



GMA Certification  
Group

*Leaders in  
Building Certification Services*

## **NCC Compliance Report**

Project: saveBOARD  
For: Upcycled Building Materials Pty Ltd  
Prepared By: GMA Certification Group  
File Ref: 20230170  
Revision: Issue A

# Document Control

Job Title





**saveBOARD**

File Ref:

20230170.

Document  
Title  
Client

**NCC Compliance Report**  
**Upcycled Building Materials Pty Ltd**

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		Name	Geoff Mitchell		
		Signature			
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## 1.0 Introduction

Upcycled Building Materials Pty Ltd has requested GMA Certification Group (GMA) review the documentation and comment on the National Construction Code (NCC) compliance of the saveBOARD product.

This report will review the suitability of the product to be used as non-structural internal wall and ceiling lining.

saveBOARD Internal Lining Board (ILB) is a unique structural composite panel made from 100% upcycled materials.

The core of the product is made from shredded and compressed composite packaging, giving the user a sustainable and superior performing product.

saveBOARD does not use glues, resins or other such biological or environmentally harmful products. During construction, or in-service use saveBOARD does not create harmful dusts, vapours, or other potentially harmful Volatile Organic Compounds (VOC's).

The saveBOARD construction boards are semi-vapour permeable, durable wall and roofing products. The product is designed for use with timber or steel framing and is finished with a moisture resistant fibreglass facer on top side and a recycled paper facing on the internal side.

Using saveBOARD reduces embodied energy by -2.7 kgCO<sub>2</sub> eq/sqm. This is a significant climate change benefit compared to traditional building materials which add carbon to a building.

saveBOARD ILB is manufactured in New Zealand and Australia.

### 1.1 Limitations

This report is consistent with the objectives and limitations of the NCC and therefore does not consider major acts of arson, multiple simultaneous ignition sources, protection of property, business interruption or losses, or any personal or moral obligations of the owners / occupiers.

## 1.2 The National Construction Code

The NCC is a performance-based code containing all Performance Requirements for the construction of buildings. It is built around a hierarchy of guidance and code compliance levels, with the Performance Requirements being the minimum level that buildings and building elements must meet. A building solution will comply with the NCC if it satisfies the Performance Requirements, which are the mandatory requirements of the NCC.

The Performance Requirements are also supported by Governing Requirements, which cover other aspects of applying the NCC including its interpretation, reference documents, the acceptance of design and construction (including related evidence of suitability/documentation) and the classification of buildings within the NCC.

The key to the performance based NCC is that there is no obligation to adopt any material, component, design factor or construction method. This provides for a choice of compliance pathways. The Performance Requirements can be met using either a Performance Solution (Alternative Solution) or using a Deemed-to-Satisfy (DTS) Solution.

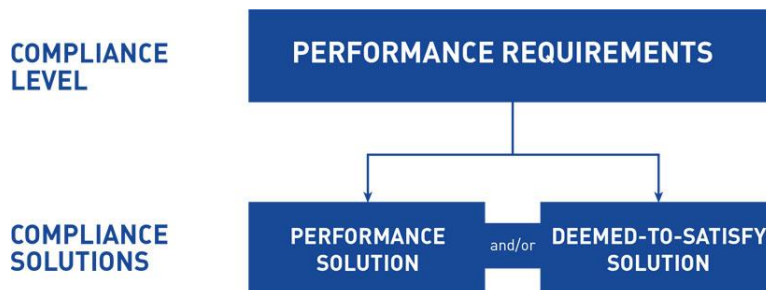


Figure 1 – How to comply with the NCC

## 2.0 Complying with the NCC

**NCC2019.1** at A2.3 gives the requirements to be considered for a solution to meet the Deem-to-satisfy provisions.

### A2.3 Deemed-to-Satisfy Solution

- (1) A solution that complies with the *Deemed-to-Satisfy Provisions* is deemed to have met the *Performance Requirements*.
- (2) A *Deemed-to-Satisfy Solution* can show compliance with the *Deemed-to-Satisfy Provisions* through one or more of the following *Assessment Methods*:
  - (a) Evidence of suitability in accordance with Part A5 that shows the use of a material, product, *plumbing* and *drainage product*, form of construction or design meets a *Deemed-to-Satisfy Provision*.
  - (b) *Expert Judgement*

