



CLASSIFICATION REPORT

Classification of a wall and ceiling lining to AS5637.1:2015

Test sponsor: Multipanel UK Limited

Address: Unit 6, Site 2 Oak Business Units



Thorverton Road, Exeter,

Devon, EX2 8 FS, United Kingdom

Job number: CRRTF180172 Author: Muntaqim Pereira

Test date: 20 February 2019 Revision: R1.0

Amendment schedule

Version	Date	Information relating to report		
R1.0	13/03/2019	Description	Initial Issue.	
			Prepared by	Reviewed by
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Executive summary

Objective

This report presents the classification of the system detailed in section 2. The classification is carried out in accordance with the procedures given in AS 5637.1:2015 - "Determination of fire hazard properties Wall and ceiling linings". This classification should be read in conjunction with the test report.

The test referenced in the classification report is:

- RTF180172 carried out to AS ISO 9705:2003 (R2016).

The report sponsor and the manufacturer/supplier are one listed below.

Sponsors

Multipanel UK Limited, Unit 6, Site 2 Oak Business Units, Thorverton Road, Exeter, Devon, EX2 8 FS, United Kingdom

Summary of tested specimen

The Alupanel 5022 – D Dark Blue Gloss/5002 Ultra Marine Blue Gloss Aluminium panels were screw fixed to the test room walls and ceiling using hex head screws. The boards lined three walls and the ceiling, with the wall with the doorway not lined.

Classification Summary

The specimen achieved the following performance requirements as defined in AS 5637.1:2015:

Criteria	Results
Group number	2
SMOGR _{ARC} (in m ² s ⁻² × 1000)	9.2

Date of test

20 February 2019

Contents

Amendment schedule	2
Executive summary	4
Contents	5
1. Construction details	6
1.1 Test specimen	6
1.2 Assembly and installation methods	6
1.3 Details of the fire test	6
1.4 Variations to test method	6
2. Schedule of components	7
3. Classification	8
4. Application of test results	9
4.1 Test limitations	9
4.2 Variations from the tested specimen	9
4.3 Uncertainty of measurements	9
Appendix A Drawings of test assembly	10

1. Construction details

1.1 Test specimen

The test specimen was screw fixed directly to the room walls and ceiling using 12g x 65mm hex head screws. The screws were fixed at nominal 600mm centres, with a 25mm offset from the edges. The ceiling panels were installed first, followed by rear wall panels, the right and then the left wall panels. The panels had two different shaded faces, one side a dark blue shade while the other side a light blue shade. The panels were installed with the dark blue shade facing into the room.

The burn room was lined by 11 panels of various sizes as detailed in below.

A full description of the specimen is provided in Appendix A and Section 2.

Table 1 Relative size and location of the lining

Quantity	Location	Size (nominal)
2	Right wall	1220mm x 2397mm
1		1157mm x 2397mm
2	Left wall	1220mm x 2397mm
1		1157mm x 2397mm
1	Rear wall	1220mm x 2397mm
1		1180mm x 2397mm
2	Ceiling	1220mm x 2400mm
1		1160mm x 2400mm

1.2 Assembly and installation methods

The wall system was constructed and completed on 19 February 2019 by representatives of Warringtonfire Australia.

1.3 Details of the fire test

The AS ISO 9705 room burn test was performed on 20 February 2019. The test was carried out at Warringtonfire Australia Pty Ltd – Unit 2, 409-411 Hammond Rd, Dandenong South, 3175, VIC, Australia. The test report number was RTF180172. The ambient temperature at the start of the test was 27 °C and did not vary significantly. A heat release rate of 1MW was achieved at 861 s.

Three walls and the ceiling were covered by the test specimen.

1.4 Variations to test method

None.

2. Schedule of components

Table 2 Schedule of components

Item	Description	
Lining		
1.	Product name	5022-D Dark Blue Gloss/5002 Ultra Marine Blue Gloss Alupanel
	Material	Aluminium sheet laminated on both sides with gloss finish. Aluminium faces were 0.3mm thick with a polyester coating. Core material is a magnesium oxide treated low density polyethylene core.
	Measured uncut sheet size	2445mm x 1220mm x 3mm thick (measured)
	Mass per unit area	5.2 kg m ⁻²
	Installation	The aluminium panels were screw fixed (item 2) to the burn room walls and ceiling at 600mm centres. The edge screws were fixed with 25mm offset from the edge. The panels had different shades on its faces, dark blue a slightly lighter blue. The darker blue shade was installed facing into the room. All the panels were cut to size accordingly. The ceiling panels were installed first, followed by the rear wall panels. the left and right panels were installed last.
Fixings		
2.	Product name	12g – 11 x 65mm Hex head screws
	Installation	Used to screw fix the panels (item 1) to the room walls and ceiling.

