CLASSIFICATION OF FIRE PERFORMANCE IN ACCORDANCE WITH BR 135:2013

Test Sponsors:

Siderise Insulation Ltd.
Forge Industrial Estate
Maesteg, Bridgend CF34 0AH
United Kingdom
T: +44 1656 730833
W: www.siderise.com

Ash & Lacy Ltd.
Bromford Lane
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West Midlands, B70 7JJ
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Ibstock Brick Ltd.
Leicester Road, Ibstock
Leicestershire, LE67 6HS
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Test Assembly:

Non-loadbearing mechanically fixed brick slip cladding system – Mechslip, fixed to, and supported by, a structural steel frame.

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

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Classification Report Ref. No.: VI092-1A (Rev.01)

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DUBAI DOHA RIYADH

Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

www.egolf.org.uk

Member of Association for Specialist Fire Protection

www.asfp.org.uk

Member of Centre for Window and Cladding Technology

www.cwct.co.uk

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1. INTRODUCTION

This report presents the classification of the non-loadbearing mechanically fixed brick slip cladding system- Mechslip, fixed to, and supported by a structural steel frame. The classification is carried out in accordance with the procedures given in BR 135 3rd Edition:2013 – *Fire performance of external thermal insulation for walls of multistorey buildings,* Annex B – *Performance criteria and classification for BS 8414-2.* This classification should be read in conjunction with the associated test report, which is referenced in section 4 of this document.

2. SPONSORS

Name:	Siderise Insulation Ltd.	Ash & Lacy Ltd.	Ibstock Brick Ltd.
Address:	Forge Industrial Estate Maesteg, Bridgend CF34 0AH United Kingdom T: +44 1656 730833 Website: www.siderise.com	Bromford Lane West Bromwich West Midlands, B70 7JJ T: +44 (0) 121 525 1444 W: www.ashandlacy.com	Leicester Road, Ibstock Leicestershire, LE67 6HS T: +44 (0) 1530 261999 W: www.ibstockbrick.co.uk

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1,
Dubai, UAE
T: +971 (0)4 821 5777
Website: www.bell-wright.com

4. TEST REPORT

Name of laboratory	Name of sponsors	Test Report Reference No.	Test Method
Thomas Bell-Wright International Consultants	1. Siderise Insulation Ltd. 2. Ash & Lacy Ltd. 3. Ibstock Brick Ltd.	Test Report VI092-1(Rev.01) dated 16-Aug-22	BS 8414-2: 2020

5. TEST SAMPLES

5.1.Sample and Assembly Description

The assembly consisted of gypsum boards, steel tracks and studs which formed the base wall of the assembly with stone wool infill. Axial brackets were then fixed onto the steel studs via the exterior face of the base wall along the height and width of the assembly. Horizontal and vertical cavity fire barriers were installed followed by installation of exterior face insulation slabs using insulation fasteners on both the walls. Runners were then screw fixed onto the Axial brackets along the height of the assembly. Mechslip brick rails to support the brick slips were then installed after the completion of the installation of the insulation slabs and were fixed to the runners along the height and width of the assembly, and the brick slips were slotted into the rails manually on both main wall and wing walls. Once the brick slips were in place, mortar was injected into the brick slip joints. After the completion of the mortar work and required drying period is achieved, the perimeter of the assembly and the combustion chamber opening were covered with Aluminium sheets.

The specimen was installed in a capacity where it bore no external load. Loads resulting from the weight of the system components have not been evaluated and are not within the scope of this report, nor are the effects of any wind loading or weather conditions.

6. STANDARD SPECIFIC REQUIREMENTS

This section outlines a series of construction conditions which are required in section 6.3 of BS 8414-2:2020. The requirements are largely drawn directly from the standard, but are provided here for clarity and context.

The specimen had a minimum main face width of 2400mm, a minimum return face width of 1200m, and extended to a height of 7700 ±100mm above the head of the combustion chamber opening on both faces.

A horizontal joint was included in the cladding system, spaced nominally at least at a height of 2400 ± 100mm above the head of the combustion chamber, as required by the standard, and it was continuous across both the main and return faces. Additional joints were also incorporated at other intermediate heights, at every 65mm height as decided by the sponsor.

As decided by the sponsor of the test, no vertical joints were included in the construction, and their inclusion is not included within the scope of the test or this classification document.

Both horizontal and vertical cavity fire breaks were included in the assembly at locations which were decided by the sponsor and representative of the intended end use conditions as shown in Appendix 2 of this report.

7. SPECIMEN VERIFICATION

7.1. Specimen Definition

Choice and design and the definition of the specimen have been made by Siderise Insulation Ltd., Ash & Lacy Ltd. and Ibstock Brick Ltd. TBWIC testing laboratory has not been involved in the selection or design of specimen. Similarly, results of the test apply only to the samples as received.

Note: There are contexts where information has been provided by the sponsor and verification of information has been done through either technical datasheet or other document submission, or as indicated directly by the sponsor. For this reason, materials have been tested in an as-received condition and TBWIC bears no liability for the legitimacy of the submitted information.

7.2. Specimen Installation

Installation of the specimen: Thomas Bennett Gulf LLC.
Installation Date: 21-Mar-22 to 26-Mar-22

8. PERFORMANCE CRITERIA

This section outlines the performance criteria prescribed in the BR135 standard, to provide clarity and context of this document. There are two three performance criteria relevant to this classification:

i. **Fire-Spread Start Time (t_s):** t_s is the time at which the temperature recorded by any thermocouple reaches or exceeds 200°C above the start temperature, T_s, and remains above this temperature for 30 seconds, as defined in section 3.10 of BS 8414-2:2020 and section B.2.1 of BR 135.
   a. T_s is the mean temperature of the thermocouples at level 1 during the 5 minutes prior to the ignition of the heat source, as defined in section 3.9 of BS 8414-2:2020.

ii. **External Flame Spread:** Failure of the specimen is deemed to have occurred if the temperature rise above T_s of an of the external thermocouples at level 2 exceeds 600°C for at least 30 seconds and within 15 minutes of the start time, t_s, as defined in section B.2.2 of BR 135.

iii. **Internal Flame Spread:** Failure of the specimen is deemed to have occur if the temperature rise above T_s of any of the internal thermocouples at level 2 exceeds 600°C for a period of at least 30 seconds and within 15 minutes of the start time, t_s, as defined in section B.2.3 of BR 135.

