



United Kingdom
Testing and
Certification

Test Report

The fire resistance performance of an Asymmetric, Non-Load Bearing, Partition wall assembly when tested in accordance with BS EN 1364-1: 2015.

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Change History

Issue Date	Revision	Created by	Authorised by	Description of Change
24/06/2025	B_B	CL	NS	This test report is additional to that issued as Test Report No. 20250204-002010B and dated 24/06/2025. The original test report remains valid and is not replaced by this additional test report.
24/06/2025	B	CL	NS	Item 3 Primer added to Technical Schedule; Test Specimen Drawings Fig 1-3 updated with updated item numbers, Specimen Photograph item numbers updated.
13/04/2025	A	AB	NS	Initial Issue

Signatories

	
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*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 3000 mm wide by 3000 mm high by 140 mm thick, comprising 140 mm wide by 38 mm thick timber stud frame. The timber frame was filled with 140 mm thick Closed Cell Polyurethane Spray Foam Insulation. This was coated with a system of Hevadex primer 52FR and an intumescent paint topcoat of Hevadex Flame-ex to the exposed face of the specimen.

The specimen was fixed into the restraint frame using 45 mm long by 45 mm wide by 5 mm thick angle brackets on unexposed face.

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 11 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, with one vertical edge unrestrained.

1.4 Specimen Conditioning

The specimen's storage, construction, and test preparation took place in the test laboratory over a total, combined time of four days. Throughout this period, both the temperature and the humidity of the laboratory were measured and recorded as being within a range of from 10.7°C to 12.6°C and 52.9 % to 68.4 % respectively.

1.5 Instruction to Test

The test was conducted on 03 March 2025 at the request of the Test Sponsor. The test was witnessed by Adam White, 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 specimen as received and test by United Kingdom Testing and Certification.

1.7 Expression of Results

1.7.1 Specimen

The specimen satisfied the performance criterion specified in BS EN 1364-1:2015 § 11 for the following intervals:

Integrity ¹	Sustained Flaming		23 minutes		
	Gap Gauge		24 minutes		No failure*
	Cotton Pad		23 minutes		
Insulation ²	Specimen		23 minutes		Due to integrity failure
Radiation ³	5 kW/m ²	10 kW/m ²	15 kW/m ²	20 kW/m ²	25 kW/m ²
	24 minutes*	24 minutes*	24 minutes*	24 minutes*	24 minutes*

*The test was discontinued after a period of 24 minutes.

¹ The time(s) in completed minutes for which the test specimen(s) continues to maintain its separating function without: a) causing ignition to the cotton pad applied in accordance with BS EN 1363-1:2020 § 10.4.5.2 b) permitting the penetration of a gap gauge as specified in EN 1363-1:2020 § 10.4.5.3 c) resulting in sustained flaming.

² The time(s) in completed minutes for which the test specimen(s) continues to maintain its separating function without developing temperatures on its unexposed surface which: a) increase the average temperature above the initial average temperature by more than 140 °C; b) increase at any location (including the roving thermocouple) above the initial average temperature by more than 180°C.

³ BS EN 1363-2: 1999 requires that the time for the measured radiation to exceed 5, 10, 15, 20 and 25 kW/m² is reported.

