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Planning Secretary  
NSW Department of Planning and Environment  
GPO Box 39  
Sydney NSW 2001

09 June 2022

Dear Planning Secretary,

**RE: St Matthews Catholic College (SSD 9872): External Walls and Cladding Documentation - Condition E5**

I refer to the St Matthews Catholic College State Significant Development approved on the 16 December 2020.

In accordance with Condition E5, Catholic Education, Diocese of Bathurst are pleased to submit a copy of the External Walls and Cladding documentation as accepted by the Certifier to the Planning Secretary. Please refer to Attachment 1 for the evidence of the submission.

Should you wish to discuss the above further, please do not hesitate to contact the undersigned.

Kind Regards,

**Anthony Soklaridis**  
Project Manager



**Best for Project**

Level 4, 25 Watt Street, Newcastle NSW 2300  
M: +61 (0)431 677 986  
[Anthony.Soklaridis@tsamgt.com](mailto:Anthony.Soklaridis@tsamgt.com)

**Attachment 1**

**From:** [Kristie Jones](#)  
**To:** [Charlie Ibrahim](#)  
**Cc:** [Michael Potts](#); [Philippa Walker](#); [Nick Windsor](#); [Anthony Soklaridis](#); [Michael Want](#); [Philippa Walker](#)  
**Subject:** RE: St Matthews Mudgee- SSD Conditions E4-E5  
**Date:** Wednesday, 8 June 2022 10:21:02 AM  
**Attachments:** [image003.png](#)  
[image005.png](#)  
[image006.png](#)  
[image939672.png](#)  
[RE Mudgee OC Requirements - Certificates.msg](#)

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Hi Charlie,

Thank you for your email.

I can confirm that no plastic packers were used during construction, please refer to attached email from Alleanza Architects to confirm this statement.

As per your comment below- given you have not further comments, we shall submit this DPIE confirming this has been accepted by the PCA.

Regards,  
Kristie

**Kristie Jones**

Contracts Administrator

**North Construction & Building Pty Ltd**

**north**

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**P:** (02) 4323 2633 | **M:** 0434 693 597 | **ABN:** 15 147 507 702

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**From:** Charlie Ibrahim <charlie@bplusg.com.au>

**Sent:** Wednesday, 8 June 2022 8:54 AM

**To:** Kristie Jones <Kristie.Jones@north.com.au>

**Cc:** Michael Potts <michael@bplusg.com.au>; Philippa Walker <philippa@bplusg.com.au>; Nick Windsor <Nick.Windsor@north.com.au>; Anthony Soklaridis <Anthony.Soklaridis@tsamgt.com>; Michael Want <Michael.Want@tsamgt.com>; Philippa Walker <philippa@bplusg.com.au>

**Subject:** RE: St Matthews Mudgee- SSD Conditions E4-E5

Hi Kristie,

It was confirmed from the previous email that plastic packers were not utilised, however as noted from the attached External Wall System Disclosure Statement provided at CC stage, plastic packers were noted in the design. Please re-confirm if plastic packers were not utilised in the construction phase. If not, we have no further comments regarding SSD condition E4&E5 where this can now be provided to the Planning Secretary.

Regards,

**Charlie Ibrahim**  
Assistant Building Surveyor



**M:** 0422 064 495 | **T:** 02 9211 7777 | **E:** [charlie@bmplug.com.au](mailto:charlie@bmplug.com.au) | **W:** [bmplug.com.au](http://bmplug.com.au)



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190089

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**From:** Kristie Jones <[Kristie.Jones@north.com.au](mailto:Kristie.Jones@north.com.au)>  
**Sent:** Wednesday, 8 June 2022 8:41 AM  
**To:** Charlie Ibrahim <[charlie@bmplug.com.au](mailto:charlie@bmplug.com.au)>  
**Cc:** Michael Potts <[michael@bmplug.com.au](mailto:michael@bmplug.com.au)>; Philippa Walker <[philippa@bmplug.com.au](mailto:philippa@bmplug.com.au)>; Nick Windsor <[Nick.Windsor@north.com.au](mailto:Nick.Windsor@north.com.au)>; Anthony Soklaridis <[Anthony.Soklaridis@tsamgt.com](mailto:Anthony.Soklaridis@tsamgt.com)>; Michael Want <[Michael.Want@tsamgt.com](mailto:Michael.Want@tsamgt.com)>  
**Subject:** FW: St Matthews Mudgee- SSD Conditions E4-E5

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Hi Charlie,

Following up on this email so we can lodge to DPIE.

Regards,  
Kristie

**Kristie Jones**  
Contracts Administrator  
**North Construction & Building Pty Ltd**

# north

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**From:** Kristie Jones <[Kristie.Jones@north.com.au](mailto:Kristie.Jones@north.com.au)>  
**Sent:** Thursday, 2 June 2022 3:11 PM  
**To:** Charlie Ibrahim <[charlie@bmplug.com.au](mailto:charlie@bmplug.com.au)>  
**Cc:** Michael Potts <[michael@bmplug.com.au](mailto:michael@bmplug.com.au)>; [philippa@bmplug.com.au](mailto:philippa@bmplug.com.au); Anthony Soklaridis <[Anthony.Soklaridis@tsamgt.com](mailto:Anthony.Soklaridis@tsamgt.com)>; Michael Want <[Michael.Want@tsamgt.com](mailto:Michael.Want@tsamgt.com)>; Nick Windsor <[Nick.Windsor@north.com.au](mailto:Nick.Windsor@north.com.au)>

**Subject:** St Matthews Mudgee- SSD Conditions E4-E5

Hi Charlie,

I refer to your email yesterday (attached) requesting evidence that that E4 has been submitted to the planning secretary.

The condition states that this should be submitted within 7 days of the PCA accepting it, please confirm in writing that you have accepted E4 statement & I shall arrange for it to be submitted to planning.

**External Walls and Cladding**

- E4. Prior to the issue of the occupation certificate, the Applicant must provide the Certifier with documented evidence that the products and systems used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels comply with the requirements of the BCA.
- E5. The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.

Thankyou.

Regards,  
Kristie

**Kristie Jones**

Contracts Administrator

**North Construction & Building Pty Ltd**

**north**

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**EXTERNAL WALL SYSTEM DISCLOSURE STATEMENT (DESIGN)  
EXTERNAL WALL COMPONENTS (TYPE A & B CONSTRUCTION)**

<b>Project Name</b>	<i>St Matthew's Catholic School</i>
<b>Address</b>	<i>48 Broadhead Road, Spring Flat</i>
<b>Part of Building</b>	<i>Block E</i>
<b>BCA referred to</b>	BCA 2019 Amendment 1

- I confirm that the table provided overleaf identifies all the proposed external wall systems and wall elements designed for the subject development, including the component elements of those systems, and any attachments thereto.
- I have undertaken reasonable investigations to ascertain that these systems and components comply with the non-combustibility requirements of Clause C1.9 of the BCA, such as reviewing product technical information, fire test reports, code mark certificates, fire-engineer's reports and external consultant advice.
- I have undertaken reasonable investigations to ascertain that any sarking-type materials associated with the external wall system design comply with Clause C1.9 of the BCA insofar as these materials do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.
- Supporting documents that demonstrate compliance for each wall type with the relevant sections of the BCA are provided and attached.
- I am a suitably qualified person and my qualifications and accreditations are listed below.
- The information contained in this statement is true and accurate to the best of my knowledge.

*Relevant qualifications and accreditations:* Registered Architect NSW reg 3130

Name: Charles Glanville

Company: Alleanza Architecture

Address: Level 1 695-699 George St, Haymarket NSW 2000

Phone No. 8039 8822 Email Charles.glanville@alleanza.com.au

*Charles Glanville*

24.05.21

**Signature**

**Date**

**EXTERNAL WALL ELEMENTS TABLE** The table below must be completed for all wall types.

**LINING / CLADDING MATERIAL** (Note. Nominate every type of external cladding and/or wall material)

<b>External/Cladding Material</b> (E.g. Fibre cement sheeting, prefinished metal sheeting, masonry etc)	<b>Elevation(s)</b>	<b>Structural frame material</b>	<b>Manufacturer</b> (E.g., Fairview, CSP, HVG etc)	<b>Product Name</b> (E.g., MondoClad, Vitradual, Styrum. Alfrex Solid etc)	<b>Test certificate, Codemark certificate or Fire Engineering Report</b> (List all documents evidencing compliance)	<b>Nominated or proprietary installation requirements</b> (relevant installation details or guidelines must be listed below and attached)
Face Brick	All	Steel frame	PGH	Smooth Volcanic	20_06_30 Compliance of PGH bricks for fire safety	Proprietary
Fibre Cement Sheetting	All	Steel Frame	CSR	Express Panel	wfra-45759_11	Proprietary
Metal Sheetting	All	Steel Frame	Lysaght	Spandek	FNE11605_- _COLORBOND(R)_steel_PE – 210311  Lysaght roofing and walling - Roofing and Walling_WEB	Proprietary

**INSULATION** (list all types of non-combustible insulation that is proposed to be incorporated in the external wall system)

<b>Product Name</b> (E.g. Mineral Wool, Glass Wool etc)	<b>Manufacture</b>	<b>Elevation</b>	<b>Test certificate reference</b>	<b>Nominated or proprietary installation requirements</b>
Glass Wool	CSR Bradford	All	CSIRO Report FCO-2805 Rev D - Issued to Ben Cooper. Alleanza Architecture. 21.04.2021  CSIRO Report FNC-9694 - Issued to Ben Cooper. Alleanza	Proprietary

			Architecture. 21.04.2021	
--	--	--	-----------------------------	--

**SARKING** (list all types of sarking that is proposed to be incorporated in the external wall system)

Product Name	Manufacture	Elevation	Test certificate reference	Nominated or proprietary installation requirements
Proctor Wrap Commercial Wall	CSR Bradford	All	AWTA Test Number 16-006359 - Issued to Ben Cooper. Alleanza Architecture. 21.04.2021	Proprietary

**PACKERS** (list all types of non-combustible packers that are proposed to be incorporated in the external wall system)

Product Name (E.g. aluminium packers etc)	Manufacture	Elevation	Test certificate reference	Nominated or proprietary installation requirements
Steel furring channels	Rondo	All	GALVABOND_G2_G2S_	Proprietary
TBA Firefly Vulcan 0.2 Thermal Break	TBA Firefly	All	AS1530.1 TEST TBA FIREFLY VULCAN THERMAL BREAK ALFOIL LAYER	Proprietary

**ATTACHMENTS** (list all types of attachments that is proposed to be incorporated in the external wall system)

Product Name	Manufacture	Elevation	Test certificate reference	Nominated or proprietary installation requirements

--	--	--	--	--

**ANCILLARY ELEMENTS** *(list all types of ancillary elements that are proposed to be incorporated within the external wall system i.e., packers, insulation to pipes etc)*

<b>Product Name</b>	<b>Manufacture</b>	<b>Elevation</b>	<b>Test certificate reference</b>	<b>Nominated or proprietary installation requirements</b>
Aluminium Window suites	Alspec	All		Proprietary

## APPENDIX A – FAÇADE MATERIAL DATA SHEETS

Materials in external walls comprise:

1. PGH smooth volcanic- 20\_06\_30 Compliance of PGH bricks for fire safety
2. CSR Cemintel ExpressPanel commercial - wfra-45759\_11
3. Metal Sheet cladding – Lysaght Spandek Colorbond - FNE11605\_-\_COLORBOND(R)\_steel\_PE – 210311  
Lysaght roofing and walling - Roofing and Walling\_WEB
- 4 CSR Bradford - CSIRO Report FCO-2805 Rev D - Issued to Ben Cooper. Alleanza Architecture. 21.04.2021  
CSIRO Report FNC-9694 - Issued to Ben Cooper. Alleanza
5. Proctor Wrap Commercial Wall - AWTA Test Number 16-006359 - Issued to Ben Cooper. Alleanza Architecture. 21.04.2021
6. Light weight steel framing – GALVABOND\_G2\_G2S
7. Thermal Break - TBA Firefly Vulcan 0.2 Thermal Break

To whom it may concern,

**Subject:** Compliance of PGH Bricks and Paver products (clay masonry units).

Thank you for providing the opportunity to explain how PGH products (clay masonry units) comply with the requirements of the National Construction Code (NCC) for fire safety.

**Fire Resistance Level's (FRL's).**

In accordance with the National Construction Code (NCC) Schedule 5, AS 3700 'Masonry Structures' (2018) is an acceptable construction manual for deriving the Fire Resistance Level (FRL) of masonry building elements (i.e. walls comprised of clay masonry units) for meeting the NCC's FRL requirements, which are then, in part, deemed to satisfy the NCC's performance requirement CP1 and CP4 (Volume 1), as well as P2.3.1 (Volume 2).

Under AS 3700 (2018), for its provisions to apply, clay masonry units must be manufactured in accordance with AS/NZS 4455. Note that PGH manufactures all units in accordance with AS/NZS 4455.1 – tested to the AS/NZS 4456 suite of standards at PGH's NATA accredited laboratory, and therefore AS 3700 can be used to derive the FRL of walls comprising of PGH clay masonry units

Fire resistance levels (FRL's) are expressed in minutes by - structural-adequacy/integrity/insulation.

***FRL (insulation)***

The FRL for insulation for masonry walls is determined in accordance with section 6.5 of AS 3700 (2018) and is a function of the wall's material thickness.

When the masonry units used in the wall have a coring percentage of less than 30%, the material thickness is taken as the walls thickness. For a cavity wall, the material thickness is taken as the sum of the material thicknesses of the separate leaves.

Accordingly, when designed and constructed in accordance with AS 3700 (2018), a 110mm thick masonry wall/leaf, constructed from 110mm thick clay masonry units with a core percentage of less than 30% will provide a wall thickness of 110mm and an FRL of 90 minutes (table 6.3, AS 3700).

As such, masonry walls constructed from any 110mm thick PGH bricks with 30% coring or less, are deemed to provide an FRL for insulation of 90mins.

Additionally, under section 6.5.2 of AS 3700 (2018), render applied to a face not exposed to fire can be considered to contribute to the wall's material thickness (and increase the FRL) for up to a maximum thickness of 20mm.

***FRL (structural adequacy)***

The FRL for structural adequacy is required of loadbearing masonry walls/leaves only.

The FRL for structural adequacy of a masonry cavity wall system (i.e. two masonry leaves), is provided by the internal loadbearing leaf only.

As the outer masonry leaf in brick veneer walls is non-loadbearing, the masonry leaf is not required to demonstrate structural adequacy as this is the responsibility of the structural frame it is supported by, which needs to be designed accordingly, though the masonry leaf must still be designed and constructed to meet the other requirements of AS 3700 (2018).

Note that, under the NCC (volume 2) section 3.7.2.4(b)(ii), a clay masonry veneer wall in residential housing, of at least 90mm thickness, designed and installed in accordance with AS 3700 (2018) is deemed to provide an FRL of 60/60/60.

The FRL for structural adequacy of loadbearing masonry walls/leaves is determined via Section 6.3 of AS 3700 (2018), and depends on several factors, namely the walls slenderness ratio which depends on the wall thickness, height, length, and support conditions. As the FRL for structural adequacy depends on how each wall being assessed is assembled, each wall's FRL for structural adequacy must be assessed and determined independently by the Project Engineer.