9. EXTENT OF DAMAGE

Component	Observation
Brick Slips	(i) Main Wall: Approximately 0.5% of the brick slip layer had collapsed. (ii) Return Wing: No collapse was observed.
Horizontal Cavity Barrier	(i) Main Wall: The bottom horizontal fire barrier located just above the combustion chamber opening and horizontal fire barriers at level 1 & level 2 marks were observed to have been reacted and damaged slightly. (ii) Return Wing: No reactions or damages were observed.
Vertical Cavity Barrier	(i) Main Wall: Vertical fire barriers had reacted up to level 2 mark. (ii) Return Wing: No reactions or damages were observed.
Cavity Insulation	(i) Main Wall: Smoke stains were observed on the exterior surface of the cavity insulation just above the combustion chamber head. (ii) Return Wing: No damages were observed.
Framing Profiles	(i) Main Wall: Smoke stains observed on the y-profile rails around the combustion chamber opening. (ii) Return Wing: No damages were observed.

10. TEST RESULTS

Test method	Parameter	No. of tests	Results	
			Fire Spread test result time, ts (min)	**Compliance with parameters in Annex B BR135:2013**
BS 8414-2:2020	External fire spread	1	No external fire spread was observed	Compliant
	Internal fire spread		No internal fire spread was observed	Compliant
	Internal fire spread burn through		No internal fire spread burn through was observed	Compliant

11. REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with Annex B of BR 135 – 'Fire Performance of external thermal insulation for walls of multi-storey buildings', Third edition, Annex B 2013.

12. CLASSIFICATION

The system described in this classification report has been tested and **did meet** the performance criteria set in Annex B of BR 135:2013.

13. FIELD OF APPLICATION

This classification is valid only for the system as installed and detailed in Section 16 of this classification report and the associated details found in the related test report, referenced in Section 4 of this classification report.

14. LIMITATION

This classification document does not represent type approval, certification of the product, or CE marking. Similarly, the BS 8414-2: 2020 test and related work which are a subject of this classification report have been conducted under Thomas Bell-Wright International Consultant's ISO 17025 UKAS accreditation scheme and quality management system. However, pursuant to UKAS Technical Bulletin *BS EN 13501 & BR 135 Classification Documents (Dated 02-Feb-2022)*, classification documents are completed on an unaccredited basis because they are not themselves test procedures. As such, this document is prepared on an unaccredited basis.

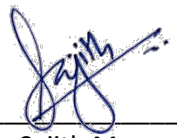
15. RECOMMENDATION

The specimen and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons, it is recommended that the relevance of test and classification reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test or classification to ensure that they are consistent with current practices, and if required may endorse the report.

This report and all records of the test to which it relates may not be retained by TBWIC further than 5 years from the date of testing.

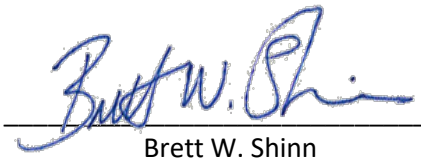
This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared By:



Sajith Menon
Senior Fire Testing Engineer

Reviewed By:



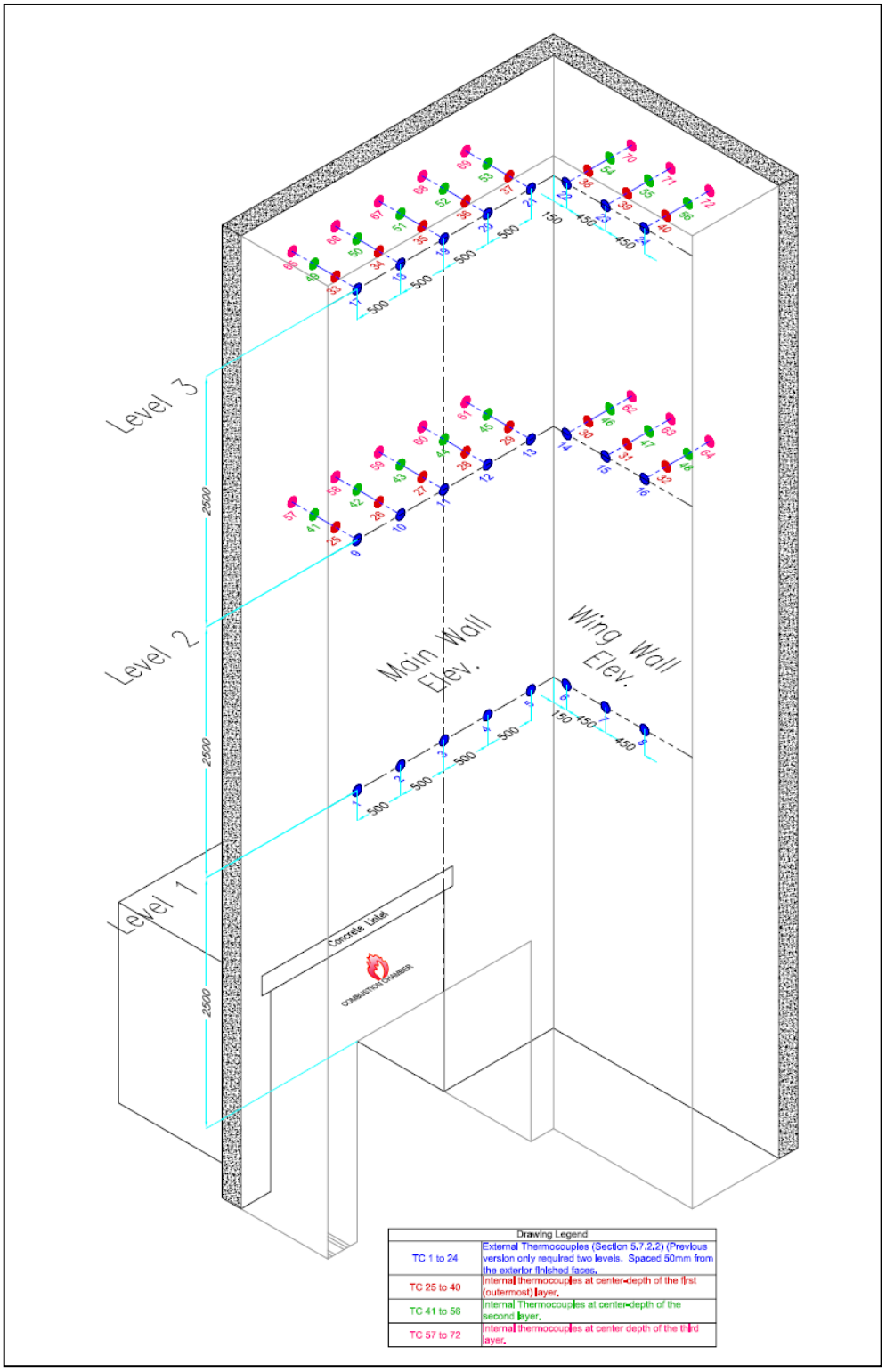
Brett W. Shinn
Projects & Laboratory Operations Manager