2 Test Specimen Drawings

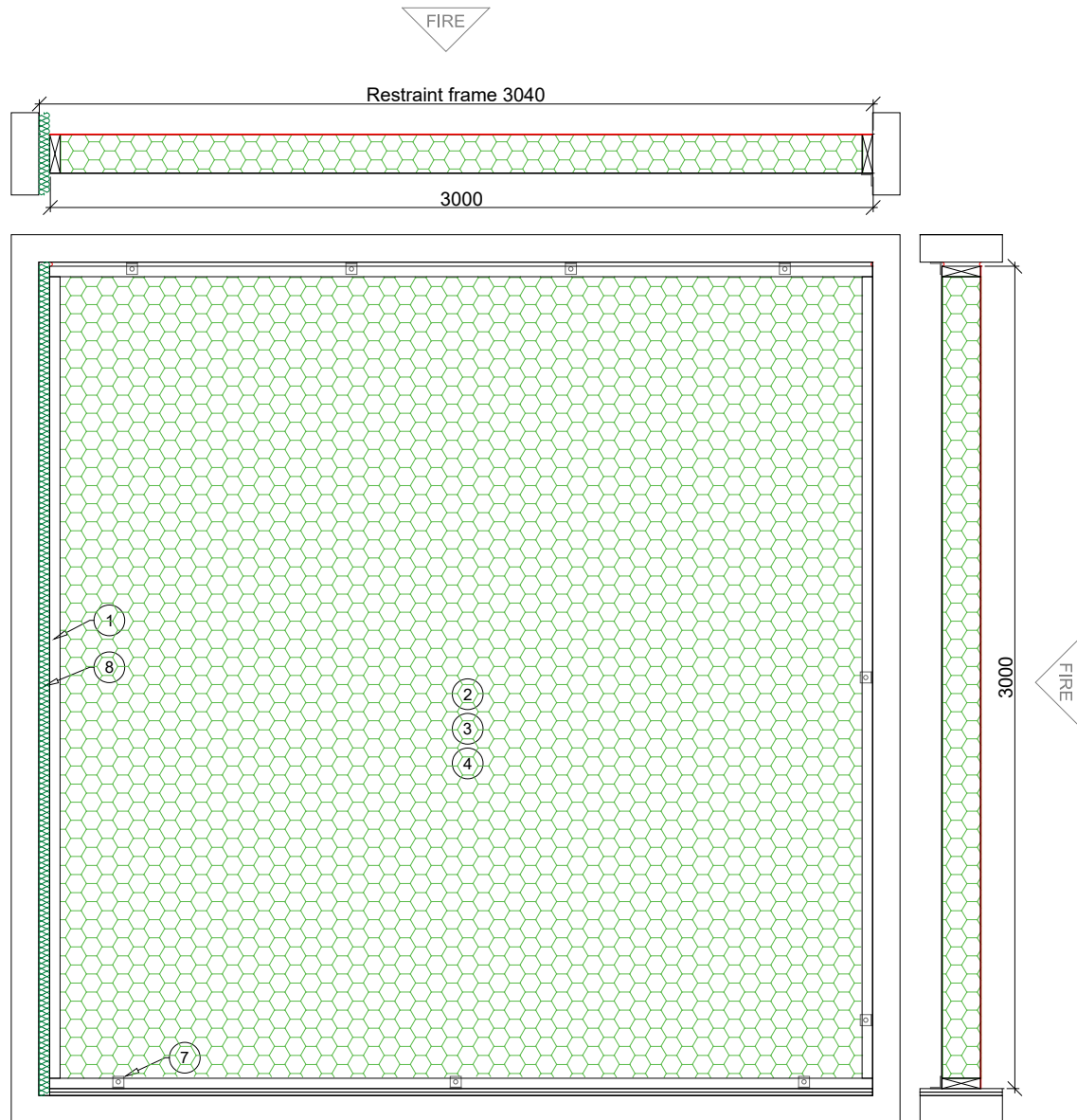


Figure 1 - General arrangement of test construction viewed from the unexposed surface

