ZHEJIANG KUCHUAN DOOR CO., LTD.

TEST REPORT

SCOPE OF WORK
AS 1530.8.1:2018+A1:2024 TESTING ON FIBERGLASS DOOR AND STEEL FRAME, MODEL FS-001

REPORT NUMBER
250822002SHF-001

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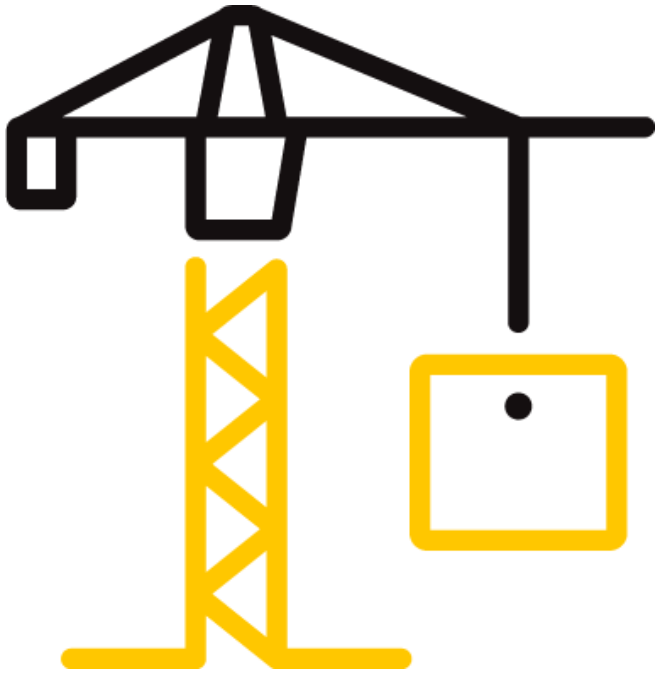

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REPORT ISSUED TO

ZHEJIANG KUCHUAN DOOR CO., LTD.
No.18 Jinniu Road, Niubeijin Industrial Zone, Wuyi County, Zhejiang

SECTION 1

SCOPE

Intertek has conducted an evaluation for Zhejiang Kuchuan Door Co., Ltd. to determine the simulated bushfire attack characteristics of the Fiberglass Door and steel frame, model FS-001. This evaluation began on August 22, 2025 and was completed on October 13, 2025. The test was conducted on September 2, 2025.

The test was conducted in accordance with AS 1530.8.1:2018+A1:2024 Methods for fire tests on building materials, components and structures, Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack-Radiant heat and small flaming sources, Section 19 SPECIFIC PROCEDURES FOR DOORS.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends six years after the test date. Test records, such as detailed drawings, datasheets, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Joke Que	**REVIEWED BY:**	Jason Xu
TITLE:	Engineer–Building & Construction	**TITLE:**	Operation Supervisor Building & Construction
SIGNATURE:	Joke Que	**SIGNATURE:**	Jason Xu
DATE:	2025-10-13	**DATE:**	2025-10-13

INTERTEK TESTING SERVICES SHENZHEN LTD. SHANGHAI FENGXIAN BRANCH 检验检测专用章 (1)

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SECTION 2
SUMMARY OF TEST RESULTS

Product Name: Fiberglass Door and steel frame, model FS-001

The test assembly satisfied the performance requirements for the following bushfire attack level:

PERFORMANCE CRITERIA	RESULTS
Bushfire attack level	**BAL: AA12.5**

The test was discontinued after a period of 60 minutes according to the test method.

This report details methods of construction, the test conditions and the results obtained when the specific element of construction described herein was tested in accordance with test method of AS 1530.8.1.

SECTION 3
TEST METHODS

The specimen was evaluated in accordance with the following:

AS 1530.8.1:2018+A1:2024, *Methods for fire tests on building materials, components and structures, Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack-Radiant heat and small flaming sources, Section 19 SPECIFIC PROCEDURES FOR DOORS*

AS 1530.4:2014, *Methods for fire tests on building materials, components and structures, Part 4: Fire-resistance test for elements of construction*

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SECTION 4
MATERIAL SOURCE/INSTALLATION

Test specimen was provided to Intertek directly by the client and was not independently selected for testing. Test specimen was received at the Evaluation Center on August 22, 2025.