**NCC 2022** mirrors the above at **A2G3**.

## 3.0 Evidence of Suitability

**NCC 2019.1** at Clause **A5.2** gives.

- (1) Subject to A5.4, A5.5 and A5.6, evidence to support that the use of a material, form of construction or design meets a Performance Requirement, or a Deemed-to-Satisfy Provision may be in the form of one or any combination of the following:
  - a) A current Codemark Australia or Codemark Certificate of Conformity
  - b) A current Certificate of Accreditation
  - c) A current certificate, other than a certificate described in (a) or (b), issued by a certification body stating that the properties and performance of a material, product, form of construction or design fulfill specific requirements of the BCA.
  - d) A report issued by an Accredited Testing Laboratory that—
    - (i) demonstrates that a material, product or form of construction fulfills specific requirements of the BCA.
    - o sets out tests the material, product or form of construction has been subjected to and the results of those testes and any other relevant information that has been relied upon to demonstrate it fulfills specific requirements of the BCA.
  - e) A certificate or report from a professional engineer or other appropriately qualified person that—
    - (i) certifies that a material, product form of construction or design fulfills specific requirements of the BCA: and
    - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfills specific requirements of the BCA.

- f) Another form of documentary evidence such as but not limited to a Product Technical Statement., that—
  - (i) demonstrates that a material, product form of construction or design fulfills specific requirements of the BCA: and
  - (ii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfills specific requirements of the BCA.

## **NCC 2022 at A5G3 gives:**

- (1) Subject to A5G5, A5G6 and A5G7 evidence to support that the use of a material, form of construction or design meets a Performance Requirement, or a Deemed-to-Satisfy Provision may be in the form of one or any combination of the following:
- a) A current Codemark Australia or Codemark Certificate of Conformity
  - b) A current Certificate of Accreditation
  - c) A current certificate, other than a certificate described in (a) or (b), issued by a certification body stating that the properties and performance of a material, product, form of construction or design fulfill specific requirements of the BCA.
  - d) A report issued by an Accredited Testing Laboratory that—
    - (iii) demonstrates that a material, product or form of construction fulfills specific requirements of the BCA.
    - o sets out tests the material, product or form of construction has been subjected to and the results of those testes and any other relevant information that has been relied upon to demonstrate it fulfills specific requirements of the BCA.
  - e) A certificate or report from a professional engineer or other appropriately qualified person that—
    - (iv) certifies that a material, product form of construction or design fulfills specific requirements of the BCA: and
    - (v) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfills specific requirements of the BCA.
  - f) Another form of documentary evidence such as but no limited to a Product Technical Statement., that—
    - (vi) demonstrates that a material, product form of construction or design fulfills specific requirements of the BCA: and
    - (vii) sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfills specific requirements of the BCA.

## 4.0 Relevant Performance Requirement

This assessment is against **NCC2019.1 CP2**.

- (a) A building must have elements which will, to the degree necessary, avoid the spread of fire—
  - (i) to exits; and
  - (ii) to sole-occupancy units and public corridors; and
  - (iii) between buildings; and
  - (iv) in a building.
- (b) Avoidance of the spread of fire referred to in (1) must be appropriate to—
  - (i) the function or use of the building; and
  - (ii) the fire load; and
  - (iii) the potential fire intensity; and
  - (iv) the fire hazard; and
  - (v) the number of storeys in the building; and
  - (vi) its proximity to other property; and
  - (vii) any active fire safety systems installed in the building; and
  - (viii) the size of any fire compartment; and
  - (ix) fire brigade intervention; and
  - (x) other elements they support; and
  - (xi) the evacuation time.

and **NCC2022 C1P2**

- (1) A building must have elements which will, to the degree necessary, avoid the spread of fire—
  - (a) to exits; and
  - (b) to sole-occupancy units and public corridors; and
  - (c) between buildings; and
  - (d) in a building.
- (2) Avoidance of the spread of fire referred to in (1) must be appropriate to—
  - (a) the function or use of the building; and
  - (b) the fire load; and
  - (c) the potential fire intensity; and



- (d) the fire hazard; and
- (e) the number of storeys in the building; and
- (f) its proximity to other property; and
- (g) any active fire safety systems installed in the building; and
- (h) the size of any fire compartment; and
- (i) fire brigade intervention; and
- (j) other elements they support; and
- (k) the evacuation time.