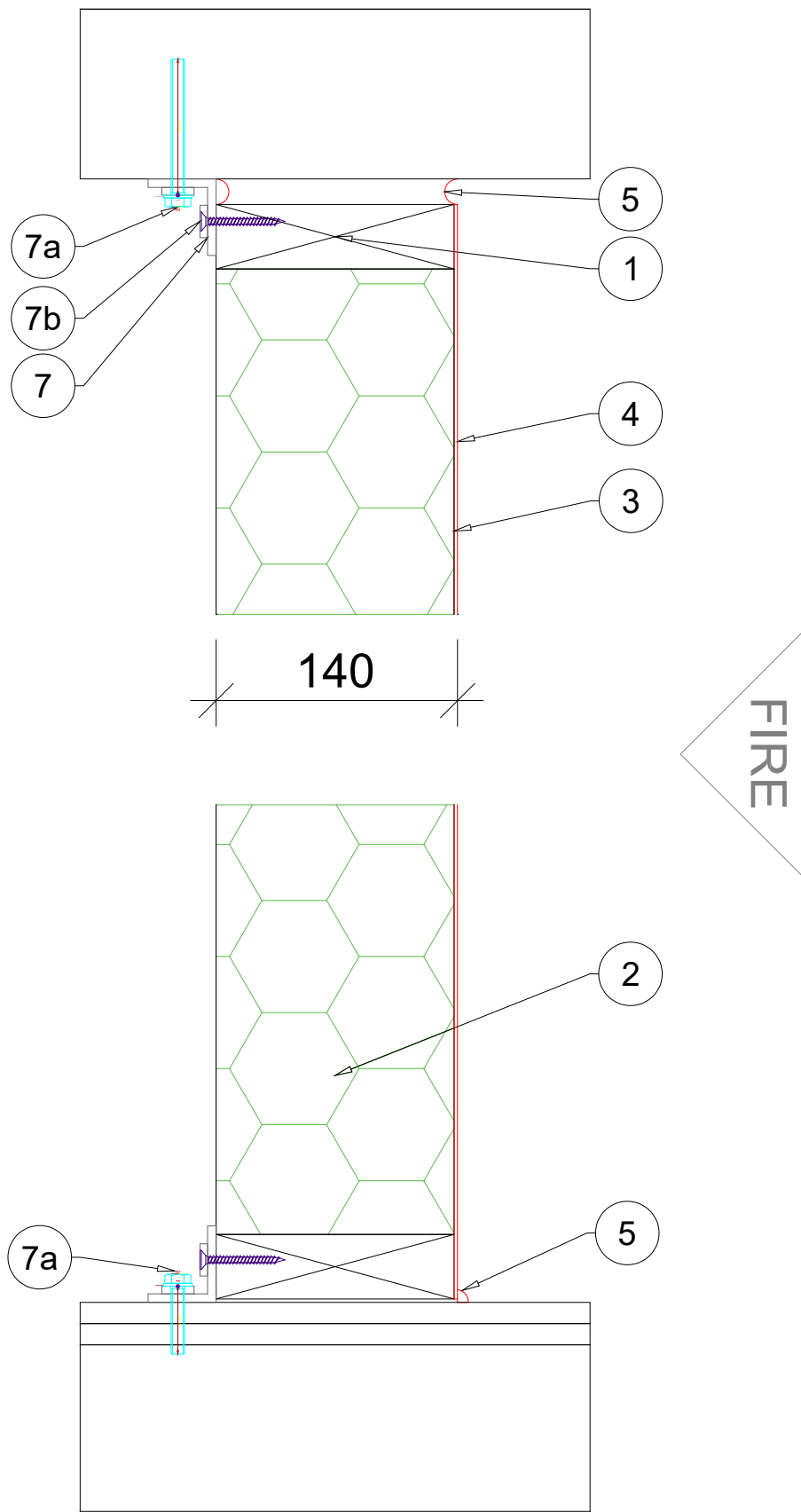


Figure 2 - Typical vertical section through The Specimen

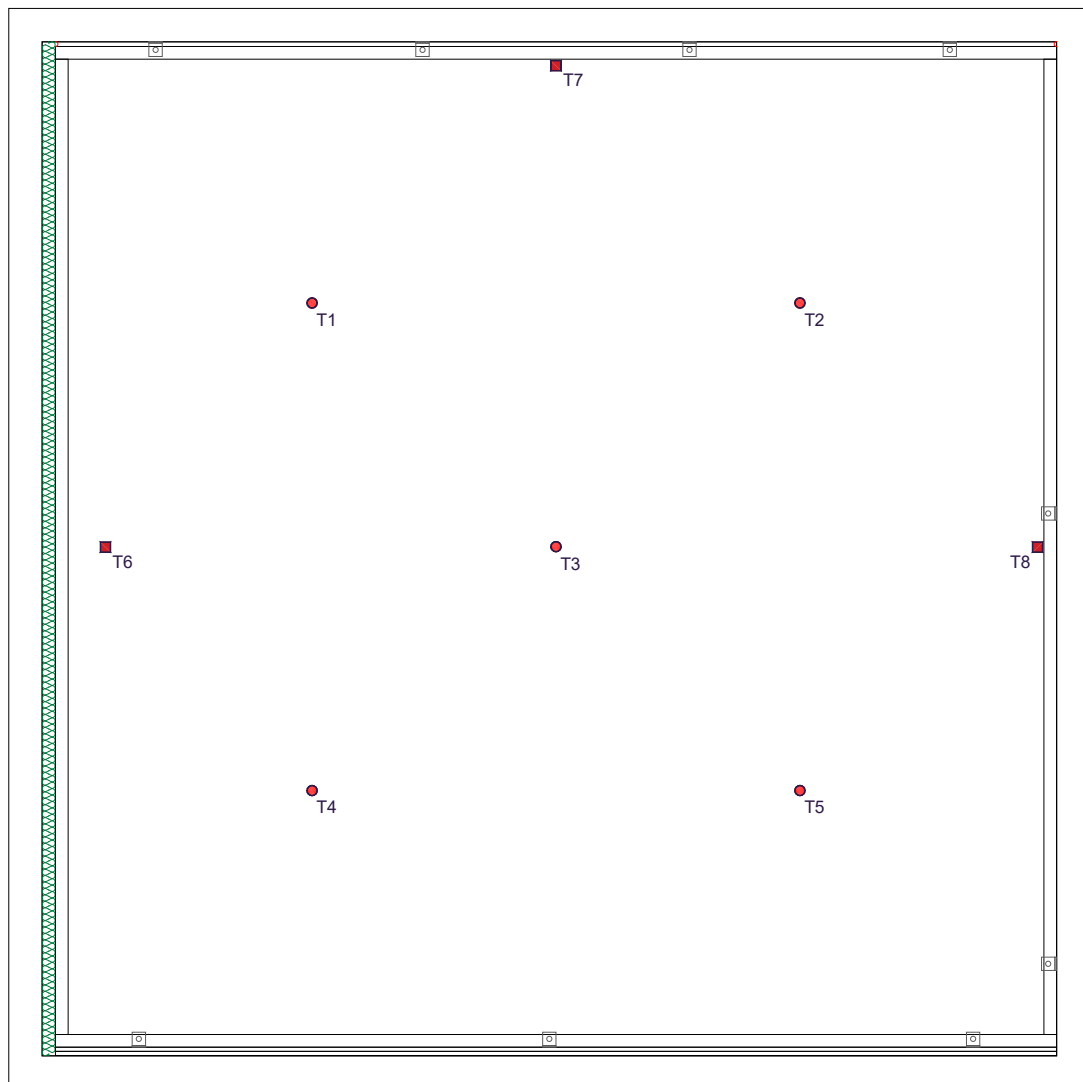


Figure 4 - Layout of instrumentation viewed from the unexposed surface of the test construction

3 Technical Schedule

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

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

** Nominal value.

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

3.1 Specimen

1. Framing System	
Supplier	Sodra *
Reference	Timber CLS *
Type & Material	140 mm CLS *
Density (nominal)	420 kg/m ³ (average)*
Moisture	13.5 % (Lab Measurement)
a. Overall Size	
i. Frame Head	3000 mm long x 140 mm wide x 38 mm thick
ii. Frame Base	3000 mm long x 140 mm wide x 38 mm thick
iii. Studs	2924 mm long x 140 mm wide x 38 mm thick
b. Fixing(s)	
i. Type	Montana – 31x88D34GSC *
ii. Material	Galvanised Screw Nail *
iii. Dimension	Ø 3.1 mm x 88 mm long
iv. Location	Top & bottom rails
v. Frequency	3 fixings in each stud (3 left and 3 right)
2. Insulation	
Manufacturer	Huntsman Building Solutions *
Reference	Closed Cell *
Type & Material	Huntsman Building Solutions Closed Cell Polyurethane Spray Foam Insulation *
Density	32-36 kg/m ³ **
Thickness	140 mm thick *