Due to the above, the following information is provided on an informative basis only and cannot be used as certification that particular walls on specific projects meet the FRL's stated; the Project Engineer must satisfy themselves that the wall's designed and as constructed, conform to the requirements of AS 3700 (2018) and meet the required FRL's for structural adequacy. Nonetheless, in accordance with Section 6.3 AS 3700 (2018), provided that a loadbearing 110mm thick masonry wall/leaf has been designed and constructed in accordance with AS 3700 (2018), with a height no greater than 3m and adequate lateral support on its top loadbearing edge, it will deliver an FRL (structural adequacy) of at least 90 minutes. The FRL for structural adequacy of this wall will increase to 120 minutes for lengths less than 4m but greater than 3m, and 180 minutes for walls less than 3m in length.

#### ***FRL (integrity)***

The FRL for integrity of masonry walls is determined in accordance with Section 6.4 of AS 3700 and is taken as being the lesser of the above two values, structural adequacy and insulation.

#### **Non-combustibility.**

According to the NCC performance requirement CP2(a)(iii) "A building must have elements which will, to the degree necessary, avoid the spread of fire between buildings". Under the deemed to satisfy pathway for compliance with CP2(a)(iii), external walls are not necessarily required to be non-combustible for class 1 and 10 buildings, or class 2-9 buildings that are of type C construction. For class 2-9 buildings, internal fire-resisting walls in buildings of type A and B construction, external walls and spandrels in type A construction as well as certain external walls of buildings of type B construction are, however, required to be non-combustible under the deemed to satisfy pathway of compliance.

Under the NCC, by definition a wall is non-combustible if it is constructed wholly of materials that are not deemed combustible when tested in accordance with the combustibility test for materials AS 1530.1 or unless materials are given an exemption by being listed in C1.9 of NCC (volume 1).

It is generally accepted that fired clay masonry units are non-combustible and will remain stable during a fire (addressing CP1), they will not contribute to the spread of fire spread (addressing CP2 and CP4) or produce smoke or toxic gases (addressing CP3 and CP4). This is because during the manufacture of PGH bricks, they are fired in kilns at in excess of 1100°C without combusting. Any organic material or combustible components in the raw clay is burnt out during this process. Note that when a material is tested in accordance with AS 1530.1, the furnace temperature stabilises at 750°C +/- 5°C. Considering that clay masonry units are fired to temperatures almost double what is required to pass the AS 1530.1 test, and do not combust during the manufacturing process, clay masonry units (including those manufactured by PGH) are considered as being non-combustible.

## **Reaction to fire – fire hazard properties.**

C1.10 of the NCC contains deemed to satisfy fire hazard requirements for certain materials used in/as linings fire hazard. C1.10(c) lists several materials which are deemed to comply with the requirements and are not required to prove their fire hazard properties through testing. On this list, C1.10(c)(i), is 'plaster, cement render, concrete, terrazzo, ceramic tile or the like'. Both brick and mortar fall under this category, therefore brick and mortar are deemed to comply with the NCC's fire hazard properties.

## **Appropriateness for use in Bushfire Prone Areas.**

Under the NCC, compliance with AS 3959 'Construction in bushfire prone areas' is deemed to satisfy GP5.1 (NCC -vol1) and P2.7.5 (NCC -vol2). In accordance with AS 3959 Section 9.4.1(a), walls constructed in bushfire-prone areas with a Bushfire Attack Level (BAL) up to flame zone (FZ), the exposed elements of the walls must be comprised of non-combustible materials which AS 3959 Section 9.4.1(a)(i) includes as being full masonry or masonry veneer walls with an outer leaf of clay that is at least 90mm thick. As such, 110mm thick PGH bricks are appropriate in all BAL's. Attention must still be made to the AS 3959 detailing requirements of walls constructed in bushfire areas, for example the treatment of joints, weep holes, vents, etc...

## **Disclaimer.**

*All PGH clay fired masonry units conform to the unit requirements of AS 3700 via AS/NZS 4455.1 'Masonry units, pavers, flags and retaining wall units; Part 1: Masonry units' and testing to AS/NZS 4456 'Masonry unit, pavers and flags – Method of test' at PGH's NATA accredited laboratory. Masonry walls constructed from PGH bricks must be designed and constructed in accordance with, and to meet the requirements of, the National Construction Code (NCC), as verified by the Project Design Professionals. PGH does not accept responsibility for the adequacy of any buildings or walls designed or constructed using PGH units. The Project Design Professionals must satisfy themselves that information herein is acceptable for the intended application, and that the building/structure is designed and constructed to conform with the requirements of the NCC.*

Please contact me should you require further clarification.

Kind regards,

**Jake Ring** BE, BComm, MIEAust

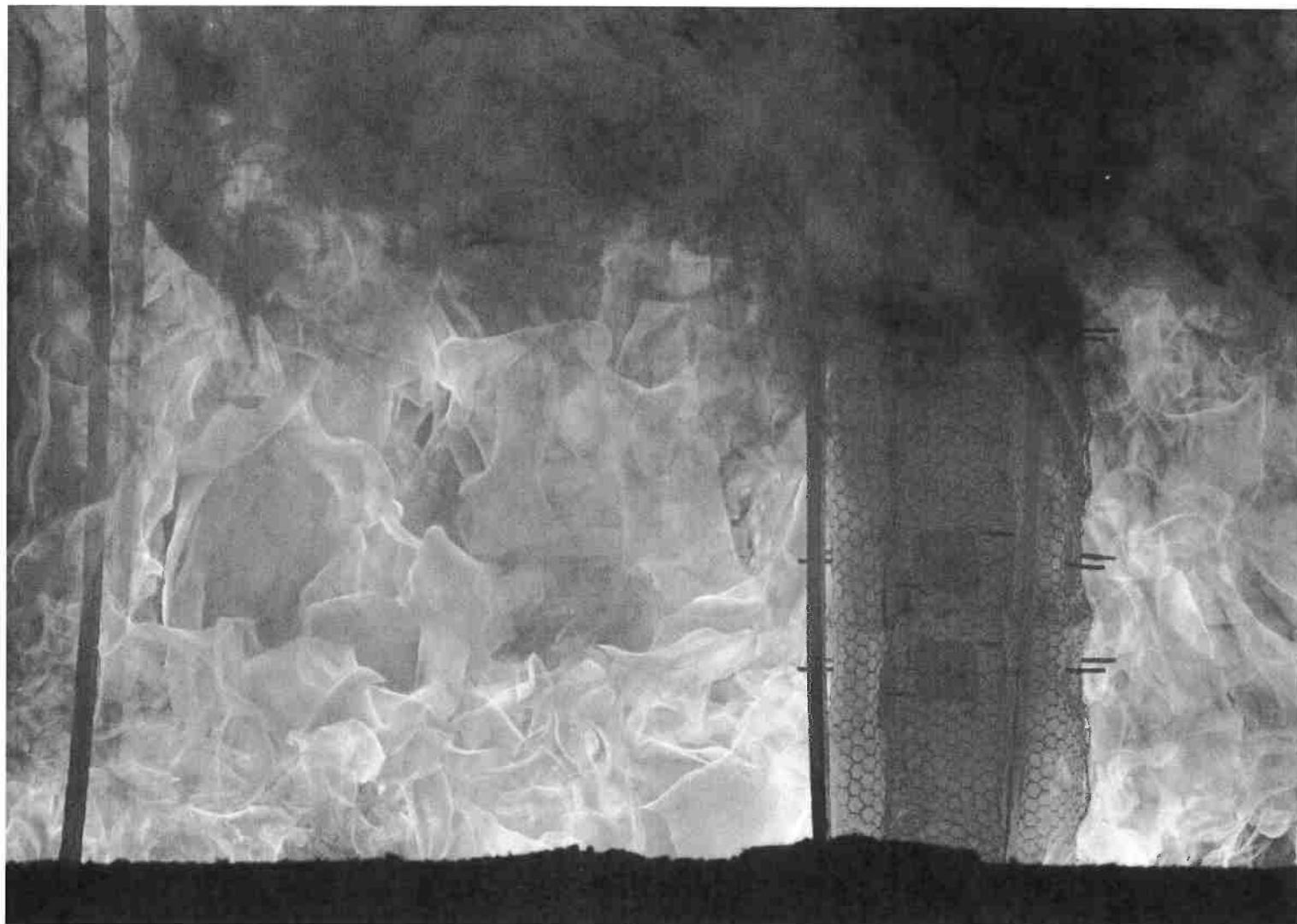
**Innovation Engineer (Structures, Facades, Compliance)**



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# Fire assessment report

CSR Gyprock plasterboard and CSR Cemintel fibre  
cement products assessed with Group numbers

Client: CSR Gyprock




Product: plasterboard and fibre cement products

Project reference number: FAS190252 Report number: 45759 Revision: R11.0

Issue date: 11 August 2020 Expiry date: 30 November 2024

## Quality Management

Version	Date	Description	Prepared by	Reviewed by
45759.1	13/08/2004	Initial issue	J P England	Leong Poon
45759.2	19/08/2004	Typographic correction	J P England	Leong Poon
45759.3	12/06/2009	Revised to include average specific extinction area.	J P England	J Richardson
45759.4	06/01/2010	Revised to include EC08 products	K Nicholls	M Kamal
45759.5	30/09/2013	Revised to include various fibre cement based products	K Nicholls	S Hu
45759.6	28/05/2014	Revised to include various fibre cement based products	K Nicholls	D Nicholson
45759.7	21/11/2014	Revised to include various plasterboard products	K Nicholls	D Nicholson
45759.8	06/09/2017	Revised to include various plasterboard products	O Saad	C McLean
45759.9	20/09/2018	Revised to extend the validity for five years and addition of new products	R Aldarwish	O Saad

Version	Date	Information relating to report			
45759 R10.0	Issue: 12/11/2019	Reason for issue	Report issued to CSR Gyprock for review and comment.		
			Prepared by	Reviewed by	Approved by
	Expiry: 30/11/2024	Name	Hon Wong	Omar Saad	Omar Saad
45759 R10.1	Issue: 15/11/2019	Reason for issue	Minor changes and amendments to clients comments		
			Prepared by	Reviewed by	Approved by
	Expiry: 30/11/2024	Name	Hon Wong	Omar Saad	Omar Saad
45759 R11.0	Issue: 11/08/2020	Reason for issue	Addition of new plasterboards including Gyprock Habito H and test data		
			Prepared by	Reviewed by	Approved by
	Expiry: 31/08/2025	Name	Hon Wong	Mahmoud Akl	Mahmoud Akl
		Signature			

## Contact information

Warringtonfire Australia Pty Ltd – ABN 81 050 241 524

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## Executive summary

This assessment considers the performance of a range of CSR wall and ceiling linings when assessed against the criteria of Specification C1.10 of the National Construction Code of Australia (NCC) 2019 and AS 5637.1:2015<sup>1</sup>.

This report documents the findings of the assessment undertaken to determine the likely fire hazard properties of the CSR wall and ceiling lining products if tested in accordance with AS ISO 9705-2003 (R2016)<sup>2</sup> and AS 5637.1:2015. The majority of the previously assessed products were based on data from tests conducted in accordance with AS 1530.3:1999 (R2016)<sup>3</sup> and AS/NZS 3837:1998 (R2016)<sup>4</sup>. The sponsor had subsequent re-testing conducted on representative samples of the range of products to establish new baseline data in accordance with the current requirements to AS 5637.1:2015 and AS ISO 9705-2003 (R2016).

The analysis conducted in section 5 to section 6 of this report found that the proposed variations are likely to achieve Group number and information on smoke production rates as shown in Table 1, if tested in accordance with AS ISO 9705-2003 (R2016) and AS 5637.1:2015.

**Table 1 Variations and assessment outcome**

Product	Reference test and assessment report	Assessment classification - group number
<b>CSR Gyprock plasterboard products</b>		
10~13 mm Gyprock Plus	RTF190098.1 and associated assessment report- FAS190127 R1.0	<b>Group No. = 1</b> <b>SMOGR<sub>RC</sub> (in m<sup>2</sup>s<sup>-2</sup> × 1000) = 0.5</b> <b>In accordance with AS ISO 9705-2003 (R2016) and AS 5637.1 :2015 for compliance with NCC 2019 in Australia</b>  <b>and</b>  <b>Group No. =1-S</b> <b>Average smoke production rate (0 to 20 minutes) = 0.16 m<sup>2</sup>s<sup>-1</sup></b> <b>In accordance with C/VM2 – Verification Method: Framework for Fire Safety Design (for applications in New Zealand).</b>
10~13 mm Supaceil		
10~13 mm Sensitive		
10~16 mm Standard plasterboard		
10~13 mm Soundchek		
10~13 mm Aquachek		
Flexible- 6.5mm (used in two layers)		
Impactchek- 13mm		
Superchek- 10mm		
25 mm ShaftLiner MR panel		
25 mm ShaftLiner MP panel		
25 mm ShaftLiner panel		
13~16 mm Fyrchek		
13~16 mm Fyrchek MR		
13 mm EC08 Partition		
13~16 mm EC08 Complete		
13 mm EC08 Impact		
13 mm EC08 Impact MR		
Gyprock perforated plasterboard panels: - 13 mm perforated panel 6 mm Round		

<sup>1</sup> Standards Australia, Determination of fire hazard properties Wall and ceiling linings, 2015

<sup>2</sup> Standards Australia, Fire tests - Full-scale room test for surface products, 2003 (R2016)

<sup>3</sup> Standards Australia, Methods for fire tests on building materials, components and structures Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999 (R2016)

<sup>4</sup> Standards Australia, Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter, 1998 (R2016)

Product	Reference test and assessment report	Assessment classification - group number
<ul style="list-style-type: none"> <li>- 12.5 mm Gyptone perforated ceiling panels- 12mm Square, 13 mm Square Minigrid, Slotted Minigrid</li> <li>- 12.5 mm Rigitone perforated ceiling panels- Matrix 8mm round, Astral, Matrix 12 mm Square, Galaxy</li> <li>- 6.5 mm Gyptone perforated panels- Flexible 12 mm Square, Flexible Slotted Minigrid</li> </ul> <p>Gyptone Access Panels- Frame-600 mm × 600 mm Hatch- 510 mm × 510 mm</p>		
<p>Gyprock plasterboard tiles:</p> <ul style="list-style-type: none"> <li>- Supatone- 10 mm</li> <li>- Arctic White- 13 mm</li> <li>- Perforated Tile- 13 mm</li> </ul>		
Gyprock Habito H plasterboard of 12.5 mm thickness	RTF200198 R1.0 and ASCRRTF200198 R1.0	<p><b>Group No. = 1</b>  <b>Average Specific Extinction Area (ASEA) = 7.3 m<sup>2</sup>/kg</b>  <b>In accordance with AS/NZS 3837:1998 and AS 5637.1:2015</b></p>
CSR Cemintel fibre cement products		
6~12 mm CeminSeal Wallboard	RTF190235.1	<p><b>Group No. = 1</b>  <b>SMOGR<sub>RC</sub> (in m<sup>2</sup>·s<sup>-2</sup> × 1000) =0.2</b>  <b>In accordance with AS ISO 9705-2003(R2016) and AS 5637.1:2015 for compliance with NCC 2019 in Australia</b></p> <p>and</p> <p><b>Group No. =1-S</b>  <b>Average smoke production rate (0 to 20 minutes) = 0.1 m<sup>2</sup>·s<sup>-1</sup></b>  <b>In accordance with C/VM2 – Verification Method: Framework for Fire Safety Design (for applications in New Zealand).</b></p>
6~9 mm Rigid Air Barrier		
7.5~9 mm Texture Base Sheet		
8~12 mm Rendaline		
6 mm Cladding sheet		
9 mm Simpleline		
6 mm Eaves lining		
9~24 mm Compressed Sheet		
9~12 mm Expresspanel		
9~12 mm Barestone Exterior with colour options/ 9~12 mm Barestone Bark		
9~12 mm Barestone Interior with colour options/ 9~12 mm Barestone Bark		
8 mm Edge		
8 mm Mosaic		
7.5 mm Plank – Smooth and Woodgrain		
10 mm Headland Weatherboard		
12 mm and 16 mm Scarborough Weatherboard		
10 mm Endeavour Weatherboard		
16 mm Balmoral Weatherboard		
6 mm Soffitline		
18~22 mm Constructafloor Interior		
18~22 mm Constructafloor Exterior		

Product	Reference test and assessment report	Assessment classification - group number
16 mm Territory		
8 mm Surround		
Notes: <ol style="list-style-type: none"><li>1. The perforated plasterboard panels may include acoustic fabric backing</li><li>2. The plasterboard panels with vinyl facings are not included in the assessment.</li><li>3. Mineral wool or glasswool panels are excluded from this assessment.</li><li>4. All fibre cement products shall have the same or similar % by weight composition of cellulosic fibres embedded in the cement base as the tested 6mm specimen.</li></ol>		

The variations and outcome of this assessment are subject to the limitations and requirements described in section 2, 4 and 7 of this report. The results of this report are valid until 30 November 2024.