## 5.0 Relevant Deemed-to-Satisfy Requirements

### NCC 2019.1

#### C1.10 Fire Hazard Properties (in part)

- (a) The *fire hazard properties* of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification C1.10:
  - (i) Floor linings and floor coverings.
  - (ii) Wall linings and ceiling linings.**
  - (iii) Air-handling ductwork.
  - (iv) Lift cars.
  - ...

#### Specification C1.10 Clause 4

##### 4. Wall and ceiling linings

- (a) A wall or ceiling lining system must comply with the group number specified in Table 3 and for buildings not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 have—
  - (i) a smoke growth rate index not more than 100; **or**
  - (ii) an average specific extinction area less than 250 m<sup>2</sup>/kg.
- (b) A group number of a wall or ceiling lining and the smoke growth rate index or average specific extinction area must be determined in accordance with AS 5637.1.

**Table 3 Wall and ceiling lining materials (material groups permitted)**

Class of building	Fire-isolated <i>exits</i> and fire control rooms	Public corridors	Specific areas	Other areas
Class 2 or 3, Unsprinklered Excluding accommodation for the aged, people with disabilities, and children	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 2 or 3, Sprinklered Excluding accommodation for the aged, people with disabilities, and children	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 3 or 9a, Unsprinklered Accommodation for the aged, people with a disability, children and <i>health-care buildings</i>	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 3 or 9a, Sprinklered Accommodation for the aged, people with a disability, children and <i>health-care buildings</i>	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 5, 6, 7, 8 or 9b <i>schools</i> , Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2,
Class 5, 6, 7, 8 or 9b <i>schools</i> , Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9b other than <i>schools</i> , Unsprinklered	Walls: 1 Ceilings: 1	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9b other than <i>schools</i> , Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3
Class 9c, Sprinklered	Walls: 1 Ceilings: 1	Walls: 1, 2 Ceilings: 1, 2	Walls: 1, 2, 3 Ceilings: 1, 2, 3	Walls: 1, 2, 3 Ceilings: 1, 2, 3

## NCC 2022

### C2D11 Fire Hazard Properties (in part)

(1) The *fire hazard properties* of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7

(a) Floor linings and floor coverings.

**(b) Wall linings and ceiling linings.**

(c) Air-handling ductwork.

(d) Lift cars

...

### Specification 7 S7C2

Linings, materials and assemblies must comply with the appropriate requirement described in Table S7C2

Table S7C2: Fire hazard property requirements

Lining, material or assembly	Requirement
Floor linings and floor coverings	S7C3
Wall linings and ceiling linings	S7C4
Air-handling ductwork	S7C5
Lift cars	S7C6
In fire control rooms subject to Specification 6 and fire isolated <i>exits</i>	S7C7
In Class 9b buildings used as a theatre, public hall or the like — fixed seating in the audience area or auditorium; and a proscenium curtain <i>required</i> by Specification 32	S7C7
Escalators, moving walkways and non- <i>required</i> non- <i>fire-isolated stairways</i> or pedestrian ramps subject to Specification 14	S7C7
<i>Sarking-type material</i>	S7C7
Attachments to internal floors, walls and ceilings	S7C7
Other materials including insulation	S7C7

### S7C4 Wall and ceiling linings

(1) A wall or ceiling lining system must comply with the group number specified in Table S7C4 and for buildings not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 have—

(a) a smoke growth rate index not more than 100; **or**

(b) an average specific extinction area less than 250 m<sup>2</sup>/kg.

(2) A group number of a wall or ceiling lining and the smoke growth rate index or average specific extinction area must be determined in accordance with AS 5637.1.

Table S7C4 Wall and ceiling lining materials (material groups permitted)

Class of building	Fire-isolated <a href="#">exits</a> and fire control rooms	Public corridors	Specific areas	Other areas
Class 2 or 3, unsprinklered, excluding accommodation for the aged, people with disabilities and children	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 2 or 3, sprinklered, excluding accommodation for the aged, people with disabilities and children	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 3 or 9a, unsprinklered, accommodation for the aged, people with a disability, children and <a href="#">health-care buildings</a>	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 3 or 9a, sprinklered, accommodation for the aged, people with a disability, children and <a href="#">health-care buildings</a>	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 5, 6, 7, 8 or 9b <a href="#">schools</a> , unsprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 5, 6, 7, 8 or 9b <a href="#">schools</a> , sprinklered	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 9b other than <a href="#">schools</a> , unsprinklered	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 9b other than <a href="#">schools</a> , sprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 9c, sprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3

## 6.0 Assessment:

Material testing certificates have been provided from Ignis Labs Pty Ltd

The NCC defines an Accredited Testing Laboratory.

