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Fire assessment report

Surround by Laminex™ Moisture Resistant MDF wall panelling in accordance with AS 5637.1:2015

Sponsor: Laminex Group Pty Ltd

Report number: FAS210194 Revision: R1.0

Issued date: 30 November 2021 Expiry date: 30 November 2026

Quality management

Version	Date	Information about the report			
R1.0	Issue: 30 Nov 2021	Reason for issue	Initial issue		
	Expiry: 30 Nov 2026		**Prepared by**	**Reviewed by**	**Authorised by**
		Name	Alim Rasel	Omar Saad	Tanmay Bhat
		Signature			

Executive summary

This report documents the findings of the assessment undertaken to determine the expected fire hazard properties of Surround by Laminex™ Moisture Resistant (MR) medium density fibreboard (MDF) wall panelling if tested in accordance with AS ISO 9705:2003 and assessed in accordance with AS 5637.1:2015.

The assessed panels are described to be routed moisture resistant medium density fibreboards and are proposed to be used as internal wall and ceiling lining in commercial or residential buildings.

The analysis in section 5 of this report found that the proposed systems, together with the described variations, are expected to achieve group number as shown in Table 1, if tested in accordance with AS ISO 9705:2003 and assessed in accordance with AS 5637.1:2015. The product classifications in accordance with C/VM2- Verification Method: Framework for fire safety design is also presented in Table 2.

Table 1 Variations and assessment outcome – Classification in accordance with AS 5637.1:2015

Panel	Panel finish	Thickness	Exposed surface area	Group number	$SMOGRA_{RC}$ (in $m^2s^{-2} \times 1000$)
Surround by Laminex™ Moisture Resistant MDF wall panelling	Water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper	9 mm – 18 mm	Maximum 152%	3	<100
The outcome of this assessment is applicable to Laminex routed panels only. Perforated panels were not considered in this assessment.					

Table 2 Variations and assessment outcome – Classification in accordance with C/VM2- Verification Method: Framework for fire safety design

Panel	Panel finish	Thickness	Exposed surface area	Group number	Average smoke production rate (m^2/s)
Surround by Laminex™ Moisture Resistant MDF wall panelling	Water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper	9 mm – 18 mm	Maximum 152%	3	<5.0
The outcome of this assessment is applicable to Laminex routed panels only. Perforated panels were not considered in this assessment.					

The variations and outcome of this assessment are subject to the limitations and requirements described in sections 2, 3 and 6 of this report. The results of this report are valid until 30 November 2026.

Contents

1. Introduction

This report documents the findings of the assessment undertaken to determine the expected fire hazard properties of Surround by Laminex™ Moisture Resistant (MR) medium density fibreboard (MDF) wall panelling if tested in accordance with AS ISO 9705:2003[1] and assessed in accordance with AS 5637.1:2015[2].

This report may be used as Evidence of Suitability in accordance with the requirements of the relevant National Construction Code (NCC) to support the use of the material, product, form of construction or design as given within the scope of this assessment report. It also references test evidence for meeting deemed to satisfy (DTS) provisions of the NCC as applicable to the assessed systems.

This assessment was carried out at the request of Laminex Group Pty Ltd. The sponsor details are included in Table 3.

Table 3 Sponsor details

Sponsor	Address
Laminex Group Pty Ltd	22 Trewin St Wendouree VIC 3355 Australia

2. Framework for the assessment

2.1 Assessment approach

An assessment is an opinion about the expected performance of a component or element of structure if it was subject to a fire test.

No specific framework, methodology, standard or guidance documents exists in Australia for doing these assessments. We have therefore followed the 'Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence' prepared by the Passive Fire Protection Forum (PFPF) in the UK in 2021[3].

This guide provides a framework for undertaking assessments in the absence of specific fire test results. Some areas where assessments may be offered are:

- Where a modification is made to a construction which has already been tested
- The interpolation or extrapolation of results of a series of fire resistance tests, or utilisation of a series of fire test results to evaluate a range of variables in a construction design or a product
- Where, for various reasons – eg size or configuration – it is not possible to subject a construction or a product to a fire test.

Assessments will vary from relatively simple judgements on small changes to a product or construction through to detailed and often complex engineering assessments of large or sophisticated constructions.

This assessment uses established empirical methods and our experience of fire testing similar products to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire hazard properties if the elements were to be tested in accordance with AS ISO 9705:2003.

1 Standards Australia, 2003, Fire tests - Full-scale room test for surface products (Reconfirmed 2016), AS ISO 9705:2003 (R2016), Standards Australia, NSW.
2 Standards Australia, 2015, Determination of fire hazard properties – Wall and ceiling linings, AS 5637.1:2015, Standards Australia, NSW.
3 Passive Fire Protection Forum (PFPF), 2021, Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence, Passive Fire Protection Forum (PFPF), UK.

This assessment has been written using appropriate test evidence generated at accredited laboratories to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturer's stated design.