Approved By:

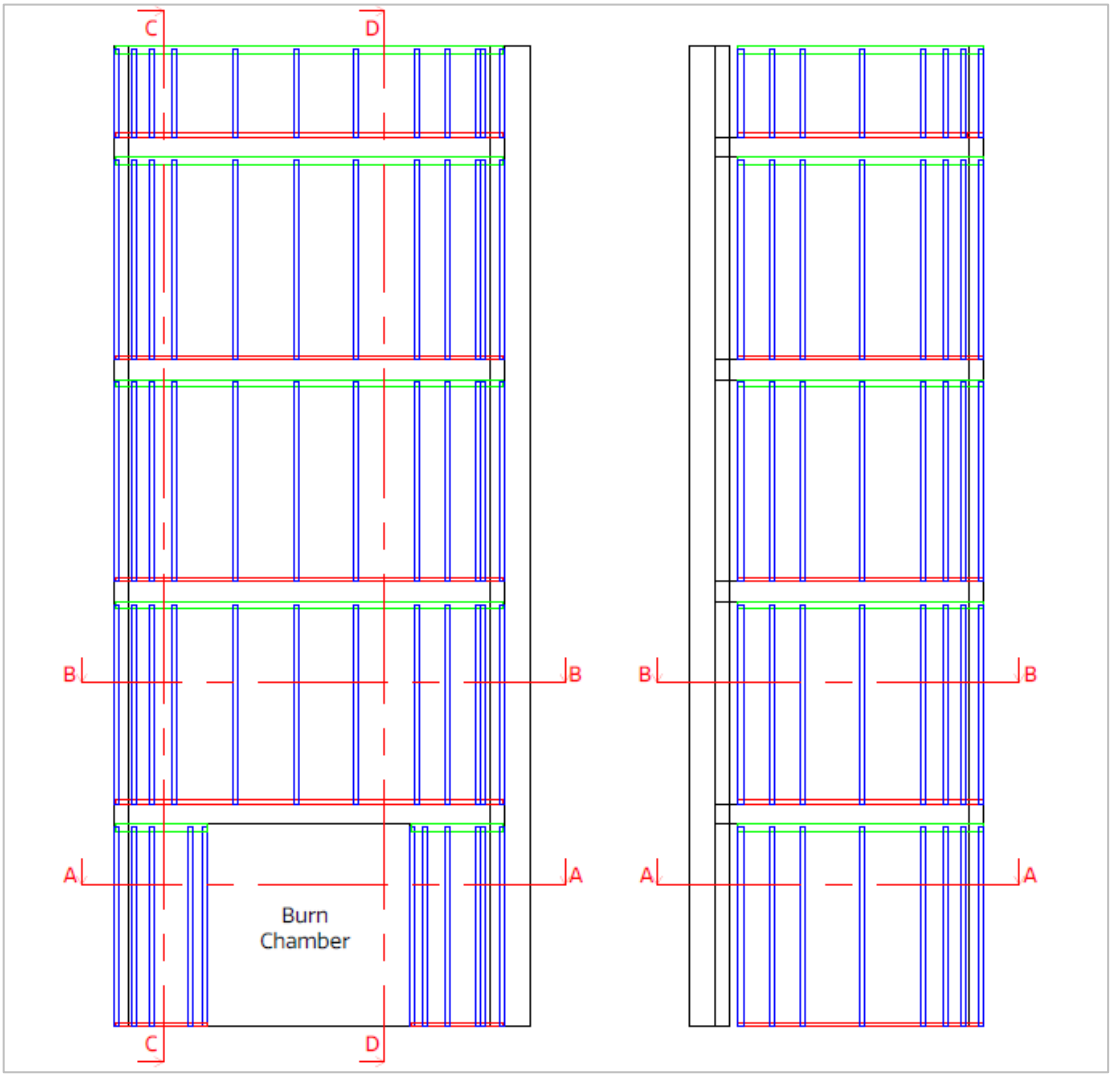
Daisan Dippi, AIFireE
Fire Testing Manager

Report Reference	Notes & Amendments
Rev. 00	This is the first issue of the classification report. No revisions are included.
Rev.01	Telephone number of test sponsor (Siderise Insulation Ltd.) was revised in the classification report.

