

BRANZ Fire Test Report

FH21516-01-1

CONE CALORIMETER TEST OF NAVCOMPACT IN ACCORDANCE WITH ISO 5660

CLIENT

New Age Veneers
Unit 11/22-24 Beaumont Road
Mount Kuring-Gai
NSW 2080
Australia



All tests and procedures reported herein, unless indicated, have been performed in accordance with the laboratory's scope of accreditation



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TEST SUMMARY

Objective

To conduct cone calorimeter testing and reduce the data in accordance with:

- ISO 5660:2015

The testing was carried out to provide data for the Calculation of a Group Number in accordance with NZBC Building Product Specifications, Section 8.5 and AS 5637.1:2015.

Test sponsor

New Age Veneers
Unit 11/22-24 Beaumont Road
Mount Kuring-Gai
NSW 2080
Australia

Description of test specimen

The product is described by the client as Navcompact, a nominally 13 mm thickness compact laminate panel, consisting of a highly compressed phenolic resin-impregnated kraft paper core, with a nominally 0.5 mm thickness Olefin decorative film facing on both sides. The tested samples had the Toorak woodgrain finish film applied. The panel was tested both with and without the decorative facing and Navcompact samples were restrained with wire ties in the sample frame after an initial sample was observed to warp in the frame and expand up towards the cone heater.

Date of tests

3rd February, 13th and 17th March 2026

LIMITATION

The results reported here relate only to the item/s tested.

TERMS AND CONDITIONS

This report is issued in accordance with the Terms and Conditions as detailed and agreed in the BRANZ Services Agreement for this work.



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TO WHOM IT MAY CONCERN

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Signed:

Jennifer Evans
NATA CEO

Date: 24 March 2014

Dr Llewellyn Richards
IANZ CEO

Date: 24th March 2014



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DOCUMENT REVISION STATUS

ISSUE NO.	DATE ISSUED	DESCRIPTION	AUTHOR	REVIEWER
1	10/04/2026	Initial Issue	LMG	LQG



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1. GENERAL

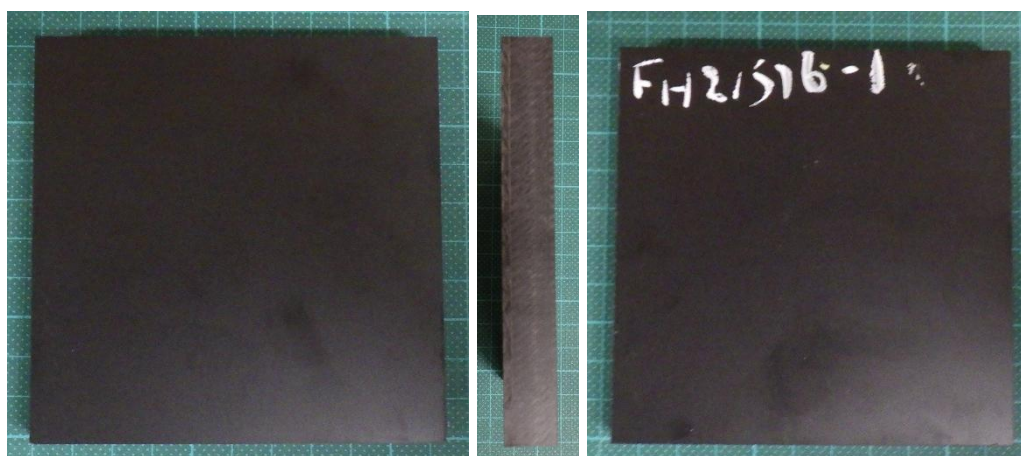
1.1 Sample description

The product submitted by the client for testing was identified by the client as Navcompact, a nominally 13 mm thickness compact laminate panel, consisting of a highly compressed phenolic resin-impregnated kraft paper core, with a nominally 0.5 mm thickness Olefin decorative film facing on both sides. The tested samples had the Toorak woodgrain finish film applied. The panel was tested both with and without the decorative facing and Navcompact samples were restrained with wire ties in the sample frame after an initial sample was observed to warp in the frame and expand up towards the cone heater. Figure 1 and 2 illustrate representative specimens of those tested.

