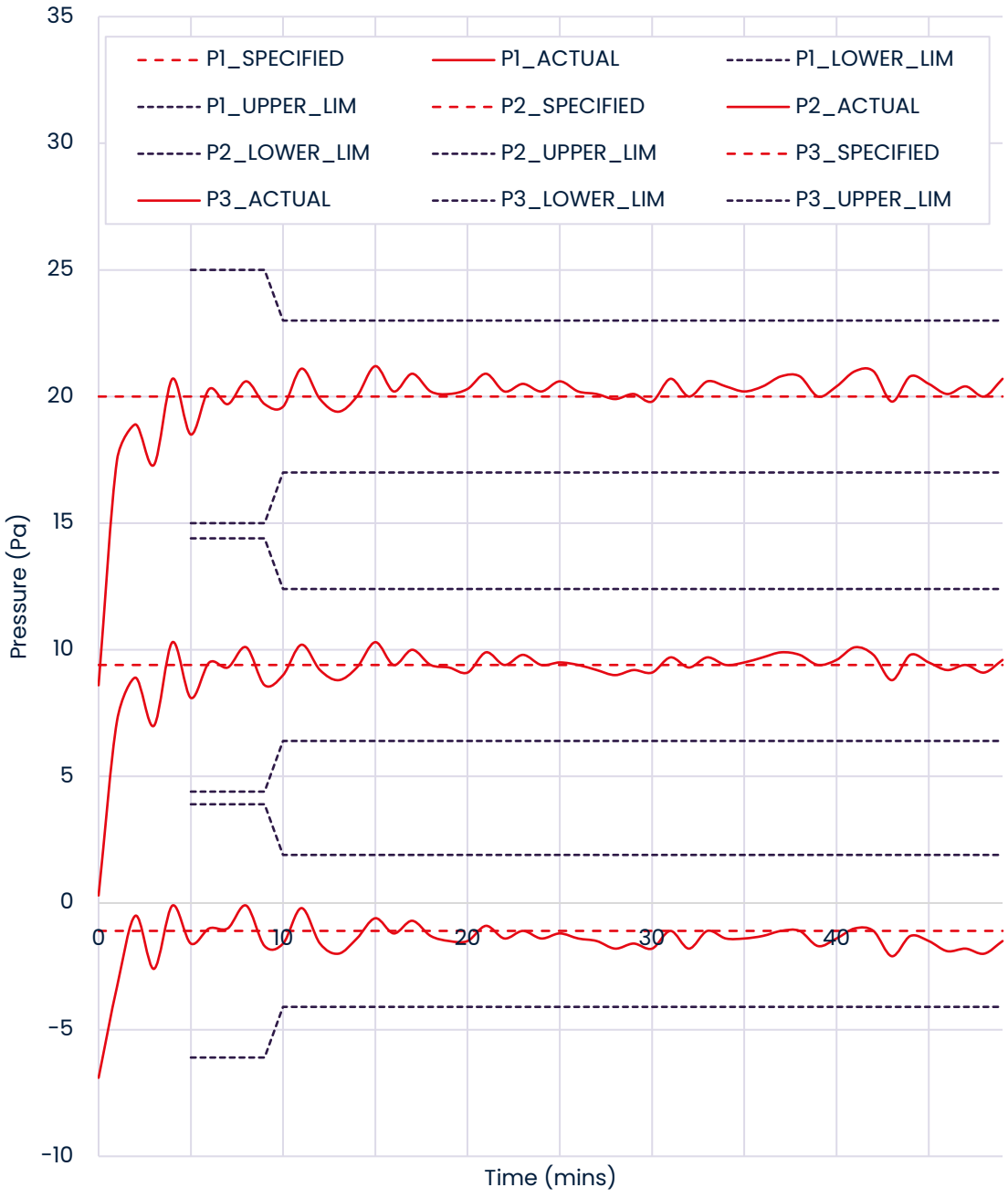


Figure 25 – Graph presenting the Time-Pressure distribution of the furnace