Manufacturer: Zhejiang Kuchuan Door Co., Ltd.
Manufacturer Address: No.18 Jinniu Road, Niubeijin Industrial Zone, Wuyi County, Zhejiang

A description of the test assembly is given in the table below. The description of the specimen is declared by the sponsor of the test. All values quoted below are nominal, unless tolerances are given.

TESTED ASSEMBLY DESCRIPTION		
Door	Type	Single Leaf Single Action Swing Fiberglass Composite Door
	Nominal Size	820 mm wide by 2040 mm high by 40 mm thick
	Facing	2 mm thick fiberglass skin
	Sub-facing	5 mm thick Gypsum board at the closing face only
	Door core	31 mm thick PU foam
	Rail & Stile	36 x 30 mm Engineered wood bonded with 36 x 20 mm PVC
Frame	Nominal Size	864 mm wide by 2086 mm high by 116 mm deep
	Material	1.2 mm thick cold-rolled steel sheet
	Installation	Hollow frame and fixed to wood framed wall by four self-tapping screws at each vertical jamb
Threshold	Nominal Size	826 mm wide by 116 mm deep
	Material	1.2 mm thick cold-roll steel sheet, Hollow threshold
Hardware	Lock	Cylindrical Leverset Backset: 70 mm; Latch throw length: 11.6 mm Latch bolt: engaged
	Hinge	Stainless Steel Hinge Size: 4’’x 3.98’’ x 2 mm, Quantity: 3 pcs
Sealing strip		Overall Size: 18 x 11.6 mm
		Location: One strip surface mounted along the frame stop and threshold stop

The sample ID number assigned by the test lab is S250822002SHF.001.

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The drawings of the Fiberglass Door and steel frame, model FS-001 and test wall construction can be found in Section 6 and 7 respectively.

The test was conducted in accordance with AS 1530.8.1:2018+A1:2024 Methods for fire tests on building materials, components and structures, Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack-Radiant heat and small flaming sources, Section 19 SPECIFIC PROCEDURES FOR DOORS.

The test door was mounted so as to open away from the Radiant heat condition at the request of the sponsor.

The wall system met the minimum deemed to satisfy requirements of AS 3959: 2018 (Incorporating Amendment Nos 1 and 2) for the prescribed exposure level and consisted of a wood framed wall system of 90 mm × 45 mm studs clad with one layer of 12 mm thick standard plasterboard & one layer of 6 mm cement board to the exposed side and one layer of 12 mm thick standard plaster board to the unexposed side.

Prior to commencement of the test, the furnace and radiant panel were preheated to steady state conditions with the specimen shielded from the radiant heat. A calibration run was undertaken to establish the position and radiometer reading that corresponds to the required radiant heat flux at the surface of the specimen. Radiation distributions are adjusted so that the average of the four heat flux measurements at the quarter points were 0.75 + 25-15% of the value measured at the central position.

After the preheating and calibration run, positioning the test assembly in the front of the furnace and radiant panel, and then one Class AA burning crib was placed at assigned corner. The timer started. Temperatures within the wall and eaves, and on unexposed surface of the wall and the door were monitored using thermocouples and the data was recorded. Radiant heat flux was monitored using a radiometer and the data was recorded. Periodic observations were made of the fire exposed face and the non-fire exposed face of the test assembly during the simulated bushfire test.

Position for the measurement of internal maximum temperature, unexposed surface temperature and radiant heat flux were presented in the drawing of Section 8.

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SECTION 5
TEST RESULTS

Performance criteria		Time to failure (min)	Position of failure
A gap from the fire exposed face to the non-fire exposed face greater than 3 mm		No failure	—
Sustained flaming for 10 s on the non-fire side		No failure	—
Flaming on the fire-exposed side at the end of the 60 min test period		No failure	—
Radiant heat flux 365 mm from the non-fire side exceeding 15 kW/m^2		Not applicable	—
Mean and maximum temperature rises greater than 140 K and 180 K		No failure	—
Radiant heat flux 250 mm from the specimen, greater than 3 kW/m^2 between 20 min and 60 min		No failure	—
Mean and maximum temperature of internal faces exceeding 250°C and 300°C respectively between 20 min and 60 min after commencement of test		No failure	—
Crib class	AA	Peak heat flux	12.5 kW/m^2

The test specimen therefore satisfied the applicable performance criteria of **BAL: AA12.5.**

A full set of test data is included in Section 9, and photographs have been presented in Section 10.