3. Classification

Australia

The test was performed in accordance with the requirements of AS ISO 9705:2003 (R2016) and AS 5637.1:2015 with the purpose of determining the Group Number that may be assigned to the material using the classification schemes given in AS 5637.1:2015.

AS 5637.1:2015 allow the classification of materials by Group Number, which indicates the amount of time taken for the material being tested to reach flashover under AS ISO 9705:2003 (R2016) test conditions. AS 5637.1:2015 define flashover to be a Heat Release Rate of 1 MW, so materials are classified, in accordance with AS 5637.1:2015, by the time taken for the Heat Release Rate, as measured during the AS ISO 9705:2003 (R2016), to reach 1MW as per the scheme below;

- Group 1 – Materials that does not reach flashover when exposed to 100 kW for 600s followed by exposure to 300 kW for 600s.
- Group 2 – Materials that reaches flashover following exposure to 300 kW within 600s after not reaching flashover when exposed to 100 kW for 600s.
- Group 3 – Materials that reaches flashover in more than 120s but within 600s when exposed to 100 kW.
- Group 4 – Materials that reach flashover within 120s when exposed to 100 kW.

The material subjected to this AS ISO 9705:2003 (R2016) test achieved a Heat Release Rate of 1 MW after 600 seconds exposure to a 100 kW heat source, followed by a further 141 seconds exposure to a 300 kW heat source. Therefore the system has achieved a classification of Group 2.

AS 5637.1:2015 also defines the smoke growth rate index, or $SMOGR_{RC}$, as a measure of smoke obscuration determined in accordance with AS ISO 9705 – 2003 and expressed in square metres per second squared (m^2s^{-2}). The $SMOGR_{RC}$ for a material is obtained by finding the maximum value of the average rate of smoke growth, where the averages are found from the total smoke obscuration determined over intervals of one minute, then dividing that value by the time that maximum occurred and multiplying the result by 1000.

The maximum average rate of smoke growth for this material occurred at 741 seconds into the test and was found to be $6.7 m^2s^{-1}$. Therefore, the $SMOGR_{RC}$ value (in $m^2s^{-2} \times 1000$) for the material is 9.2.

Criteria	Results
Group number	2
$SMOGR_{RC}$ (in $m^2s^{-2} \times 1000$)	9.2

Table 3 Australian test results

4. Application of test results

4.1 Test limitations

The results of these fire tests may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

These results only relate to the behaviour of the specimen of the element of the construction under the particular conditions of the test. They are not intended to be the sole criteria for assessing the potential fire performance of the element in use, and they do not necessarily reflect the actual behaviour in fires.

4.2 Variations from the tested specimen

This report details methods of construction, the test conditions and the results obtained when the specific element of construction described here was tested following the procedure outlined in AS ISO 9705:2003 R2016. Any significant variation with respect to size, construction details, loads, stresses, edge or end conditions is not addressed by this report.

It is recommended that any proposed variation to the tested configuration should be referred to the test sponsor. They should then obtain appropriate documentary evidence of compliance from Warringtonfire Australia Pty Ltd or another registered testing authority.

4.3 Uncertainty of measurements

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.