2.2 Compliance with the National Construction Code

This assessment report has been prepared to meet the Evidence of Suitability requirements of the NCC 2019 including amendments[4] under A5.2 (1) (d).

This assessment has been written in accordance with the general principles outlined in EN 15725:2010[5] for extended application reports on the fire performance of construction products and building elements. It also references test evidence for meeting a performance requirement or deemed to satisfy (DTS) provision of the NCC under A5.5 for reaction to fire as applicable to the assessed systems.

This assessment report may also be used to demonstrate compliance with the requirements for Evidence of Suitability under NCC 2016 including amendments[6].

2.3 Declaration

The 'Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence' prepared by the PFPF in the UK requires a declaration from the client. By accepting our fee proposal on 30 August 2021, Laminex Group Pty Ltd confirmed that:

- To their knowledge the component or element of structure, which is the subject of this assessment, has not been subjected to a fire test to the standard against which this assessment is being made.
- They agree to withdraw this assessment from circulation if the component or element of structure is the subject of a fire test by a test authority in accordance with the standard against which this assessment is being made and the results are not in agreement with this assessment.
- They are not aware of any information that could adversely affect the conclusions of this assessment and – if they subsequently become aware of any such information – they agree to ask the assessing authority to withdraw the assessment.

3. Limitations of this assessment

- The scope of this report is limited to an assessment of the variations to the tested systems described in section 4.3.
- This report details the methods of construction, test conditions and assessed results that are expected if the system were tested in accordance with AS ISO 9705:2003.
- This assessment is applicable to internal wall and ceiling linings.
- This report is only valid for the assessed system/s and must not be used for any other purpose. Any changes with respect to size, construction details, loads, stresses, panel fixing, edge or end conditions – other than those identified in this report – may invalidate the findings of this assessment. If there are changes to the system, a reassessment will need to be done by an Accredited Testing Laboratory (ATL).
- The documentation that forms the basis for this report is listed in Appendix B.
- This report has been prepared based on information provided by others. Warringtonfire has not verified the accuracy and/or completeness of that information and will not be responsible for any errors or omissions that may be incorporated into this report as a result.

[4] National Construction Code Volumes One and Two - Building Code of Australia 2019 including Amendments, Australian Building Codes Board, Australia
[5] European Committee for Standardization, 2010, Extended application reports on the fire performance of construction products and building elements, EN 15725:2010, European Committee for Standardization, Brussels, Belgium.
[6] National Construction Code Volumes One and Two - Building Code of Australia 2016 including Amendments, Australian Building Codes Board, Australia

- This assessment is based on the proposed systems being constructed under comprehensive quality control practices and following appropriate industry regulations and Australian Standards on quality of materials, design of structures, guidance on workmanship and the expert handling, placing and finishing of the products on site. These variables are beyond the control and consideration of this report.

4. Description of the specimen and variations

4.1 System description

The proposed system consists of Laminex routed MDF panels which are used as internal wall and ceiling linings. The panels are commercially known as Surround by Laminex™ Moisture Resistant MDF wall panelling.

4.2 Referenced test data

The assessment of the variation to the tested systems and the determination of the expected performance is based on the results of the fire tests documented in the reports summarised in Table 4. Further details of the tested systems are included in Appendix B.

Table 4 Referenced test data

Report number	Test sponsor	Date	Testing authority
Ostman and Tsantaridis (1993) – Research paper	Swedish Institute of Wood Technology Research	11 March 1993	Swedish Institute of Wood Technology Research
RTF200495 R1.1	Warringtonfire	4 January 2021	Warringtonfire
RTF210397 R1.0	Laminex Group Pty Ltd	11 October 2021	Warringtonfire
RTF210023 R1.0	Laminex Group Pty Ltd	12 March 2021	Warringtonfire
RTF200371 R1.0	Laminex Group Pty Ltd	29 October 2020	Warringtonfire
RTF200372 R1.0	Laminex Group Pty Ltd	27 October 2020	Warringtonfire
EWFA 39410500.1	Laminex Group Pty Ltd	22 April 2016	Warringtonfire

4.3 Variations to the tested systems

An identical system has not been subject to a standard fire test. We have therefore assessed the systems using baseline test information for similar systems. The variations to the tested systems – together with the referenced fire tests – are described in Table 5.

Table 5 Variation to tested system

Item	Reference test	Description	Variations
Panel composition	Ostman and Tsantaridis (1993), RTF200495 R1.1, RTF210397 R1.0	Standard MDF panels were tested.	It is proposed MR MDF panels are assessed.
Panel profile	RTF210023 R1.0, RTF200371 R1.0	Solid standard MDF panels and routed fire retardant (FR) MDF panels were tested.	It is proposed routed MR MDF panels are assessed.
Panel finish	RTF200372 R1.0, EWFA 39410500.1	FR MDF panels finished with water-based acrylic primer paint and Melamine/formaldehyde resin impregnated paper were tested.	It is proposed MR MDF panels finished with water-based acrylic primer paint and Melamine/formaldehyde resin impregnated paper is assessed.