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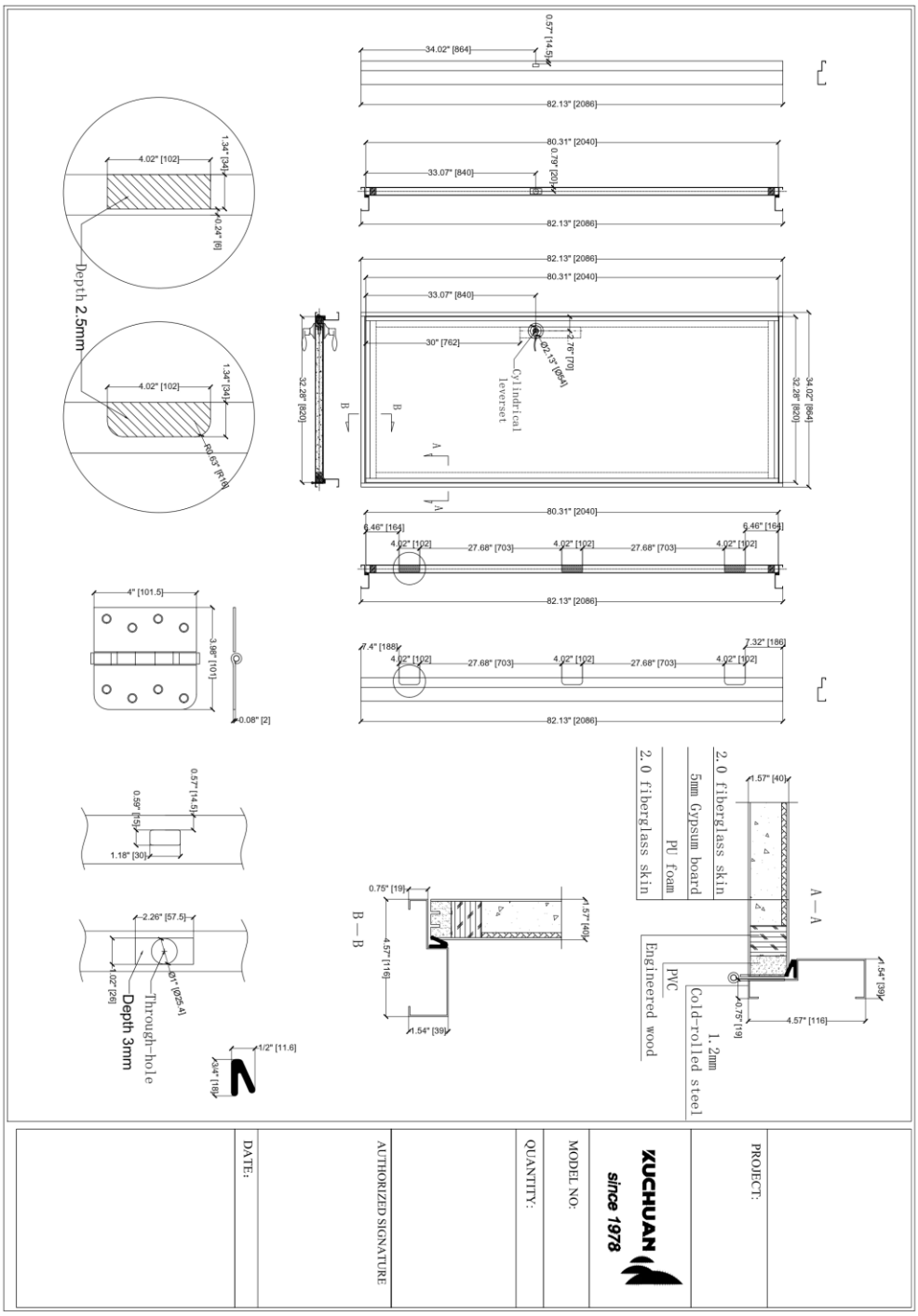
SECTION 6