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## 1. Introduction

This assessment considers the performance of a range of CSR wall and ceiling linings when assessed against the criteria of Specification C1.10 of the National Construction Code of Australia (NCC) 2019 and AS 5637.1:2015.

This report documents the findings of the assessment undertaken to determine the likely fire hazard properties of the CSR wall and ceiling lining products if tested in accordance with AS ISO 9705-2003 (R2016) and AS 5637.1:2015. The majority of the previously assessed products were based on data from tests conducted in accordance with AS 1530.3:1999 (R2016) and AS/NZS 3837:1998 (R2016). The sponsor had subsequent re-testing conducted on representative samples of the range of products to establish new baseline data in accordance with the current requirements to AS 5637.1:2015 and AS ISO 9705-2003 (R2016).

This assessment was carried out at the request of CSR Gyprock. The sponsor details are included in Table 2.

**Table 2 Sponsor details**

Sponsor	Address
CSR Gyprock	376 Victoria Street Wetherill Park NSW 2164 Australia

## 2. Framework for the assessment

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

No specific framework, methodology, standard or guidance documents exists in Australia for doing these assessments. Therefore, we have followed the Guide to Undertaking Assessments In Lieu of Fire Tests prepared by the Passive Fire Protection Federation (PFPF) in the UK<sup>5</sup>.

This guide provides a framework to undertake 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*
- *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.

### 2.1 Limitations of assessment

The assessment is limited to products with no added facings such as, but not limited to, vinyl facing or combustible coatings other than those already tested and assessed.

### 2.2 Declaration

The guide to undertaking assessments in lieu of fire tests prepared by the PFPF in the UK requires a declaration from the client. By accepting our fee proposal dated 15 June 2020, CSR Gyprock confirmed that

<sup>5</sup> Guide to Undertaking Assessments In Lieu of Fire Test - The Passive Fire Protection Federation (PFPF), June 2000, UK.

- 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. Description of the specimens and variations

#### 3.1 Specimens description

There are two ranges of CSR specimens tested and assessed, namely:

- CSR Gyprock plasterboard wall and ceilings products and plasterboard ceiling tiles and access panels; and
- CSR Cemintel fibre cement products

As advised by the sponsor, the mineral fibre and glass fibre ceiling and wall tiles will be dropped from this assessment. Plasterboard with vinyl facing have also been dropped due to insufficient supporting test data.

#### 3.2 Referenced test data

The assessment of the variations to the tested specimens and the determination of the likely performance is based on the results of the fire test/s documented in the reports summarised in Table 3. Further details of the tested system are described in Appendix A.

**Table 3 Referenced test data**

Report number	Test sponsor	Test date	Testing authority
RTF190235.1	CSR Gyprock	14/10/2019	Warringtonfire Australia
RTF190098.1 and associated assessment report- FAS190127 R1.0	CSR Gyprock	15/06/2019	Warringtonfire Australia
RTF200198 R1.0 and classification report ASCRRTF299198 R1.0	CSR Gyprock	25/06/2020	Warringtonfire Australia

#### 3.3 Variations to tested specimens

An identical system has not been subject to a standard fire test. We have therefore assessed the products using baseline test information for similar products. The variations to the tested specimens together with the referenced baseline standard fire tests – are described in Table 4.

**Table 4 Variation to tested CSR Gyprock plasterboard specimens**

Item and thickness	Item and thickness
10~13mm Gyprock Plus	25mm ShaftLiner MR panel
10~13mm Supaceil	25mm ShaftLiner panel
10~13 mm Sensitive	25 mm ShaftLiner MP
10~16 mm Standard plasterboard	13~16 mm Fyrcek
10~13 mm Soundcek	13~16 mm Fyrcek MR
10~13 mm Aquachek	13 mm EC08 Partition
Flexible- 6.5 mm (used in two layers)	13~16mm EC08 Complete
Impactcek- 13 mm	13 mm EC08 Impact
Supercek- 10 mm	13 mm EC08 Impact MR
12.5 mm Habito H	
Gyprock perforated plasterboard panels: - 13 mm perforated panel 6mm Round - 12.5 mm Gyptone perforated ceiling panels- 12 mm Square, 13mm Square Minigrid, Slotted Minigrid - 12.5 mm Rigitone perforated ceiling panels- Matrix 8mm round, Astral, Matrix 12 mm Square, Galaxy - 6.5 mm Gyptone perforated panels- Flexible 12 mm Square, Flexible Slotted Minigrid - Gyptone Access Panels- Frame-600 mm × 600 mm Hatch- 510 mm × 510 mm	Gyprock plasterboard tiles: - Supatone- 10 mm - Arctic White- 13 mm - Perforated Tile- 13 mm
Notes: 1. The perforated plasterboard panels may include acoustic fabric backing 2. The plasterboard panels with vinyl facings are not included in the assessment.	

**Table 5 Variation to tested CSR Cemintel fibre cement products**

Item and description	Item and description
6~12 mm CeminSeal Wallboard	8 mm Edge
6~9 mm Rigid Air Barrier	8 mm Mosaic
7.5~9 mm Texture Base Sheet	7.5 mm Plank – Smooth and Woodgrain
8~12 mm Rendaline	10 mm Headland Weatherboard
6 mm Cladding sheet	12 mm & 16 mm Scarborough Weatherboard
9 mm Simpleline	10 mm Endeavour Weatherboard
6 mm Eaves lining	16 mm Balmoral Weatherboard
9~24 mm Compressed Sheet	6 mm Soffitline
9~12 mm Expresspanel	18~22mm Constructafloor Interior
9~12 mm Barestone Exterior with optional colour finishes in Ash, Lunar and Graphite	18~22mm Constructafloor Exterior
9~12 mm Barestone Interior with optional colour finishes in Ash, Lunar and Graphite	16mm Territory
9~12 mm Barestone Bark	8mm Surround

### 3.4 Purpose of the test

The test was performed in accordance with the requirements of AS ISO 9705:2003 (R2016) and AS 5637.1:2015 to determine the group number that may be assigned to the material using the classification schemes given in AS 5637.1:2015 and C/VM2 – Verification Method: Framework for Fire Safety Design

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

### 3.5 Requirements of NCC 2019- Specification C1.10 part 4. “Wall and ceiling linings”

Part 4 of Specification C1.10 in NCC 2019 “Walls and ceiling linings” states that –

- 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 complying with Specification E1.5 have-
  - i a smoke growth rate index not more than 100; or
  - ii an average specific extinction area of 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 5637.1:2015.

## 4. Scope, objective and assumptions

- The scope of this report is limited to an assessment of the variations to the tested systems described in section 3.3.
- This report details the methods of construction, test conditions and assessed results that would have been expected if the specific elements of construction described here had been tested in accordance with AS ISO 9705:2003 (R2016) and AS 5637.1:2015.
- The results of this assessment are applicable to plasterboard and fibre cement wall and ceiling lining, including plasterboard ceiling tiles.
- This report is only valid for the assessed products. Any changes with respect to size, construction details, loads, stresses, edge or end conditions, other than those identified in this report, may invalidate the findings of this assessment. If there are changes to the products, a reassessment will be needed to verify consistency with the assessment in this report.
- The data, methodologies, calculations and conclusions documented in this report specifically relate to the assessed system/s and must not be used for any other purpose.
- 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.

## 5. Assessment 1 – Assessment of CSR Gyprock plasterboard products

This revised assessment supersedes all previous discussion points with new test data based on test and assessment in accordance with AS 5637.1:2015 on representative product samples. All previous tests were conducted only in accordance with AS 1530.3 and are now deemed as obsolete as there were no tests carried out in accordance with AS ISO 9705-2003 (R2016) to establish the baseline data. However, the old test data in accordance with AS 1530.3 have been retained for future reference on the combustibility of the products.

### 5.1 Description of variations

The group number of a material or a system is based on its 'time to flashover' in the AS ISO 9705-2003 (R2016) room burn test. Flashover usually occurs when the fire is fully developed and all combustible items in the room are involved in the fire. In AS 5637.1:2015, flashover is said to occur when the total heat release rate exceeds 1 MW (1000 kW). For example, the fire hazard properties of timber are dependent on multiple factors such as density, thickness, microstructure and chemical composition. For veneered timber materials, additional factors such as the type and thickness of the adhesive layer also contribute to the fire.

In accordance with the procedures and requirements in AS 5637:2015, the variations to the tested specimen plasterboard product will be mainly in the changes in thickness or size and minor variations in the material composition of the plasterboard products.

Products with a combustible facing and with different core material other than that of plasterboard are therefore removed from this report and may be reinstated when new supporting test data in accordance with AS 5637:2015 are available.

This assessment was undertaken to determine the likely performance of the CSR Gyprock plasterboard products, as outlined in Table 4

based on the data from referenced test report RTF190098.1 and assessment report FAS190127 R1.0 with details provided in the Appendix A.3.

Based on recent tests conducted in accordance with AS ISO 9705-2003 (R2016) fire test on standard gypsum plasterboard samples, there was sufficient evidence of correlation between the various plasterboard samples from CSR Gyprock. Therefore, the test conducted on the CSR Gyprock Habito H in accordance with AS/NZS 3837:1998 provided acceptable data for classification in accordance with AS 5637.1:2015.

### 5.2 Methodology

The approach and method of assessment used for this assessment is summarised in Table 6.

**Table 6 Method of assessment**

Assessment method	
Level of complexity	Simple assessment –based purely on analysing data provided in the referenced fire test and comparing the physical properties of products.
Type of assessment	Comparative

### 5.3 Assessment of variations to tested CSR Gyprock plasterboard specimen

In test RTF190098, the tested specimen in the AS ISO 9705-2003 (R2016) fire test, was perforated plasterboard with a cloth (polyester) backing on the unexposed side.

The tested plasterboard being perforated would be more onerous when exposed to fire compared with a solid plasterboard panel. It allowed oxygen and flames to infiltrate the back of the plasterboard, enabling both surfaces to burn simultaneously. It would have resulted in a higher peak heat release rate than if the panels were to be solid with the front exposed surface to burn through the paper lining and up to 10 minutes before the plasterboard back lining starts to combust.

It is noted from the test that:

- It appears that the paper lining of the perforated plasterboard including the added fabric backing material played only a small or insignificant part in the total heat release rate.
- The burning rate of the plasterboard specimen was measured from the subtraction of the burner's heat release rate from the total measured heat release rate. It represented no more than 25% of the total heat release rate and the specimen burn at a steady rate without much spiking in the heat release. From the test data the total heat release rate peaked at about 410 kW when the burner was ratted up to 300 kW.
- Smoke generation was minimal during the test.

The discussion in assessment report FAS190127 R1.0 concluded that the specimen plasterboard would perform similarly if the amount of free area in the perforations of the plasterboard were to be varied or if the plasterboard were to be decreased or increased in thickness.

Since the perforated plasterboard tested was the most onerous, it is considered that solid plasterboard panels would perform equally or better if subjected to a fire test in accordance with AS ISO 9705:2003 (R2016) and would likely attain the same Group No.1.

The above assessment could be extended to cover all thicknesses plasterboard with the same fabric lining as that tested. The main constituents that contributed to combustion in the fire test were the paper facing of the plasterboard and the fabric backing for the perforated plasterboard panels. Increasing the thickness of the plasterboard does not lead to additional facing material. The thicker panels will likely perform similarly to the tested specimen and achieve the same group number in accordance with AS 5637:2015.

It would also extend to other plasterboard panels with composition mix of the core material which includes fire rated plasterboard. It was evident from the test observations that the core plasterboard material provided minimal combustion and any variation in the core mix would only have a marginal variance in the rate of combustion as the core is virtually non-combustible.

The 25 mm ShaftLiner MP plasterboard panel has the same core gypsum material composition as the tested standard 12 mm ShaftLiner plasterboard panel except for an added fungicide. The additive is of minimal contribution by mass to the overall core material and based on tests on similar plasterboard samples, the ShaftLiner MP is expected to perform to the same level and be assigned a Group 1 rating along with the other plasterboard samples.

The above assessment does include lining materials such as vinyl which would melt and combust at relatively low temperatures and there is insufficient baseline test data to support the assessment.

The same exclusion applies to mineral wool or glass fibre core materials where such panels have not been subjected to a fire test in accordance with AS ISO 9705:2003 (R2016) and AS 5637.1:2015.

Following the above discussions and evidence from previous tests confirming minimal variance in performance between different mix of plasterboards, the 12.5 mm Gyprock Habito H plasterboard specimen tested in RTF200198 in accordance with AS/NZS 3837:1998 and AS 5637.1:2015 is provided a Group 1 classification.

The list of plasterboard products positively assessed in FAS190127 R1.0 has been appended to the list of plasterboard products in Table 4

## 5.4 Conclusion

This assessment demonstrates that the range of plasterboard products as listed in Table 4 is likely to achieve Group 1 classification if it were tested in accordance with AS ISO 9705:2003 (R2016) and AS 5637.1:2015.

## 6. Assessment 2 – Assessment of CSR Cemintel fibre cement products

This revised assessment supersedes all previous discussion points with new test data based on test and assessment in accordance with AS 5637.1:2015 on representative product samples. All previous tests were conducted only in accordance with AS 1530.3 and are now deemed as obsolete as there were no tests carried out in accordance with AS ISO 9705-2003 (R2016) to establish the baseline data. However, the old test data in accordance with AS 1530.3 have been retained for future reference on the combustibility of the products.