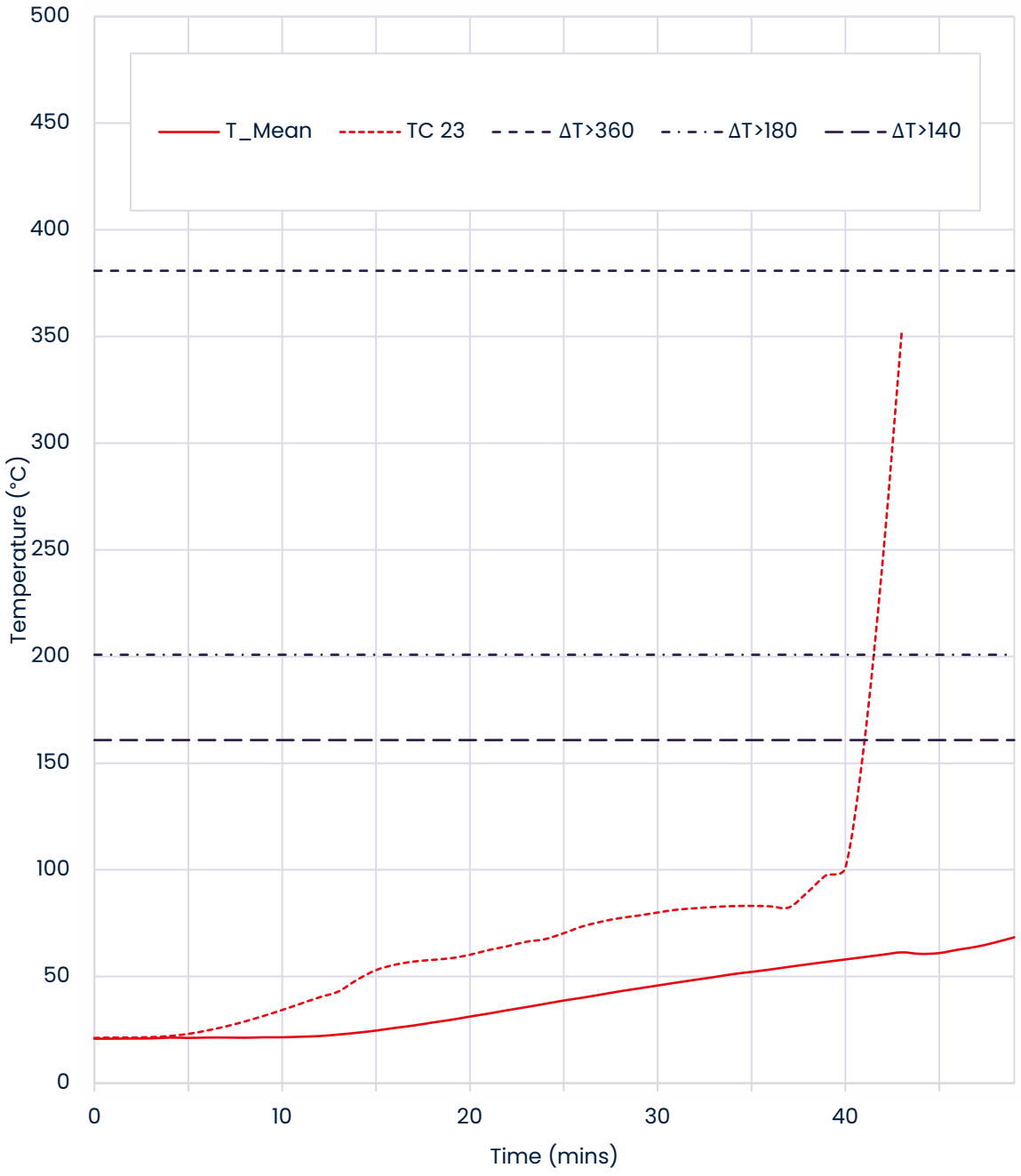


Figure 26 - Graph presenting the Time-Temperature distribution of the unexposed surface of The Specimen

