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Certificate Holder:
**Thermal Panel
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Certificate of Conformity

Certificate number: CM 30128 Rev 1

THIS TO CERTIFY THAT

Therm-Loc EPS-FR Panel System

<p>Type and/or use of product:</p> <p>Wall and ceiling panels for use in ambient temperature rooms, cool-rooms, freezers and partitions.</p>	<p>Description of product:</p> <p>Insulated coolroom (sandwich) panels comprising fire retardant expanded polystyrene (EPS-FR) core encased with Colorbond steel in various roll-formed profiles that is bonded to the core with polyurethane adhesive. Panel thickness range is as follows:</p> <ul style="list-style-type: none"> • 50mm • 75mm • 100mm • 150mm • 200mm • 250mm <p>Associated accessories include aluminium extrusions, steel angles and flashings, fixings and sealants.</p>
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COMPLIES WITH THE FOLLOWING BCA PROVISIONS AND STATE OR TERRITORY VARIATION(S)

BCA 2022

	Volume One		Volume Two and Housing Provisions	
Performance Requirement(s)	B1P1(1) & (2)(a, b, c)	Structural reliability	H1P1(1), (2)(a, b, c) & (3)	Structural stability and resistance

Scope of certification: The CodeMark Scheme is a building product certification scheme. The rules of the Scheme are available at the ABCB website www.abcb.gov.au. This Certificate of Conformity is to confirm that the relevant requirements of the Building Code of Australia (BCA) as claimed against have been met. The responsibility for the product performance and its fitness for the intended use remain with the certificate holder. The certification is not transferrable to a manufacturer not listed on Appendix A of this certificate.

Disclaimer: The Scheme Owner, Scheme Administrator and Scheme Accreditation Body do not make any representations, warranties or guarantees, and accept no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of any material contained within this certificate; and the Scheme Owner, Scheme Administrator and Scheme Accreditation Body disclaim to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the use of the product(s) referred to in this certificate.

The purpose of Global-Mark **construction site audits** is to confirm the practicability of installing the product; and to confirm the appropriateness and accuracy of installation instructions. In placing the **CodeMark mark** on the product/system, the certificate holder makes a declaration of compliance with the certification standard(s) and confirms that the product is identical to the product certified herein. In issuing this Certificate of Approval Global-Mark has relied on the **expertise of external bodies** (laboratories, and technical experts).

Herve Michoux
Global-Mark Managing Director

Peter Gardner
Unrestricted Building Certifier

Date of issue: 30/05/2024

Date of expiry: 23/04/2027



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	B1P2	Structural resistance		
	J1P1	Energy use	H6P1	Energy efficiency - Building
Deemed-to-Satisfy Provision(s):	C2D11(1)(b) & (i)	Fire hazard properties		
State or territory variation(s):	NSW J1P1	Energy use	NSW H6P1	Building fabric
	NSW J1P5	Building fabric- Class 2 building and Class 4 parts of a building	NT H6P1	Building
	NSW NCC2019A1 NSW J(A)P1	Energy efficiency- Class 2 building and Class 4 parts	TAS NCC 2019 A1 P2.6.1	Building
	TAS NCC2019A1 JP1	Energy use	NSW NCC2019A1 NSW P2.6.1(A)	Building fabric

SUBJECT TO THE FOLLOWING LIMITATIONS AND CONDITIONS AND THE PRODUCT TECHNICAL DATA IN APPENDIX A AND EVALUATION STATEMENTS IN APPENDIX B