Dimensions	3000 mm long x 3000 mm wide
Location	Within Timber Frame
3. Primer	
Manufacturer	Hevadex
Reference	Primer 52FR
Density	0.2kg per m ² **
Thickness	100 microns dry ¹
Type & Material	Primer 52FR *
Application Method	roller applied
Location	Exposed face
4. Intumescent Paint	
Manufacturer	Hevadex
Reference	Flame- Ex
Density	1kg per m ² **
Thickness	512 microns dry ¹
Type & Material	Fire retardant thermal barrier intumescent coating*
Application Method	Brushed, roller and spray
Location	Exposed face
5. Sealant	
Manufacturer	Certitek
Reference	DM-01F
Material	Intumescent Mastic
Location(s)	Around perimeter of the specimen
Application Method	Cartridge gun
6. Base Build Up	
Manufacturer	Knauf UK
Reference	Knauf Fire Panel
Type & Material	Gypsum based board with strong lining papers
Dimensions	3000 long x 12.5 mm thick x 400 mm wide

Density	12.8 Kg/m ² **
Location	At the base of the restraint frame to build the frame to 3000 mm height
7. Head, Fixed Edge and Base Angles	
Supplier	United Kingdom testing and certification
Reference	Angle Bracket
Material	Steel *
Dimensions (mm)	45 mm long x 40 mm wide x 5 mm thick
Location	Along Head, Fixed Edge and Base
Frequency	On the head: 300 mm, 1100 mm, 1900 mm and 2700 mm On fixed edge: 250 mm and 1500 mm from base On the base: 250 mm, 1500 mm and 2750 mm from fixed edge
a. Fixing(s)	Into the head, base and fixed edge of the restraint frame
i. Manufacturer	Rawplug
ii. Reference	Head: R-LX-06X075_HF-ZF Base and fixed edge: R-LX-06X045-P-ZF
iii. Type	Concrete screws
iv. Material	Zinc Plated Steel *
v. Dimension	Head: Ø 7.5 mm x 80 mm long Base and fixed edge: Ø 7.5 mm x 50 mm long
vi. Location	1 no per angle
b. Fixing(s)	Into the timber frame
i. Manufacturer	Turbo TX
ii. Reference	TX25
iii. Type	Multi-Purpose Screw
iv. Material	Steel
v. Dimension	Ø 7.5 mm x 45 mm long
vi. Location	1 no per angle
8. Free Edge Gasket	
Manufacturer	Knauf Insulation Ltd.
Reference	Knauf Insulation Rocksilks® RS45 Building Slab

Type & Material	Semi Rigid Insulation Slabs; Rock Mineral Wool
Dimensions	1200 mm high x 600 mm wide x 50 mm thick slab sections
Density	45 Kg/m ³ (± 10 Kg/m ³) **
Fixing Method	Compression Fitted
Location	At the free edge of the supporting construction

4 Specimen Photographs



Figure 5 - Item 4



Figure 6 - Item 2, 5, 6, 7, 7,



Figure 7 - Item 5



Figure 8 - Item 2



Figure 9 - Item 1



Figure 10 - Item 4, & 5



Figure 11- Item 8



Figure 12 - Item 8



Figure 13 - Item 1

5 Test Procedure

5.1 Heating Conditions

The Specimen was 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 20.

5.2 Pressure Conditions

The Specimen was 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 one instances throughout the duration of the test. The Time-Pressure distribution is presented in Figure 21.

5.3 Unexposed Surface Temperature

A roving thermocouple was available for the evaluation of the maximum temperature rise of the unexposed surface of the specimen for the duration of the test. Any measurements using the roving thermocouple are presented on page 18.

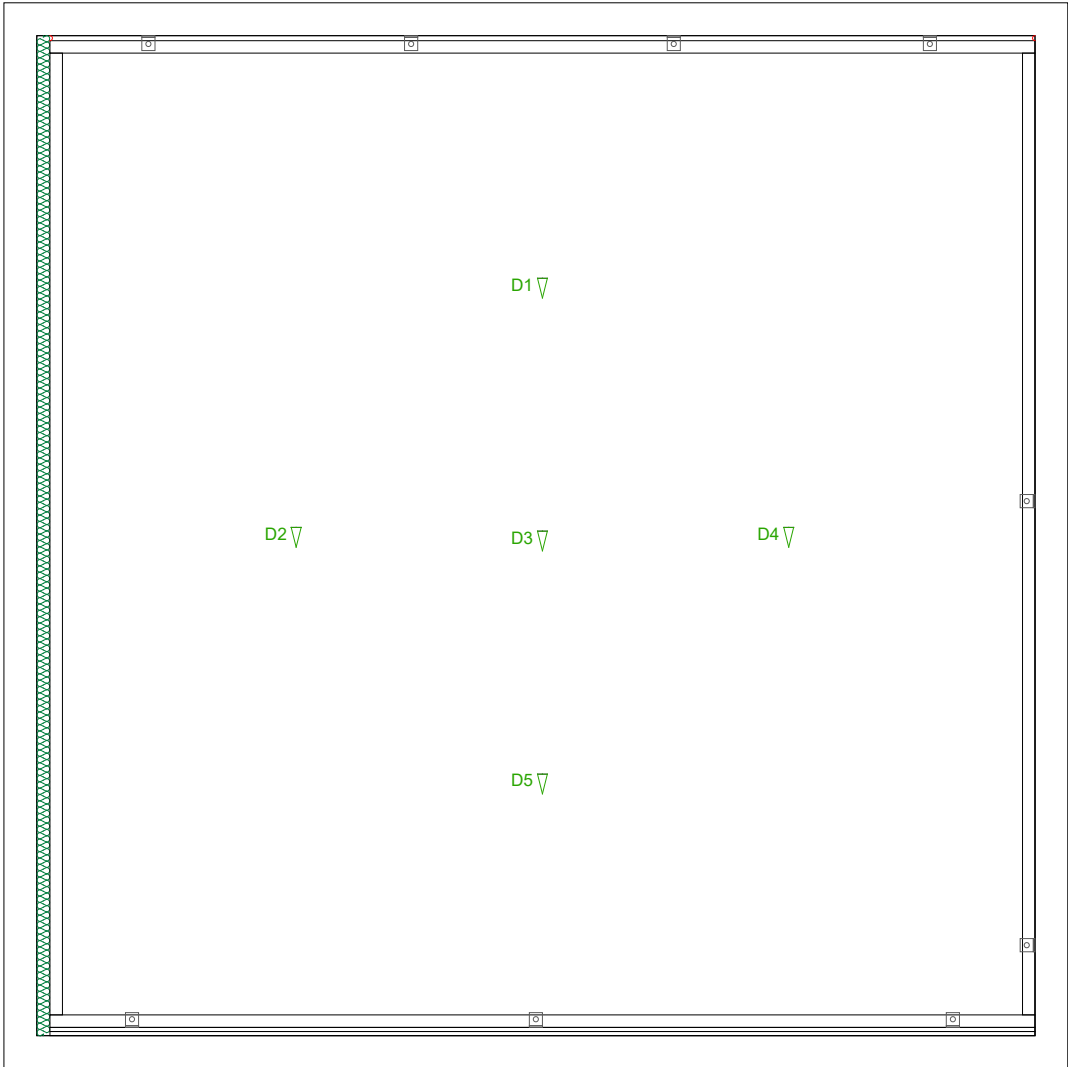
Disc thermocouples were affixed to the unexposed surface of the specimens in accordance with BS EN 1364-1:2015 § 9.1.2 to measure and monitor the maximum and the mean temperature rise of the unexposed surface of the specimen for the duration of the test. A summary of the measurements is presented in Figure 22 and the locations of these thermocouples is illustrated in Figure 4.