### 6.1 Description of variations

The group number of a material or a system is based on its 'time to flashover' in the AS ISO 9705-2003 (R2016) room burn test. Flashover usually occurs when the fire is fully developed and all combustible items in the room are involved in the fire. In AS 5637.1:2015, flashover is said to occur when the total heat release rate exceeds 1 MW (1000 kW). For example, the fire hazard properties of timber are dependent on multiple factors such as density, thickness, microstructure and chemical composition. For veneered timber materials, additional factors such as the type and thickness of the adhesive layer also contribute to the fire.

In accordance with the procedures and requirements in AS 5637:2015, the variations to the tested specimen fibre cement product will be mainly in the thickness and density such as compressed fibre cement.

This assessment was undertaken to determine the likely performance of the CSR Cemintel fibre cement products, as outlined in Table 5 based on the data from referenced test report RTF190235.1 with CSR Cemintel fibre cement specimen panels and with details provided in the A.4

### 6.2 Methodology

The approach and method of assessment used for this assessment is summarised in Table 7.

**Table 7 Method of assessment**

Assessment method	
Level of complexity	Simple assessment –based purely on analysing data provided in the referenced fire test and comparing the physical properties of products.
Type of assessment	Comparative

### 6.3 Assessment of CSR Cemintel fibre cement products based on tested fibre cement specimen

In test RTF190235, the tested specimen in the AS ISO 9705-2003 (R2016) fire test consisted of fibre cement panels mounted on a series of steel battens or an AFS Logicwall® system.

The tested fibre cement panels would be considered to be more onerous compared with compressed fibre cement panels.

The components that are likely to combust when tested are the embedded cellulose fibres. The fibres in the compressed fibre cement panels are harder to combust as the compressed cement would have a slightly higher thermal storage mass, less porous for air or oxygen ingress and hence takes longer to heat up the fibres and combust.

The embedded fibres are relatively low compared to the total mass of the panel and hence contribute only minimal fuel for combustion in the test.

From observation of the test data in RTF190235.1 with 6mm fibre cement sheets, there was virtually no combustion in the specimen fibre cement panels when the burner output was at 100 kW.

Ten minutes into the test when the burner heat release rate was turned up to 300kW, the total heat release rate was only averaging 350 kW which equates to a contribution of a steady 50kW from the combustion of the fibre cement panels. The peak total heat release rate was below 400kW with no sharp peaks throughout the test duration.

It is noted from the test that:

- There was minimal burning of the fibre cement panels during initial 10minutes when the burner was on 100 kW output. There was no lateral flame spread.
- When the burner was ramed up to 300 kW, there was some lateral flame spread along the ceiling but minimal along the wall.
- Even though the fibre cement sheets cracked and fell off at the completion of the test, there was no continual burning of the debris.
- Smoke generation was minimal.

Based on the test data on a 6mm fibre cement sample, the contribution to the total heat release rate during the "high fire" of 300kW during the test, a thicker sample fibre cement panel will have a proportional increase in the total heat release rate with increase in thickness. The deduction is based on the uniform nature of the combustion where the tested panels provided a flat heat release rate throughout the test. It can therefore be considered that if the panels were thicker in the test, the total heat release rate would be elevated in proportion to the thickness and at a steady combustion rate. It is assumed that the cellulosic fibres in the thicker panels would have be of the same concentration or percentage by weight. This has been confirmed in writing by the sponsor.

The thickest fibre cement panel provided by the sponsor is 24 mm which is four times the thickness of the 6 mm tested specimen. If the 24 mm fibre cement panel were tested in accordance with AS ISO 9705-2003 (R2016), the equivalent contribution to the total heat release rate from the burning of the panels would be  $4 \times 50\text{kW}$  or a total heat release rate of 500 kW (200 kW from specimen + 300 kW from burner) which would still be within the limits of 1 MW, ie. the specimen would unlikely cause a flashover for the full duration of the test.

The thickest fibre cement panel would likely achieve the same Group 1 rating in accordance with AS 5637:2015.

Compressed fibre with the same percentage cellulosic fibres embedded in the cement base would likely perform equally or better in that it would have a comparatively higher thermal storage mass than the normal fibre cement and being denser it would make it harder for oxygen to permeate the panels and hence would likely burn at a slower rate.

The Barestone weatherboard panels have been provided with additional colour finishes with the addition of trace carbon elements to the core material, namely 0.2% for Ash colour, 0.6% for Lunar and 2.0% for Graphite. The Barestone Bark weather panels, which are basically sanded samples of the basic Barestone weatherboard panels. The addition of the trace elements of carbon is unlikely to cause any variance to the performance of the original base fibre cement core material.

The above assessment could be extended to cover all fibre cement panels up to 24 mm thick, provided that there is minimal variance in the composition of the embedded cellulosic fibres.

## 6.4 Conclusion

This assessment demonstrates that the range of CSR Cemintel fibre cement products as outlined in Table 5 is likely to achieve Group 1 classification if it were tested in accordance with AS ISO 9705:2003 (R2016) and AS 5637.1:2015.

## 7. 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 information and experience available at the time of preparation. 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 likely to be demonstrated on a test in accordance with AS ISO 9705-2003 (R2016) and AS 5637.1:2015, based on the evidence referred to in this report.

This assessment is provided to the CSR Gyprock for its own purposes and we cannot express an opinion on whether it will be accepted by building certifiers or any other third parties for any purpose.

## Appendix A Summary of supporting test data

### A.1 Material properties for CSR products

Table 8 CSR Gyprock plasterboard products

Product	Thickness mm	Mass kg/m <sup>2</sup>	AS 1530.3 indices			
			II	SOF	HE	SDI
CD Gyprock	10	6.5	13	0	1	2
	13	8.5				
Supacell	10	7.2	14	0	1	1
Soundchek	10	9.3	0	0	0	3
	13	13				
Aquachek	10	8	13	0	2	3
	13	10.4				
Flexible	6	4.3	13	0	1	2
Perforated	13	10	0	0	0	3
Fyrchek	13	10.5	0	0	0	3
	16	12.5				
Fyrechek MR	13	10.7	13	0	2	2
	16	13.5				
Shaftliner	25	19.8	0	0	0	3
Flamechek	10		13	0	2	2
Impactchek	10	8.0	0	0	0	3
	13	10.5				

Notes -

1. Gyprock Plasterboard is machine made sheet composed of a gypsum core encased in heavy duty paper linerboard
2. The linerboard face and back 170-180 gsm.
3. Aquachek and Fyrchek MR contain Paraffin wax emulsion.
4. The mesh in Impactchek is located adjacent to the back linerboard.

Table 9 CSR fibre cement products

Product	Thickness mm	Mass kg/m <sup>2</sup>	AS 1530.3 indices			
			II	SOF	HE	SDI
Fibre cement panel coated with polyurethane (GBKS 261)	10	1196	0	0	0	1

**Table 10 Ceiling panels**

Product description	Thickness mm	Mass kg/m <sup>2</sup>	EFH AS 1530.3
10 mm Supaceil Gyprock lay in panels with paint or vinyl facings	-	-	-
CSR Gyprock Freshtone Supatone (painted plasterboard)	10	7.3	0,0,0,4
CSR Gyprock Diamond White (Vinyl faced)			
CSR Gyprock Ultra Matt (Vinyl faced)			
Arctic White ceiling	10	65	

## A.2 Test results for ceiling panels, Gyprock Giptone, Gyprock Rigitone and Gyprock Plus.

**Table 11 Test results ceiling panels in general accordance with AS 5637.1:2015**

Material	Test Reference	Group Number	Average Specific Extinction Area (m <sup>2</sup> /kg)
Supaceil 10 mm thick	136806	1	46
Aquachek 10 mm thick	136808	1	38
Supaceil 10 mm thick faced with Vinyl Facing (Ultra matt)	136811	1	80
Cement-bonded fibrous wood particle panel- 16 mm thick	FNK 10457	1	41.3
Gyprock Perforated Plasterboard with Viledon fabric backing	FH 5549	1	10.1
Arctic white ceiling	18-002907	1	70.3
Notes -			
1. The above results have been superseded by new tests in accordance with AS 5637.1:2015 and are no longer valid.			
2. These results will be referenced for guidance on the combustibility of the materials as required.			

**Table 12 Test results for Gyprock Gyptone, Gyprock Rigitone and Gyprock Plus in accordance with AS 3837:1998**

Material	Test Reference	Group Number	Average Specific Extinction Area (m <sup>2</sup> /kg)
Gyptone Big Quattro 41	15-005762	1	4.9
Gyprock Rigitone 10/23	15-005760	1	8.5
Gyprock Plus	16-002226	1	7.6

### A.3 Test report – RTF190098.1 and summary of assessment report FAS190127 R1.0

Table 13 Information about test report

Item	Information about test report
Report sponsor	CSR Gyprock
Test laboratory	Warringtonfire Australia, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The fire resistance test was completed on 25/06/2019.
Test standards	The test was done in accordance with AS ISO 9705-2003 (R2016) and AS 5637.1:2015.
Variation to test standards	None
General description of tested specimen	The tested system consisted of a 28 mm thick metal framing, incorporating J-tracks, clips and furring channels, which was clad with 12 mm Rigitone Matrix 12 Square acoustic panel. The panels were screw fixed to the furring channels using 25 mm plasterboard screws. The J-tracks were first screw fixed to the room walls and ceiling and the furring channels slotted into the tracks. The furring channels were also secured in place using clips that were installed along the length of the channels. The panels were then screw fixed on to the furring channels. Panel to panel joints were sealed using Rigitone sealant.
Instrumentation	The test report states that the instrumentation was in accordance with AS ISO 9705-2003 (R2016).

The test specimen achieved the following result:

Table 14 Classification for AS ISO 9705-2003 (R2016) and AS 5637.1:2015 (for applications in Australia).

Criteria	Results
Group number	1
SMOGR <sub>ARC</sub> (in m <sup>2</sup> ·s <sup>-2</sup> × 1000)	0.5

Table 15 Classification for C/VM2 – Verification Method: Framework for Fire Safety Design (for applications in New Zealand).

Criteria	Results
Group number	1-S
Average smoke production rate (0 to 20 minutes)	0.16 m <sup>2</sup> ·s <sup>-1</sup>

Table 16 Assessment outcome from FAS190127 R1.0 to Australian Building Code requirements

Item	Panel thickness	Description of Variations	Assessed Classification for AS ISO 9705-2003 (R2016) and AS 5637.1:2015	
			Group No.	SMOGR <sub>ARC</sub> (in m <sup>2</sup> ·s <sup>-2</sup> × 1000)
Gyprock Rigitone Matrix 12 mm Square	12.5 mm	As tested. Perforated plasterboard with 12 mm square holes at 23% total free open area and black fabric backing	1	0.5

Item	Panel thickness	Description of Variations	Assessed Classification for AS ISO 9705-2003 (R2016) and AS 5637.1:2015	
			Group No.	SMOGR <sub>RC</sub> (in m <sup>2</sup> ·s <sup>-2</sup> × 1000)
Gyprock Rigitone Matrix 8 mm Round	12.5 mm	8mm round holes with 15.5% total free open area		
Gyprock Rigitone Astral	12.5 mm	Staggered pattern 12 mm and 20 mm round hoers with 16.6% total free open area		
Gyprock Rigitone Galaxy	12.5 mm	Scattered pattern 15 mm and 20 mm round holes with 10% total free open area.		
Gyprock Gyptone 12 mm Square	12.5 mm	12 mm square holes with 16.0% total free open area		
Gyprock Gyptone 12 mm Square Minigrid	12.5 mm	12 mm square holes with 6% total free open area in a mini grid layout		
Gyprock Gyptone Slotted Minigrid	12.5 mm	6 mm x 80 mm rectangular holes with 13% total free open area		
Gyprock Gyptone Flexible 12 mm Square	6.5 mm	12 mm square holes with 16.0% total free open area		
Gyprock Gyptone Flexible Slotted Minigrid	6.5 mm	6 mm × 80 mm rectangular holes with 13% total free open area		
Gyprock Gyptone Access Panels	-	Frame- 600mm × 600mm Hatch- 510mm × 510mm All of perforated plasterboard from one of 3 patterns from Gyprock Gyptone 12mm S, Gyprock Gyptone 12mm Square Minigrid and Gyprock Gyptone Slotted Minigrid		
Gyprock 6 m Round	13 mm	6 mm diameter holes of 8.3% total free open area		

**Table 17 Assessment outcome from FAS190127 R1.0 to New Zealand Building Code requirements**

Item	Panel thickness	Description of Variations
Gyprock Rigitone Matrix 12 mm Square	12.5 mm	As tested. Perforated plasterboard with 12 mm square holes at 23% total free open area and black fabric backing
Gyprock Rigitone Matrix 8 mm Round	12.5 mm	8 mm round holes with 15.5% total free open area
Gyprock Rigitone Astral	12.5 mm	Staggered pattern 12 mm and 20 mm round holes with 16.6% total free open area
Gyprock Rigitone Galaxy	12.5 mm	Scattered pattern 15 mm and 20 mm round holes with 10% total free open area.
Gyprock Gyptone 12 mm Square	12.5 mm	12 mm square holes with 16.0% total free open area
Gyprock Gyptone 12 mm Square Minigrid	12.5 mm	12 mm square holes with 6% total free open area in a mini grid layout
Gyprock Gyptone Slotted Minigrid	12.5 mm	6 mm × 80 mm rectangular holes with 13% total free open area
Gyprock Gyptone Flexible 12mm Square	6.5 mm	12 mm square holes with 16.0% total free open area
Gyprock Gyptone Flexible Slotted Minigrid	6.5 mm	6 mm × 80 mm rectangular holes with 13% total free open area

## A.4 Test report – RTF190235.1

**Table 18 Information about test report**

Item	Information about test report
Report sponsor	CSR Gyprock
Test laboratory	Warringtonfire Australia, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The fire resistance test was completed on 14/10/2019.
Test standards	The test was done in accordance with AS ISO 9705-2003 (R2016) and AS 5637.1:2015.
Variation to test standards	None
General description of tested specimen	The test specimen consisted of 6 mm fibre cement sheet panels that were fixed onto a steel framing system. The steel framing system lined the internal face of the test room walls and ceiling.
Instrumentation	The test report states that the instrumentation was in accordance with AS ISO 9705-2003 (R2016).