Figure 1: Representative specimen of Navcompact (Exposed face on left, Edge view centre, reverse face on right)



Figure 2: Representative specimen of Navcompact core (Exposed face on left, Edge view centre, reverse face on right)



1.2 Sample measurements

The following physical parameters were measured for each specimen prior to testing.

Table 1: Physical parameters

Client ID	Specimen ID	Initial properties		Overall apparent density (kg/m ³)	Colour
		Mass (g)	Mean thickness (mm)		
Navcompact core	FH21516-1-50-1	185.3	13.1	1411	Black
Navcompact Toorak	FH21516-2-50-3	185.6	13.0	1428	Light brown woodgrain
	FH21516-2-50-4	186.3	13.0	1433	
	FH21516-2-50-5	185.4	13.0	1426	

2. EXPERIMENTAL PROCEDURE

2.1 Test standard

The tests were carried out and data reduced according to the test procedures described in ISO 5660 (2015), Reaction-to-fire tests – Heat release, smoke production and mass loss rate; (the test standard). The sample preparation and test procedure were as described in 2.4 and 2.5.

2.2 Test date

The tests were conducted on 3rd February, 13th and 17th March 2026 by Ms Lisa Grant at BRANZ Limited laboratories, Judgeford, New Zealand.

2.3 Specimen conditioning

All specimens were conditioned to moisture equilibrium (constant weight), at a temperature of $23 \pm 2^\circ\text{C}$ and a relative humidity of $50 \pm 5\%$ immediately prior to testing.

2.4 Specimen wrapping and preparation

All tests were conducted and the specimens prepared in accordance with the test standard. The spark igniter and the stainless-steel retainer frame were used. All specimens were wrapped in a single layer of aluminium foil, covering the unexposed surfaces and the Navcompact samples were restrained in the sample frame with four wire ties.

2.5 Test programme

The test program consisted of two indicative and two further replicate specimens tested at an irradiance level of 50 kW/m^2 . All tests were carried out with the specimen horizontal, and with a nominal duct flow rate of $0.024 \text{ m}^3/\text{s}$.

2.6 Calculation of heat release without ignition

If a tested specimen does not display ignition, the average heat release rate values are to be calculated from the last negative heat release reading after the test begins.

If the last recorded negative heat release reading is not able to be established as there were multiple negative heat release readings over the course of the test, average values are calculated from the first positive heat release reading after the start of the test.

2.7 Specimen selection

BRANZ was not involved in the selection of the materials submitted for testing. The test materials used were supplied to the laboratory by the client.



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3. INDICATIVE TEST RESULTS

Indicative tests were conducted on specimens FH21516-1-50-1 and FH21516-2-50-3 to demonstrate comparative performance of the product both with and without the decorative film.

Table 2: Indicative test results and reduced data

Specimen ID	Irradiance (kW/m ²)	Time to Ignition (s)	Peak Heat Release Rate (kW/m ²)	Total Heat Released (MJ/m ²)	Mean Average Specific Extinction Area (m ² /kg)
FH21516-1-50-1	50	63	138.0	153.4	42.0
FH21516-2-50-3	50	39	295.1	156.1	61.0

Note: Shaded row - Specimen 1 result for replicate test sample.

As shown in Table 2 above, the FH21516-2-50-3 specimen exhibited the fastest time to ignition and highest heat release rates and was selected for replicate testing to represent the entire range.

4. TEST RESULTS AND REDUCED DATA

4.1 Test results and reduced data – ISO 5660

The test results obtained for the Navcompact panel, as described in Section 1, are presented in Table 3 below. The data has been reduced in accordance with Section 2.1.