5.4 Radiation

The Radiant Heat of the specimen was measured using 180° field of view, water cooled heat flux meters that was positioned at the geometric center of each 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 23.

5.5 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
0	0	0	0	0	0
10	5	6	4	6	7
20	14	9	11	9	15

5.6 Observations

HH	MM	SS	E4	U5	Observation
00	00	00			The test commences.
00	06	45		X	Smoke/steam releases from the head and free edge of the specimen.
00	22	01		X	Gap forming at the head between timber frame and the insulation.
00	23	00		X	Cotton pad test applied at the head between timber frame and insulation, Cotton pad ignites. Cotton pad failure and by virtue insulation failure has deemed to have occurred.
00	23	08		X	A flame emits and sustains for a duration longer than 10 seconds from the leading edge of the door. Sustained flame integrity failure
00	24	44			The test is discontinued at the request of the Test Sponsor.

⁴ Viewed from exposed surface of the test construction.

⁵ Viewed from unexposed surface of the test construction.

5.7 Test Images



Figure 14 – The exposed surface of the test construction prior to commencement of the test



Figure 15 - The unexposed surface of the test construction prior to the commencement of the test



Figure 16 - The unexposed surface of the test construction after a test duration of 10 minutes



Figure 17 - The unexposed surface of the test construction after a test duration of 20 minutes



Figure 18 - The unexposed surface of the test construction after a test duration of 24 minutes



Figure 19 - The exposed surface of the test construction after the test was discontinued

6 On-going Implications

6.1 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 1364-1: 2015 and can be applied following the identification of classification(s).

6.2 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.

6.3 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.