<p>Limitations and conditions:</p> <ol style="list-style-type: none"> 1. Therm-Loc EPS-FR has the following fire hazard properties in accordance with NCC Volume One Specification 7 Clause S7C4.: <ol style="list-style-type: none"> a. AS ISO 9705-2003 (R2016) – SMOGRA_{RC} < 100 m²/s² x 1000 b. Group Number classification in accordance with AS 5637.1:2015 requires the following construction/installation parameters: <ol style="list-style-type: none"> i. Group Number 1 – Class S or SL EPS-FR panels (when the ceiling is externally supported) or only Class SL EPS-FR panels (when the ceiling is self-supported by the walls) 250mm thick or less encased by min. 0.4mm Colorbond steel; steel angles at junctions fixed to steel skins with steel rivets at 300 mm spacings; ceiling panel to wall panel joints having steel rivets connecting the steel skins at a maximum spacing of 1200 mm; and, where ceiling panels are required to be supported by mushroom bolts, they must be steel of diameter no less than 10 mm and include steel washers. ii. Group Number 2 – Class S or SL EPS-FR panels 250mm thick or less encased by min. 0.4mm Colorbond steel; steel or aluminium angles at junctions fixed to steel skins with steel or aluminium rivets at 300 mm spacings, except that if the panel thickness is greater than 150 mm and self-supported, then steel angles and rivets must be used; and, where ceiling panels are required to be supported by mushroom bolts, they must be steel of diameter no less than 10 mm and include steel washers. iii. Group Number 3 – Class S or SL EPS-FR panels that have a thickness greater than 150 mm, but not more than 250 mm encased by min. 0.4mm Colorbond steel; aluminium angles at junctions fixed to steel skins with aluminium rivets at 300 mm spacings; and the panel system is self-supporting. 2. Ceiling applications are restricted to non-trafficable areas. 	<p>Building classification/s:</p> <p>Unrestricted</p>
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3. Therm-Loc EPS -FR products contribute to the thermal resistance of the building fabric, thereby contributing to the requirements of Volume One J1P1 and Volume Two H6P1. Thermal insulation values for the product only are provided in Table 1.	
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APPENDIX A – PRODUCT TECHNICAL DATA

A1 Type and intended use of product

Refer to page 1.

A2 Description of product

Refer to page 1.

The core is fire retardant expanded polystyrene (EPS-FR), SL Grade in accordance with AS 1366.3-1992 (R2018), with nominal density of 13.5 kg/m³.

The encasing steel profiles are roll-formed from 0.6 mm BMT G300 or 0.4 mm BMT G300 Colorbond steel.

Accessories include 1.6 mm thick aluminium extrusions of various profiles including tracks and angles, 0.4 mm thick Colorbond steel flashings of various profiles, mastic, silicone (mould resistant/white/clear), aluminium rivets, steel rivets and self-drilling screws.

A3 Product specification

Refer to Thermal Panel Solutions Technical Manual (File Reference: Thermal Panel Solutions_Technical Manual_R2.4_210331, 31 March 2021). Panel spans must comply with the following structural design tables. Refer also to the notes to the tables for the relevant requirements and conditions.

1. Table 2.1 – Allowable Spans for Therm-Loc 0.6mm Skins
2. Table 2.2 – Allowable Spans for Therm-Loc 0.4mm Skins
3. Table 3.1 – Allowable ULS Pressures for Therm-Loc 0.6mm Skins
4. Table 3.2 – Allowable SLS Pressures for Therm-Loc 0.6mm Skins
5. Table 3.3 – Allowable ULS Pressures for Therm-Loc 0.4mm Skins
6. Table 3.4 – Allowable SLS Pressures for Therm-Loc 0.4mm Skins

The declared thermal conductivity of the core is 0.0407 W/mK at 23°C. The declared thermal insulation (R-Value) for Therm-Loc is provided in Table 1. The nominal weight of the panels is also provided in Table 1.

Table 1

Therm-Loc Panel Thickness (mm)	R-Value (m²K/W)	Nominal Weight (kg/m²)
50	1.13	11.7
75	1.70	12.0
100	2.26	12.4
150	3.39	13.1
200	4.52	13.8
250	5.65	14.5

A4 Manufacturer and manufacturing plant(s)

Thermal Panel Solutions Pty Ltd – Gate 2, 25 Garling Road, Kings Park, NSW, 2148

A5 Installation requirements

Refer to Thermal Panel Solutions Construction Details, Revision-A, 29/03/2021 for standard construction details.

Installation shall be carried out by an accredited installer in accordance with the Insulated Panel Council Australasia Ltd (IPCA) Code of Practice, Version 4.3, 2017. Refer to Annex A for typical construction details.

Refer to the installation conditions specified in the Thermal Panel Solutions Technical Manual (File Reference: Thermal Panel Solutions Technical Manual_R2.4_210331, 31 March 2021).

A6 Other relevant technical data

Any referenced documents within the technical literature identified in Appendix A, A3 and Appendix A, A5.