Item	Reference test	Description	Variations
Panel thickness	Ostman and Tsantaridis (1993)	The thickness of the tested standard MDF panel was recorded to be 12 mm.	It is proposed that, thickness of the MR MDF panel will be varied from 9 mm to 18 mm.

4.4 Test and Assessment standard

AS ISO 9705:2003 stipulates full room burn testing techniques for surface products.

AS 5637.1:2015 sets out procedures for assessing internal wall and ceiling linings according to their tendency to ignite, release heat, cause flashover, release smoke and contribute to fire growth.

4.5 Schedule of components

Table 6 outlines the schedule of components for the assessed systems subject to a fire test, as referenced in Appendix B.

Table 6 Schedule of components of assessed systems

Item	Description	
Lining		
1.	Item name	Routed moisture resistant (MR) medium density fibreboard (MDF) panels
	Product name	Surround by Laminex™, Moisture Resistant MDF wall panelling
	Thickness	9 mm – 18 mm
	Minimum density	655 kg/m^3
Installation method		
Mechanically fixed to the internal studwork.		

5. Assessment – Moisture resistant MDF

5.1 Description of variation

12 mm thick standard MDF panels were tested by Ostman and Tsantaridis (1993)[7] in accordance with ISO 9705. Additionally, 12 mm and 9 mm standard and MR MDF panels were tested in accordance with ISO 5660-1:2015/Amd.1:2019[8] to establish correlation with the tested standard MDF. Based on these test data, it is proposed that 9 mm to 18 mm thick routed MR MDF panels are assessed in accordance with AS 5637.1:2015 to allocate group numbers. The panels are proposed to be finished with either water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper.

5.2 Methodology

The method of assessment used is summarised in Table 7.

Table 7 Method of assessment

Assessment method	
Level of complexity	Intermediate assessment
Type of assessment	Qualitative – interpolation/Comparative

5.3 Moisture resistant (MR) medium density fibreboard (MDF)

AS 5637.1:2015 stipulates that, group number must be assigned to internal wall or ceiling linings based on test data in accordance with AS ISO 9705:2003. Additionally, group number can be assigned based on cone calorimeter test data (ISO 5660-1 or AS/NZS 3837[9]) if there is an established correlation.

Standard MDF panels were previously tested in accordance with ISO 9705 as part of a research project conducted by Ostman and Tsantaridis (1993) and the following performance as listed in Table 8 was observed.

Table 8 Performance of standard MDF in ISO 9705 room burn test

Panel	Thickness, mm	Density, kg/m^3	Time to flashover, s	Group number	Average rate of smoke production, m^2/s)
Standard MDF	12	655	131	3	2.0

It is noted that, the tested standard MDF panels reached flashover at 131 seconds and hence achieved group number 3. This full-scale room burn test forms the basis of the assessment of proposed MR MDF panels.

The proposed MR MDF panels varies from the tested standard MDF in composition. To achieve the moisture resistance properties, Melamine Urea Formaldehyde (MUF) resin are used to bind the wood fibres together. To establish correlation between the expected performance, standard and moisture resistant (MR) MDF panels were tested in accordance with ISO 5660-1:2015/Amd.1:2019 in RTF200495 R1.1 and RTF210397 R1.0 respectively. It was noted that both panels were brown in colour and the nominal density of the tested panels remained identical at 740 kg/m^3. However, the standard panel was 12 mm thick while the MR MDF panel was 9 mm thick. The recorded heat release rate (HRR) curve for both standard and MR MDF panels under 50 kW/m^2 exposure are illustrated in Figure 1 and Figure 2.

[7] Ostman and Tsantaridis, 1993, Smoke data from the cone calorimeter for comparison with the room fire test, Fire & Materials, Vol 17, page 191-200.
[8] International Standard, 2019, Reaction to fire tests – heat release, smoke production and mass loss rate – part 1: Heat release rate (cone calorimeter method) and smoke production rate (dynamic measurements), International Standard, Switzerland.
[9] Standards Australia, 2012, Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter, Standards Australia, NSW.