TEST SAMPLE DRAWINGS



Assembly drawing of the Fiberglass Door and steel frame

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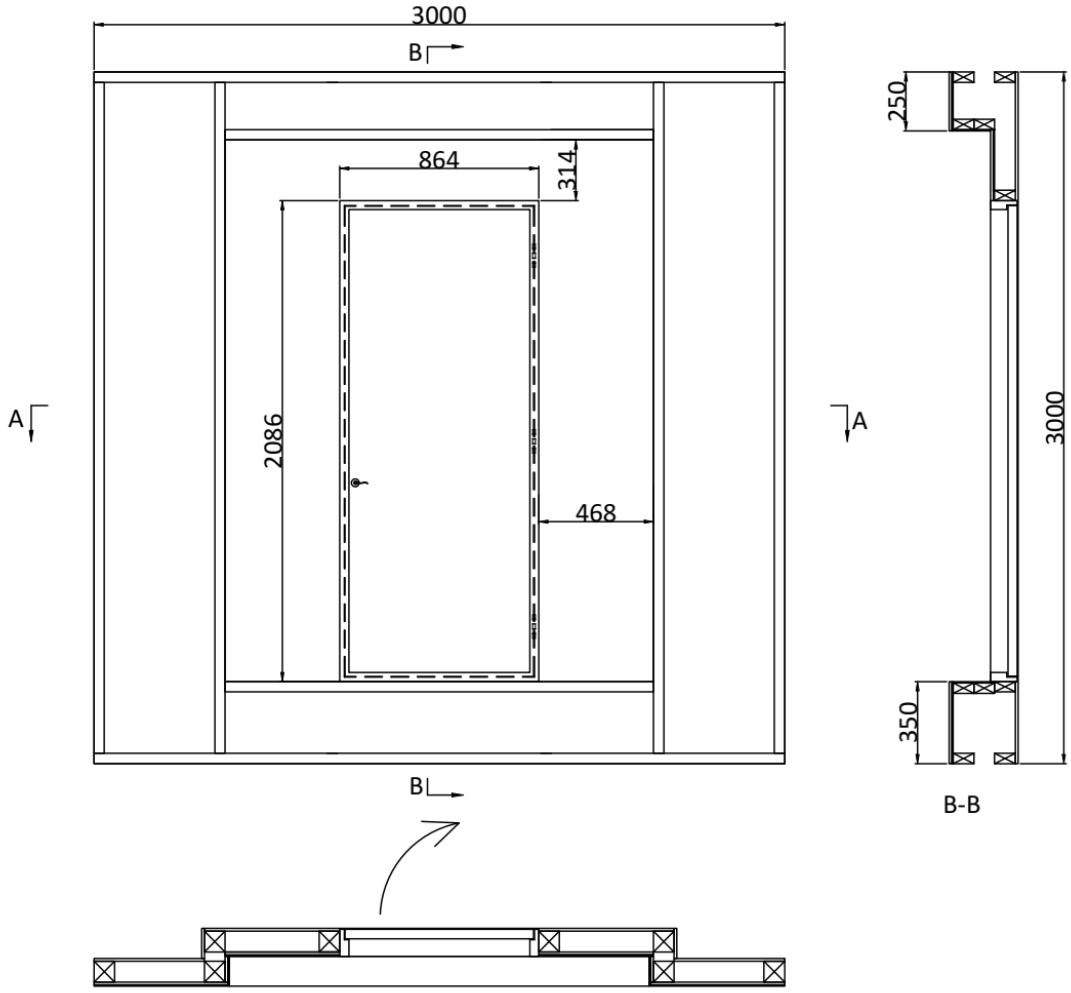
SECTION 7