*Accredited Testing Laboratory*

*One of the following:*

1. *An organisation accredited by the National Association of Testing Authorities Australia (NATA) to undertake the relevant tests.*
2. *An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.*
3. *An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.*

Ignis Labs Pty Ltd holds NATA Accreditation No 20534 for testing to ISO.IEC 17025 for

- Evaluation of fire risk (excluding electrical products) and fire mitigation performance
- Mechanical performance evaluation of components for building envelopes, framing
- and interior lining

Ignis Labs as such is recognised as an Accredited Testing Laboratory for the purposes of the NCC.

Ignis Labs Material Testing Certificate IGNL-6067-07-01C I01 R00 Dated 17.05.2022 (Attached as Appendix A) determines that saveBOARD archives:

- Group Number 3.
- Average Specific Extinction Area of 77.66 m<sup>2</sup>/kg

The Certificate of Ignis has been given authored by Benjamin Hughes- Brown in the capacity of a professional engineer.

The NCC defines a professional engineer.

Professional engineer means a person who is—

- (a) if legislation is applicable — a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable—
  - (i) registered in the relevant discipline on the National Engineering Register (NER) of the Institution of Engineers Australia (which trades as 'Engineers Australia'); or
  - (ii) eligible to become registered on the Institution of Engineers Australia's NER and has appropriate experience and competence in the relevant field.

Benjamin Hughes-Brown appears on the National Engineers Register as a Professional Engineer (Fire Safety, Mechanical)

Benjamin Hughes-Brown as such is recognised as a professional engineer for the purposes of the NCC.

## 7.0 Conclusion

In accordance with NCC 2019.1 Clause A5.2(1)(d) & (e) and NCC 2022 Clause A5G3 (1)(d) & (e) it is concluded that

saveBOARD can be used as a wall and ceiling lining in Class 2 to 9 buildings wherever a Group 3 material is permitted by Clause 4 of Specification C1.10 (NCC2019.1) or Clause S7C4 (NCC2022)

**GR Mitchell** JP, MBOINZ, FRICS, LFAIBS  
B Bld Surv, Gd Cert Bld Fire Safety, M Urb Plan.  
January 2023





# CERTIFICATE

## Material Fire Test Certificate

IGNL-6067-07-01C I01 R00

DATE OF TEST 10.05.2022  
12.05.2022  
ISSUE DATE 17.05.2022  
EXPIRY DATE 16.05.2027

**saveBOARD**  
Exposed Internal Lining

**SPONSOR**  
Upcycled Building Materials  
Australia Pty Ltd  
Level 1, 40 Albert Road  
South Melbourne, Victoria 3205

**TEST BODY**  
Ignis Labs Pty Ltd  
ABN 36 620 256 617  
3 Cooper Place  
Queanbeyan NSW 2620  
Australia  
www.ignislabs.com.au  
(02) 6111 2909  
*Test body is the test location*



**Introduction**

Ignis Labs undertook a test of the saveBOARD Exposed Internal Lining. The testing was undertaken in accordance with AS/NZS 3837:1998. The group number was predicted in accordance with AS 5637.1:2015. This is a short form AS 5637.1:2015 report.

BCA requirements specify that the Group Number of a wall or ceiling lining shall be determined in accordance with AS 5637.1:2015. Clause 5.3.1 of AS 5637.1:2015 specifies that only materials for which there are correlations between AS/NZS 3837:1998 results and AS ISO 9705:2003 results shall be tested in accordance with AS/NZS 3837:1998 for the purpose of determining a Group Number. As such, Clause 5.3.3 of AS 5637.1:2005 specifies the suitable materials with permitted correlations, and it includes wood products.

**Product Description**

The sponsor described the specimen as internal wall and ceiling lining for residential and commercial applications. It is composed of composite packaging consisting of 70% wood fibres, 22% polyethylene, 3% cellulose, 3% aluminium, and 2% other materials. It has a nominal mass of 750 kg/m<sup>3</sup> and a nominal thickness of 10 mm. Its end use is as internal wall lining.