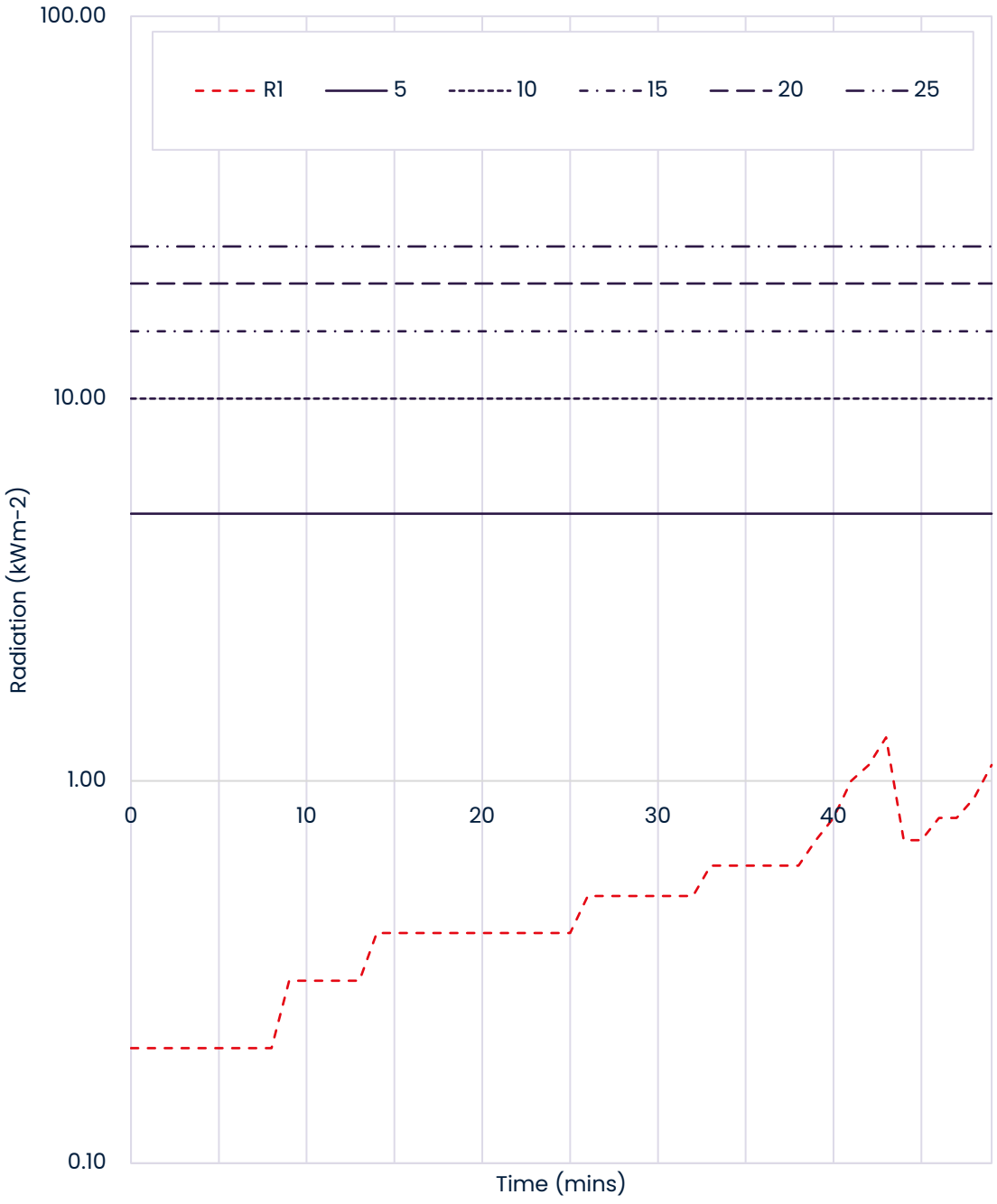


Figure 27 - Graph presenting Time-Radiation distribution of the unexposed surface of The Specimen

10 Tables

Table 1 – The temperatures recorded by the disc thermocouples used evaluate the mean and maximum temperature rise of the unexposed surface of The Specimen under the normal procedure. Values are in Degrees Celsius (°C) unless otherwise stated.

