



FIRE ASSESSMENT REPORT

FAR 4065

ASSESSMENT REPORT ON THE FIRE PERFORMANCE OF EUROCOUSTIC
CEILING PANEL

CLIENT

Forman Building Systems Ltd.
20 Vestey Drive
Mount Wellington
Auckland 1060
New Zealand

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ASSESSMENT OBJECTIVE

This report gives the BRANZ assessment of the Group Number Classification in accordance with the New Zealand Building Code (NZBC) Verification Method C/VM2 Appendix A for the Classification of Fire Performance of Wall and Ceiling Lining Materials, for a product tested in accordance with AS/NZS 3837.

CLIENT

Forman Building Systems Ltd.
20 Vestey Drive
Mount Wellington
Auckland 1060
New Zealand

PRODUCT

Eurocoustic Ceiling Panel.

CONCLUSION

For the purposes of compliance with the NZBC Verification Method C/VM2 Appendix A for the Classification of Fire Performance of Wall and Ceiling Lining Materials, the following classification is considered applicable to the products as detailed in Section 2.

Group number (NZBC C/VM2 Appendix A)	Average Specific Extinction Area (m ² /kg)
1	Greater than 250

LIMITATION

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1. INTRODUCTION

This report gives the BRANZ assessment of the Group Number Classification in accordance with the New Zealand Building Code (NZBC) Verification Method C/VM2 Appendix A for the Classification of Fire Performance of Wall and Ceiling Lining Materials, for a product tested using the cone calorimeter in accordance with the test standard AS/NZS 3837.

2. BACKGROUND

In BRANZ Report FH 4528, Eurocoustic Acoustichoc described by the test client as a rigid self-supporting stone wool ceiling panel lined with a reinforced decorative white or coloured tissue on the exposed side and a natural glass fibre tissue on the reverse side, was subjected to testing in accordance with AS/NZS 3837 and a Group Classification number determined. In addition single indicative tests were carried out on variations of the ceiling panels. These variations were described by the client as having essentially the same composition and construction as Eurocoustic Acoustichoc, albeit with minor variations in the decorative finishes and thicknesses. These specimens were prepared and subjected to single indicative tests in accordance with AS/NZS 3837. This is summarised in Table 1.

In accordance with the NZBC C/VM2 Appendix A, for determination of Group Classification numbers using the cone calorimeter is to be in accordance with test standard ISO 5660 parts 1 and 2.

3. TESTS SUMMARY

Table 1 Summary of test specimens and their reported results

Specimen	Specimen ID	Number of specimens tested	Group number (AS/NZS 3837)	Average Specific Extinction Area (m ² /kg)
Eurocoustic	Acoustichoc	3	1	Greater than 250 (tested result 724.6)
	Boreal	1	1	Greater than 250 (tested result 365)
	Tonga Colour-Blue	1	1	Greater than 250 (tested result *)
	Minerval	1	1	Greater than 250 (tested result 1894)

* inconclusive data from single test



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4. DISCUSSION

4.1 Differences between AS/NZS 3837 and ISO 5660

ISO 5660 is essentially identical to AS/NZS 3837. It uses the same equipment, the same test conditions and specimen preparation, the key difference is in the end of test criteria. The differences are summarised Table 2.

Table 2 End of test criteria for AS/NZS 3837 and ISO 5660

	AS/NZS 3837	ISO 5660
1	2 minutes after flaming or other signs of combustion cease	30 minutes after sustained flaming.
2	Average mass loss rate over 1 minute falls below 150 g/m ² ; or	30 minutes with no ignition
3	60 minutes have elapsed, whichever occurs first	Oxygen level returns to within 100 ppm of ambient for at least 10 minutes
4	-	Mass of specimen becomes zero

The test that is the subject of this assessment was carried out in accordance with AS/NZS 3837.

Any comparison between the test methods needs to establish that sufficient data was collected when tested to AS/NZS 3837 to fully characterise the fire performance that would be captured if the end of test criteria of ISO 5660 were applied.

4.2 The AS/NZS 3837 test results

In BRANZ test FH 4528, the replicate specimens of Acoustihoc were each tested until the end of test criteria was met. In these tests, the values for time to ignition ranged from 7 s to 8 s, and test durations as determined by the AS/NZS 3837 end of test criteria ranged from 131 s to 134 s. In the single indicative tests of the alternative panels, these all performed very similarly with ignition times of 8 s or 9 s, and test durations between 132 s and 139 s. In all of these tests, they were run and data collected for at least 600 s. No specimen recorded any re-ignition or dramatic increase in the heat release rate after the AS/NZS 3837 end of test criteria was reached. Given the nature of the specimens it is unlikely that such specimens would exhibit any additional heat release had the tests been run for any longer.

It is therefore considered that if the tests had been conducted and data reduced in accordance with ISO 5660, the increased duration of the tests would not have yielded a different Group Number Classification.



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The Specific Extinction Area values are typically reduced slightly when the data is reduced over a longer period. Therefore it is considered to be conservative to use the Specific Extinction Area from testing to AS/NZS 3837 directly.

4.3 The average specific extinction area

In accordance with NZBC Verification Method C/VM2 Appendix A, samples achieving either a Group number classification 1 or 2, and with an average specific extinction area less than 250 m²/kg are identified with "S" post-script to the Group number. This is not applicable to specimens achieving a Group 3 classification.

5. CONCLUSION

It is considered that for the purposes of compliance with the NZBC Verification Method C/VM2 Appendix A, the classification in Table 3 is considered applicable to the product as described.

Table 3 Summary of Assessed Performance in Accordance with NZBC Verification Method C/VM2 Appendix A

Specimen	Specimen ID	Group number (AS/NZS 3837)	Average Specific Extinction Area (m ² /kg)
Eurocoustic	Acoustichoc	1	Greater than 250
	Boreal		
	Tonga Colour-Blue		
	Minerval		



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