TEST WALL CONSTRUCTION DRAWING



A-A
Exposed side

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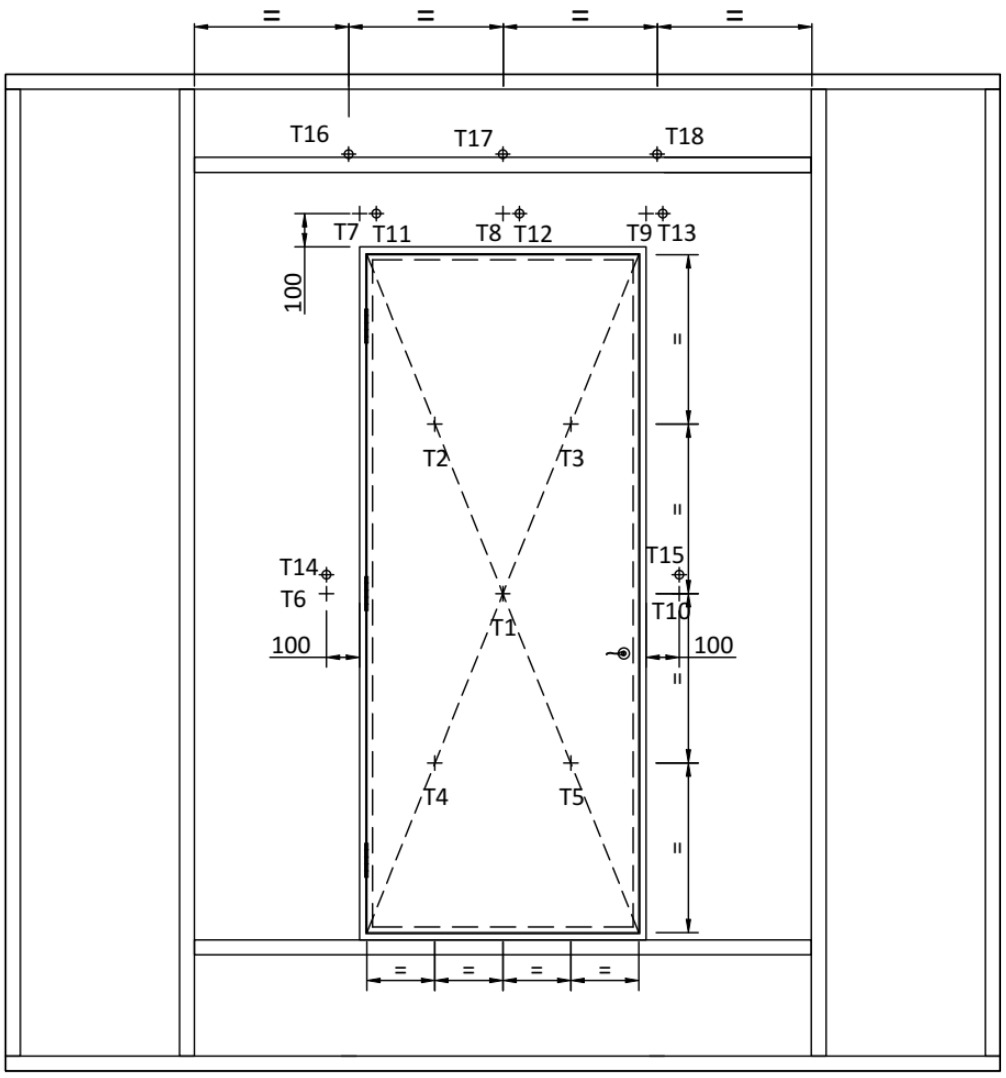
SECTION 8
TEST MEANSUREMENT DATA



Legend:

⊕ = Position for internal temperature within the wall and eaves

+ = Position for surface temperature on unexposed surface of the wall and the door

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SECTION 9
TEST DATA

Standards: AS 1530.8.1:2018+A1:2024 Methods for fire tests on building materials, components and structures, Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack-Radiant heat and small flaming sources

Procedure: Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack- Radiant heat and small flaming sources

Conditioning: According to AS 1530.8.1, Section 12

Equipment:

ITEM	ID
Vertical furnace	SH1097
Test Clock	SH1042
Ambient temperature gauge	SH1097-11
Internal and unexposed thermocouples	SH1097-12
Heat flux meter	SH1093

Exposure Conditions:	According to AS 1530.8.1, Section 3.2, 14.2, 14.3
Test apparatus:	According to AS 1530.4 and 1530.8.1, Section 11
Conditioning:	According to 1530.8.1, Section 12
Test Specimen:	According to AS 1530.8.1, Section 15 through 22
Installation of test specimen:	According to AS 1530.8.1, Section 15 through 22
Heat flux meter:	According to AS 1530.8.1, Clause 11. (c)
Specimen Thermocouples:	According to AS 1530.4 and 1530.8.1, Clause 11. (g)
Test Procedure:	According to AS 1530.8.1, Section 14