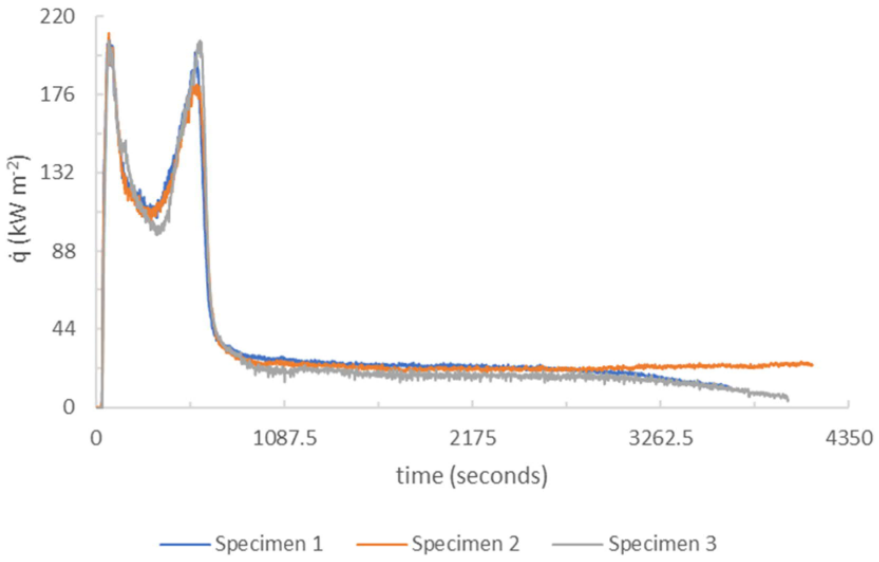

Figure 1 Heat release rate vs time – standard MDF (image reproduced from RTF200495 R1.1)

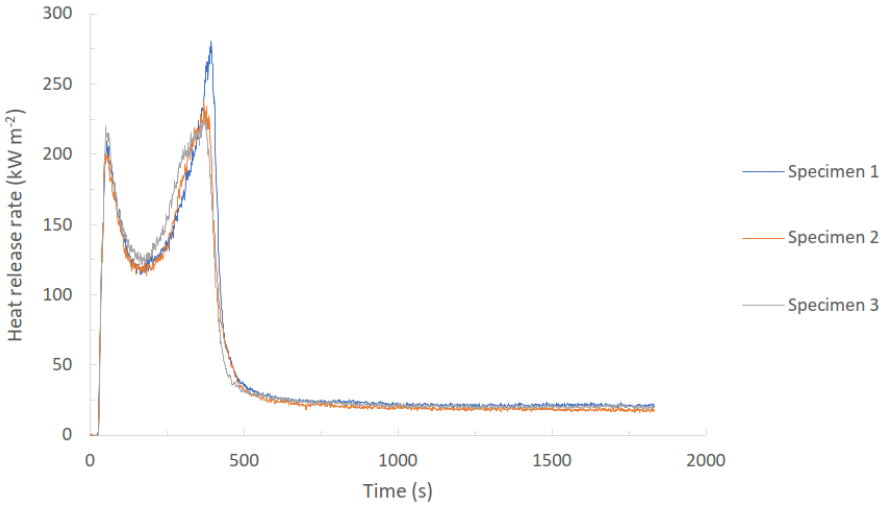

Figure 2 Heat release rate vs time – MR MDF (image reproduced from RTF210397 R1.1)

Both standard and MR MDF panels demonstrated similar characteristics with two peaks and subsequent stabilisation of HRR. The peak HRR for standard and MR MDF panels was recorded to be 210.4 kW/m^2 and 280.4 kW/m^2 respectively. The minor variation in peak HRR is expected due to the variation in panel thickness as the MR MDF panels are thinner and as such heat conduction through the panel is expected to be quicker. For both panels, the HRR did not exceed 300 kW/m^2. It is also noted that, the MR MDF panels stabilised earlier at around 500 seconds compared with standard MDF panels at 1000 seconds.

It is understood that the MR MDF panels are expected to achieve group 3. As such, the panels are required to resist flashover for the first two minutes. The first peak is representative of the likely material performance for the first two minutes. It is noted that, the first peak remained similar for both standard and MR MDF panels and did not exceed 220 kW/m^2. With consideration to the peak HRR and overall behaviour observed in RTF200495 R1.1 and RTF210397 R1.0, it is concluded that, both standard and MR MDF panels are expected to perform similarly at least for the first two minutes if tested in AS ISO 9705:2003 test. Based on the above, solid MR MDF panels are positively assessed.

5.4 Surround MR MDF

The proposed Surround MR MDF panels will include routing along the length and will be decorated with either Melamine/formaldehyde resin impregnated paper or water-based acrylic primer paint. The proposed variations and their impact on the fire performance is discussed below.

5.4.1 Panel routing

In test RTF210023 R1.0, 12 mm thick routed FR MDF panels were tested in accordance with AS ISO 9705:2003. The panels consisted of grey-coloured FR MDF boards which were painted on the exposed side with white-coloured water-based acrylic primer. The surface density of the panels was recorded to be 783.34 kg/m^2.

Due to the routing, additional surfaces of the panels were exposed to fire in contrast to flat panels. The amount of routing can be expressed as “exposed surface area” which can be calculated as follows,

$$Exposed\ surface\ area\ (\%) = \frac{Total\ exposed\ surface\ area\ due\ to\ routing}{Area\ of\ the\ flat\ or\ non\ routed\ panel} \times 100$$

In test RTF210023 R1.0, the exposed surface area was recorded to be 152%. The tested construction achieved group number 2 and SMOGRA$_{RC}$ of 8.1 (m^2/s^2 × 1000).