Appendix A Drawings of test assembly

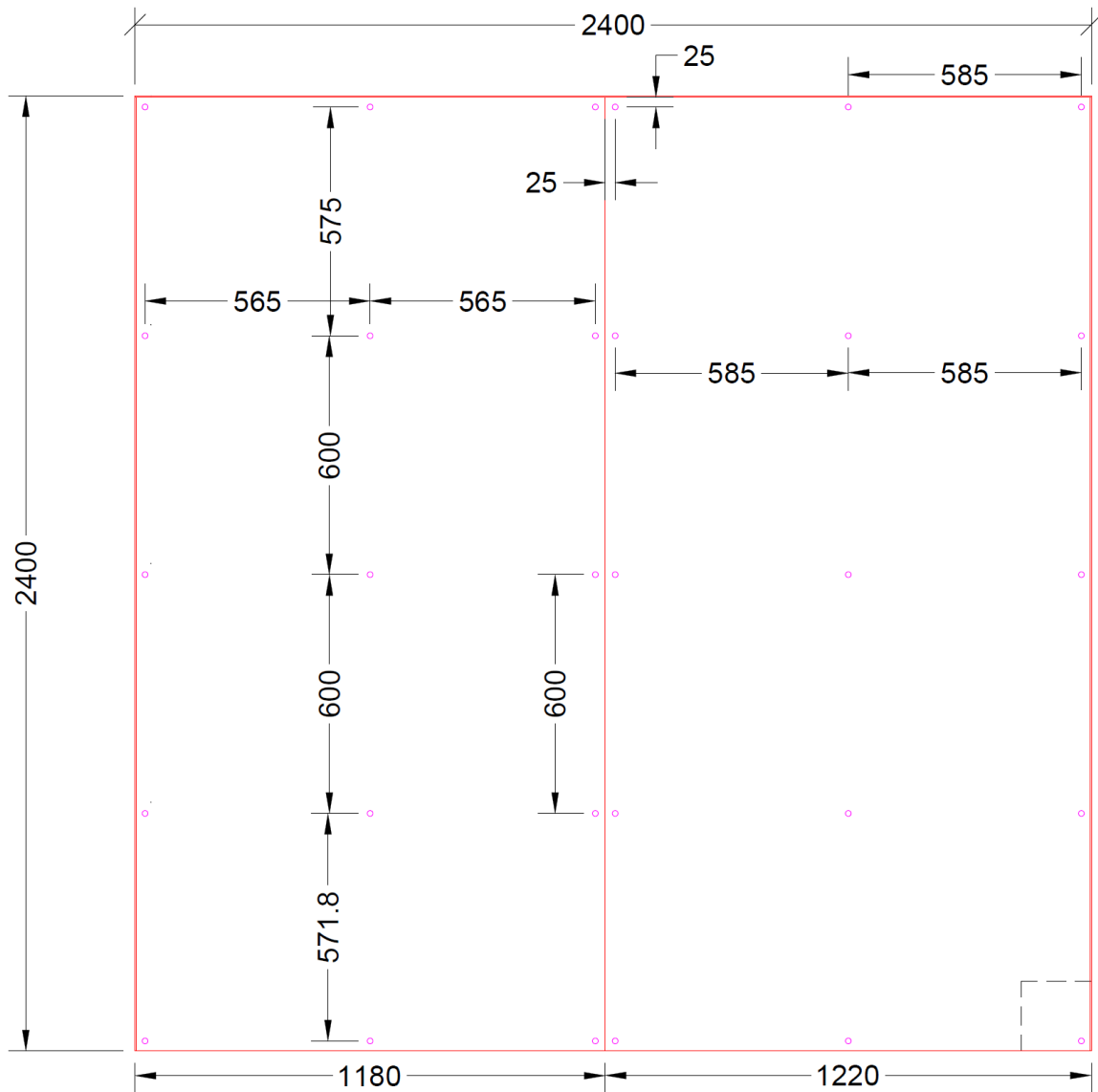