Table 3: Test results and reduced data – ISO 5660

Material	Test specimens as described in Section 1 (in accordance with ISO 5660)			Mean
Specimen test number	FH21516-2-50-3	FH21516-2-50-4	FH21516-2-50-5	
Test Date	13/03/2026	13/03/2026	17/03/2026	
C-Factor	0.0427	0.0427	0.0444	0.0433
Time to sustained flaming	s	39	42	43
Observations ^a	Refer to Table 4			
Test duration ^b	s	1839*	1842*	1843*
Mass remaining, m_f	g	66.6	64.6	64.8
Mass pyrolyzed	%	64.1	65.3	65.1
Specimen mass loss ^c	kg/m ²	13.4	13.7	13.6
Specimen mass loss rate ^c	g/m ² s	7.5	7.6	7.5
Heat release rate				
peak, \dot{q}_{max}''	kW/m ²	295.1	320.9	313.0
average, \dot{q}_{avg}''				
Over 60 s from ignition ^d	kW/m ²	182.7	187.5	193.4
Over 180 s from ignition ^d	kW/m ²	115.9	116.9	121.6
Over 300 s from ignition ^d	kW/m ²	97.2	98.7	102.9
Total heat released	MJ/m ²	156.1	163.8	168.9
Average Specific Extinction Area	m ² /kg	61.0	83.8	65.9
Effective heat of combustion ^d , $\Delta h_{c,eff}$	MJ/kg	11.6	11.9	12.4
Total smoke production				
Non-flaming $S_{A,1}$	m ² /m ²	2.9	3.3	4.6
Flaming $S_{A,2}$	m ² /m ²	818.7	1150.7	894.0
Total $S_A = S_{A,1} + S_{A,2}$	m ² /m ²	821.6	1153.9	898.6

Notes: ^a no significant observations were recorded

^b determined by * 30 minutes after time to sustained flaming

^c from ignition to end of test; ^d from the start of the test



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4.2 Observations

Table 4: Observations and incidents recorded during testing

Sample ID	Time (s)	Description
FH21516-2-50-3	9	Surface film begins bubbling
	30	Audible crackling sounds and surface spalling begins
	47	Sustained flaming and ignition observed
FH21516-2-50-4	8	Surface film begins bubbling
	30	Audible crackling sounds and surface spalling begins
	40	Transitory flaming observed
	42	Sustained flaming and ignition observed
FH21516-2-50-5	7	Surface film begins bubbling
	32	Audible crackling sounds and surface spalling begins
	43	Sustained flaming and ignition observed

5. VARIABILITY ANALYSIS

The test standards require that the mean heat release rate (HRR) readings over the first 180 seconds from ignition for the three specimens should differ by no more than 10 % of the arithmetic mean of the three readings. In the event of this criterion not being met, a further three specimens are required to be tested. Specimens which do not ignite have values calculated as detailed in Section 2.6.

Table 5 presents the HRR results for each specimen and their comparison with the arithmetic mean:

Table 5: Heat release rate

Specimen ID	Average HRR over 180 s from ignition	Arithmetic mean	% difference from the arithmetic mean
FH21516-2-50-3	115.9	118.1	-1.9
FH21516-2-50-4	116.9		-1.0
FH21516-2-50-5	121.6		2.9

Table 5 identifies that all the specimens exposed to 50 kW/m² irradiance met the acceptance criteria, therefore a further three specimens were not required.

6. SUMMARY

The report summary for the specimens as described in Section **Error! Reference source not found.**, exposed to an irradiance of 50 kW/m² is given in Table 6 below with rates of heat release and smoke production illustrated in Figure 3 and Figure 4.

Table 6: Report summary

Mean Specimen thickness (mm)	Irradiance (kW/m ²)	Mean Time to Ignition (s)	Mean Peak Heat Release Rate (kW/m ²)	Total Heat Released (MJ/kg)	Average Specific Extinction Area (m ² /kg)
13.0	50	41	309.7	162.9	70.2