7 Figures

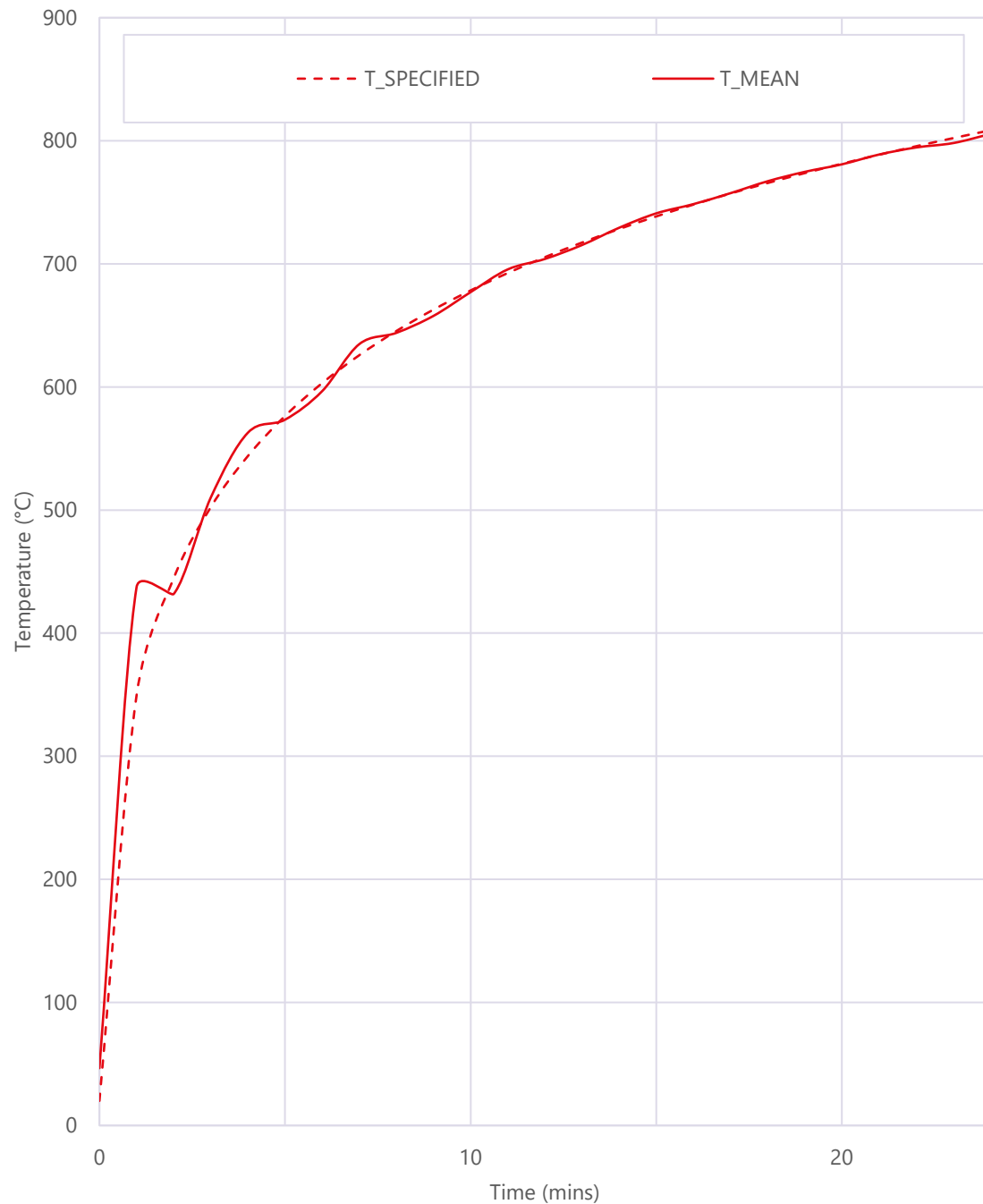


Figure 20 – Graph presenting the Time-Temperature distribution of the furnace

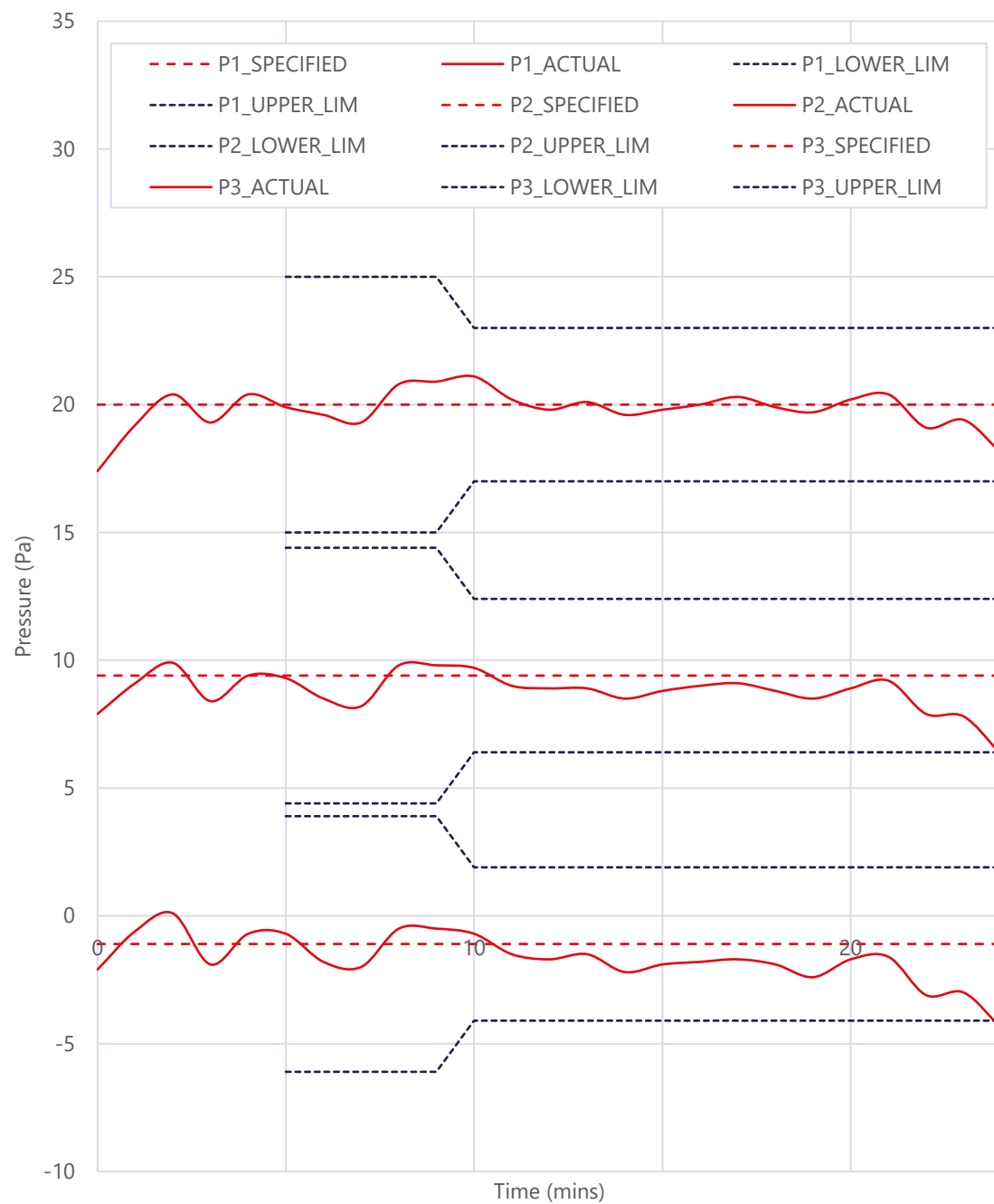