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Test Observations:

Time		All observations are from the unexposed face unless noted otherwise.
Mins	**Secs**	
00	00	One Class AA burning timber crib was placed at the bottom of the leading edge above the threshold. The burning crib test started. The test assembly was to be moved to the assigned position with radiation 12.5kw/m² in the front of furnace and radiant panel and lasted 120s, the radiant heat exposure test started.
01	40	The pilot ignition source was applied to the position of smoke emission of the specimen with 10s and it was not ignited.
02	20	The test assembly moved to second assigned position with radiation 10kw/m² and exposed for 40s.
03	00	The test assembly moved to third assigned position with radiation 8kw/m² and exposed for 60s.
04	00	The test assembly moved to fourth assigned position with radiation 6kw/m² and exposed for 60s.
04	43	This burning timber crib extinguished and the door facing turned black above the timber crib.
05	00	The test assembly moved to fifth assigned position with radiation 5kw/m² and exposed for 60s.
06	00	The test assembly moved to sixth assigned position with radiation 4kw/m² and exposed for 60s.
07	00	The test assembly moved to seventh assigned position with radiation 3kw/m² and exposed for 180s.
10	00	The test of radiant heat exposure was discontinued. Neither flaming nor through gap was observed on unexposed side of test assembly.
20	00	A radiant heat flux was positioned at a distance of 250mm from the fire-exposed face of the center point of the door leaf.
50	00	No significant change on exposed side and unexposed side of test assembly.
60	00	Observation of 50 min period was discontinued.

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Heat flux data:

Incident heat flux together with heat flux profiles specified in the standard

Time/ Secs	Specified Heat Flux/ kW/m^2	Incident Heat Flux / kW/m^2
0	0	0.0
20	12.5	13.1
40	12.5	13.3
60	12.5	13.3
80	12.5	13.8
100	12.5	13.3
120	12.5	13.8
140	12.5	13.0
160	10	10.6
180	10	10.6
200	8	9.9
220	8	8.6
240	8	8.1
260	6	6.8
280	6	6.2
300	6	6.1
320	5	6.0
340	5	5.9
360	5	5.9
380	4	4.7
400	4	4.4
420	4	4.4
440	3	3.8
460	3	3.9
480	3	3.9
500	3	3.9
520	3	4.0
540	3	4.0
560	3	4.0
580	3	3.8
600	3	3.7