The test specimen achieved the following result:

**Table 19 Classification for AS ISO 9705:2003 (R2016) and AS 5637.1:2015**

Criteria	Results
Group number	1
SMOGR <sub>RC</sub> (in m <sup>2</sup> /s <sup>2</sup> × 1000)	0.2

**Table 20 Classification for C/VM2 – Verification Method: Framework for Fire Safety Design**

Criteria	Results
Group number	1-S
Average smoke production rate (0 to 20 minutes) (in m <sup>2</sup> /s)	0.1

## A.5 Test report – RTF200198.1 (& classification report ASCRRTF 200198.1)

**Table 21 Information about test report**

Item	Information about test report
Report sponsor	CSR Gyprock
Test laboratory	Warringtonfire Australia, Unit 2, 409-411 Hammond Road, Dandenong, Victoria 3175, Australia.
Test date	The fire resistance test was completed on 25/06/2019.
Test standards	The test was done in accordance with AS/NZ 3837.1:1998.
Variation to test standards	None
General description of tested specimen	Three test samples of the specimen consisting of 12.6 mm (measured) plasterboard panels of gypsum plaster encased in paper liners. All specimens were wrapped in a single layer of aluminium foil, covering the sides and bottom prior to testing.
Instrumentation	The test report states that the instrumentation was in accordance with AS/NZ 3837.1:1998.

The test specimen achieved the following result:

**Table 22 Classification for AS/NZS 3837:1998 and AS 5637.1:2015**

Criteria	Results
Group number	1
Average Specific Extinction Area (ASEA)	7.3 m <sup>2</sup> /kg

## UNDERSTANDING COMPLIANCE

The NCC outlines deem-to-satisfy requirements for metal claddings based on compliance to Australian Standards. Whilst the applicable Australian Standards differ between Residential and Non-Residential buildings the underlying common tenants are;

- a) that installed metal claddings must be able to meet expected Structural, Wind and Installation loads as per the Australian Standards,
- b) that installed metal claddings must be sufficiently durable to meet the amenity and sustainability requirements of the Australian Standards.

To determine a metal cladding's capacities and ability to comply with Australian design standards, metal cladding products must be tested in accordance with AS 4040.1. Metal cladding products that cannot demonstrate testing to AS 4040.1 and compliance with other relevant Australian Standards do not meet the deemed-to-comply provisions of the NCC.

LYSAGHT® steel building products have been tested in Lysaght's own NATA accredited testing facility to meet all relevant Australian Standards as outlined in this document.

## CHAIN OF RESPONSIBILITY

It is the primary responsibility of each person in the value chain, from designer to supplier to installer to builder to ensure that products used on a building are;

- a) Suitable for the intended use, and
- b) Comply with relevant Australian Standards and NCC provisions

Increasingly regulatory authorities are requiring documentary evidence of a products compliance to the requirements of the NCC. Recent Queensland legislation goes further placing an onus on all members in the chain of responsibility to report the use of any non-conforming product.

## INSIDE OUR BRANDS

Lysaght's range of steel building products are manufactured using Australia's leading coated steel and prepainted aluminium materials.

COLORBOND® prepainted steel and ZINCALUME® aluminium/zinc/magnesium alloy coated steel are supplied to Lysaght in large coils. Lysaght then shapes and forms these materials (through the process known as rollforming) into our range of roofing profiles, gutters, fascias and downpipes, plus products for fencing systems and home additions such as verandahs, patios and carports.

Similarly, PERMALITE® prepainted aluminium is used to manufacture a range of roofing, walling and structural products ideally suited to the most aggressive of environments.

FOR YOUR NEAREST SUPPLIER VISIT:

**WWW.LYSAGHT.COM**

FOR SALES ENQUIRIES CALL 13 30 38

FOR TECHNICAL ENQUIRIES CALL 1800 641 417

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LY0146-11/2019

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# ROOFING & WALLING



## YOUR COMPLIANCE CHECKLIST

- Fully specify LYSAGHT® Profile, Finish & Coating class
- Check all details when you receive order confirmation
- On-Site - check delivery docket and product branding

### THIS BULLETIN DETAILS RELEVANT NCC OF AUSTRALIA COMPLIANCE INFORMATION RELEVANT TO THE FOLLOWING LYSAGHT® STEEL AND PERMALITE® ALUMINIUM CLADDING PRODUCTS.

- LYSAGHT CUSTOM ORB®
- LYSAGHT CUSTOM ORB ACCENT® 21
- LYSAGHT CUSTOM ORB ACCENT® 35
- LYSAGHT TRIMDEK®
- LYSAGHT SPANDEK®
- LYSAGHT KLIP-LOK 700 HI-STRENGTH®
- LYSAGHT KLIP-LOK CLASSIC® 700
- LYSAGHT KLIP-LOK® 406
- LYSAGHT FLATDEK®
- LYSAGHT FLATDEK® II
- LYSAGHT FLATDEK® 310
- LYSAGHT PANELRIB®
- LYSAGHT MINI ORB®
- LYSAGHT MULTICLAD®
- LYSAGHT TRIMWALL®
- LYSAGHT WALLCLAD®
- LYSAGHT WEATHERLINE®
- LYSAGHT EASYCLAD® 2P300
- PERMALITE LT7®
- PERMALITE V-Rib®
- PERMALITE ALSPAN®
- PERMALITE WAVELINE®

## LYSAGHT® – YOUR GUARANTEE OF COMPLIANCE

The National Construction Code of Australia (NCC) details the minimum necessary requirements for safety, health, amenity and sustainability that need to be met in the design and construction of new buildings (and new building work in existing buildings) throughout Australia.

Using products that do not conform to the NCC requirements can leave installers, builders and suppliers liable for cost of replacement, rectification and consequential damages.

Lysaght's range of Australian-made steel and aluminium building products has been developed, tested and manufactured to not only meet our country's demanding climatic and geographic requirements but also to

provide building designers, builders and owners with the confidence that comes from using guaranteed compliant products.

The compliance statements overleaf outline compliance of Lysaght's roofing and walling products with both the National Construction Code of Australia and the relevant Australian Standards for both Residential and Non-residential buildings.



# NATIONAL CONSTRUCTION CODE OF AUSTRALIA (NCC) COMPLIANCE STATEMENT

## LYSAGHT ROOFING AND WALLING PRODUCT RANGE

Issuing entity:		BlueScope Steel Limited				Ref #: LYS-NCC- R&W		Version: V2.0		Issue date: 26/11/2019		
<b>Application</b>		Roofing for class 2 to 9 Buildings (Non-Residential) and for class 1 and 10 Buildings (Residential)										
<b>Scope of Use</b>		All products noted below may be used as roof cladding and/or walling when designed using the individual technical data available for each product at <a href="http://www.lysaght.com">www.lysaght.com</a> for LYSAGHT products or <a href="http://www.permalite.com.au">www.permalite.com.au</a> for PERMALITE® products										
		<b>ROOFING - WALLING</b>			<b>ROOFING</b>			<b>WALLING - CEILING - SOFFIT</b>			<b>ROOFING - WALLING</b>	
		LYSAGHT CUSTOM ORB® LYSAGHT CUSTOM ORB ACCENT® 21 LYSAGHT CUSTOM ORB ACCENT® 35			LYSAGHT TRIMDEK® LYSAGHT SPANDEK® LYSAGHT KLIP-LOK 700 HI-STRENGTH® LYSAGHT KLIP-LOK CLASSIC® 700 LYSAGHT KLIP-LOK® 406			LYSAGHT FLATDEK® LYSAGHT FLATDEK® II LYSAGHT FLATDEK® 310			LYSAGHT PANELRIB® LYSAGHT MINI ORB® LYSAGHT MULTICLAD® LYSAGHT TRIMWALL®	
								LYSAGHT WALLCLAD® LYSAGHT WEATHERLINE® LYSAGHT EASYCLAD® 2P300			PERMALITE LT7® PERMALITE V-Rib® PERMALITE ALSPAN® PERMALITE WAVELINE®	
<b>Product Attributes</b>		<b>Base Metal Thickness Range</b>		Roofing: 0.42mm - 0.48mm				<b>Walling: 0.35mm - 0.42mm</b>		0.7mm - 1.2mm		
		<b>Min Yield Strength</b>		550 MPa				550 MPa		220-225 MPa		
<b>Base Material Brand Name</b>		<b>Zincalume®</b>	<b>Colorbond®</b>	<b>Colorbond® MATT</b>	<b>Colorbond®</b>	<b>Colorbond®</b>	<b>Colorbond®</b>	<b>Colorbond®</b>	<b>Colorbond®</b>	<b>permalite</b>		
		ZINCALUME® steel	COLORBOND® steel	COLORBOND® steel Matt	COLORBOND® Metallic steel	COLORBOND® Ultra steel	COLORBOND® Stainless steel	PERMALITE® pre-painted aluminium				
<b>Typical Environments</b>		For Low to High corrosive environments; >200m from breaking surf > 100m from calm marine	For Low to High corrosive environments; >200m from breaking surf > 100m from calm marine	For Low to High corrosive environments; >200m from breaking surf > 100m from calm marine	For Low to High corrosive environments; >200m from breaking surf > 100m from calm marine	For Low to High corrosive environments; >200m from breaking surf > 100m from calm marine	For Very High to High corrosive environments; >100m from breaking surf > 0m from calm marine	For Very High corrosive environments; > 0m from breaking surf	For Very High corrosive environments; < 0m from breaking surf			
<b>Material Specification</b>		<b>Coating</b>	AM125	AM100	AM100	AM100	AM150	Grade 430 SS	5251 / 5052 marine grade aluminium alloy			
		125 g/m <sup>2</sup> minimum metallic coating mass, (aluminium/zinc/magnesium alloy) with Activate® technology to AS 1397-2011	100 g/m <sup>2</sup> minimum metallic coating mass, (aluminium/zinc/magnesium alloy) with Activate® technology to AS 1397-2011	100 g/m <sup>2</sup> minimum metallic coating mass, (aluminium/zinc/magnesium alloy) with Activate® technology to AS 1397-2011	100 g/m <sup>2</sup> minimum metallic coating mass, (aluminium/zinc/magnesium alloy) with Activate® technology to AS 1397-2011	150 g/m <sup>2</sup> minimum metallic coating mass, (aluminium/zinc/magnesium alloy) with Activate® technology to AS 1397-2011	N/A					
		<b>Paint</b>	N/A	Paint Coating to AS 2728-2013 includes Thermatech® solar reflectance technology*	Paint Coating to AS 2728-2013 includes Thermatech® solar reflectance technology*	Paint Coating to AS 2728-2013 Type 3	Paint Coating to AS 2728-2013 Type 4 includes Thermatech® solar reflectance technology*	Paint Coating to AS 2728-2013 Type 6	Paint Coating to AS 2728-2013			
		<b>Solar Absorbance Value</b>	Range from 0.32 to 0.96	Range from 0.35 to 0.79	Range from 0.34 to 0.93	Range from 0.32 to 0.73	Range from 0.32 to 0.73	0.26 for unpainted weathered aluminium				
<b>Warranty**</b>		<b>Roofing</b>	Up to 36 years**	Up to 36 years**	Up to 36 years**	Up to 30 years**	Up to 36 years**	Up to 36 years**	up to 40 years***			
		<b>Walling</b>	Up to 18 years** (Non - residential)	Up to 20 years** (Non - residential) Up to 15 years** (Residential)	Up to 20 years** (Non - residential) Up to 15 years** (Residential)	Up to 20 years** (Non - residential) Up to 10 years** (Residential)	Up to 20 years** (Non - residential) Up to 15 years** (Residential)	Up to 20 years** (Non - residential) Up to 15 years** (Residential)	Up to 30 years***			
<b>Combustibility</b>		LYSAGHT® products manufactured from COLORBOND® steel, ZINCALUME® steel or galvanised steel materials all have an ignitability index, Spread of Flame index and Heat Evolved Index of 0 (zero) and as such may be used wherever a non-combustible material is required as per the National Construction Code clauses C1.9.(e).(v) and 3.7.1.1.(e). PERMALITE® products manufactured from pre-painted aluminium materials have a Spread-of-Flame index of 0 (zero) and as such are considered non-combustible materials in accordance with the National Construction Code clauses C1.9.(e).(v) and 3.7.1.1.(e).										
<b>Compliance with the deemed-to-satisfy provision of the NCC</b>		<p>NCC Volume 1 - For class 2 to 9 Buildings (Non-Residential)</p> <ul style="list-style-type: none"> <li>- Section B1.4 Structural Resistance</li> <li>(j) (iv) Metal roofing: AS 1562.1-2018 (except in cyclonic areas)</li> </ul> <p>Section F1.0 Deemed-to-Satisfy Provisions</p> <ul style="list-style-type: none"> <li>- F1.5 Roof coverings</li> <li>Metal Sheet roofing complying with AS 1562.1-2018</li> </ul> <p>NCC Volume 2 - For class 1 and 10 Buildings (Housing Provisions)</p> <ul style="list-style-type: none"> <li>- 3.5.1 Roof cladding</li> </ul> <p>Published Capacity tables in reference manuals noted below are suitable to determine structural adequacy and serviceability of nominated products for individual projects referencing the following Australian Standards and NCC requirements:</p> <ul style="list-style-type: none"> <li>NCC, Volume One, Section B - Structure, Part B1 -Structural provisions (Deemed-to-Satisfy Provisions), Clause B1.1 Resistance to actions, and Clause B1.2 Determination of individual actions</li> <li>NCC, Volume One, Section B - Structure, Specification B1.2 - Design of Buildings in Cyclonic Areas</li> </ul>										
<b>Acceptable Construction Manuals</b>		AS 1562.1-2018 Design and Installation of sheet and wall cladding - Metal	LYSAGHT® Roofing & Walling Installation Manual for Design and Installation professionals LYSAGHT® Cyclonic Area Design Manual for Design and Installation professionals LYSAGHT® Architectural Detailing and Flashing Manual for Architects and Detailing professionals LYSAGHT TOPSPAN® Design & Installation Guide LYSAGHT TOPSPAN® Quick Selection Guide and Quick Selection Guide Addendums 1, 2, 3 LYSAGHT® Maintenance Manual for Roofing Walling and Rainwater Goods LYSAGHT CUSTOM ORB® Design & Installation Guide LYSAGHT TRIMDEK® Design & Installation Guide LYSAGHT CUSTOM ORB ACCENT® 21 Design & Installation Guide LYSAGHT CUSTOM ORB ACCENT® 35 Design & Installation Guide LYSAGHT SPANDEK® Design & Installation Guide LYSAGHT KLIP-LOK 700 HI-STRENGTH® Design & Installation Guide			LYSAGHT KLIP-LOK CLASSIC® 700 Design & Installation Guide LYSAGHT KLIP-LOK® 406 Design & Installation Guide LYSAGHT FLATDEK® Design & Installation Guide LYSAGHT FLATDEK® 310 Design & Installation Guide LYSAGHT FLATDEK® II Design & Installation Guide LYSAGHT® Product Advisory Bulletins			BlueScope Technical Bulletin 1A Steel roofing products - selection guide available at <a href="http://steelproducts.bluescopesteel.com.au">http://steelproducts.bluescopesteel.com.au</a>			PERMALITE® Aluminium Roofing Solutions PERMALITE® Aluminium Residential Solutions available at <a href="http://www.permalite.com.au">www.permalite.com.au</a>
<b>Australian Standards Compliance</b>		<p>lysaght published Limit State Capacities for Strength and Serviceability have been determined from testing at NATA<sup>(1)</sup> accredited facilities in compliance with the following standards;</p> <ul style="list-style-type: none"> <li>AS 1562.1-2018 Design and installation of sheet roof and wall cladding. Part 1: Metal</li> <li>AS 4040.0-1992 (Reconfirmed 2016) Methods of testing sheet roof and wall cladding. Method 0: Introduction, list of methods and general requirements</li> <li>AS 4040.1-1992 (Reconfirmed 2016) Methods of testing sheet roof and wall cladding. Method 1: Resistance to concentrated loads</li> <li>AS 4040.2-1992 (Reconfirmed 2016) Methods of testing sheet roof and wall cladding. Method 2: Resistance to wind pressures for non-cyclonic regions</li> <li>AS 4040.3-2018 Methods of testing sheet roof and wall cladding. Method 3: Resistance to wind pressures for cyclonic regions</li> </ul> <p>Limit state capacities contained within the Acceptable Construction &amp; Design Manuals are suitable to determine structural and serviceability in accordance with;</p> <ul style="list-style-type: none"> <li>AS/NZS 1170.0:2002 Structural design actions, Part 0: General principles</li> <li>AS/NZS 1170.1:2002 (Reconfirmed 2016) Structural design actions, Part 1: Permanent, imposed and other actions</li> <li>AS/NZS 2728:2013 (Reconfirmed 2016) Structural design actions, Part 2: Wind actions</li> <li>AS/NZS 1170.3:2011 (Reconfirmed 2016) Structural design actions, Part 3: Snow and ice actions</li> </ul> <p>AS 1562.1-2018 Design and Installation of sheet and wall cladding Part 1: Metal Section 2.1.3 Steel: Requires metallic coated products to comply with;</p> <ul style="list-style-type: none"> <li>AS 1397-2011 Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium and Pre-painted products to comply with;</li> <li>AS/NZS 2728:2013 Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements</li> <li>AS 1397-2011 Defines the coating types and classes and steel grades for hot-dip metallic coated steel. Product made to other standards may not meet the ductility or strength requirements assumed by design standards or the minimum coating class requirements critical to building durability.</li> </ul> <p>LYSAGHT® product coating compliance is nominated at "Coating" above. AS/NZS 2728 specifies requirements for the physical properties and long-term durability of pre-finished/pre-painted sheet metal products. LYSAGHT® pre-painted compliance is nominated at "Paint" above for Performance requirement 1.3.1 Metal products Hot dipped metallic coated steel (types Z, ZM, AZ, AM) complying with AS 1397, stainless steel, aluminium or aluminium alloy in the form of sheet, coil or strip.</p> <p>PERMALITE® aluminium feed coil complies to AS/NZS 1734:1997 Aluminium and Aluminium alloys - Flat sheet, coil sheet and plate. PERMALITE® pre-painted aluminium complies with AS/NZS 2728 Pre-finished /pre-painted sheet metal products for interior/ exterior applications</p>										

