# Certificate of Test

NE5820 REPORT No.: FNE9310



AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

TRADE NAME: Eurolight Lightweight panel

SPONSOR: Nikpol Pty. Ltd.
46 Yarraman Place
VIRGINIA QLD
AUSTRALIA

DESCRIPTION OF SAMPLE: The sponsor described the tested specimen as a sandwich panel comprising three layers:

Surface: 8 mm thick melamine faced particleboard;
Core: 16 mm thick cardboard honeycomb;
Backing: 8 mm thick melamine faced particleboard.

Nominal total thickness: 32 mm
Nominal mass: 12.9 kg/m²
Colour: white face

TEST PROCEDURE: Nine samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

OBSERVATION: Due to variable behaviour, nine specimens were tested, as required by Cluse 2.8 of AS/NZS 1530.3:1999.

RESULTS: The following means and standard errors were obtained:

| Parameter | Mean | Standard Error |
|---|---|---|
| Ignition Time (min) | 5.4 | 0.7 |
| Flame Spread Time (s) | 79.0 | 43.1 |
| Heat Release Integral (kJ/m²) | 90.7 | 13.8 |
| Smoke Release ($log_{10}D$) | -1.736 | 0.033 |

For regulatory purposes these figures correspond to the following indices:

| Ignitability Index (0-20) | Spread of Flame Index (0-10) | Heat Evolved Index (0-10) | Smoke Developed Index (0-10) |
|---|---|---|---|
| 15 | 6 | 3 | 2 |

The results of this fire test 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.

DATE OF TEST: 5 February 2009
Issued on the 5th day of March 2009 without alterations or additions.

for Russell Collins
Testing Officer

Garry E Collins
Manager, Fire Testing and Assessments

NATA

This document is issued in accordance with NATA's accreditation requirements.

**CSIRO Materials Science and Engineering**
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
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CSIRO

**Test on a particleboard sandwich panel at 50-kW/m² irradiance in accordance with AS/NZS 3837:1998**

**Report number FNK 9305**
CSIRO job number NK5821
Date of Issue: 19 February 2009

Client
**Nikpol Pty. Ltd.**

**Commercial-in-confidence**


**CSIRO – Materials Science and Engineering**
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***Use of Reports – Testing***

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## SUMMARY

SPONSORED INVESTIGATION REPORT No. FNK 9305

TEST ON A PARTICLEBOARD SANDWICH PANEL AT 50-kW/m² IRRADIANCE IN ACCORDANCE WITH AS/NZS 3837:1998

Sample Identification:

Eurolight Lightweight panel

Sponsor:

Nikpol Pty. Ltd.
46 Yarraman Place
VIRGINIA QLD
AUSTRALIA

Manufacturers:

Fritz Egger GmbH & Co.
Holzwerkstoffe
Welberndorf 20, AT-6380
ST. JOHANN IN TIROL
AUSTRIA

Job Number:

NK5821

Test Date:

5 February 2009

Description of Sample:

The sponsor described the tested specimen as a sandwich panel comprising three layers:

Surface: 8 mm thick melamine faced particleboard;
Core: 16 mm thick cardboard honeycomb;
Backing: 8 mm thick melamine faced particleboard.

Nominal total thickness: 32 mm
Nominal mass: 0.48 kg/m²
Colour: white face

Documentation:

The following documents were supplied by the sponsor as a full and complete description of the sample:

Test Agreement form and Attachment A dated 9 October 2008

Conditioning of Specimens:

Prior to the test, the specimens were conditioned to constant mass at a temperature of 23 ± 2°C and a relative humidity of 50 ± 10%.

Test Method:

Tests were performed in accordance with Australian/New Zealand Standard 3837:1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter. All test specimens were exposed in the horizontal orientation with the standard pilot operating.

Nominally 100 x 100-mm specimens were tested as supplied. Specimens were tested with the use of an edge frame. The edge frame reduces the test surface area to 0.0088-$m^2$, and this is the area used in calculations. The specimen was restrained using a wire grid.

For the test, specimens were wrapped in aluminium foil so that the four edges and the bottom of the specimen were covered. The foil formed a shallow tray that retained any molten material during testing.

Three specimens were tested at an irradiance level of 50-$kW/m^2$.