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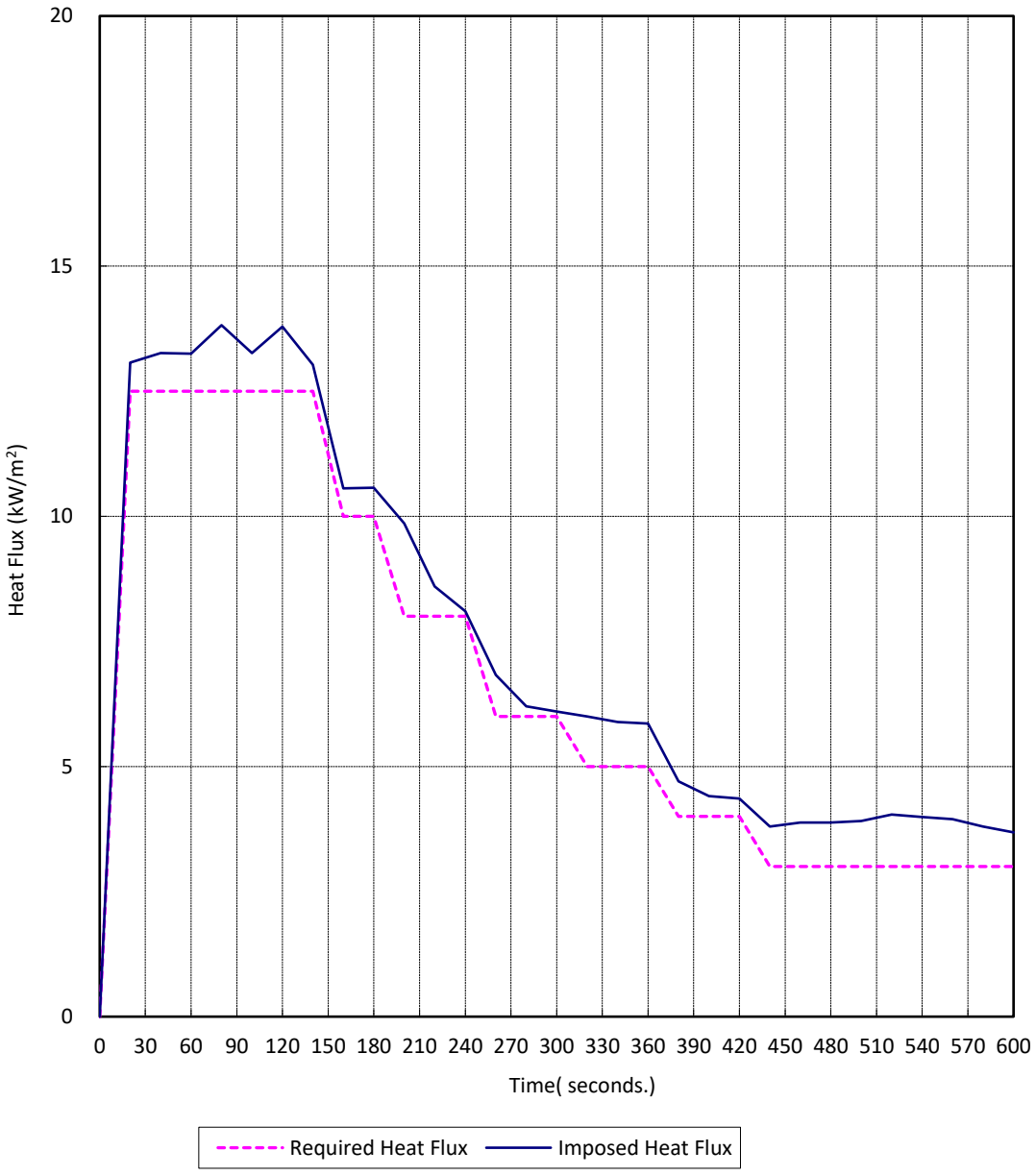
Graph for imposed heat flux and heat flux profiles specified in the standard



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Radiant heat flux:

R - At a distance of 250mm from the centre of exposed side of the specimen.

Time Mins	R (kW/m^2)
0	/
2	/
4	/
6	/
8	/
10	/
12	/
14	/
16	/
18	/
20	0.23
22	0.19
24	0.16
26	0.14
28	0.12
30	0.12
32	0.07
34	0.07
36	0.08
38	0.07
40	0.06
42	0.05
44	0.06
46	0.04
48	0.05
50	0.04
52	0.01
54	0.01
56	0.01
58	0.02
60	0.00

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Unexposed surface temperatures on the door

Time Mins	T1 (°C)	T2 (°C)	T3 (°C)	T4 (°C)	T5 (°C)	Mean Temperature (°C)
0	34	34	34	34	34	34
2	34	35	35	34	34	35
4	35	36	35	35	35	35
6	36	37	37	35	36	36
8	37	38	39	36	37	37
10	38	39	40	37	38	38
12	39	41	40	38	39	39
14	40	41	41	39	41	40
16	41	42	42	40	41	41
18	41	43	42	41	42	42
20	42	43	43	42	42	42
22	42	43	43	42	42	42
24	42	43	43	42	42	42
26	42	43	42	42	42	42
28	41	42	42	41	42	42
30	41	42	42	41	41	41
32	41	41	41	40	41	41
34	40	41	41	40	40	40
36	40	40	40	39	40	40
38	40	40	40	39	39	39
40	39	39	40	38	39	39
42	39	39	39	38	38	39
44	38	38	39	37	38	38
46	38	38	38	37	37	38
48	38	38	38	36	37	37
50	37	37	37	36	36	37
52	37	37	37	35	36	36
54	37	37	37	35	36	36
56	36	36	36	35	35	36
58	36	36	36	35	35	36
60	36	36	36	34	35	35