Figure 1 Rear wall

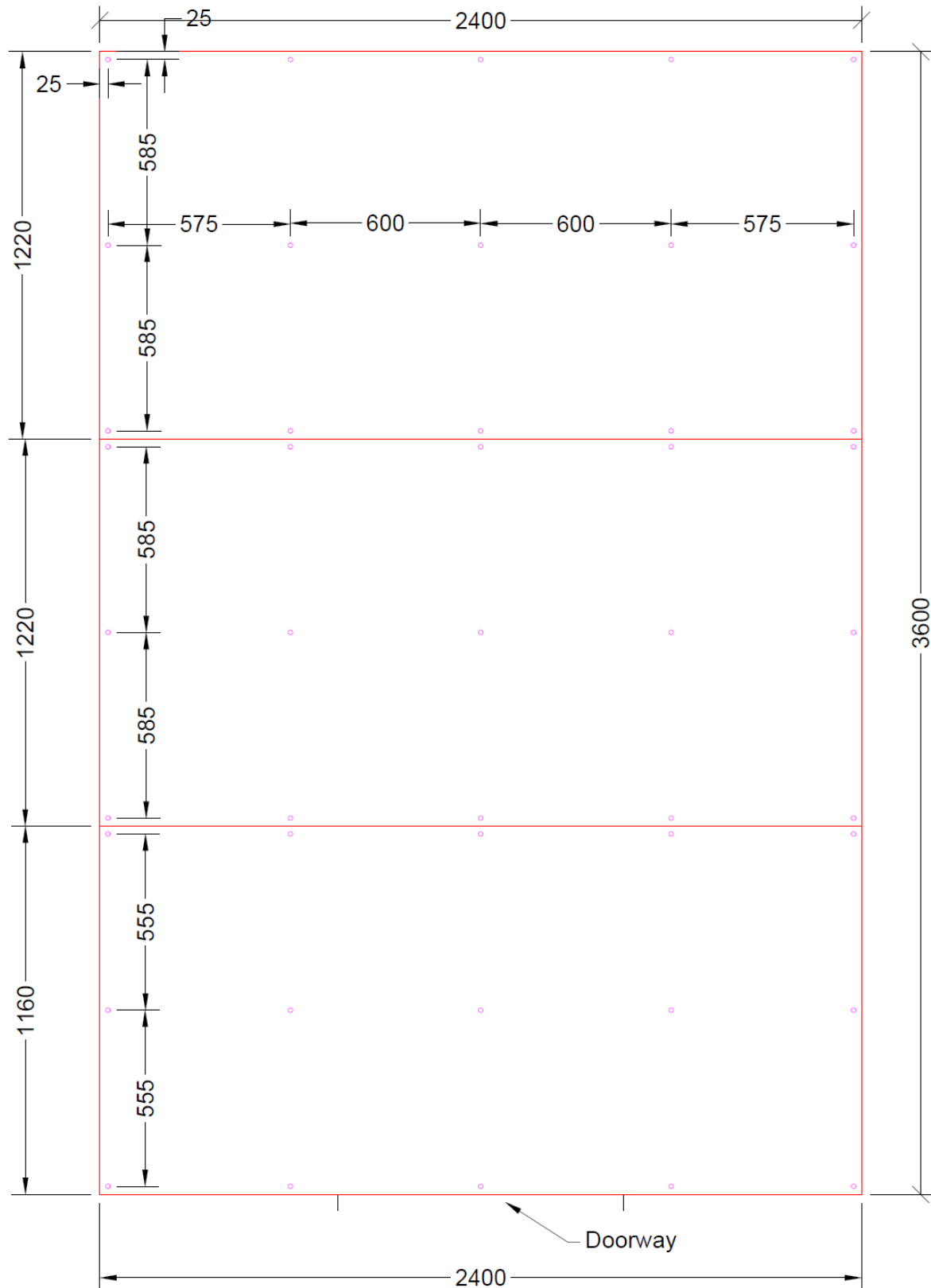


Figure 2 Ceiling (from above)

