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Classification report

Classification standard: AS 5637.1:2015

Test sponsor: Abodo Wood Australia

Test location: Warringtonfire Melbourne

Product: Vulcan Panelling - TG9 V groove

Report number: RTF210302

Test date: 05 June 2021 Revision: ASCR1.0

Warringtonfire: accredited for compliance with ISO/IEC 17025:2017 – Testing

Quality management

Version	Date	Information about the report			
R1.0	13 July 2021	Description	Initial issue.		
			Prepared by	Reviewed by	Authorised by
		Name	Muntaqim Pereira	Tanmay Bhat	Tanmay Bhat
		Signature			

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Contents

1. Introduction

This report documents the group number classification of the reaction-to-fire test conducted on Vulcan Panelling - TG9 V groove undertaken on 5 July 2021 in accordance with AS/NZS 3837:1998 and AS 5637.1:2015. The classification is based on the time taken for the system to reach flashover, which is defined in AS 5637.1:2015 as a heat release of 1 MW when tested in accordance with AS ISO 9705:2003. Group numbers can be obtained from either of the following test methods:

- A full-scale corner room burn test in accordance with AS ISO 9705:2003, or
- When appropriate, prediction using data from a small-scale cone-calorimetry test in accordance with AS/NZS 3837 or ISO 5660-1.

This report should be read in conjunction with the test report 20210713-RTF210302 R1.0 for a complete description of the test results and construction. Warringtonfire Australia did the test at the request of Abodo Wood Australia.

Table 1 Test sponsor details

Test sponsor	Address
Abodo Wood Australia	62 Ascot Road Mangere, Auckland 2022 New Zealand

2. Product description

The description of the test specimens in Table 3 has been prepared from the information provided by the test sponsor, unless otherwise specified.

All measurements-unless indicated-were measured by Warringtonfire.

Table 2 Product description

Item	Detail
Product	Vulcan Panelling - TG9 V groove
Material	The product consists of a 10 mm thick thermally modified radiata pine timber, which was LOSP H3 treated for termite. The specimen tested was uncoated, with the unexposed face having a V-shaped groove. The specimen consisted of several blocks bonded together along the vertical grain using polyurethane adhesive.
Photograph of the prepared sample	

Item	Detail
Average as received areal density	4.7 kg/m^2
Average areal density after conditioning	4.7 kg/m^2
Colour	Dark brown

3. Test procedure

Table 3 details the test procedure for this reaction-to-fire test.

Table 3 Test procedure

Item	Detail
Test standard	The test was performed in accordance with AS/NZS 3837:1998.
Deviations from the test standard	As the un-grooved face was deemed to have consistent heat flux across the exposed surface, only the un-grooved face was tested.
Pre-test conditioning	The specimens were received on 30 June 2021. Before testing, the specimens were conditioned to a constant mass at a temperature of 23 ± 2 °C and a relative humidity of 50 ± 5%.
Sampling / specimen selection	The specimens were supplied by the sponsor of the test. Warringtonfire was not involved in any selection or sampling procedure.
Test orientation	Horizontal.
Separation distance	All specimens were tested with a separation distance of 25 mm between the base plate of the cone heater and the upper surface of the specimen.
Specimen preparation	All specimens were wrapped in a single layer of aluminium foil which covered the sides and the bottom.
Specimen mounting	A wire grid was used as the specimen was found to be dimensionally unstable at high temperatures based on initial sample testing. A retaining frame was used, leaving an average exposed specimen surface area of 8.836 × 10-3 m².
Spark ignitor position	The spark ignitor was turned off after the specimen ignited.
Number of tests	Three specimens were subjected to an irradiance of 50 kW/m².
Frequency of measurement	Data was collected every 1 second(s).
Orifice plate calibration factor	0.043302
Test face	The un-grooved face, which ensures consistent heat flux across the exposed surface.
End of test condition	The average mass loss over a 1 minute period had dropped below 150 g/m².
Test operator	Muntaqim Pereira

4. Classification

AS 5637.1:2015 allows the classification of materials by group number, which is an indication on 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 defines flashover to be a heat release rate of 1 MW.

The group classifications are:

- Group 1 – Material that does not reach flashover when exposed to 100 kW for 10 minutes followed by exposure to 300 kW for a further 10 minutes.
- Group 2 – Material that reaches flashover following exposure to 300 kW within 10 minutes after not reaching flashover having first been exposed to 100 kW for 10 minutes.
- Group 3 – Material that reaches flashover between 2 – 10 minutes when exposed to 100 kW.
- Group 4 – Material that reaches flashover within 2 minutes when exposed to 100 kW.

The classification for this material is determined from a predictive mathematical model[1] which uses the data obtained from the AS/NZS 3837:1998 cone calorimetry test. The determination of the group number was deemed valid due to existing correlations between the cone calorimetry (AS/NZS 3837:1998) and the full-scale room burn test (AS ISO 9705:2003) for timber and timber products , as specified in clause 5.3.3 of AS 5637.1:2015.

Table 4 Classification for AS/NZS 3837:1998 and AS 5637.1:2015

Criteria	Results
Group number	3
Average Specific Extinction Area (ASEA)	96.8 m^2/kg

[1] Kokkala, M.A., Thomas, P.H., Karlsson, B. (1993), *Rate of heat release and ignitability indices for surface linings*, Fire and Materials, 17 (5), 209-216

5. Application of test results

5.1 Test limitations

This document is the original version of this test report and is written in English. In case of doubt the original version prevails over a translation.

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.

Reports are statements of fact for the referenced version of the standards stated in §3 and as such are of unlimited validity in time.

The results stated in this report apply to the test specimens as received. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the test sponsor. The test sponsor should then obtain appropriate documentary evidence of compliance from Warringtonfire or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test specimens that were tested.

5.2 Uncertainty of measurements

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurements obtained from a reaction to fire test, it is not possible to provide a stated degree of accuracy of the result.

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