Figure 3: Rate of heat release versus time

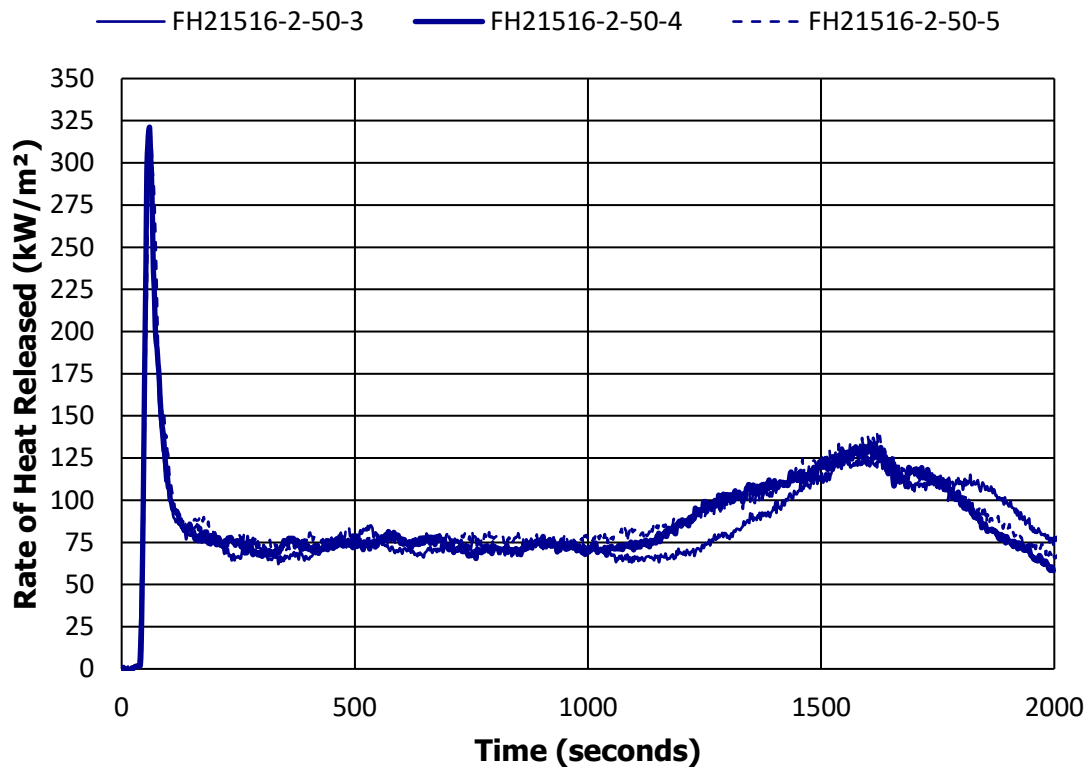
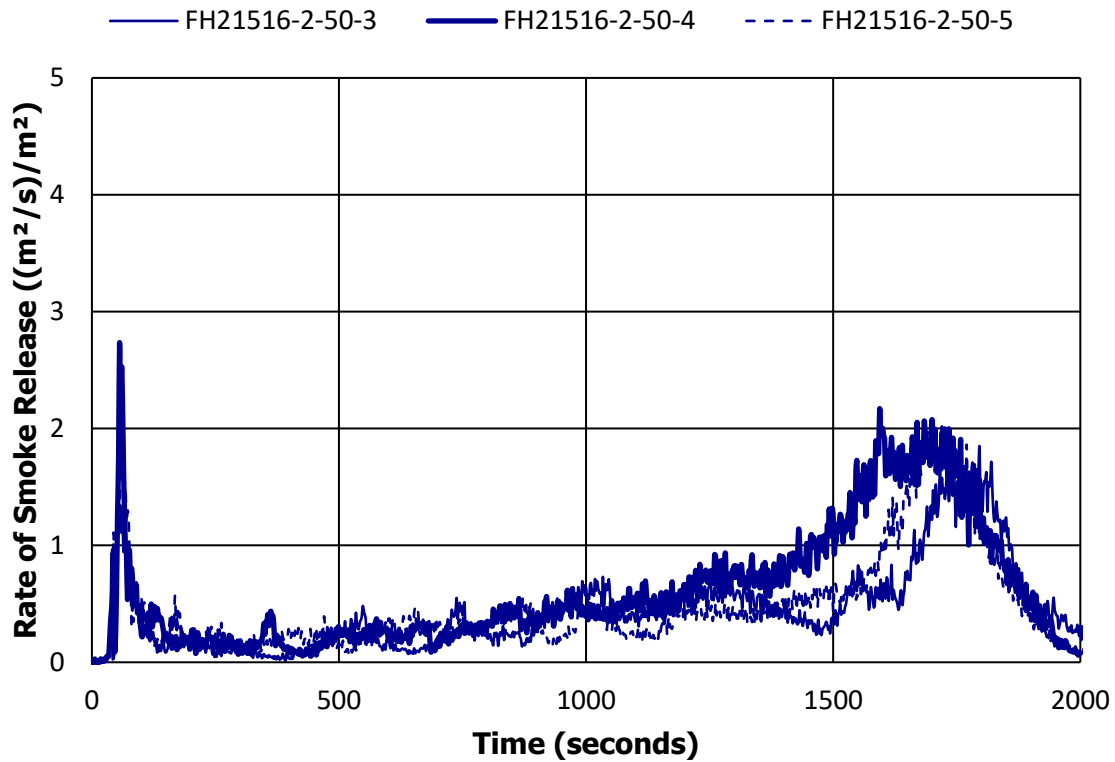