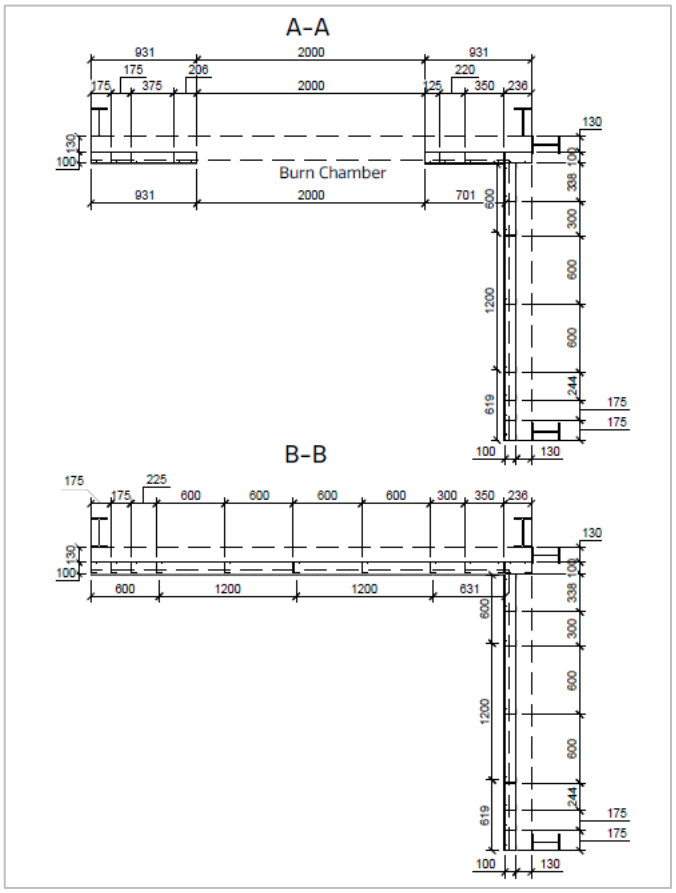
16. ASSEMBLY DRAWINGS



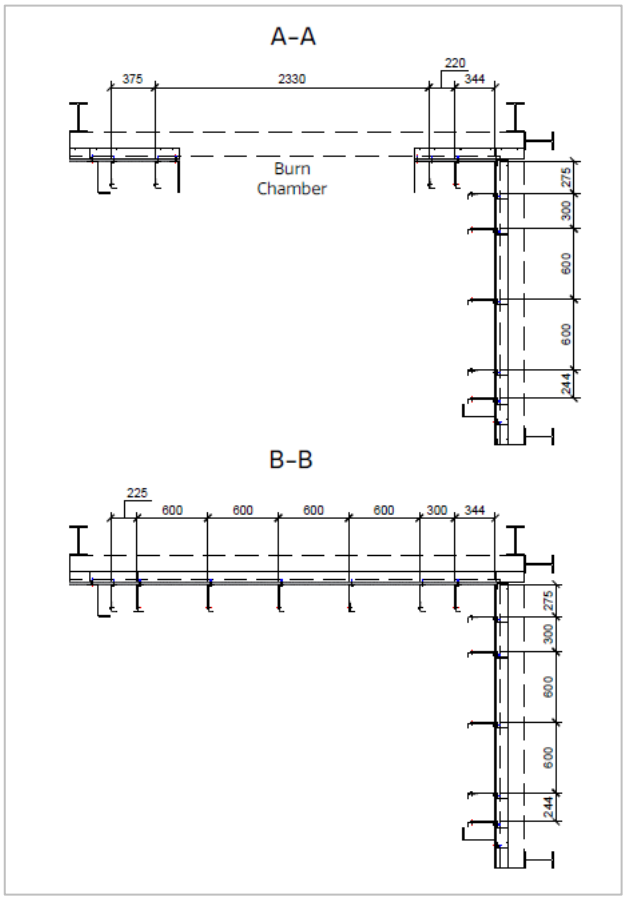
Drawing 1: Overall instrumentation of the specimen.
(Drawing by TBWIC).