Figure 21 – Graph presenting the Time-Pressure distribution of the furnace

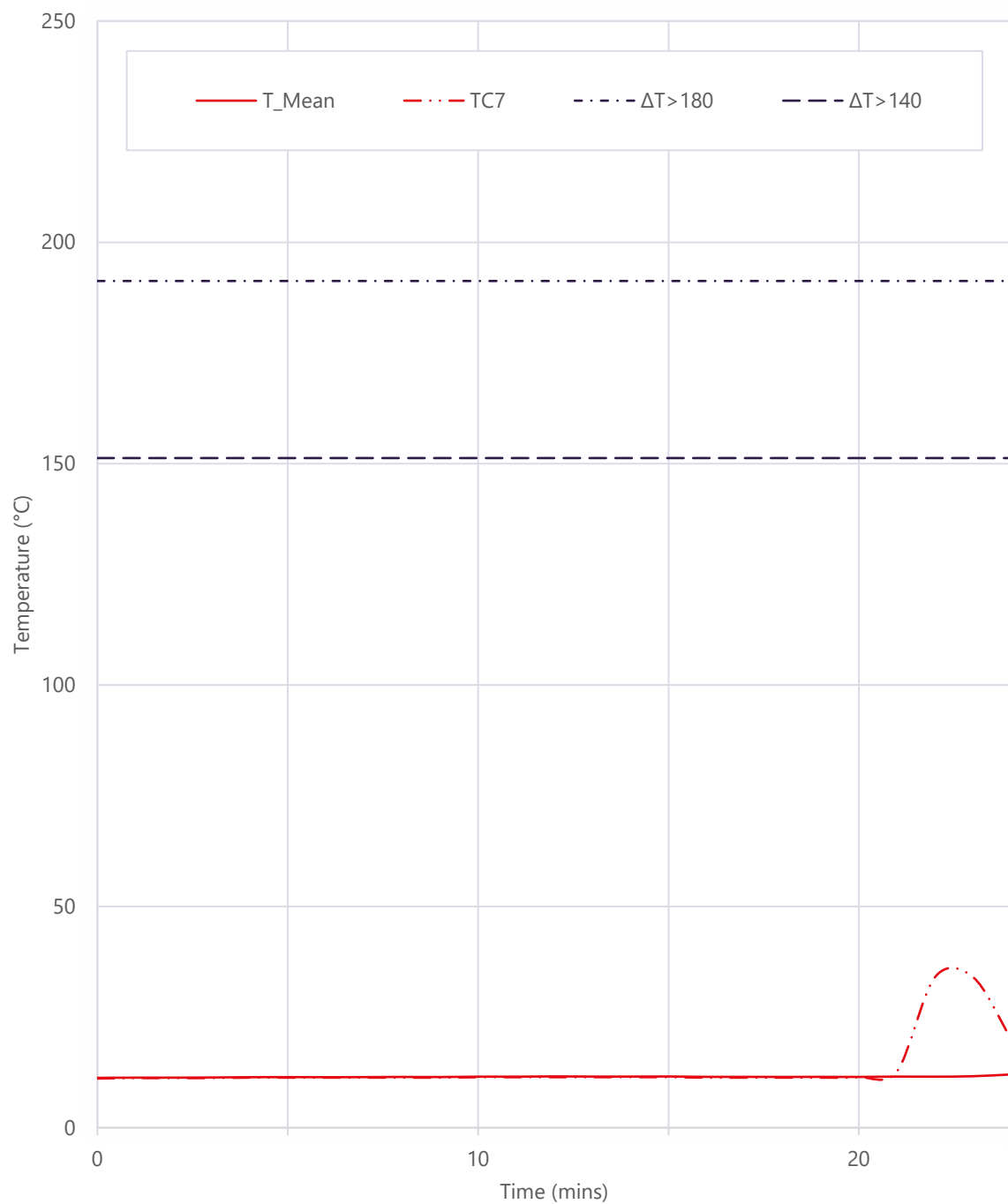


Figure 22 - Graph presenting the Time-Temperature distribution of the unexposed surface of The Specimen