Time (mins)	TC1	TC2	TC3	TC4	TC5
0	21.0	21.1	20.7	20.8	20.6
2	20.9	21.1	21.3	20.8	20.6
4	21.1	21.2	22.5	21.2	20.8
6	21.3	21.4	21.8	21.4	21.0
8	21.7	21.3	21.4	21.2	20.9
10	21.5	21.6	21.8	21.5	21.2
12	22.0	22.4	22.6	22.0	21.5
14	23.3	24.1	24.9	23.3	22.6
16	25.4	26.5	28.2	25.5	23.9
20	30.7	32.6	34.8	30.8	27.2
22	34.1	36.0	38.2	33.9	28.8
24	37.1	39.3	41.9	37.1	30.5
26	40.0	42.7	44.9	40.4	32.4
28	43.3	45.5	49.0	43.6	34.0
30	46.2	48.6	51.5	46.6	36.0
32	49.1	51.3	54.4	49.5	38.0
34	51.7	54.0	57.1	52.5	40.2
36	54.2	56.0	58.5	55.3	42.4
38	56.7	58.3	60.8	58.0	44.8
40	59.1	60.5	62.3	60.6	47.5
42	61.4	62.9	63.9	63.0	50.0
44	63.1	57.5	65.4	64.9	52.2
46	65.7	56.6	68.4	67.2	55.0
48	67.5	65.7	69.8	69.5	57.6
49	69.2	72.0	71.2	70.5	59.0

Table 2 – The temperatures recorded by the disc thermocouples used to evaluate the maximum temperature rise of the frame/ transom members adjacent to the door leaf of The Specimen. Values are in Degrees Celsius (°C) unless otherwise stated.

Time (mins)	TC6	TC7	TC8	TC9	TC10
0	20.2	20.6	20.7	21.4	19.5
2	20.3	20.7	25.9	21.5	19.5
4	20.4	20.7	25.2	21.6	19.4
6	20.5	21.9	23.9	22.6	19.4
8	20.7	40.1	24.1	26.3	19.4
10	20.9	36.0	23.1	25.9	19.4
12	21.3	37.1	23.2	25.2	19.3
14	21.4	35.9	23.6	25.1	19.3
16	21.9	35.2	24.5	26.4	19.3
20	21.7	39.2	26.0	29.0	18.8
22	21.8	42.1	26.9	29.9	18.7
24	22.0	43.3	28.3	33.2	*
26	22.4	48.8	28.6	36.7	22.9
28	22.5	46.5	31.8	41.9	23.5
30	22.8	43.5	34.1	41.1	24.0
32	23.3	45.8	33.3	41.6	24.2
34	23.9	48.3	34.6	42.7	24.8
36	24.4	50.6	34.7	43.0	25.4
38	25.7	55.6	35.8	46.9	26.0
40	26.0	61.2	37.8	51.4	26.9
42	26.5	66.4	38.9	59.1	27.7
44	27.5	77.1	40.5	62.7	28.6
46	27.9	117.5	43.4	64.8	29.4
48	28.9	148.3	55.6	76.9	30.0
49	29.2	152.3	67.6	89.1	30.4

*Thermocouple Malfunction.

Table 3 – The temperatures recorded by the disc thermocouples used to evaluate the maximum temperature rise of the door leaf of The Specimen under the normal procedure. Values are in Degrees Celsius (°C) unless otherwise stated.