The received specimens were a multi-layered product consisting of a brown paper backing, and an external face of compressed, multicoloured, laminated recycled paper products. It had a measured nominal density of 0.78 g/cm<sup>3</sup> and a measured nominal thickness of 10.09 mm. The recycled packaging face of the specimen was tested.

Ignis Labs was not responsible for the sampling stage. All specimens were sampled and fabricated by the test sponsor. The test results apply to the specimens as received.

AS 5637.1 Group Number: 3 | ASEA 77.66 m<sup>2</sup>/kg

**Specimen**

The test specimen has characteristics are listed below

Average specimen thickness:	10.09 mm
Average specimen pre-test mass:	80.55 g
Specimen colour:	Multicoloured

**Test Method**

Six (6) specimens were tested in accordance with the requirements of AS/NZS 3837. Prior to the test, the specimens were conditioned at an ambient temperature of 23 ±2 °C and a relative humidity 50 ±5 %.

**Reference Documents**

This certificate is based on the following documents:

- Ignis Labs Test Certificate IGNL-6067-07-01C I01R00 dated 17 May 2022.

**Notes**

1. 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.
2. As per Section 9 (n) of AS 5637.1:2015, the determination of the group number was based on the AS/NZS 3837:1998 test.
3. Clause A5.2(1)(e) of the BCA allows for evidence of suitability in relation to a report from a professional engineer that certifies that a material, product, form or construction or design fulfils specific requirements of the BCA, sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon to demonstrate it fulfils specific requirements of the BCA.
4. This report is provided in accordance with BCA Clause A5.2(1)(e) as a report from a professional engineer. In accordance with BCA Clause A5.2(1)(b) it is demonstrated that the material and testing demonstrates compliance with the requirements of the BCA in accordance with AS 5637.1:2015 in determining the group number.

**Benjamin Hughes-Brown** | FIEAust CPEng NER APEC Engineer IntPE(Aus)

Chartered Professional Engineer  
CPEng, NER (Fire Safety / Mech) 2590091, RPEQ11498, BDC-1875, PRE0000303, DEPO000317, PE0001872  
MFireSafety(UWS), BEng(UTS), GradDipBushFire(UWS), DipEngPrac(UTS), DipEng(CTI)

Version: IGNL-QF-031-Issue 03 Revision 01

**Disclaimer** These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use. The information contained in this document is provided for the sole use of the recipient and no reliance should be placed on the information by any other person. In the event that the information is disclosed or furnished to any other person, Ignis Labs Pty Ltd accepts no liability for any loss or damage incurred by that person whatsoever as a result of using the information.

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# CERTIFICATE

## Material Fire Test Certificate

IGNL-6067-07-01C I01 R00

DATE OF TEST 10.05.2022  
 12.05.2022  
 ISSUE DATE 17.05.2022  
 EXPIRY DATE 16.05.2027

AS/NZS 3837:1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter

**SPONSOR**  
**Upcycled Building Materials Australia Pty Ltd**  
 Level 1, 40 Albert Road  
 South Melbourne, Victoria 3205

**TEST BODY**  
**Ignis Labs Pty Ltd**  
 ABN 36 620 256 617  
 3 Cooper Place  
 Queanbeyan NSW 2620  
 Australia  
 www.ignislabs.com.au  
 (02) 6111 2909  
 Test body is the test location



**Specimen Identification**

saveBOARD Exposed Internal Lining

**Specimen Description**

The sponsor described the specimen as internal wall and ceiling lining for residential and commercial applications. It is composed of composite packaging consisting of 70% wood fibres, 22% polyethylene, 3% cellulose, 3% aluminium, and 2% other materials. It has a nominal mass of 750 kg/m<sup>3</sup> and a nominal thickness of 10 mm. Its end use is as internal wall lining. The received specimens were a multi-layered product consisting of a brown paper backing, and an external face of compressed, multicoloured, laminated recycled paper products. It had a measured nominal density of 0.78 g/cm<sup>3</sup> and a measured nominal thickness of 10.09 mm.

Ignis Labs was not responsible for the sampling stage. All specimens were sampled and fabricated by the test sponsor. The test results apply to the specimens as received.