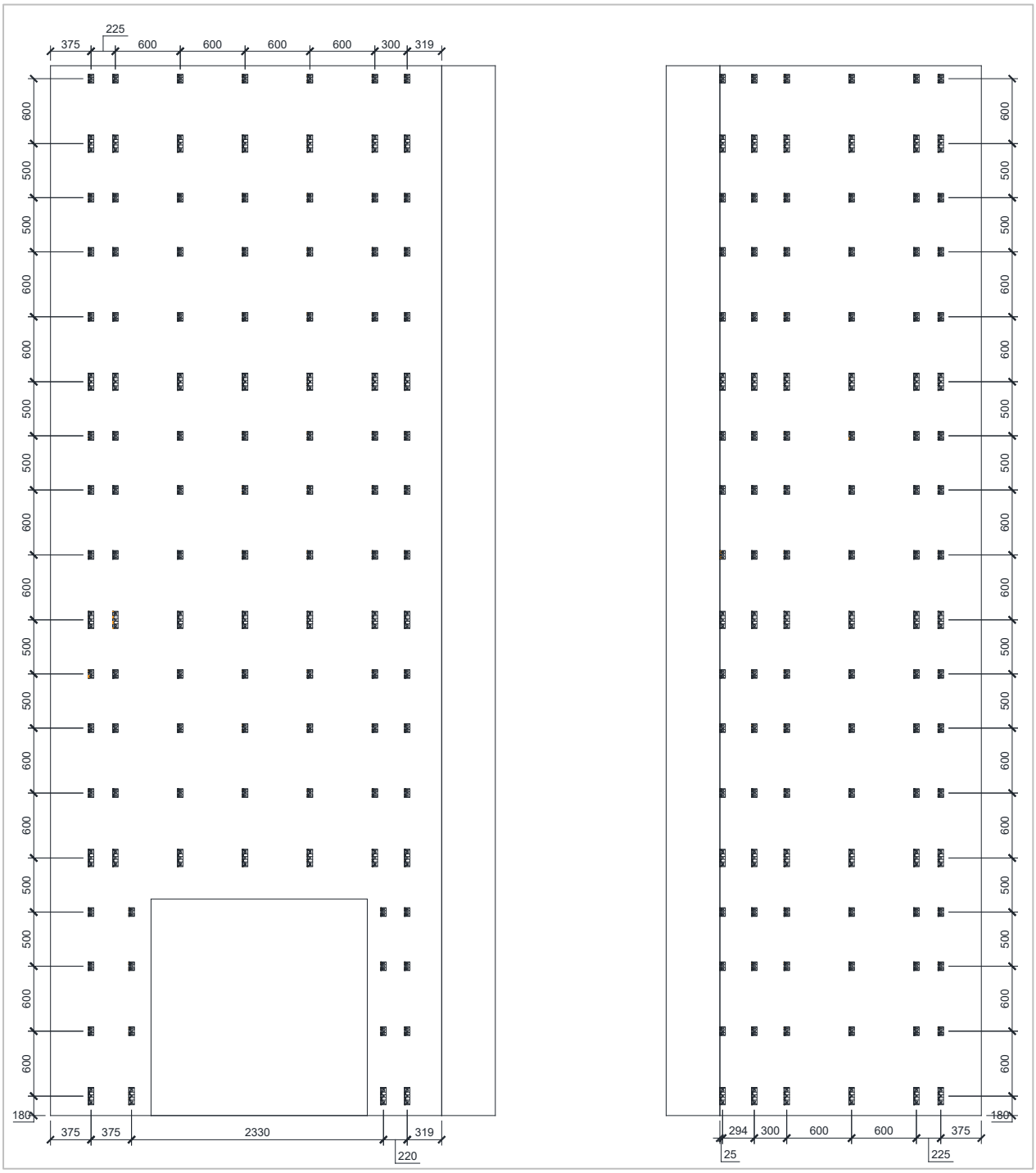
Drawing 2: Elevation view of the base wall framing structure.
(Drawing provided by test sponsor)



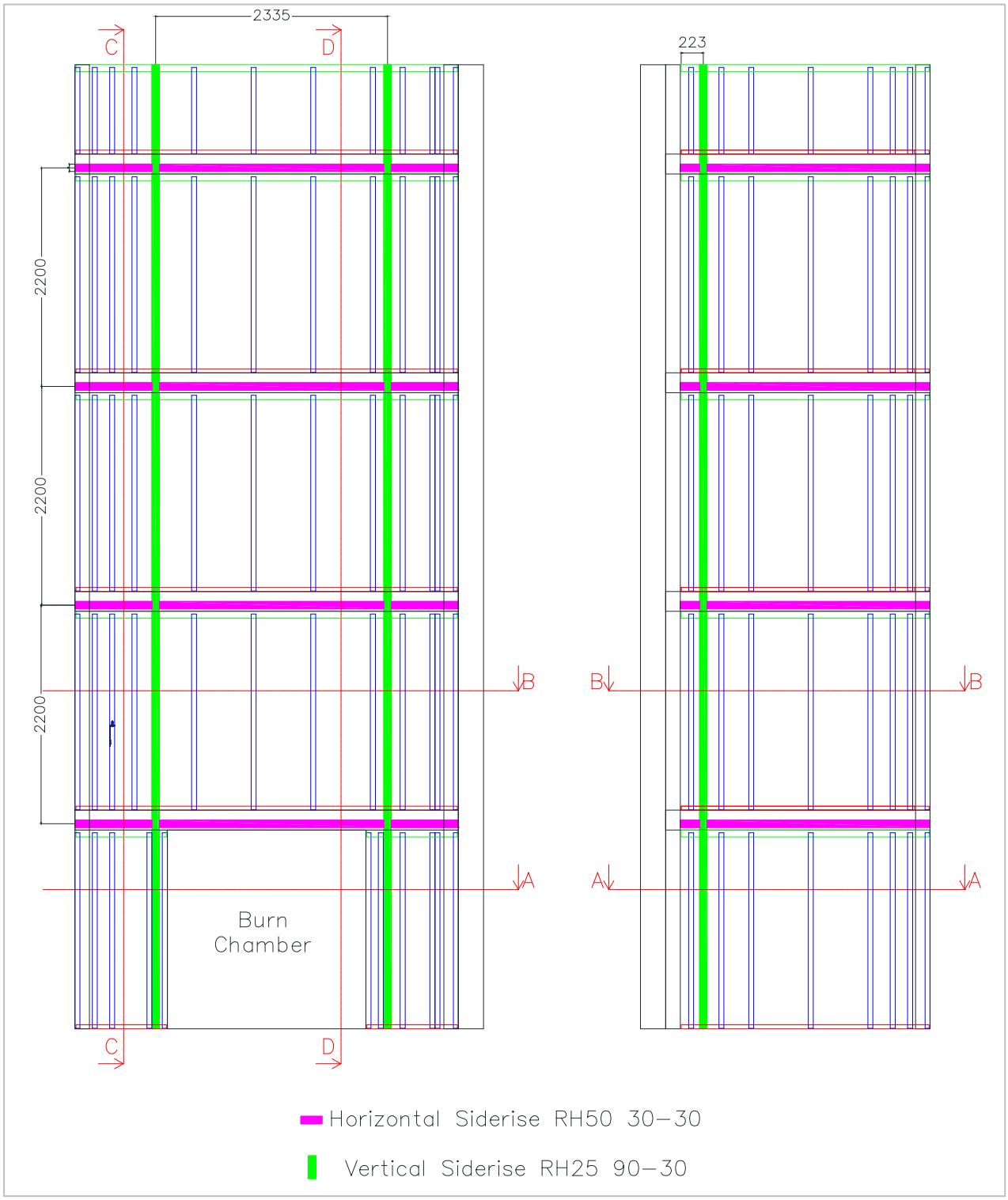
Drawing 3: Horizontal sectional views of drawing no. 2.
(Drawing provided by test sponsor)