In test RTF200371 R1.0, 9 mm thick green solid FR MDF panels were tested in accordance with AS ISO 9705:2003. The panel density was recorded to be 806 kg/m^3. This construction achieved group number 2 and a SMOGRA$_{RC}$ of 12.0 (in m^2/s^2 × 1000). The core material of green and grey FR MDF is nearly identical with the exception of a minor variation in dye colour. Because the dye accounts for a fraction of the panel's mass, its impact on performance is deemed minimal. Test RTF210023 R1.0 and RTF200371 R1.0 provides primary data for comparative performance analysis of solid and routed panels. The recorded HRR for routed and solid FR MDF panels are illustrated in Figure 3 and Figure 4.

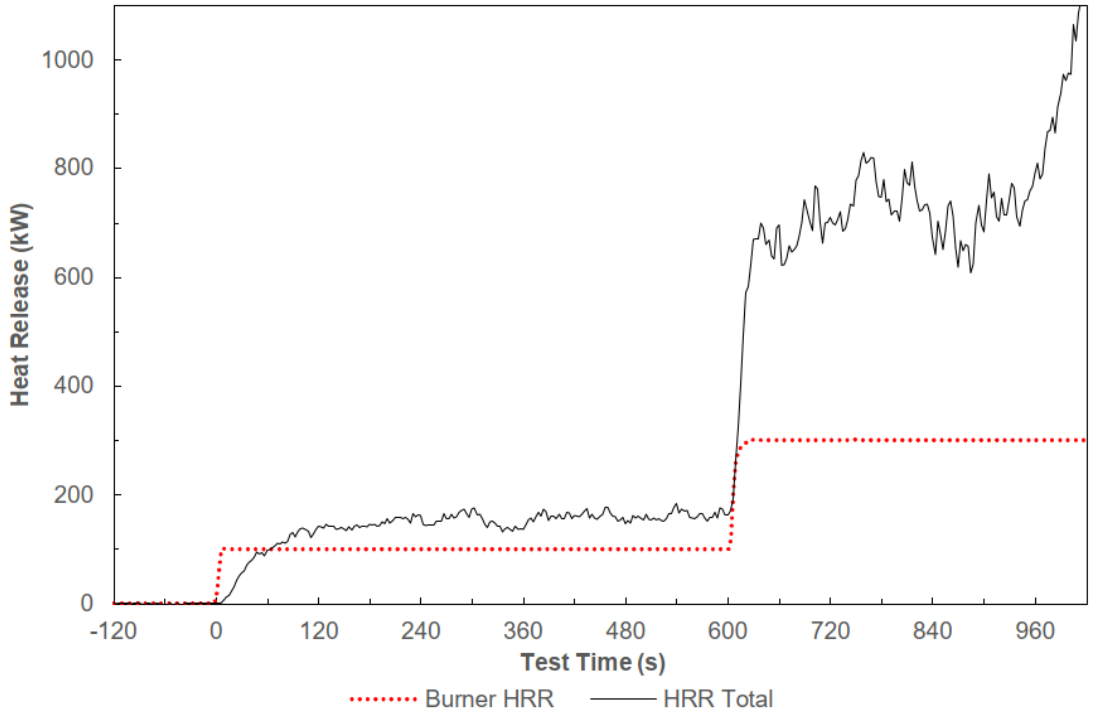

Figure 3 Heat release rate vs time – routed FR MDF panels (image reproduced from RTF210023 R1.0)