Time (mins)	TC11	TC12	TC13	TC14	TC15	TC16	TC17	TC18
0	21.0	21.3	21.1	21.3	19.2	20.5	21.5	21.1
2	21.0	21.3	21.4	23.5	19.2	20.5	24.2	21.3
4	21.1	21.3	21.8	22.7	20.1	20.6	23.6	21.8
6	21.2	21.5	22.1	22.8	20.1	21.0	24.1	21.7
8	21.3	21.7	22.2	23.2	19.0	20.8	24.4	21.6
10	21.4	21.8	22.2	23.5	19.0	20.8	26.0	21.8
12	22.1	22.2	22.6	25.0	19.2	21.5	27.8	23.2
14	23.3	22.8	24.0	28.3	19.5	22.6	29.1	25.6
16	25.3	24.0	26.3	31.9	20.0	24.4	31.6	28.7
20	30.1	26.6	31.3	39.7	20.9	28.7	37.4	35.9
22	32.8	28.2	34.7	43.1	21.1	30.8	40.1	39.3
24	35.5	29.8	38.2	46.9	20.9	33.1	43.0	42.7
26	38.0	31.4	41.0	50.8	22.1	35.6	47.7	46.1
28	40.6	33.3	44.7	53.9	21.9	37.7	49.7	49.3
30	43.1	35.2	47.7	56.7	22.2	40.2	52.9	52.1
32	45.3	37.2	50.4	59.1	23.1	42.6	55.6	54.6
34	47.4	39.4	52.9	60.8	23.9	45.0	57.9	57.0
36	49.4	41.7	55.3	62.7	23.4	47.5	60.2	58.5
38	51.1	44.3	57.4	64.2	24.4	49.8	62.2	60.5
40	53.0	47.0	59.8	66.2	25.8	52.3	63.9	61.9
42	55.1	50.3	62.0	68.3	26.5	54.6	65.8	63.8
44	57.0	53.8	64.3	70.8	27.3	56.6	61.6	65.4
46	59.1	58.5	66.0	73.5	26.2	58.7	60.3	66.8
48	61.2	64.3	71.5	76.8	27.3	60.9	63.8	68.1
49	62.2	70.6	77.1	78.1	28.0	62.0	65.4	69.4

Table 4 – Table presenting the temperatures recorded by the disc thermocouples used to evaluate the maximum temperature rise of the Glazed area incorporated into The Specimen under the normal procedure. Values are in Degrees Celsius (°C) unless otherwise stated.

Time (mins)	TC19	TC20	TC21	TC22	TC23	TC24	TC25
0	21.7	21.5	21.0	21.1	21.2	20.8	22.0
2	22.7	22.5	22.6	21.4	21.4	21.1	22.2
4	26.6	26.0	29.0	22.0	22.1	22.0	23.0
6	34.6	35.8	40.4	24.4	24.7	24.6	25.3
8	48.0	52.7	58.0	28.6	28.9	28.1	28.7
10	65.9	66.6	81.3	34.0	34.3	32.5	33.3
12	91.5	90.8	98.9	40.2	40.3	37.7	38.5
14	105.2	101.4	111.2	48.2	48.5	44.7	45.4
16	110.1	109.9	115.9	55.5	55.5	52.0	52.6
20	107.0	114.9	114.0	60.4	60.2	59.1	59.4
22	108.1	113.9	112.3	64.7	64.2	61.8	66.8
24	112.8	115.3	112.9	68.2	67.5	63.7	71.9
26	121.4	117.8	109.6	72.5	73.5	67.6	75.7
28	135.3	116.4	113.5	76.6	77.4	70.6	77.7
30	129.6	114.7	114.8	79.4	80.0	71.8	78.6
32	121.3	116.0	111.7	81.0	82.0	73.4	78.7
34	121.3	117.2	110.3	82.1	83.0	75.5	79.3
36	122.8	118.5	110.9	82.3	82.9	76.9	80.1
38	129.5	122.4	113.7	81.7	89.6	77.4	79.5
40	138.4	128.4	118.3	90.9	100.9	77.9	77.8
41	142.1	132.0	121.0	118.3	158.7	77.1	78.3
42	147.2	135.6	124.7	159.2	**245.6**	77.7	78.8
44	152.9	141.1	132.6	108.3	*	*	30.6
46	159.5	146.1	144.4	28.1	*	*	21.8
49	186.2	159.8	165.7	21.7	*	*	21.6

*Thermocouple Malfunction.