Please note that not all products are available in all finishes or in each state. Please refer to your local Lysaght service centre for product availability for your region.

\*Thermatech® solar reflectance technology is incorporated in the standard COLORBOND® steel colour range, however excludes Night Sky®.

\*\* Warranties subject to application and eligibility criteria. For full terms and conditions and to determine the eligibility of your product for a warranty visit [www.bluescopesteel.com.au/warranties](http://www.bluescopesteel.com.au/warranties) and [www.lysaght.com/warranties](http://www.lysaght.com/warranties).

\*\*\* visit [Permalite.com.au/warranties](http://Permalite.com.au/warranties) to obtain an indicative warranty period for your project.

1. National Association of Testing Authorities.

# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11605

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

TRADE NAME: BlueScope COLORBOND Steel

SPONSOR: Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

DESCRIPTION OF  
SAMPLE:

The sponsor described the tested specimen as a polyester painted steel sheet with aluminium-zinc-magnesium alloy coating on both sides.

Nominal thickness of steel sheet:	0.35 mm
Nominal thickness of aluminium-zinc-magnesium coating:	30 $\mu\text{m}$
Nominal thickness of paint layer:	50 $\mu\text{m}$
Nominal total thickness:	0.45 mm
Nominal total mass:	5.5 kg/m <sup>2</sup>
Nominal total density:	7700 kg/m <sup>3</sup>
Colour:	dark grey (Woodland Grey)/brown

TEST PROCEDURE: Six 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.

RESULTS: The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-1.560	0.072

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)
0	0	0	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: 11 February 2016

Issued on the 3<sup>rd</sup> day of March 2016 without alterations or additions.



Heherson Alarde  
Testing Officer



Brett Roddy  
Team Leader, Fire Testing and Assessments

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# Certificate of Test

QUOTE No.: NC6040

REPORT No.: FNC9694

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## COMBUSTIBILITY TEST FOR MATERIALS

TRADE NAME: Bradford Gold Insulation R1.5 Water-repellent Wall & Floor batts

SPONSOR: CSR Building Products Limited  
CSR Performance System  
376 Victoria Street  
WETHERILL PARK NSW  
AUSTRALIA

### DESCRIPTION OF TEST SAMPLE:

The sponsor described the tested specimen as glass-fibre insulation batt bonded with thermosetting resin.

Nominal mass: 657 g/m<sup>2</sup>  
Nominal thickness: 75 mm  
Colour: light golden yellow

TEST PROCEDURE: Five (5) samples were tested in accordance with Australian Standard 1530 Methods for fire tests on building materials, components and structures, Part 1- 1994: Combustibility Test for Materials.

RESULTS: Mean furnace thermocouple temperature rise ..... 26.0°C  
Mean specimen centre thermocouple temperature rise ..... 3.8°C  
Mean specimen surface thermocouple temperature rise ..... 0°C  
Mean duration of sustained flaming ..... 0 seconds  
Mean mass loss ..... 19.5 %


DESIGNATION: The material is NOT deemed COMBUSTIBLE according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

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.

DATE OF TEST: 6 March 2010

Issued on the 8<sup>th</sup> day of March 2010 without alterations or additions.

  
Russell Collins  
Testing Officer

  
Garry E Collins  
Manager, Fire Testing and Assessments



This document is issued in accordance with NATA's accreditation requirements.  
Accreditation No. 165 – Corporate Site No. 3625



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# Reaction to fire performance of faced glasswool and rockwool when tested to **AS/NZS 1530.3-1999**

## Assessment Report

Author: Keith Nicholls

Assessment Number: FCO-2805

Quote Number: CO4552

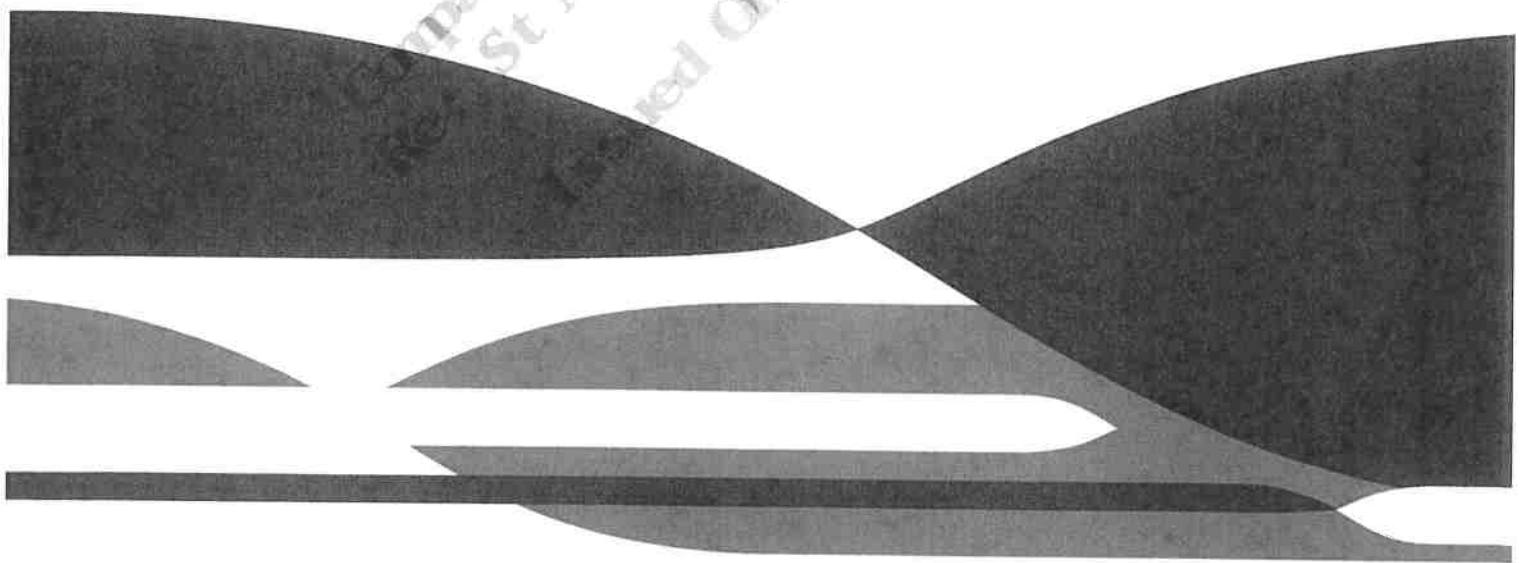
Date: 25<sup>th</sup> July 2018

Version: Revision D

Client: CSR Building Products Limited

Commercial-in-confidence

Company: Ben Cooper  
St Matthew's Catholic School  
Mudgee NSW  
Issued On: 21st April 2021



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#### Assessment Report Details

Report CSIRO Reference number: FCO-2805/4552

#### Report Status and Revision History

VERSION	STATUS	DATE	DISTRIBUTION	ISSUE NUMBER
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Revision D	Final for issue	11/7/2018	CSIRO; Client	FCO-2805 Rev D

#### Test Report Authorisation

AUTHOR	REVIEWED BY	AUTHORISED BY
Keith Nicholls	Jing Xu	Brett Roddy
		
25 <sup>th</sup> July 2018	25 <sup>th</sup> July 2018	25 <sup>th</sup> July 2018

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Issued to: Ben Cooper  
Company: Allianza Architecture  
Re: St Matthews Catholic School  
Mudgee NSW  
Issued On: 21st April 2021

# 1 Introduction

This report provides the reaction to fire performance of faced glasswool and rockwool when tested to AS/NZS 1530.3-1999.

This report confirms the extent to which the referenced reaction to fire tests listed in Section 2 meet the requirements of the fire test standards listed in Section 4 of the report. The proposed variations to the tested construction presented in Section 3 are subject to an analysis in Appendix B and the conclusions are presented in Section 5 of this report subject to the validity and limitations in Section 6 and 7.

# 2 Supporting Data

This assessment report refers to various test reports to support the analysis and conclusions of this report. They are listed below in Table 1.

**Table 1 – Referenced Tests**

Report Reference	Test Standard	Outline of Test Specimen	
FNE9785	AS/NZS 1530.3-1999	Ultrapon-faced Bradford Glasswool Ultratel	
FNE9787		Medium duty foil-faced Bradford Glasswool Ultratel	
FNE9788		Heavy Duty foil-faced Bradford Glasswool Ultratel	
FNE9790		BMF-faced Bradford Glasswool Ultratel	
FNE10360		Bradford 50mm Supertel Board faced with HDP foil	
FNE10361		Bradford 50mm Supertel Board faced with Acoustituff	
FNE10364		Bradford 50mm Ultratel Board faced with Acoustituff	
FNE11429		Bradford Enviroseal Roof Tile Plus, foil faced (Ultratel glasswool board)	
7-574195-CN		CSR Bradford Thermoplast 993 White (Antiglare)	
7-574196-CN		CSR Bradford Thermoplast 990 White	
FNE12136		Bradford Glasswool Ultratel faced with BMF Bostik HT adhesive	
FNE12137		Thermoseal 750P heavy duty perforated foil (HDP) faced Bradford Glasswool Supertel with Bostik HT adhesive	
FNE 9690		Rockwool Building Grade Granulated	
FNE 11527		CSR Bradford Rockwool Granulated	
FNE 11655		CSR Rockwool Fibertex - 820	
FNE 9589		Bradford Glasswool Quietel	
FNC 9595		AS 1530.1-1994	Bradford Rockwool Fibertex 450
FNC 9596			Bradford Rockwool Fibertex HD
FNC 9693			Soundscreen Plus R3.0
FNC 9770	Rockwool Granulated Cavity Wall		
FNC 9771	Rockwool Building Grade Granulated		

Report Reference	Test Standard	Outline of Test Specimen
FNC 10324	AS 1530.1-1994	CSR Bradford R3.6 Building Blanket glass-fibre insulation batt
FNC 0354		Glasswool Partition Batts glass-fibre insulation
FNC 9594		Bradford Gold Insulation R2.0 Ceiling batts glass-fibre
FNC 9694		Bradford Gold Insulation R1.5 Water-repellent Wall & Floor batts
FNC 9695		Bradford Gold Insulation R5.0 High Performance Ceiling batts glass-fibre insulation
FNC 9749		Bradford Glasswool Partition Batts
NR-15003		CSR Fireseal Party Wall Roof Sealer
NR-15004		CSR Fireseal Party Wall Batts
NR-15005		CSR Rockwool Fibertex 820
NR-15006		CSR Bradford New Generation SoundScreen R2.0 Wall Floor Batts glass-fibre insulation
NR-15007		Bradford Rockwool Granulated Industrial (502)

The test reports listed above were undertaken by CSIRO, AWTA or CSR Building Products Limited and were sponsored by CSR Building Products Limited.

### 3 Proposed Variations

The proposed construction shall be rockwool and glasswool tested products listed in Section 2, subject to the following variations;

- The density of the tested rockwool may vary from that tested up to 110 kg/m<sup>3</sup>
- The density of the tested glasswool may vary from that tested up to 130 kg/m<sup>3</sup>
- The facings may vary from that tested to one of the following:
  - Ultraphon
  - Medium duty foil
  - Heavy duty foil
  - Black matt facing (BMF)
  - Heavy duty perforated foil (HDP foil)
  - Acoustituff
  - Enviroseal Roof Tile Plus foil
  - Thermoplast Decorative facing 993
  - Thermoplast Decorative facing 990
- The facings may be adhered with either Bostik Rapidset 4725 or Bostik HT insulation adhesive.

## 4 Referenced Standard

Standards:

AS/NZS 1530.3-1999 Australian/New Zealand Standard 1530: Method for fire tests on building materials, components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999

## 5 Conclusion

On the basis of the analysis presented in this report, it is the opinion of this Testing Authority that the tested prototypes described in Section 2 when varied as described in Section 3 will achieve the classification indices for ignitability, heat evolved, spread of flame, and smoke developed stated below in accordance with the method referenced in Section 4 and subject to the validity and limitations in section 6 and 7.

Table 1: AS/NZS 1530.3 performance of the rockwool or glasswool insulation with various facings

Facing	Adhesive	Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
Unfaced	None	0	0	0	1
Ultrapphon	Bostik Rapidset 4725 or Bostik HT adhesive when applied at a rate of 25gsm (dry weight)	0	0	0	3
Medium duty foil		0	0	0	0-1
Heavy duty foil		0	0	0	0-1
BMF		18	0	0	3
HDP foil		0	0	0	3
Acoustituff		0	0	0	1
Enviroseal Roof Tile Plus foil		0	0	0	1
Thermoplast Decorative facing 993		0	0	0	0-1
Thermoplast Decorative facing 990		0	0	0	0-1

## 6 Term of Validity

This assessment report will lapse on 30<sup>th</sup> June 2023. Should you wish us to re-examine this report with a view to the possible extension of its term of validity, would you please apply to us three to four months before the date of expiry. This Division reserves the right at any time to amend or withdraw this assessment in the light of new knowledge.