Figure 4: Rate of smoke production versus time



7. DISCUSSION

Navcompact samples were tested with the decorative film in place, and with the resin core directly exposed. Both specimens achieved the same indicative Group Number classification, and the most onerous variant was tested in full.

END OF TEST REPORT



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GROUP NUMBER CLASSIFICATION



This is to certify that the specimens described below were tested by BRANZ in accordance with ISO 5660 for determination of Group Number classification

Test Sponsor

New Age Veneers
Unit 11/22-24 Beaumont Road
Mount Kuring-Gai
NSW 2080
Australia

Date of tests

3rd February, 13th and 17th March 2026

Reference BRANZ Test Report

FH21516-01-1 – 10 April 2026

Test specimens as described by the client

Navcompact

A nominally 13 mm thickness compact laminate panel, consisting of a highly compressed phenolic resin-impregnated kraft paper core, with a nominally 0.5 mm thickness Olefin decorative film facing on both sides. The tested samples had the Toorak woodgrain finish film applied. The panel was tested with and without the decorative facing and samples were restrained with wire ties in the sample frame after an initial sample was observed to warp in the frame and expand towards the cone heater.

Specimen ID	Mean Values			Colour	Indicative Group Number
	Mass (g)	Thickness (mm)	Apparent Density (kg/m ³)		
FH21516-1-50-1	185.3	13.1	1411	Black	3
FH21516-3-50-3,4,5	185.8*	13.0*	1429*	Pale Woodgrain	3

**Mean values for replicate specimens*

Discussion

Navcompact samples were tested with the decorative film in place, and with the resin core directly exposed. Both specimens achieved the same indicative Group Number classification, and the most onerous variant was tested in full.

FH21516-01-1-C1

GROUP NUMBER CLASSIFICATION



Group Number Classification in accordance with the New Zealand Building Code and NCC Australia The specimens were deemed suitable for testing and calculations for establishing a Group Number were carried out in accordance with New Zealand Building Code (NZBC) Building Product Specifications Part 8, Section 8.5, Subsection 8.5.5: Determining a material Group Number when tested to ISO 5660.

Testing was performed in accordance with ISO 5660, cone calorimeter test, for the purposes of Group Number Classification as specified in the National Construction Code (NCC) Volume One, Specification 7, Clause S7C4. As per Section 9 (n) of AS 5637.1, It was deemed valid to test the particular material in the cone calorimeter for the determination of National Construction Code NCC group number. Classification for the sample as described above is given in the table below.

Building Code Document	Group Number Classification
NZBC Building Product Specifications, Part 8, Section 8.5, Subsection 8.5.5, Table 8.5.5.3	Group 3
NCC 2022 Volume One Specification 7, Clause S7C4, determined in accordance with AS 5637.1:2015	Group 3 The average specific extinction area was less than the 250 m ² /kg limit

Regulatory authorities are advised to examine test reports before approving any product.

Issued by

L. M. Grant
Fire Testing Engineer
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Fire Testing Engineer
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L. Q. Greive
Fire Testing Engineer
IANZ Approved Signatory

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