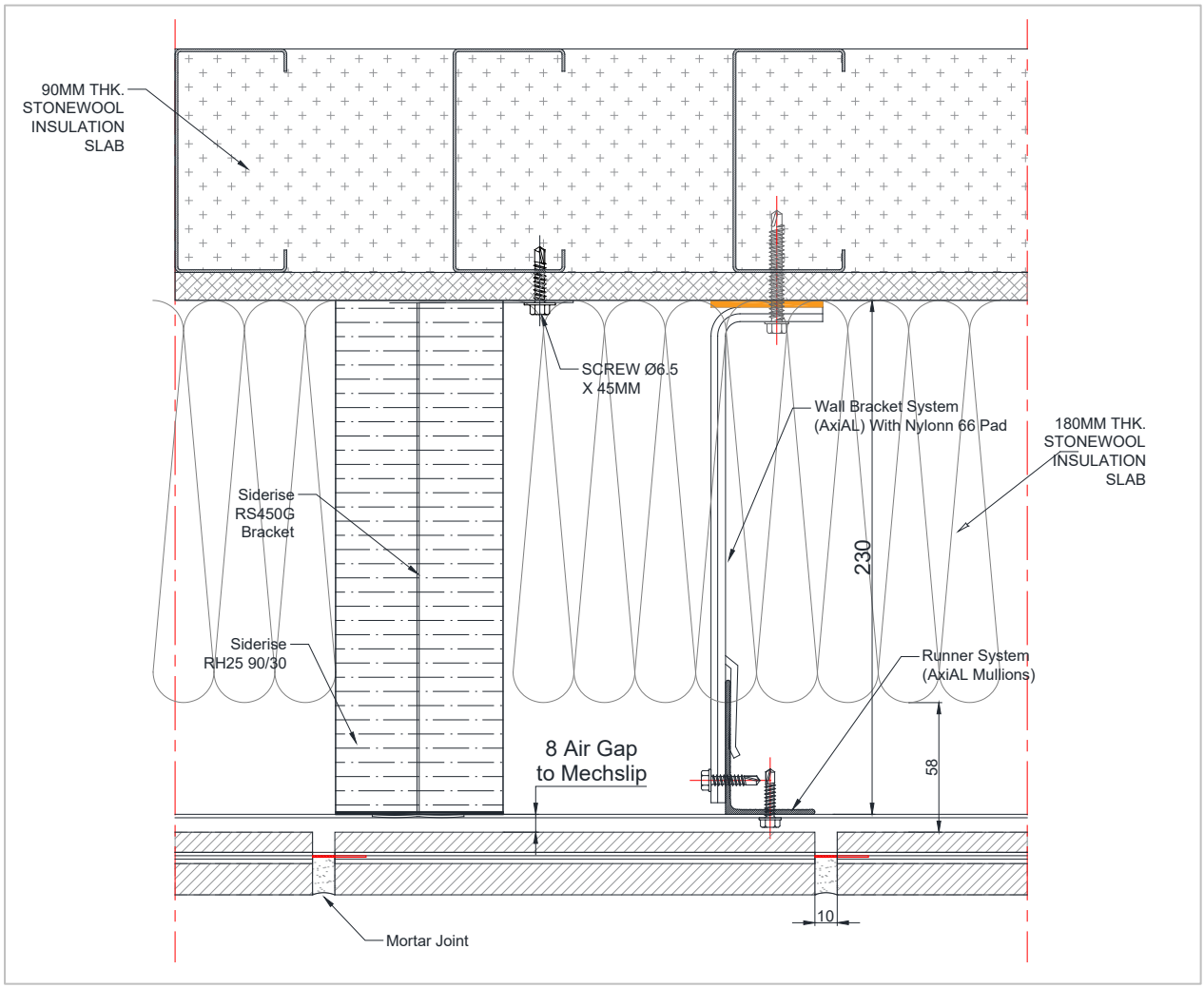
Drawing 4: Horizontal sectional views representing the layout the wall brackets and runners.
(Drawing provided by test sponsor)