## 7 Limitations

The conclusions of this assessment report may be used to directly assess the fire performance under such conditions, but it should be recognised that a single test method will not provide a full assessment of the fire hazard under all fire conditions.

This assessment report does not provide an endorsement by CSIRO of the actual products supplied to industry. This assessment can therefore only relate only to the actual prototype test specimens, testing conditions and methodology described in the supporting data, and does not imply any performance abilities of construction of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report is reviewed on or, before, the stated expiry date.

The information contained in this assessment report shall not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.

Issued to: Applied Technica  
Company: Allianceza Catholic  
Re: St Matthews Mudgee NSW  
Issued On: 21st April 2018

## Appendix A Supporting Test Data

### A.1 CSIRO Certificate of Tests numbered FNE 9785, FNE 9787, FNE 9788, FNE 9790, FNE 10360, FNE 10361, FNE 10364 and FNE 11429

Certificate of Tests numbered FNE9785, FNE9787, FNE9788, and FNE9790, issued on 14th June 2010 by CSIRO, FNE10360 issued on 21st December 2011 by CSIRO, FNE10361 and FNE10364 issued on 22nd December 2011 by CSIRO, and FNE 11429, issued on 23rd July by CSIRO, details the test results for Ultraphon-faced Bradford Glasswool Ultratel, Medium duty foil-faced Bradford Glasswool Ultratel, Heavy Duty foil-faced Bradford Glasswool Ultratel, BMF-faced Bradford Glasswool Ultratel, Bradford 50mm Supertel Board faced with HDP foil, Bradford 50mm Supertel Board faced with Acoustituff, Bradford 50mm Ultratel Board faced with Acoustituff, and Bradford Glasswool Ultratel - Faced with Enviroseal roof tile plus respectively, when tested to AS/NZS 1530.3:1999. All of the test specimens comprised various facings, Bostik Rapidset 4725 adhesive and backed with Bradford Glasswool Ultratel or Supertel glass-fibre insulation with a nominal density of either 32 kg/m<sup>3</sup> or 48 kg/m<sup>3</sup>. All the test specimens achieved an Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index of 18, 0, 0, 3 respectively or better.

### A.2 AWTA Product Testing Test Reports numbered 7-574195-CN and 7-574196-CN

Test Reports numbered 7-574195-CN and 7-574196-CN, issued on 12th August 2010 by AWTA Product Testing, detail the test results for CSR Bradford Thermoplast 993 White (Antiglare) and CSR Bradford Thermoplast 990 White respectively, when tested to AS/NZS 1530.3:1999. The test specimens comprised facings backed with glass-fibre insulation. The total mass of the specimens was 1030-g/m<sup>2</sup> and 960-g/m<sup>2</sup> respectively. The density of the glass-fibre insulation was not reported. Both test specimens achieved an Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index of 0, 0, 0, 0-1 respectively.

### A.3 CSIRO Certificate of Test numbered FNE 12136

Certificate of Test numbered FNE 12136, issued on 12th April 2018 by CSIRO. The specimen comprised Bradford Glasswool Ultratel glass-fibre insulation batt bonded with thermosetting resin and a thickness of 50 mm and nominal density of 48 kg/m<sup>3</sup>. The specimen was faced on one side with Black Matt Facing (BMF). When tested in accordance with AS/NZS 1530.3-1999 the Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 2 respectively.

### A.4 CSIRO Certificate of Test numbered FNE 12137

Certificate of Test numbered FNE 12137, issued on 12th April 2018 by CSIRO, details the test results for Bradford Glasswool Supertel glass-fibre insulation batt bonded with thermosetting resin and a thickness of 50 mm and nominal density of 32 kg/m<sup>3</sup>. The specimen was faced on one side with 750P Heavy Duty Perforated Foil (HDP). When tested in accordance with AS/NZS 1530.3-1999 the Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 2 respectively.

## A.5 CSIRO Certificate of Test numbered FNE 9690

Certificate of Test numbered FNE 9690, issued on 6 April 2010 by CSIRO, details the test results for Rockwool Building Grade Granulated loose fill granulated rockwool mineral-fibre insulation, with a thickness of 100 mm and a nominal density of 20 kg/m<sup>3</sup> and 100 kg/m<sup>3</sup>, tested in accordance with AS/NZS 1530.3 1999. The Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 0-1 respectively.

## A.6 CSIRO Certificate of Test numbered FNE 11527

Certificate of Test numbered FNE 11527, issued on 8 April 2016 by CSIRO, details the test results for CSR Bradford Rockwool Granulated loose-fill granulated rockwool mineral-fibre insulation, with a thickness of 100 mm and a nominal density of 100 kg/m<sup>3</sup>, tested in accordance with AS/NZS 1530.3 1999. The Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 1 respectively.

## A.7 CSIRO Certificate of Test numbered FNE 11655

Certificate of Test numbered FNE 11655, issued on 8 April 2016 by CSIRO, details the test results for CSR Bradford Rockwool Fibertex - 820 rockwool mineral-fibre insulation board, with a thickness of 100 mm and a nominal density of 110 kg/m<sup>3</sup>, tested in accordance with AS/NZS 1530.3 1999. The Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 1 respectively.

## A.8 CSIRO Certificate of Test numbered FNE 9589

Certificate of Test numbered FNE 9589 was issued on 11 February 2010 by CSIRO. The specimen comprised Bradford Glasswool Quietel glass-fibre insulation batt bonded with thermosetting resin and a thickness of 25 mm and nominal density of 130 kg/m<sup>3</sup>. When tested in accordance with AS/NZS 1530.3-1999 the Ignitability Index, Spread of Flame Index, Heat Evolved Index and Smoke Developed Index achieved were 0, 0, 0, 1 respectively.

## A.9 CSIRO Certificate of Test numbered FNC 9595

Certificate of Test numbered FNC 9595, issued on 12 February 2010 by CSIRO, details the test results for Bradford Rockwool Fibertex 450 rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 80 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.10 CSIRO Certificate of Test numbered FNC 9596

Certificate of Test numbered FNC 9596, issued on 12 February 2010 by CSIRO, details the test results for Bradford Rockwool Fibertex HD rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 197 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.11 CSIRO Certificate of Test numbered FNC 9693

Certificate of Test numbered FNC 9693, issued on 8 March 2010 by CSIRO, details the test results for Soundscreen Plus R3.0 rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 30 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.12 CSIRO Certificate of Test numbered FNC 9770

Certificate of Test numbered FNC 9770, issued on 11 June 2010 by CSIRO, details the test results for Rockwool Granulated Cavity Wall loose fill granulated rockwool mineral-fibre insulation with a nominal density of 20 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.13 CSIRO Certificate of Test numbered FNC 9771

Certificate of Test numbered FNC 9771, issued on 11 June 2010 by CSIRO, details the test results for Rockwool Building Grade Granulated loose fill granulated rockwool mineral-fibre insulation with a nominal density of 100 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.14 CSIRO Certificate of Test numbered FNC 10324

Certificate of Test numbered FNC 10324, issued on 21 November 2011 by CSIRO, details the test results for CSR Bradford R3.6 Building Blanket glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 145 mm and a nominal density of 15.9 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.15 CSIRO Certificate of Test numbered FNC 0354

Certificate of Test numbered FNC 0354, issued on 25 October 2005 by CSIRO, details the test results for Glasswool Partition Batts glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 50 mm and a nominal density of 11 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.16 CSIRO Certificate of Test numbered FNC 9594

Certificate of Test numbered FNC 9594, issued on 12 February 2010 by CSIRO, details the test results for Bradford Gold Insulation R2.0 Ceiling batts glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 115 mm and a nominal mass of 728 g/m<sup>2</sup> (a density of 6.3 kg/m<sup>3</sup>) when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.17 CSIRO Certificate of Test numbered FNC 9694

Certificate of Test numbered FNC 9694, issued on 8 March 2010 by CSIRO, details the test results for Bradford Gold Insulation R1.5 Water-repellent Wall & Floor batts glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 75 mm and a nominal mass of 657 g/m<sup>2</sup> (a density of 8.76 kg/m<sup>3</sup>) when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.18 CSIRO Certificate of Test numbered FNC 9695

Certificate of Test numbered FNC 9695, issued on 19 March 2010 by CSIRO, details the test results for Bradford Gold Insulation R5.0 High Performance Ceiling batts glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 210 mm and a nominal mass of 2800 g/m<sup>2</sup> (a density of 13.3 kg/m<sup>3</sup>) when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.19 CSIRO Certificate of Test numbered FNC 9749

Certificate of Test numbered FNC 9749, issued on 11 June 2010 by CSIRO, details the test results for Bradford Glasswool Partition Batts (14 kg/m<sup>3</sup>) glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 50 mm and a nominal density of 14 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.20 CSR Test Report NR-15003

Test Report numbered NR-15003, issued on 25th May 2015 by CSR Building Products Insulation Research Laboratory, details the test results for CSR Fireseal Party Wall Roof Sealer rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 50 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.21 CSR Test Report NR-15004

Test Report numbered NR-15004, issued on 25th May 2015 by CSR Building Products Insulation Research Laboratory, details the test results for CSR Fireseal Party Wall Batts rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 70 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.22 CSR Test Report NR-15005

Test Report numbered NR-15005, issued on 10th July 2015 by CSR Building Products Insulation Research Laboratory, details the test results for CSR Rockwool Fibertex 820 rockwool mineral-fibre insulation batt with a thickness of 50 mm and a nominal density of 110 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.23 CSR Test Report NR-15006

Test Report numbered NR-15006, issued on 10th July 2015 by CSR Building Products Insulation Research Laboratory, detail the test results for CSR Bradford New Generation SoundScreen R2.0 Wall Floor Batts glass-fibre insulation batt bonded with thermosetting resin, with a thickness of 70 mm and a tested density of 26.8 kg/m<sup>3</sup> and binder content of 5%, when tested to AS 1530.1-1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

## A.24 CSR Test Report NR-15007

Test Report numbered NR-15007, issued on 15th September 2015 by CSR Building Products Insulation Research Laboratory, details the test results for Bradford Rockwool Granulated Industrial (502) loose fill granulated rockwool mineral-fibre insulation with a nominal density of 200 kg/m<sup>3</sup> when tested in accordance with AS 1530.1 1994. The material was not deemed combustible according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

Issued to: Ben Cooper  
Company: Alliance Architectural  
Re: St Matthews Catholic School  
Mudgee NSW  
Issued On: 21st April 2021

## Appendix B Analysis of Variations

### B.1 Variation in density and thickness of tested rockwool

The principle used in this assessment uses the performance of a large range of rockwool materials tested in accordance with AS 1530.1-1994 to predict the variation in reaction to fire performance in AS/NZS 1530.3-1999.

With reference to the requirements of AS 1530.1-1994. Samples are placed in a tube furnace at 750°C. The furnace and/or specimen surface temperatures should not show a rise of more than 50°C above their final equilibrium temperatures AND specimens must not show continuous flaming for more than five seconds to not be deemed combustible. Both density and binder content of the tested rockwool mineral-fibre insulation test specimens may affect the performance when tested to AS 1530.1. When tested the following rockwool products were not deemed combustible according to the test criteria specified in AS 1530.1-1994.

- Bradford Rockwool Fibertex 450 at 80 kg/m<sup>3</sup> density;
- Bradford Rockwool Fibertex HD at 197 kg/m<sup>3</sup> density;
- Soundscreen Plus R3.0 at 30 kg/m<sup>3</sup> density;
- Rockwool Granulated Cavity Wall at 20 kg/m<sup>3</sup> density;
- Rockwool Building Grade Granulated at 100 kg/m<sup>3</sup> density;
- CSR Fireseal Party Wall Roof Sealer at 50 kg/m<sup>3</sup> density;
- CSR Fireseal Party Wall Batts at 70 kg/m<sup>3</sup> density;
- CSR Rockwool Fibertex 820 at 110 kg/m<sup>3</sup> density; and
- Bradford Rockwool Granulated Industrial (502) at 200 kg/m<sup>3</sup> density;

It is apparent the density of the rockwool up to 110kg/m<sup>3</sup> does not affect the classification of combustibility when tested to the requirements of AS 1530.1-1994.

CSR Building Products Limited provided the percentage of thermosetting resin binder combustible content for each of the products listed above. The combustible content of the mineral-fibre insulation comprised up to 3.4% binder by mass for densities up to 110 kg/m<sup>3</sup>.

The test specimens required for AS 1530.1 are cylindrical, of 45-mm diameter and 50-mm thick. Consequently, as the test specimen dimensions are definite, the thickness of the rockwool mineral-fibre insulation used in practice would not affect the performance when tested to AS 1530.1-1994.

The significance of the above results indicates that all proposed products have the same classification of non-combustibility indicating a very low level of combustible materials present in any of the compositions tested.

With reference to AS/NZS 1530.3-1999 tests FNE 9690, FNE 11527 and FNE 11655, the specimens comprised Rockwool Building Grade Granulated, CSR Bradford Rockwool Granulated and CSR Rockwool Fibertex 820 at 20 kg/m<sup>3</sup>, 100 kg/m<sup>3</sup> and 110 kg/m<sup>3</sup> density respectively. When tested they achieved indices of 0, 0, 0, 1 showing a very low reaction to fire response for this material.

The significance of this results is that three of the proposed materials have very low reaction to fire indices when tested to AS/NZS 1530.3-1999. When this is considered on balance with the non-combustibility classification for the proposed range of products it is considered reasonable and conservative to apply the test results from tests FNE 9690, FNE11655 and FNE 11527 to the proposed range of materials.

AS/NZS 1530.3 is a surface exposure test; consequently, the thickness of a test specimen does not necessarily have an important effect on the performance of a product when tested to this standard. This is particularly true for products which do not ignite during the test, which was the case for Rockwool Building Grade Granulated, CSR Bradford Rockwool Granulated and CSR Rockwool Fibertex 820 at 20 kg/m<sup>3</sup>, 100 kg/m<sup>3</sup> and 110 kg/m<sup>3</sup> density respectively. The AS/NZS 1530.3 standard specifies that loose fill insulation products are tested at a thickness of 100-mm. The range of thicknesses used in practice would not influence the test results for these products.

## B.2 Variation in density and thickness of tested glasswool

Similarly, as for rockwool discussed in Section B1 of this report, the density and binder content of the tested glasswool insulation may affect the performance when tested to AS 1530.1. When tested the following glasswool products were not deemed combustible according to the test criteria specified in AS 1530.1-1994.

- Glasswool Partition Batts Test on Bradford Gold Insulation R2.0 Ceiling batts
- Bradford Gold Insulation R1.5 Water-repellent Wall & Floor batts
- Bradford Gold Insulation R5.0 High-Performance Ceiling batts
- Bradford Glasswool Partition Batts (14 kg/m<sup>3</sup>)
- CSR Bradford R3.6 Building Blanket
- CSR Bradford New Generation SoundScreen R2.0 Wall Floor Batts

It is apparent the density of the Glasswool up to 26.8 kg/m<sup>3</sup> does not affect the classification of combustibility when tested to the requirements of AS 1530.1-1994.