The nominal exhaust system flow rate for all tests was 0.024-$m^3/s$.

A measured quantity of ethanol was burnt to obtain a C factor to be used in the Heat Release calculations.

Duration of Test:

The test is terminated when any one of the following is applicable:

1. 2 minutes have passed since all flaming from the specimen ceased; and
2. the average mass loss over a 1 minute period has dropped below 150-$g/m^2$;
3. 60 minutes have elapsed; or
4. the specimen fails to ignite after a 10 minute exposure.

Observations:

Specimen 1

The specimen began to char and smoke after 18 seconds exposure to the test. The specimen ignited during the test. The test was terminated when average mass loss over a 1 minute period has dropped below 150-$g/m^2$.

Specimen 2

The specimen began to char and smoke after 14 seconds exposure to the test. The specimen ignited during the test. The test was terminated when average mass loss over a 1 minute period has dropped below 150-$g/m^2$.

Specimen 3

The specimen began to char and smoke after 19 seconds exposure to the test. The specimen ignited during the test. The test was terminated when average mass loss over a 1 minute period has dropped below 150-$g/m^2$.

Results:

The results of tests as specified in the Standard are summarised in Table 1.



## APPENDICES:



TESTED BY:

for

Russell Collins
Testing Officer

Garry E Collins
Manager, Fire Testing and Assessments

19 February 2009

Test Details:

Date of test: 05/02/09

Test Report Date: 19/02/09

Ethanol burn ('C' factors): 0.0437

| | Irradiance (kW/m²) | Time to sustained burning (s) | Test duration (s) | Thickness (mm) | Specimen mass (g) | Mass remaining (g) | Mass loss (g) | Percent of mass pyrolysed (%) | Average rate of mass loss (g/m².s) | Peak HRR (kW/m²) | Average HRR (first 60s after ign) | Average HRR (first 180s after ign) | Average HRR (first 300s after ign) | Total heat released (MJ/m²) | Average EHC (MJ/kg) | Average specific extinction area (m²/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 1 | 50 | 37 | 1115 | 32.37 | 133 | 86.40 | 46.60 | 35.04 | 12.44 | 243.8 | 98.0 | 166.8 | 155.1 | 146.78 | 27.72 | 113.7 |
| Sample 2 | 50 | 48 | 1200 | 32.34 | 124.95 | 32.75 | 92.20 | 73.79 | 8.77 | 261.7 | 198.8 | 150.7 | 145.4 | 122.93 | 11.73 | 16.0 |
| Sample 3 | 50 | 44 | 1065 | 32.33 | 126.02 | 44.42 | 81.60 | 64.75 | 8.94 | 259.2 | 171.5 | 136.0 | 129.1 | 105.84 | 11.41 | 25.2 |
| Mean | | 43.0 | 1126.7 | | 128.0 | 54.5 | 73.5 | 57.9 | 10.0 | 254.9 | 156.1 | 151.2 | 143.2 | 125.2 | 17.0 | 51.6 |
| SD | | 5.6 | 68.3 | | 4.4 | 28.2 | 23.9 | 20.3 | 2.1 | 9.7 | 52.1 | 15.4 | 13.2 | 20.6 | 9.3 | 54.0 |