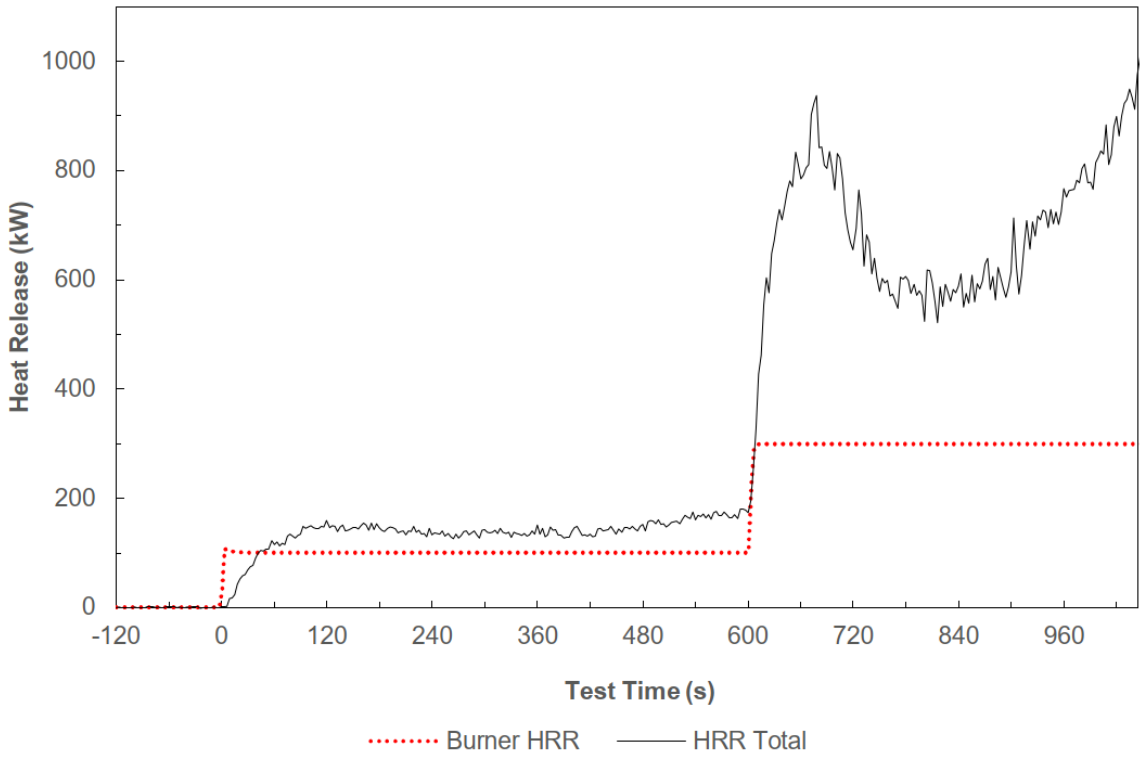

Figure 4 Heat release rate vs time – solid FR MDF panels (image reproduced from RTF200371 R1.0)

The proposed MR MDF panels with the expectation of group number 3 is only expected to resist flashover for 120 seconds under 100 kW exposure when tested in accordance with AS ISO 9705:2003. From test RTF210023 R1.0 and RTF200371 R1.0, it is noted that, the HRR remains largely identical for the first 10 minutes under 100 kW. The peak HRR did not exceed 200 kW for both panels. Hence, a similar performance is expected between solid and routed MR MDF panels under 100kW exposure. Based on the above, routed MR MDF panels are positively assessed for group 3.

5.4.2 Panel finish

It is proposed that, the panels will be finished with either water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper. In test RTF210023 R1.0, routed FR MDF panels with water-based acrylic primer paint were tested and achieved group number 2. In comparison with solid panel, the routed panel with water-based acrylic primer paint did not cause any deviation in performance under 100 kW exposure. The HRR curve almost remained identical up to 120 seconds. Hence, a similar performance is expected if the MR MDF panels are finished with water-based acrylic primer paint. Based on the above, water-based acrylic primer paint is positively assessed.

In test RTF200372 R1.0, 18 mm FR MDF panel laminated with melamine impregnated decorative paper was tested in accordance with AS ISO 9705:2003. This construction achieved group number 2 and a $SMOGRA_{RC}$ of 4.4 (in $m^2s^{-2} \times 1000$). Additionally, in test EWFA 39410500.1, 16 mm FR MDF panel laminated with melamine impregnated decorative paper was tested in accordance with AS ISO 9705:2003. This construction achieved group number 2 and a $SMOGRA_{RC}$ of 20.3 (in $m^2s^{-2} \times 1000$).

The performance of the laminate was closely observed from test RTF200372 R1.0 and EWFA 39410500.1. It was noted that, the laminate remains largely non-reactive for the first 10 minutes under 100 kW exposure. This is reflected in the observations, test images and the HRR recorded during test (HRR remains below 200 kW for the first 10 minutes). It is expected that the laminates will behave similarly if applied on top of the proposed MR MDF panels. Based on the above, proposed Melamine/formaldehyde resin impregnated papers are positively assessed.

5.4.3 Panel thickness

It is noted that in the full room burn test conducted by Ostman and Tsantaridis (1993), the panel thickness was recorded as 12 mm and achieved group number 3. It is proposed the thickness of the MR MDF panel will vary from 9 mm to 18 mm. In principle, reduction in thickness can decrease the temperature gradient between opposing faces and result in greater HRR at any given time. However, such behaviour is expected in thermally thin materials only. Additionally, for a group 3 rating the panel is expected to resist flashover only up to two minutes. Within such timeframe, the surface composition and overall exposure area is expected play the primary role in material performance rather than temperature gradient between panels. Therefore, the variation in panel thickness is not expected to be detrimental in terms of performance. Based on the above, MR MDF panels with thicknesses from 9 mm to 18 mm are positively assessed.

5.5 Conclusion

This assessment demonstrates that the Surround by Laminex™ Moisture Resistant MDF wall panelling are expected to achieve group number as listed in Table 9 if they were tested in accordance with AS ISO 9705:2003 and assessed in accordance with AS 5637.1:2015. The classification in accordance with C/VM2- Verification Method: Framework for fire safety design is also presented in Table 10.