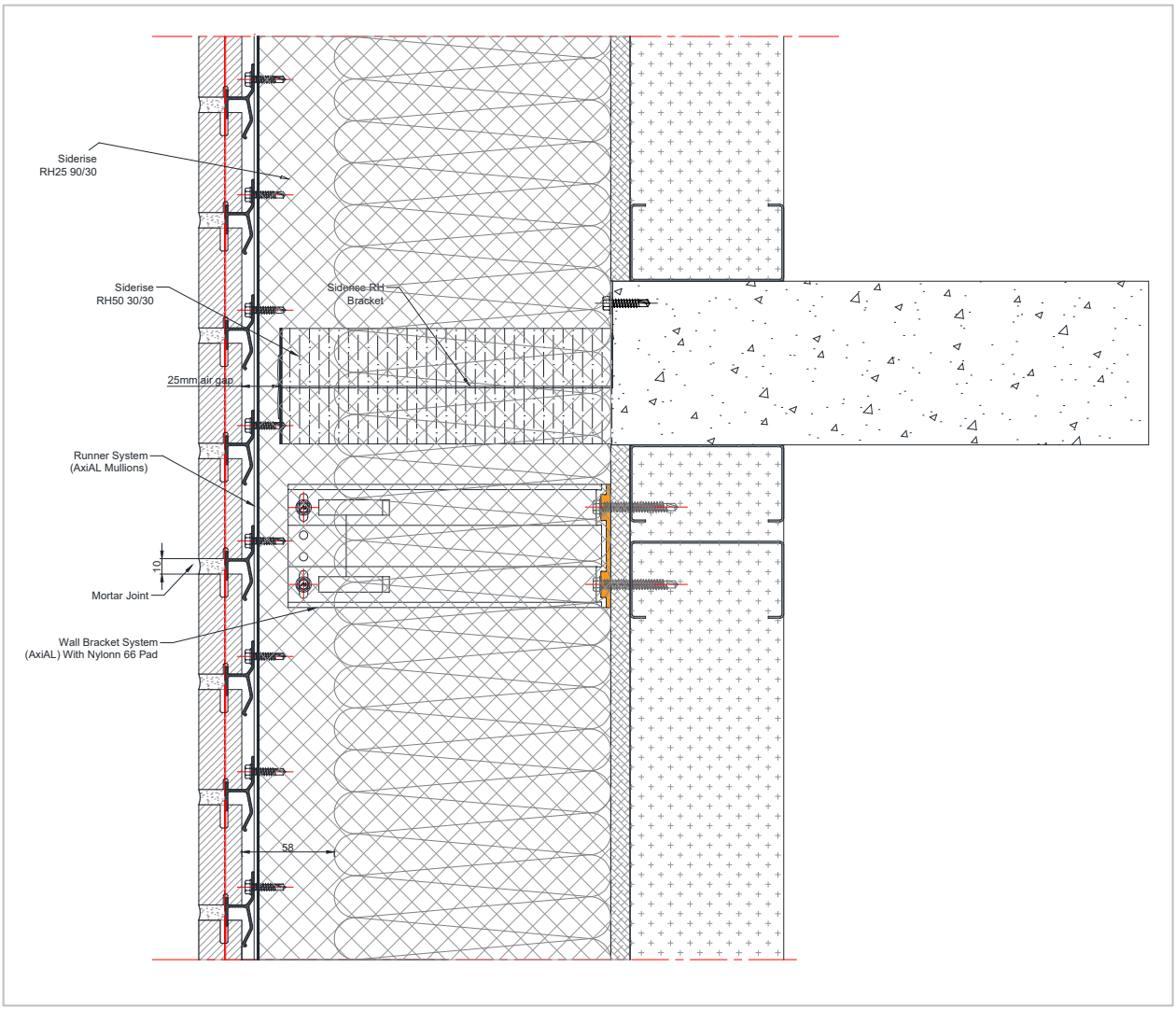
Drawing 5: Elevation view of the wall bracket layout on both main and wing walls.
(Drawing provided by test sponsor)



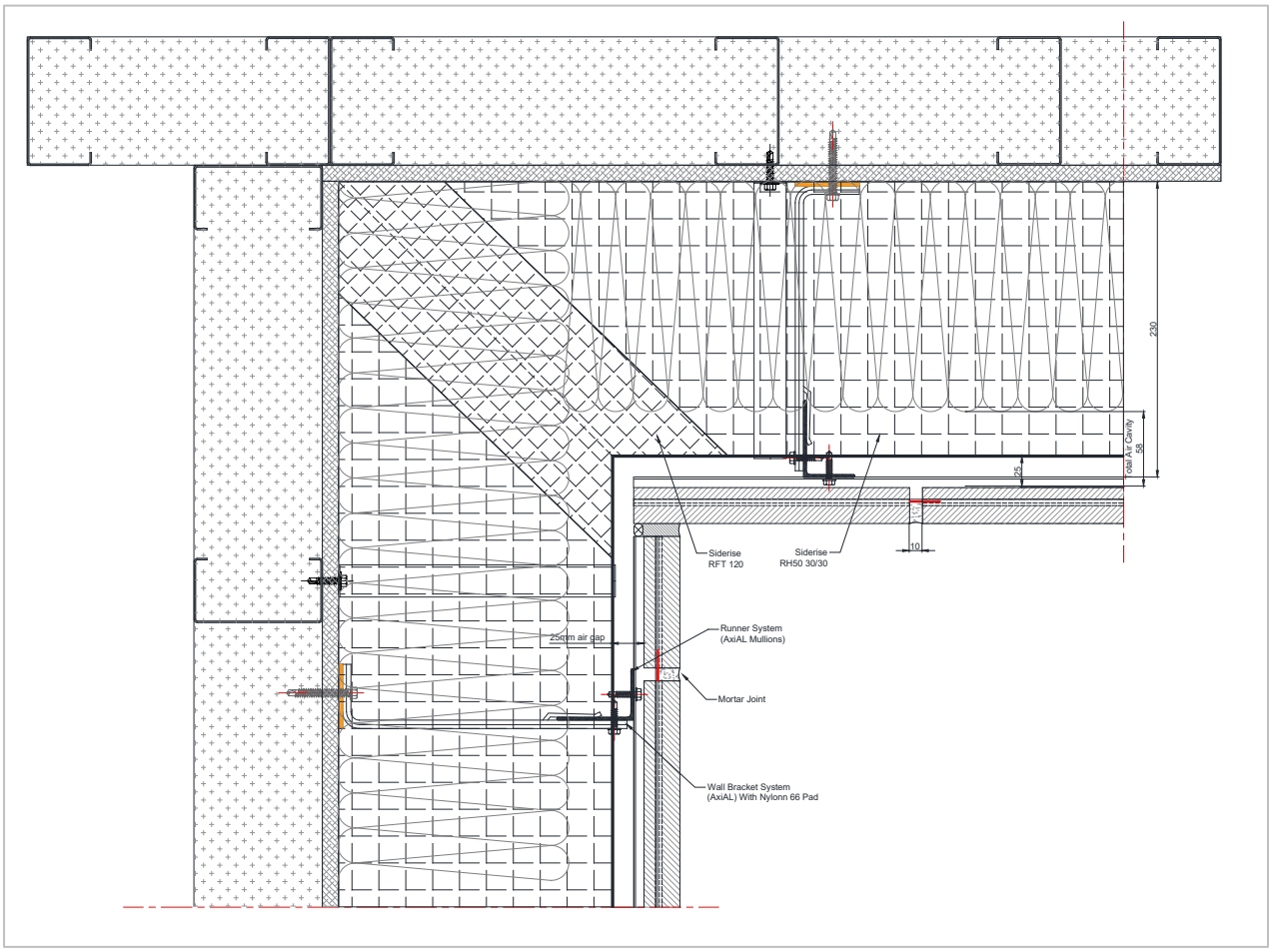
Drawing 6: View of the layout of the cavity fire barriers.
(Drawing provided by test sponsor)