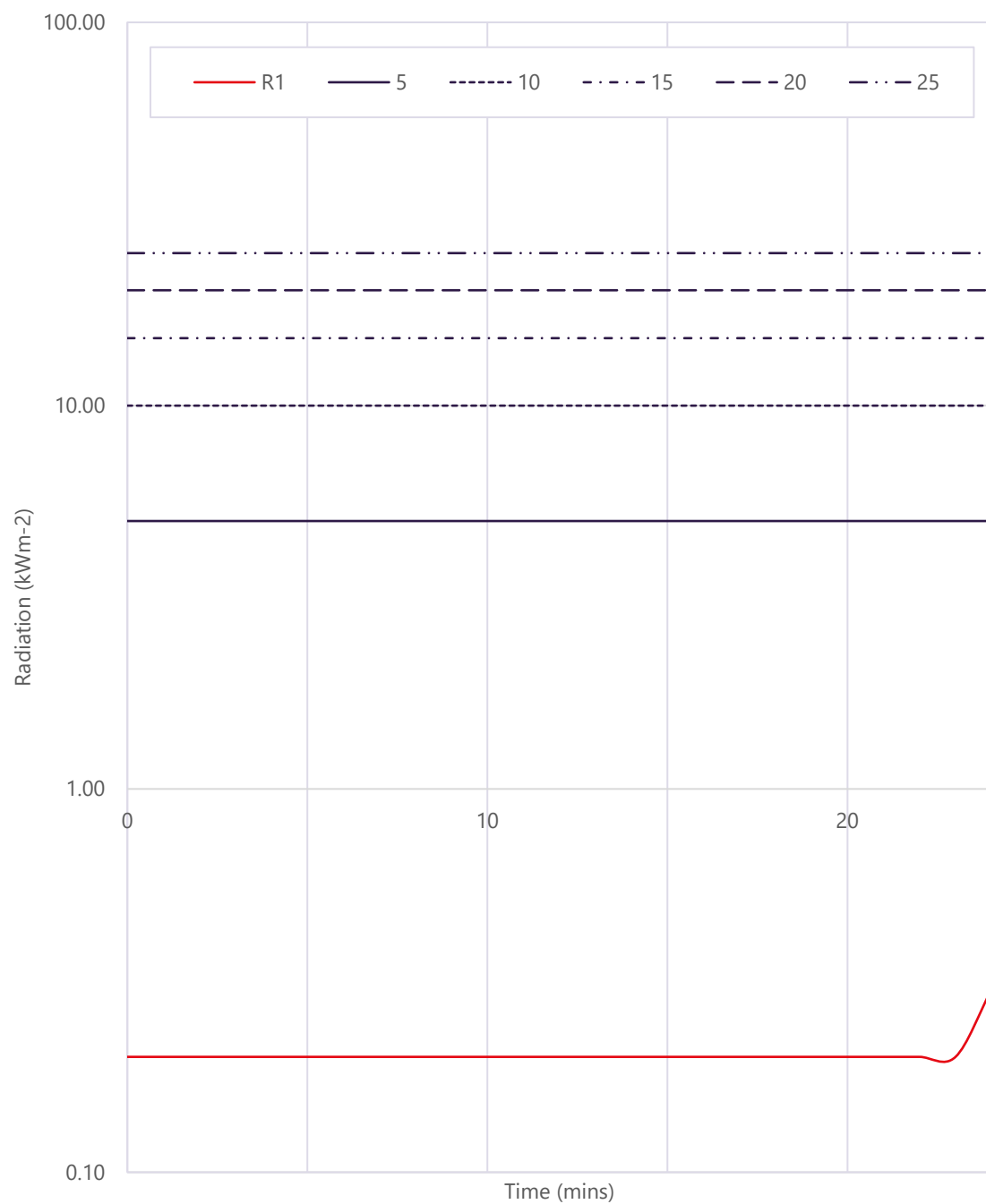


Figure 23 - Graph presenting Time-Radiation distribution of the unexposed surface of The Specimen

8 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. Values are in Degrees Celsius (°C) unless otherwise stated.

Time (mins)	TC1	TC2	TC3	TC4	TC5
0	11.1	12.1	11.0	11.2	10.9
1	11.2	12.2	11.0	11.2	10.9
2	11.2	12.2	11.0	11.2	10.9
3	11.2	12.3	11.0	11.2	11.0
4	11.3	12.3	11.1	11.3	11.0
5	11.3	12.3	11.1	11.3	11.1
6	11.3	12.3	11.1	11.3	11.0
7	11.3	12.3	11.1	11.3	11.1
8	11.4	12.4	11.1	11.3	11.1
9	11.3	12.4	11.1	11.3	11.1
10	11.4	12.5	11.2	11.4	11.1
11	11.4	12.5	11.2	11.4	11.1
12	11.5	12.6	11.2	11.4	11.2
13	11.4	12.6	11.1	11.4	11.2
14	11.4	12.7	11.2	11.3	11.1
15	11.4	12.8	11.2	11.3	11.1
16	11.3	12.7	11.1	11.3	11.0
17	11.3	12.7	11.1	11.3	11.0
18	11.3	12.7	11.1	11.2	11.0
19	11.3	12.8	11.1	11.2	11.0
20	11.3	12.8	11.0	11.2	11.0
21	11.3	12.9	11.1	11.3	11.1
22	11.3	12.9	11.1	11.2	11.1
23	11.5	13.0	11.2	11.3	11.1
24	12.3	13.4	11.7	11.4	11.3

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

Time (mins)	TC6	TC7	TC8
0	11.0	11.1	11.0
1	11.0	11.2	11.1
2	11.0	11.2	11.1
3	11.1	11.2	11.1
4	11.1	11.3	11.1
5	11.1	11.3	11.2
6	11.1	11.3	11.2
7	11.2	11.3	11.2
8	11.2	11.3	11.2
9	11.2	11.3	11.2
10	11.2	11.4	11.3
11	11.2	11.4	11.3
12	11.2	11.4	11.3
13	11.3	11.4	11.4
14	11.2	11.4	11.3
15	11.2	11.4	11.3
16	11.1	11.3	11.2
17	11.1	11.3	11.2
18	11.1	11.3	11.1
19	11.1	11.3	11.2
20	11.1	11.4	11.1
21	11.1	12.7	11.2
22	11.1	34.0	11.2
23	11.2	34.0	11.3
24	11.5	20.1	11.6