Table 9 Variations and assessment outcome – Classification in accordance with AS 563.1:2015

Panel	Panel finish	Thickness	Exposed surface area	Group number	$SMOGRA_{RC}$ (in $m^2s^{-2} \times 1000$)
Surround by Laminex™ Moisture Resistant MDF wall panelling	Water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper	9 mm – 18 mm	Maximum 152%	3	<100
The outcome of this assessment is applicable to Laminex routed panels only. Perforated panels were not considered in this assessment.					

Table 10 Variations and assessment outcome – Classification in accordance with C/VM2- Verification Method: Framework for fire safety design

Panel	Panel finish	Thickness	Exposed surface area	Group number	Average smoke production rate (m^2/s)
Surround by Laminex™ Moisture Resistant MDF wall panelling	Water-based acrylic primer paint or Melamine/formaldehyde resin impregnated paper	9 mm – 18 mm	Maximum 152%	3	<5.0
The outcome of this assessment is applicable to Laminex routed panels only. Perforated panels were not considered in this assessment.					

6. Validity

Warringtonfire Australia does not endorse the tested or assessed product in any way. The conclusions of this assessment 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 conditions.

Due to the nature of fire testing and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

This assessment is based on test data, information and experience available at the time of preparation. If contradictory evidence becomes available to the assessing authority the assessment will be unconditionally withdrawn and the report sponsor will be notified in writing. Similarly, the assessment should be re-evaluated, if the assessed construction is subsequently tested since actual test data is deemed to take precedence.

The published procedures for the conduct of tests and the assessment of test results are subject to constant review and improvement. It is therefore recommended that this report be reviewed on, or before, the stated expiry date.

This assessment represents our opinion about the performance of the proposed systems expected to be demonstrated on a test in accordance with AS ISO 9705:2003, based on the evidence referred to in this report.

This assessment is provided to Laminex Group Pty Ltd for their own specific purposes. This report may be used as Evidence of Suitability in accordance the requirements of the relevant National Construction Code. Building certifiers and other third parties must determine the suitability of the systems described in this report for a specific installation.

Appendix A Drawings and additional information

Table 11 Details of drawings

Drawing title	Dwg no	Drawn by
Heat release rate vs time – standard MDF	Figure 1	Warrintonfire (reproduced from RTF200495 R1.1)
Heat release rate vs time – MR MDF	Figure 2	Warrintonfire (reproduced from RTF210397 R1.1)
Heat release rate vs time – routed FR MDF panels	Figure 3	Warrintonfire (reproduced from RTF210023 R1.0)
Heat release rate vs time – solid FR MDF panels	Figure 4	Warrintonfire (reproduced from RTF200371 R1.0)

Appendix B Summary of supporting test data

B.1 Research paper – Ostman and Tsantaridis (1993)

Table 12 Information about test report

Item	Information about test report
Report sponsor	Swedish Institute of Wood Technology Research
Test standards	The test was done in accordance with ISO 9705
Variation to test standards	None
General description of tested specimen	As part of a research study 28 wall and ceiling lining products were tested in accordance with ISO 9705. Among the tested products, 12 mm thick standard medium density fibreboard were included. The panel density was recorded as 655 kg/m^3.
Instrumentation	The test report states that the instrumentation was in accordance with ISO 9705.

The test specimen achieved the following results – see Table 13.

Table 13 Results summary for this test report

Panel	Time to flashover, s	Average rate of smoke production, (m^2/s)
12 mm thick standard MDF	131	2.0

B.2 Test report – RTF200495 R1.1

Table 14 Information about test report

Item	Information about test report
Report sponsor	Warringtonfire
Test laboratory	Warringtonfire Unit 1 406-411 Hammond Road Dandenong VIC 3175 Australia
Test date	The reaction to fire test was conducted on 04/01/2021
Test standards	The test was done in accordance with ISO 5660-1:2015/Amd.1:2019
Variation to test standards	None
General description of tested specimen	Three standard MDF panels were tested. The panel thickness and density were recorded as 12 mm and 740.3 kg/m^3 respectively.
Instrumentation	The test report states that the instrumentation was in accordance with ISO 5660-1:2015/Amd.1:2019.

The test specimen achieved the following results – see Table 15 .

Table 15 Results summary for this test report

Panel	Time to sustained flaming, s	Peak HRR
12 mm thick standard MDF	39	210.4

B.3 Test report – RTF210397 R1.0

Table 16 Information about test report

Item	Information about test report
Report sponsor	Laminex Group Pty Ltd
Test laboratory	Warringtonfire Unit 1 406-411 Hammond Road Dandenong VIC 3175 Australia
Test date	The reaction to fire test was conducted on 11 October 2021
Test standards	The test was done in accordance with ISO 5660-1:2015/Amd.1:2019
Variation to test standards	None
General description of tested specimen	Three MR MDF panels were tested. The panel thickness and density were recorded as 9 mm and 740.3 kg/m^3 respectively.
Instrumentation	The test report states that the instrumentation was in accordance with ISO 5660-1:2015/Amd.1:2019.