**Test Method**

Six (6) specimens were tested in accordance with the requirements of AS/NZS 3837. Prior to the test, the specimens were conditioned at an ambient temperature of 23 ±2 °C and a relative humidity 50 ±5 %. The core of the specimen was tested. A retaining grid was applied.

**Observations**

All specimens exhibited similar behaviour. Specimens began smoking prior to ignition and specimens ignited between 24 and 39 seconds into the test. Ignition continued throughout the remainder of the test and the testing of each specimen was stopped at extinguishment, after between 25 and 44 minutes. No phase change was observed prior to ignition. The core of the material, consisting of compressed recycled packaging materials, began to unfurl outwards between the wire mesh. At the conclusion of the test, core material had become a loose, white ash.

**Input**

Test Heat Flux (kW/m <sup>2</sup> )	50.0							
		Sp 1	Sp 2	Sp 3	Sp 4	Sp 5	Sp 6	Mean
Thickness (mm)		9.09	11.2	11.31	11.49	8.77	8.88	10.1233
Surface Area (m <sup>2</sup> )	A <sub>c</sub>	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884	0.00884
Mass Before the Test (g)	m <sub>i</sub>	69.30	105.69	91.87	86.19	68.02	71.13	82.03
Mass After the Test (g)	m <sub>f</sub>	5.19	15.13	13.16	18.12	15.44	16.69	13.96
Time to Ignition (sec)	t <sub>ig</sub>	24	26	36	39	25	27	29.5
Test Start Time (sec)	t <sub>start</sub>	0	0	0	0	0	0	0

**Calculation**

Density (kg/m <sup>3</sup> )	ρ	742.53	910.58	761.23	733.03	754.91	765.66	777.99
Irradiance (kW/m <sup>2</sup> )		50	50	50	50	50	50	50
Exhaust System Flow Rate (m <sup>3</sup> /sec)		0.024	0.024	0.024	0.024	0.024	0.024	0.024
Mass Loss (kg/m <sup>2</sup> )		7.25	10.24	8.90	7.70	5.95	6.16	7.70
Average Rate of Mass Loss (g/m <sup>2</sup> .s)		3.42	3.95	3.84	3.70	3.95	4.05	3.82
Total Mass Pyrolyzed (%)		92.51	85.68	85.68	78.97	77.30	76.54	82.78
Time to 50kW/m <sup>2</sup> (sec)	t <sub>50</sub>	32.45	35.76	40.47	36.77	26.11	29.46	33.50
Ignitability Index (1/min)	I <sub>g</sub>	1.85	1.68	1.48	1.63	2.30	2.04	1.83
Test Duration (sec)		2142	2622	2355	2121	1530	1548	2053.0

Peak Rate of Heat Release(0-60s)		133.49	173.26	157.35	154.04	161.51	132.41	152.01
Peak Rate of Heat Release(0-180s)		134.28	179.41	173.58	157.35	186.33	148.89	163.31
Peak Rate of Heat Release(0-300s)		134.28	179.41	173.58	157.35	194.69	183.35	170.44
Average Rate of Heat Release(0-60s)		104.66	123.13	111.87	124.86	130.42	111.20	117.69
Average Rate of Heat Release(0-180s)		114.02	153.71	143.92	137.11	158.03	125.37	138.69
Average Rate of Heat Release(0-300s)		114.30	157.36	141.67	134.24	170.09	143.75	143.57
Total Heat Released (MJ/m <sup>2</sup> )		119.92	184.20	165.10	148.39	126.40	114.50	143.08
Average Effective Heat of Combustion (MJ/kg)	Δh <sub>c,eff(avg)</sub>	16.52	17.98	18.54	19.27	21.23	18.58	18.69
Average specific Exinction Area (m <sup>2</sup> /kg)	Σ <sub>(avg)</sub>	76.76	79.18	71.34	73.42	87.12	78.15	77.66

*Darren Laker*  
 Test Supervisor  
 Darren Laker

*Jessica Ying*  
 Technical Lead  
 Jessica Ying

Version: IGNL-QF-050-Issue 03 Revision 00

Disclaimer These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use. The results of these fire tests may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions. The information contained in this document is provided for the sole use of the recipient and no reliance should be placed on the information by any other person. In the event that the information is disclosed or furnished to any other person, the Ignis Labs Pty Ltd accepts no liability for any loss or damage incurred by that person whatsoever as a result of using the information.