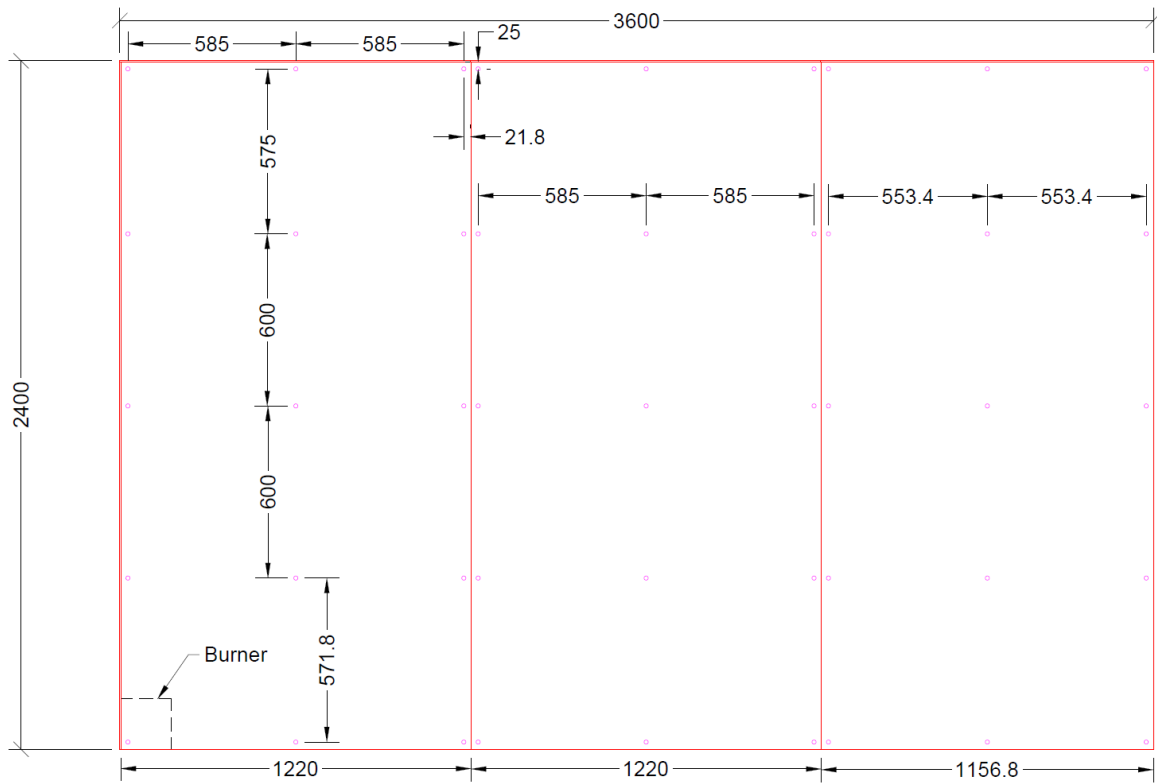


Figure 3 Right wall

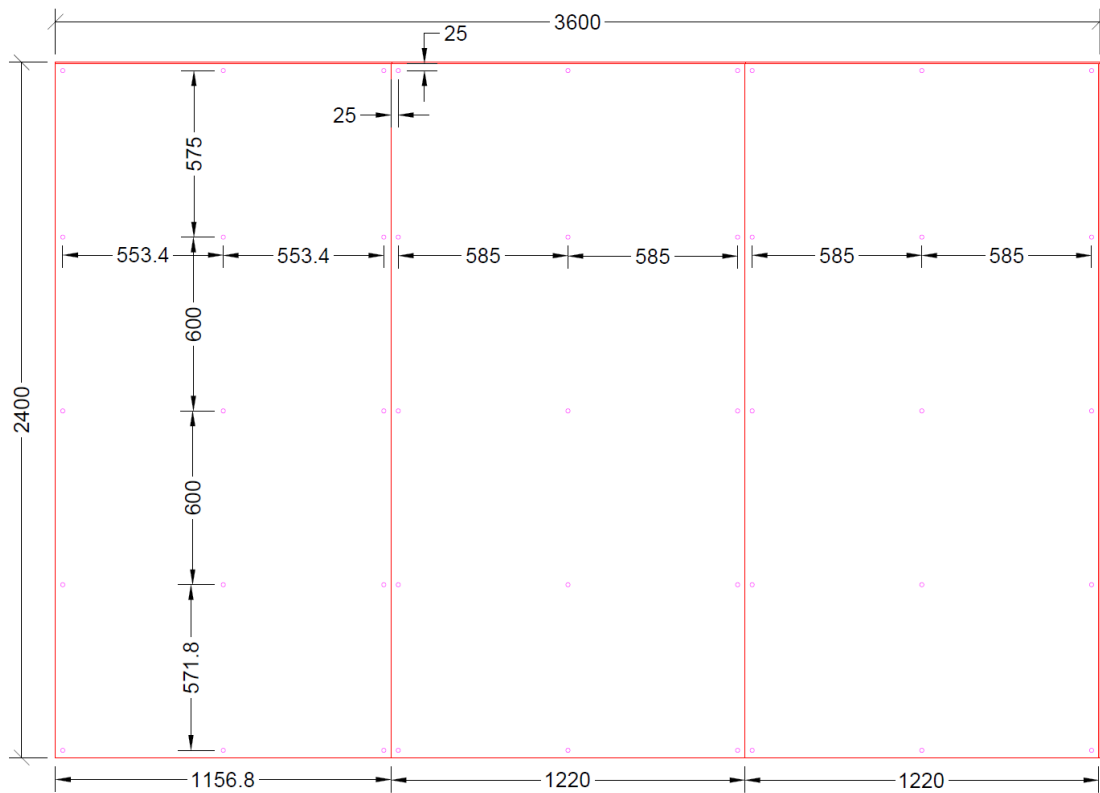


Figure 4 Left wall