Table 1- Results of tests

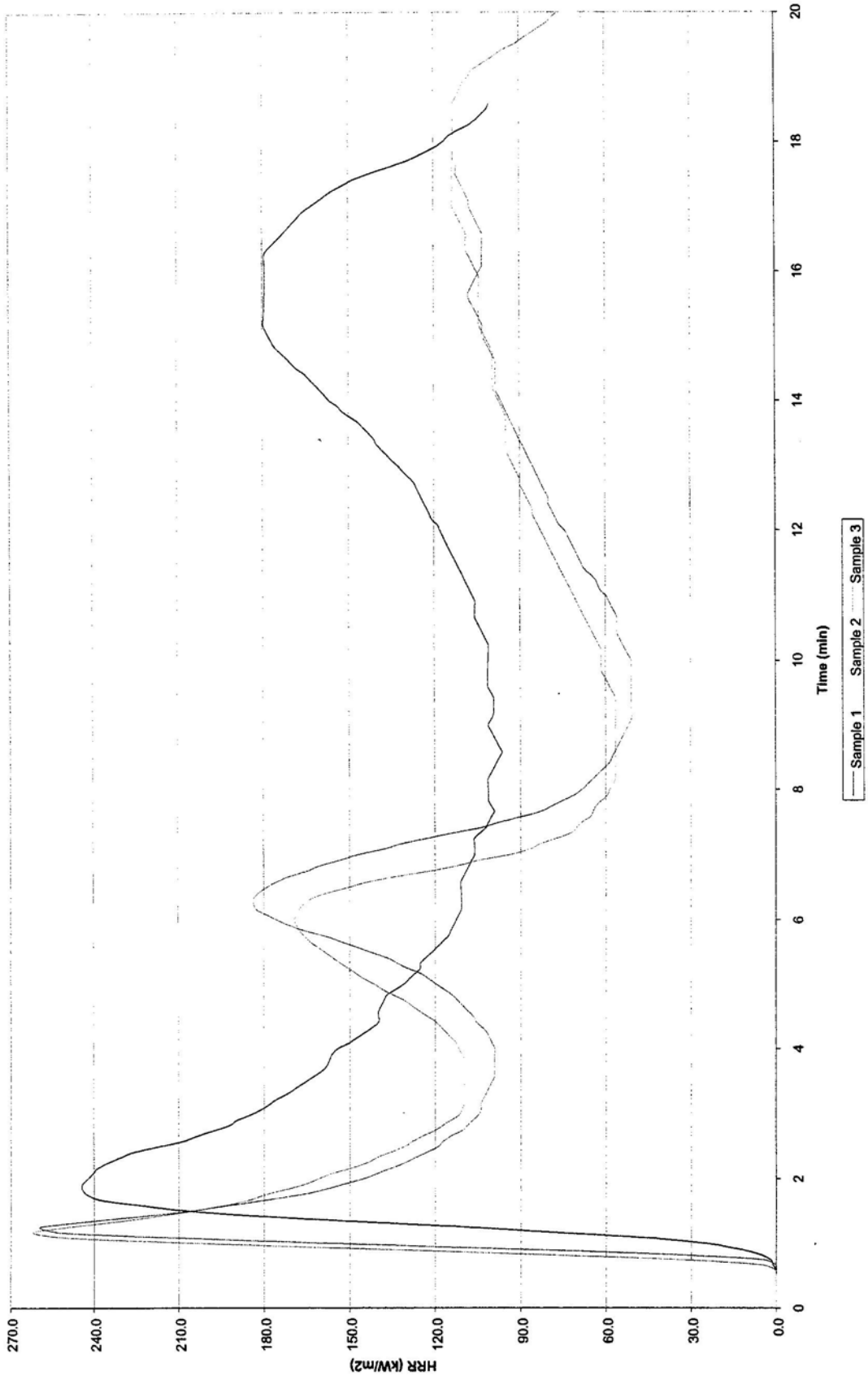


Figure 1- Heat Release Rate

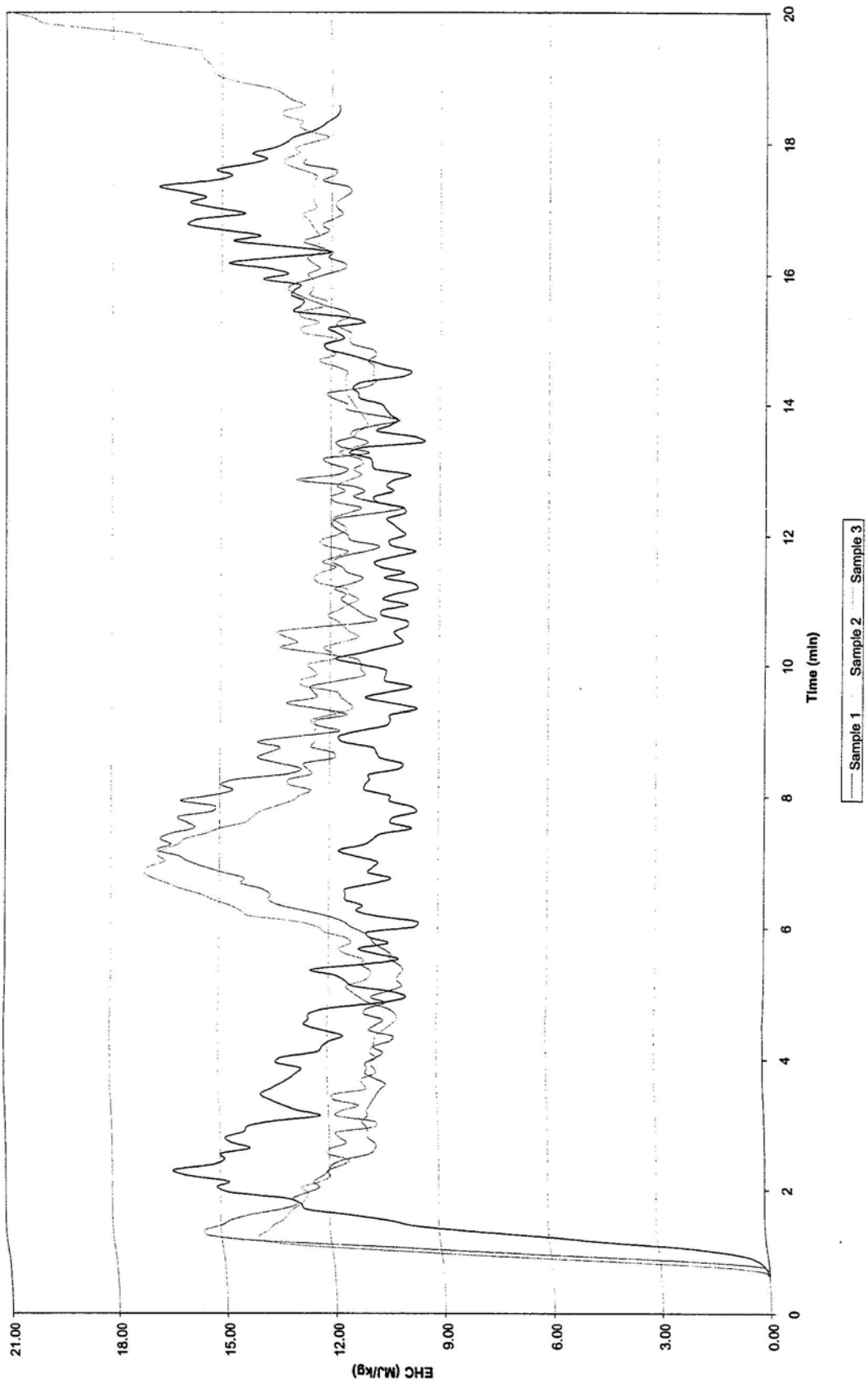


Figure 2- Effective Heat of Combustion

Certificate of Assessment 1-1219

# *Certificate of Assessment*

NK5821

No. 1219



This is to certify that the specimen described below was tested by the CSIRO Division of Materials Science and Engineering in accordance with Australian/ New Zealand Standard 3837, Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter. 1998, at 50 kW/m², on behalf of:

Nikpol Pty. Ltd.
48 Yarraman Place
VIRGINIA QLD
AUSTRALIA

A full description of the test specimen and the complete test results are detailed in the Division's sponsored investigation report numbered FNK 9305.

SAMPLE IDENTIFICATION: Eurolight Lightweight panel

DESCRIPTION OF SAMPLE: The sponsor described the tested specimen as a sandwich panel comprising three layers:

Surface: 8 mm thick melamine faced particleboard;
Core: 16 mm thick cardboard honeycomb;
Backing: 8 mm thick melamine faced particleboard.

Nominal total thickness: 32 mm
Nominal mass: 0.48 kg/m²
Colour: white face

SAMPLE CLASSIFICATION: Group Number: Group 3
(In accordance with Specification A2.4 of the Building Code of Australia.)

Average specific extinction area: 51.6 m²/kg
(Refer to Specification C1.10a section 3(c) of the Building Code of Australia.)

Testing Officer: Russell Collins Date of Test: 5 February 2009

Issued on the 12th day of February 2009 without alterations or additions.

Garry E Collins
Manager, Fire Testing and Assessments

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