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Unexposed surface temperatures on the wall

Time Mins	T6 (°C)	T7 (°C)	T8 (°C)	T9 (°C)	T10 (°C)
0	34	34	34	35	34
2	35	35	35	36	35
4	36	36	36	58	37
6	40	38	39	62	41
8	43	39	41	50	44
10	44	40	42	50	45
12	44	40	43	46	45
14	43	40	43	44	45
16	43	40	43	41	44
18	42	40	43	41	44
20	42	40	43	40	43
22	42	39	42	39	43
24	42	39	42	39	43
26	42	38	41	38	43
28	41	38	41	38	43
30	41	37	41	38	42
32	41	37	40	38	42
34	41	37	40	38	42
36	41	37	40	38	41
38	41	37	39	37	41
40	40	36	39	37	41
42	40	36	39	37	41
44	40	36	39	37	40
46	40	36	38	37	40
48	39	36	38	37	40
50	39	36	38	37	39
52	39	36	38	37	39
54	39	36	38	37	39
56	38	35	38	37	39
58	38	35	38	37	39
60	38	35	37	36	38

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Internal temperatures

Time Mins	T11 (°C)	T12 (°C)	T13 (°C)	T14 (°C)	T15 (°C)	T16 (°C)	T17 (°C)	T18 (°C)
0	58	56	57	51	58	52	47	53
2	64	62	63	57	65	58	52	60
4	76	74	75	71	79	70	68	78
6	79	76	77	78	86	77	80	86
8	86	80	82	76	87	76	81	87
10	91	86	88	73	87	74	80	88
12	93	91	91	73	86	74	80	89
14	93	92	92	73	84	73	80	88
16	91	91	91	72	82	72	78	86
18	87	88	88	70	79	70	77	83
20	84	85	84	69	76	68	75	80
22	80	82	81	67	73	66	74	77
24	76	78	78	65	70	65	73	74
26	73	75	74	63	67	63	71	72
28	70	72	71	62	65	61	69	70
30	67	69	68	60	62	60	67	67
32	64	66	66	58	60	58	65	65
34	62	64	63	57	59	57	63	63
36	60	62	61	56	57	56	61	61
38	58	60	60	55	56	55	59	59
40	57	58	58	54	54	54	58	58
42	55	57	57	53	53	54	57	56
44	54	55	55	52	52	53	55	55
46	53	54	54	51	51	52	54	53
48	52	53	53	50	50	51	53	52
50	51	52	52	50	49	51	52	51
52	50	51	51	49	49	50	51	50
54	49	50	50	48	48	50	50	49
56	48	49	49	48	47	49	49	49
58	48	49	48	47	47	48	48	48
60	47	48	48	47	46	48	47	47

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SECTION 10
PHOTOGRAPHS

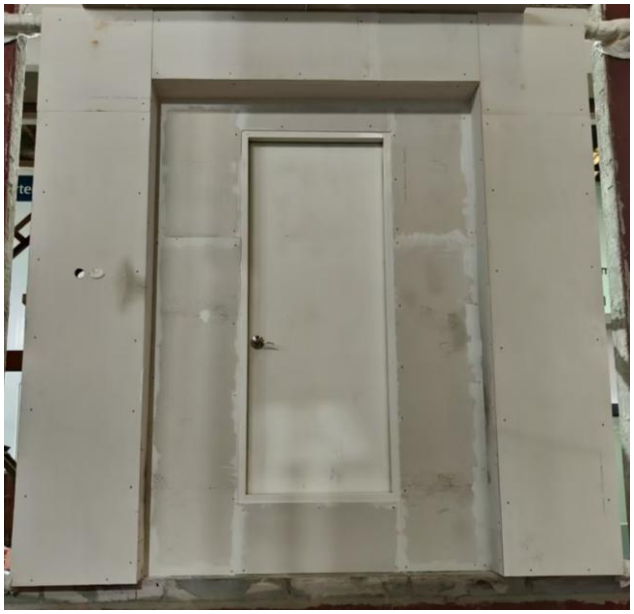

Fig. 1 Exposed Side before the Radiant heat test

Fig. 2 Exposed Side after 60 minutes

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SECTION 11
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	2025-10-13	N/A	Original Report Issue