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# GEOFFREY MITCHELL

MANAGING DIRECTOR

Curriculum vitae

## QUALIFICATIONS:

Certificate for Building Construction Technician  
Bachelor of Building Surveying, Central Queensland University  
Graduate Certificate in Building Fire Safety, Queensland University of Technology  
Master of Urban Planning, Bond University  
Cert IV in Access Consulting – Access Institute  
Justice of the Peace Queensland (1983)

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## LICENCES/ACCREDITATIONS:

### Queensland

Accredited at the level of Building Surveyor (QBCC License No A20976)  
Registered House and General Builder (QBCC License No 20976)  
Registered Supervisor Building Design Drafting (Limited) (QBCC License No 20976)

### Northern Territory

Registered Building Certifier (Unrestricted) Building Practitioners Board (166064BU)

### New South Wales

A1 Accredited Certifier – Building Surveying Grade 1 Building Professionals Board (BDC3039)

### Victoria

Building Surveyor (unlimited) – Victorian Building Authority (BS-U 60810)

### Western Australia

Building Surveyor Practitioner Level 1 – Building Commission (BSP2298)

### National

Accredited Specialist Disability Accommodation (SDA) Assessor. – SDA000088

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## PROFESSIONAL ASSOCIATIONS:

Life Fellow Australian Institute of Building Surveyors (AIBS)  
(Past National President & Past State President of the QLD / Northern Territory Chapter)

Fellow Royal Institute of Chartered Surveyors (RICS)

Governmental Voting Member International Code Council (ICC)

Member Building Officials Institute of New Zealand (BOINZ)

Past Director on National Board of the AIBS

Past Executive Member of the AIBS QLD/ NT Chapter

Past Member AIBS Queensland Special Advisory Group

## **TECHNICAL COMMITTEES AND REPRESENTATION**

Chair - Global Membership Council of the ICC

Member - Codes and Standards Council of the ICC

Member AIBS Technical Special Advisory Group

Co-author LexisNexis commentary on the Building Code of Australia

Member Course Advisory Committee (School of Sustainable Development) Bond University

Member Course Advisory Committee (Building Surveying) Central Queensland University

Member Australian Standards Committee BD092

Member Australian Standards Committee BD105

Member Australian Standards Committee BD099

Past Member - Australian Building Codes Board (ABCB) – Building Codes Committee (2000 – 2018)

Past Referee-Queensland Building and Development Tribunal

Past National Chairman - AIBS Education & Training Committee

Past Member - Building Codes Queensland – Building Industry Consultative Group

Past Lecturer (Performance Legislation) - Central Queensland University

Past Member – Aged Care Accreditation Group –on contract to Australian Government

Past Member – Insulation Inspection Program – on contract to Australian Government

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## **CAREER:**

July 2011 to Present

Director GMA Certification Pty Ltd

May 2003 to Present:

Director - GMA Certification Group Pty Ltd

January 1993 to Present

Director - Geoff Mitchell & Associates Pty Ltd

August 1988 – January 1993

Owner – GMA Constructions

Owner – ACM Drafting (Building Consultancy)

January 1980 to August 1988

Building Inspector – Albert Shire Council

January 1976 to January 1980

Cadet Building Inspector – Albert Shire Council

## PAPERS:

### International:

#### Royal Institute of Chartered Surveyors (RICS)

- Brighton, UK (2002)

#### Hong Kong Institute of Surveyors (HKIS)

- Hong Kong (2002)
- Hong Kong (2003)
- Hong Kong (2011)

#### Building Officials of New Zealand (BOINZ)

- Nelson, NZ (2004)
- New Plymouth, NZ (2005)
- Christchurch, NZ (2006)
- Rotorua, NZ (2007)
- Auckland, NZ (2008)
- Rotorua, NZ (2010)
- Auckland, NZ (2011)
- Christchurch NZ (2016)

#### International Code Council (ICC)

- Minneapolis, MN USA (2008)
- Baltimore, MD USA (2009)
- Phoenix AZ USA (2011)
- Atlantic City NJ USA (2013)
- Columbus OH USA (2017)

### National

Presented papers since 1999 at numerous conferences, both AIBS and other organisations, on various subjects such as:

- Building Surveying Procedures
- Building Surveyors Education
- Documentation for Approvals
- Termite Management
- Energy Efficiency
- The Building Code of Australia



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