The performance of glass-fibre insulation batts with the same composition as those tested and densities ranging between 6.3 kg/m<sup>3</sup> and 26.8 kg/m<sup>3</sup> would be equivalent in performance to Glasswool Partition Batts, Bradford Gold Insulation R2.0 Ceiling batts, Bradford Gold Insulation R1.5 Water-repellent Wall & Floor batts, Bradford Gold Insulation R5.0 High Performance Ceiling batts, Bradford Glasswool Partition Batts (14 kg/m<sup>3</sup>), CSR Bradford R3.6 Building Blanket, and CSR Bradford New Generation SoundScreen R2.0 Wall Floor Batts when tested to the requirements of AS 1530.1-1994.

CSR Building Products Limited provided a percentage of thermosetting resin binder combustible content for each of the products. The combustible content of the glass-fibre insulation comprised up to 5% binder by mass for densities up to 26.8 kg/m<sup>3</sup>, up to 7% binder by mass for densities up to 14 kg/m<sup>3</sup>, and up to 9% binder by mass for densities up to 11 kg/m<sup>3</sup>.

The test specimens required for AS 1530.1 are cylindrical, of 45-mm diameter and 50-mm thick. Consequently, as the test specimen dimensions are definite, the thickness of your glass-fibre insulation batts used in practice would not affect the performance when tested to AS 1530.1-1994.

The significance of the above results indicates that all proposed products have the same classification of non-combustibility indicating a very low level of combustible materials present in any of the compositions tested.

With reference to AS/NZS 1530.3-1999 test FNE 9589 which comprised glasswool glass-fibre insulation boards of the density of 130 kg/m<sup>3</sup> and 13% binder content by mass. When tested they achieved indices of 0, 0, 0, 1 showing a very low reaction to fire response for this material.

The significance of this results is that the proposed material, when tested at high density and binder content, has a very low reaction to fire indices when tested to AS/NZS 1530.3-1999. When this is considered on balance with the non-combustibility classification for the proposed range of products of lower density and binder content it is considered reasonable and conservative to apply the test results from tests FNE 9589 to the proposed range of glasswool materials.

AS/NZS 1530.3-1999 is a surface exposure test; consequently, the thickness of a test specimen does not necessarily have an important effect on the performance of a product when tested to this standard. This is particularly true for products which do not ignite during the test and as such the range of thicknesses used in practice would not influence the test results for these products.

### B.3 Variation in facing for the proposed insulation materials

The principle of the assessment of the performance of various facings when tested to AS/NZS 1530.3-1999 is formed on the basis the underlying insulation material when tested in accordance with AS 1530.1-1994 has been found to be non-combustible and when tested in accordance with AS/NZS 1530.3-1999 and found to have reaction to fire indices of 0, 0, 0, 0-1 which is the least reactive result possible.

The significance of this finding is it makes it reasonable and conservative to conclude that when the insulation materials discussed in Section B1 and B2 of this report are faced, the performance when tested AS/NZS 1530.3-1999, would be dominated by the facing and adhesive used.

The significance of this finding is that the results for the faced insulation material tests may be applied to other insulation materials without measurably affecting their reaction to fire performance in accordance with AS/NZS 1530.3-1999.

The proposed facing and adhesive materials are all based on tests on the CSR glasswool or CSR rockwool products listed below in Table B1.

**Table B1- Various facings and adhesives**

Facing	Adhesive	Test reference	Ignitability Index	Spread of Flame Index	Heat Evolved Index	Smoke Dev. Index
Ultrapron	Bostik Rapidset 4725	FNE 9785	0	0	0	3
Medium duty foil	Bostik Rapidset 4725	FNE 9787	0	0	0	0-1
Heavy duty foil	Bostik Rapidset 4725	FNE 9788	0	0	0	0-1
BMF	Bostik Rapidset 4725	FNE 9790	18	0	0	3
BMF	Bostik HT adhesive	FNE 12136	0	0	0	2
HDP foil	Bostik Rapidset 4725	FNE 10360	0	0	0	3
HDP foil	Bostik HT adhesive	FNE 12137	0	0	0	2
Acoustituff	Bostik Rapidset 4725	FNE 10361	0	0	0	1
Acoustituff	Bostik Rapidset 4725	FNE 10364	0	0	0	1
Enviroseal Roof Tile Plus foil	Bostik Rapidset 4725	FNE11429	0	0	0	1
Thermoplast Decorative facing 993	Bostik Rapidset 4725	7-574195-CN	0	0	0	0-1
Thermoplast Decorative facing 990	Bostik Rapidset 4725	7-574196-CN	0	0	0	0-1

The highest results occur in the tests that include facings which include perforations or some degree of permeability such as Ultrapron (woven glass fibre), BMF (randomly felted glass fibre tissue) and HDP (an aluminium foil with 2.4 mm diameter perforations and 10% open area). The difference in the performance of each adhesive is expected to be demonstrated with these facings.

With reference to Tests FNE 9790 and FNE 12136 which comprised Bradford glasswool Ultratel with

BMF facing adhered with Bostik Rapidset 4725 adhesive and Bostik HT insulation adhesive respectively.

With reference to Tests FNE10360 and FNE 12137 which comprised Bradford glasswool Supertel with HDP facing adhered with Bostik Rapidset 4725 adhesive and Bostik HT insulation adhesive respectively.

In both cases specimens with Bostik HT adhesive demonstrated lower or equal results on all four early fire hazard indices. Based on these results is reasonable and conservative to conclude that Bostik HT insulation adhesive and Bostik Rapidset 4725 adhesive when used to apply the previously tested facings will not detrimentally affect the four early fire hazard indices when tested in accordance with AS/NZS 1530.3-1999. A summary of the resulting performance is presented in Table B2.

**Table B2- Assessed Fire Hazard Performance**

Facing	Adhesive	Ignitability Index	Spread of Flame Index	Heat Evolved Index	Smoke Developed Index
Ultraplon	Bostik Rapidset 4725 or Bostik HT adhesive when applied at a rate of 25gsm (dry weight)	0	0	0	3
Medium duty foil		0	0	0	0-1
Heavy duty foil		0	0	0	0-1
BMF		18	0	0	3
HDP foil		0	0	0	3
Acoustituff		0	0	0	1
Enviroseal Roof Tile Plus foil		0	0	0	1
Thermoplast Decorative facing 993		0	0	0	0-1
Thermoplast Decorative facing 990		0	0	0	0-1

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Issued to: Ben Cooper  
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On: 21st April 2021

# AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing  
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## TEST REPORT

**Client :** Proctor Group Australia  
Unit 8, 171-175 Newton Road  
Wetherill Park NSW 2164

**Test Number :** 16-006359  
**Issue Date :** 12/12/2016  
**Print Date :** 13/12/2016  
**Order Number :** 00016232

**Sample Description** Clients Ref : "ProctorWrap Commercial Wall (CW)"  
3 Ply Spun bonded polyolefin membrane  
Colour : Grey/White  
End Use : Pliable building membrane  
Nominal Mass per Unit Area/Density : 132g/m2  
Nominal Thickness : 0.5mm

AS 1530.2-1993

### Methods for Fire Tests on Building Materials, Components and Structures. Part 2: Test for Flammability of Materials

Date Tested		12/12/2016
Flammability Index		1
	Length	Width
Spread Factor	0	0
Heat Factor	1	1
Maximum height (d)		
Mean	1.5	1.6
Coefficient of Variation	0.0	12.9 %
Heat (a)		
Mean	1.5	1.5 °C.min
Coefficient of Variation	0.0	0.0 %
Number of Specimens Tested	6	6
Observation	Visible smoke, melting dripping debris	

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.

Specimens were tested face,back,face,back.

78614

16452

Page 1 of 1

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- Chemical Testing  
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- Performance & Approvals Testing

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: Accreditation No. 985  
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0204/11/06

APPROVED SIGNATORY

MICHAEL A JACKSON B.Sc.(Hons)  
MANAGING DIRECTOR

# Coated Steel – Metallic

## Data Sheet



October 2020. This literature supersedes all previous issues



# GALVABOND® steel

## G2 / G2S

### General Description

GALVABOND® G2 steel is a hot-dipped zinc-coated commercial forming steel with a spangled surface, suitable for general manufacturing, widely available as distributor stock. Product is suitable for moderate drawing applications and is suitable for lockseaming up to 1.6mm thick. GALVABOND® G2S steel is skinpassed to improve surface quality. Under normal storage conditions it will be free of fluting for 3 months after galvanising

### Typical uses

Tube, airconditioning ducts, airconditioning panels, meter boxes, trailers, partitioning systems, cable trays, scaffolding planks, rendering mesh, feeder troughs.

### Australian and International Standards

AS/NZS 1365:1996 (R2016)  
AS 1397-2011  
ISO 9001:2015 Quality System certified

### Guaranteed properties of steel base

Mechanical properties	Guaranteed minimum
Elongation on 80mm ( $\geq 0.60\text{mm}$ ) % (transverse tensile)	27
180° Transverse Bend (L axis)	0t
Pittsburgh lock-seam ( $\leq 1.6\text{mm}$ )	Pass

### Chemical composition of steel base

Chemical properties	Guaranteed maximum %
Carbon - C	0.10
Manganese - Mn	0.45
Phosphorus - P	0.025
Sulfur - S	0.030

### Metal coating adhesion – 180° bend test

Coating class	Result
Z100	0t
Z200	0t
Z275	0t
Z450	1t
Z600	2t

Where t = the diameter of mandrel in terms of thickness of product.

### Dimensional capabilities

Thickness range (mm)	Max Width(mm)
0.30 - 0.319	1000
0.32 – 0.349	1100
0.35 – 0.399	1220
0.40 – 0.419	1300
0.42 – 0.499	1390
0.45 – 0.500	1510
0.501 – 2.00	1530
2.01 – 3.20	1220 (G2 only)
3.201 – 3.50	1000 (G2 only)

Notes: Not every combination of thickness and width may be available. Supply conditions may be subject to dimensional restrictions and are subject to BlueScope Sales and Marketing confirmation. Slitting and shearing available on request from BlueScope Sales Offices. For requirements outside the standard product range please contact your local Sales Office. To determine maximum mill edge width available, subtract 30mm from the maximum width.

### Fire hazard properties

Test & Evaluation Methods	Range	Result
Simultaneous determination of ignitability, flame propagation, heat release and smoke release (AS/NZS 1530.3:1999 (R2016))	Ignitability Index (0 – 20)	0
	Spread of Flame Index (0 – 10)	0
	Heat Evolved Index (0 – 10)	0
	Smoke Developed Index (0 – 10)	2
NCC non-combustible material concessions (NCC 2019; AS/NZS 1530.3:1999 (R2016))	National Construction Code, Building Code of Australia 2019; Volume 1: Part C1.9.e, and Volume 2: Part 3.7.1.1.e	May be used wherever a non-combustible material is required
	AS/NZS 1530.3:1999 (R2016)	
Combustibility test for materials (steel substrate) (AS 1530.1-1994 (R2016))	AS 1530.1-1994 (R2016)	Not deemed combustible (steel substrate)

### Supply conditions

Attribute	Normal	Optional
Coating Class	Z275	Z100, Z200, (Z450 >0.35mm; Z600 >0.40mm)
Surface Condition	Spangled	Minimised spangle
Surface Treatment	Passivated	Unpassivated (oiled)
Branding	Branded	-
Tolerance - Dimensions	Class A	B Class
Tolerance - Flatness	Class A	B Class

Important Notes: Optional supply conditions may be subject to dimensional restrictions

### Fabricating performance

Method	Rating
Bending	5
Drawing	3
Pressing	3
Roll Forming	5
Lock-Forming	5
Welding (design must allow for some strength reduction near welds)	5
Painting Pre-treatment	5

Where: 1 = Limited to 5 = Excellent or NR = Not Recommended

The ratings in this table are general indicators only, given as a guide to fabricating performance.

### Important information

Material should be used promptly (within six months) to avoid the possibility of a storage related corrosion. For selection of the most appropriate metallic coated steel, please refer to technical bulletins TB1a, TB1b, CTB21 and CTB22. For storage, rollforming lubricants and other information please refer to the Technical Bulletins.

[steel.com.au](http://steel.com.au)

To learn more about this product

1800 064 384

[steeldirect@bluescopesteel.com](mailto:steeldirect@bluescopesteel.com)

For more information contact Steel Direct



The information contained in this datasheet is provided by way of general information about this product only, and has not been prepared with your specific needs in mind. We recommend that you seek BlueScope Steel Limited's advice as to the suitability of this product for the purpose(s) for which you propose to use it. To contact BlueScope Steel Limited for advice about your proposed use of this product, please contact Steel Direct. GALVABOND®, BlueScope and the BlueScope brand mark are registered trade marks of BlueScope Steel Limited.

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# Certificate of Test

Quote No.: NC7891

REPORT No.: FNC12071

COMBUSTIBILITY TEST FOR MATERIALS IN ACCORDANCE WITH AS 1530.1-1994

**TRADE NAME:** Aluminium Foil used in the following products:  
TBA Firefly Non-Combustible Sarking (Breathable)  
TBA Firefly Non-Combustible Sarking (Non-Breathable)  
TBA Firefly Phoenix EA Sarking (Non-Breathable)  
TBA Firefly Class 0 Foil Tape  
TBA Firefly Vulcan (6 mm thick) Fire Barrier  
TBA Firefly Plus 60 (10 mm thick) Fire Barrier  
TBA Firefly Titan (15 mm thick) Fire Barrier

**SPONSOR:** TBA Textiles Pty Ltd  
Unit 12, 6 Leighton Place  
HORNSBY NSW 2077  
AUSTRALIA

**DESCRIPTION OF TEST SAMPLE:** The sponsor described the tested specimen as an uncoated solid aluminium cylinder representative of the aluminium foil used in the products listed under the Trade Name section of this report.

Nominal thickness: 50 mm  
Nominal total density: 2700 kg/m<sup>3</sup>  
Colour: silver (uncoated aluminium)

**TEST PROCEDURE:** Five (5) samples were tested in accordance with Australian Standard 1530 Methods for fire tests on building materials, components and structures, Part 1- 1994: Combustibility Test for Materials.

An alternative suitable insulating material was used to fill the annular space between the furnace tubes, as specified in Clause 4.2 of ISO 1182:2010.

**RESULTS:**

Mean furnace thermocouple temperature rise .....	7.8°C
Mean specimen centre thermocouple temperature rise .....	7.2°C
Mean specimen surface thermocouple temperature rise.....	14.2°C
Mean duration of sustained flaming .....	0 seconds
Mean mass loss.....	0.19 %

**DESIGNATION:** The material is NOT deemed COMBUSTIBLE according to the test criteria specified in Clause 3.4 of AS 1530.1-1994.

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.

DATE OF TEST: 1 December 2017

Issued on the 12<sup>th</sup> day of December 2017 without alterations or additions.



Faustin Molina  
Testing Officer



Brett Roddy  
Team Leader, Fire Testing and Assessments

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