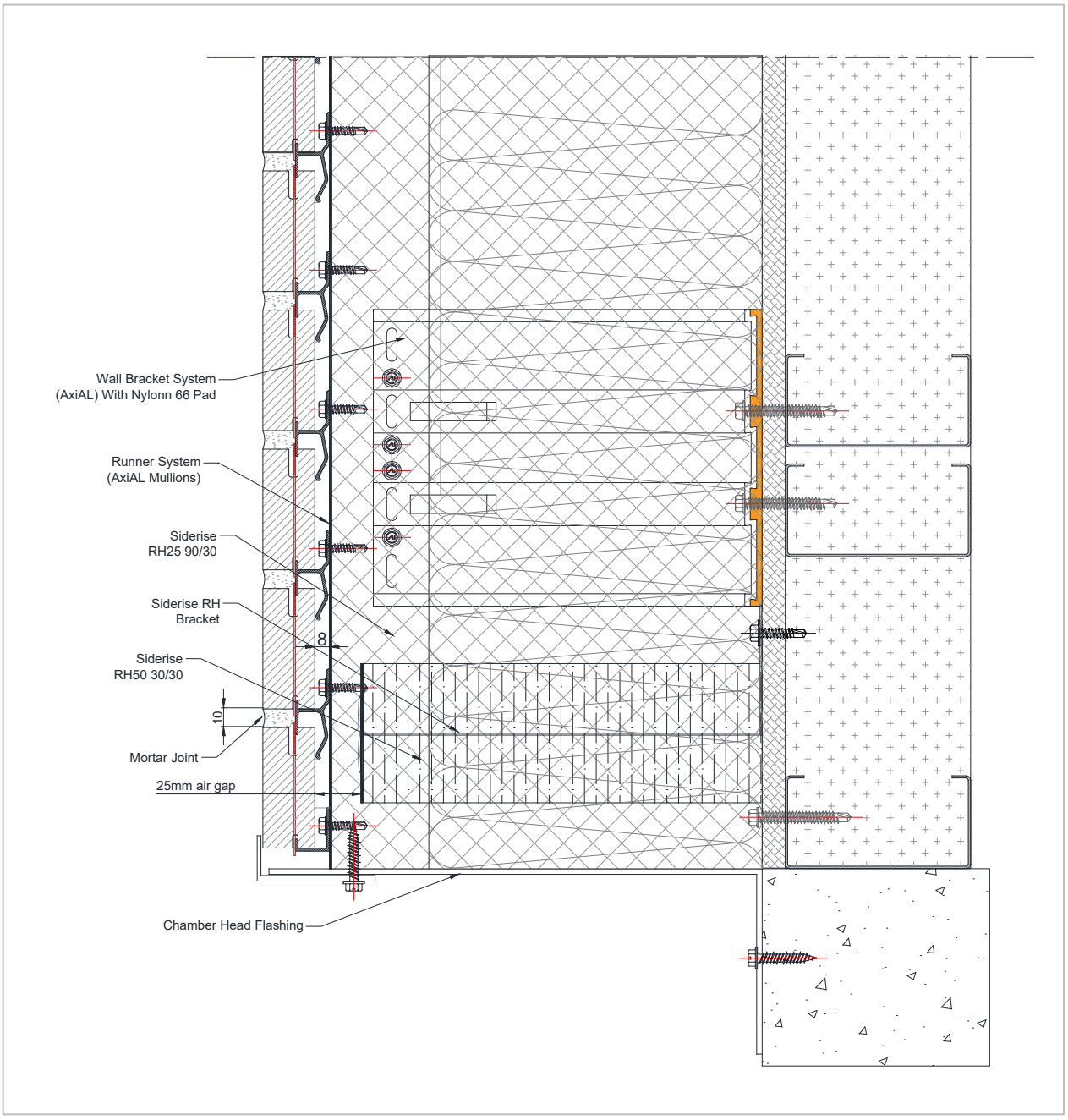
Drawing 7: Typical mid-section detail of the test assembly.
(Drawing provided by test sponsor)



Drawing 8: Typical vertical sectional detail of the test assembly.
(Drawing provided by test sponsor)



Drawing 9: Typical corner sectional detail of the test assembly.
(Drawing provided by test sponsor)



Drawing 10: Typical combustion chamber head vertical sectional detail of the test assembly.
(Drawing provided by test sponsor)

----- End of Classification Report -----