The test specimen achieved the following results – see Table 15 .

Table 17 Results summary for this test report

Panel	Time to sustained flaming, s	Peak HRR
9 mm thick MR MDF	33	280.4

B.4 Test report – RTF210023 R1.0

Table 18 Information about test report

Item	Information about test report
Report sponsor	Laminex Group Pty Ltd
Test laboratory	Warringtonfire Australia, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The fire test was completed on 12 March 2021.
Test standards	The test was done in accordance with AS ISO 9705:2003.
Variation to test standards	2. Smoke obscuration measurements were made using a helium-neon laser smoke photometer, as outlined in annex H of ISO 9705-1:2016 3. The temperature in the area surrounding the fire test room, from the completion of installation until the start of the test, did not remain between 10 to 30 °C. It was between 1 and 3 °C above during the 2.5 hours immediately prior of the start of the test. These minor variations are not likely to negatively affect the test results.
General description of tested specimen	12 mm thick routed FR MDF panels were tested in accordance with AS ISO 9705:2003. The panels consisted of grey-coloured FR MDF boards which were painted on the exposed side with white-coloured water-based acrylic primer. The panels were then routed along the length and had grooves running along the length on both sides. The surface density of the panels was recorded to be 783.34 kg/m^2. The exposed surface area was recorded to be 152%. The panels were screw fixed using plasterboard screws. Each panel had a groove running along the length, where a plastic strip was slotted in, effectively creating a tongue and groove joint at the panel-to-panel joins.
Instrumentation	The test report states that the instrumentation was in accordance with AS ISO 9705:2003.

The test specimen achieved the following results – see Table 19.

Table 19 Results summary for this test report

Panel	Group number	SMOGRA$_{RC}$ (in $m^2/s^2 \times 1000$)	Time to flashover
12 mm thick grey routed FR MDF panels	2	8.1	16 minutes

B.5 Test report – RTF200371 R1.0

Table 20 Information about test report

Item	Information about test report
Report sponsor	Laminex Group Pty Ltd
Test laboratory	Warringtonfire Australia, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The reaction to fire test was completed on 29 October 2020.
Test standards	The test was done in accordance with AS ISO 9705:2003.
Variation to test standards	Smoke obscuration measurements were made using a helium-neon laser smoke photometer, as outlined in annex H of ISO 9705-1:2016. This variation is not likely to negatively affect the test results.
General description of tested specimen	9 mm thick green FR MDF panels were tested in accordance with AS ISO 9705:2003. The panels were screw fixed using plasterboard screws. The panel density was recorded to be 806 kg/m^3.
Instrumentation	The test report states that the instrumentation was in accordance with AS ISO 9705:2003.

The test specimen achieved the following results – see Table 21 .

Table 21 Results summary for this test report

Panel	Group number	SMOGRA$_{RC}$ (in $m^2/s^2 \times 1000$)	Time to flashover
9 mm thick green FR MDF	2	12	17 minutes

B.6 Test report – RTF200372 R1.0

Table 22 Information about test report

Item	Information about test report
Report sponsor	Laminex Group Pty Ltd
Test laboratory	Warringtonfire Australia, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The reaction to fire test was completed on 27 October 2020.
Test standards	The test was done in accordance with AS ISO 9705:2003.
Variation to test standards	Smoke obscuration measurements were made using a helium-neon laser smoke photometer, as outlined in Annex H of ISO 9705-1:2016
General description of tested specimen	18 mm thick laminated FR MDF panel was tested accordance with AS ISO 9705:2003. The core was sandwiched between two layers of melamine impregnated decorative papers. The panel was fixed to the stud work using plasterboard screws.
Instrumentation	The test report states that the instrumentation was in accordance with AS ISO 9705:2003.

The test specimen achieved the following results – see Table 23 .

Table 23 Results summary for this test report

Panel	Group number	SMOGRA$_{RC}$ (in $m^2s^{-2} \times 1000$).
18 mm thick laminated FR MDF	2	4.4

B.7 Test report – EWFA 39410500.1

Table 24 Information about test report

Item	Information about test report
Report sponsor	Laminex Group Pty Ltd
Test laboratory	Warringtonfire Australia, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The reaction to fire test was completed on 22 April 2016.
Test standards	The test was done in accordance with AS ISO 9705:2003.
Variation to test standards	None
General description of tested specimen	16 mm thick FR MDF panels were tested in accordance with AS ISO 9705:2003. The panels were factory bonded with melamine impregnated decorative paper on both sides.
Instrumentation	The test report states that the instrumentation was in accordance with ISO 9705:2003.

The test specimen achieved the following results – see Table 25 .

Table 25 Results summary for this test report

Panel	Group number	SMOGRA$_{RC}$ (in $m^2s^{-2} \times 1000$).
16 mm thick laminated FR MDF	2	20.3

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