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

The following assessment methods have been used to determine compliance with BCA 2022:

Code Clause	Assessment Method(s)	Evidence of suitability	Evidence reference in B2
Volume One B1P1(1) & (2)(a, b, c)	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 2 and 12
Volume One B1P2	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 2 and 12
Volume One C2D11(1)(b), (i)	Volume One A2G3(2)(a)	Volume One A5G3(1)(d) Report issued by a registered testing authority	Items 4 to 7
		Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 8 to 12
		Volume One A5G3(1)(f) Another form of documentary evidence	Item 3
Volume One J1P1	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume One A5G3(1)(f) Another form of documentary evidence	Item 1
Volume Two H1P1(1), (2)(a, b, c) & (3)	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 2 and 12
Volume Two H6P1	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1
Volume One NSW J1P1	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume One A5G3(1)(f) Another form of documentary evidence	Item 1
Volume One NSW J1P5	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume One A5G3(1)(f) Another form of documentary evidence	Item 1
NSW NCC2019A1 NSW J(A)P1	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume One A5G3(1)(f) Another form of documentary evidence	Item 1
TAS NCC2019A1 JP1	Volume One A2G2(2)(a)	Volume One A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1
NSW H6P1	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1

NT H6P1	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1
TAS NCC 2019 A1 P2.6.1	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1
NSW NCC2019A1 NSW P2.6.1(A)	Volume Two A2G2(2)(a)	Volume Two A5G3(1)(e) Certificate or report from a professional engineer or other appropriately qualified person	Items 12 and 13
		Volume Two A5G3(1)(f) Another form of documentary evidence	Item 1

B2 Reports

The following reports have been used as evidence to determine compliance with BCA 2022:

Ref	Author	Reference	Date	Description	NATA Registration
1	Thermal Panel Solutions	R2.4_210331	31-03-2021	Technical Manual.	Not applicable
2	Milanovic Neale Consulting Engineers Andrew Morrison	S9875-RPT01	6/05/2020	Non-Cyclonic Engineering Span Tables for Therm-Loc and Therm-Flam Insulated Panels.	Not applicable
3	AUSBLOX	Revision 1	15/04/2018	Expanded Polystyrene (EPS) Technical Datasheet. Declared properties of EPS including physical properties, thermal properties and early fire hazard indices.	Not applicable
4	BRANZ L. F. Hersche	FAR 2489 Issue 3.0	23/02/2021	Assessment of the Performance of Metal Clad Expanded Polystyrene Sandwich Panels in the AS ISO 9705 Room Fire Test. Provides confirmation of Group 1, Group 2 and Group 3 classifications, and specifications for the construction method for each.	Via. ilac-MRA IANZ Accreditation No. 37
5	BRANZ L. F. Hersche	Certificate No. 372 Issue 2	23/02/2021	Fire Test Certificate for AS ISO 9705 test method. Nominal 250mm thick (or less) Class S or SL (to AS 1366.3) EPS clad both sides with "Colorbond" steel of thickness 0.4mm or greater and panel to panel junctions fixed with steel angles and steel rivets at not more than 300mm centres. Classification: Group Number 2, SMOGRA _{RC} : <100.	Via. ilac-MRA IANZ Accreditation No. 37
6	BRANZ L. F. Hersche	Certificate No. 373 Issue 2	23/02/2021	Fire Test Certificate for AS ISO 9705 test method. Nominal 150mm thick (or less) Class S or SL (to AS 1366.3) EPS clad both sides with "Colorbond" steel of thickness 0.4mm or greater and panel to panel junctions fixed with aluminium angles and aluminium rivets at not more than 300mm centres. Classification: Group Number 2, SMOGRA _{RC} : <100.	Via. ilac-MRA IANZ Accreditation No. 37

Ref	Author	Reference	Date	Description	NATA Registration
7	BRANZ L. F. Hersche	Certificate No. 374 Issue 2	23/02/2021	Fire Test Certificate for AS ISO 9705 test method. Nominal 250mm thick (or less) Class S or SL (to AS 1366.3) EPS clad both sides with "Colorbond" steel of thickness 0.4mm or greater and panel to panel junctions fixed with steel angles and steel rivets at not more than 300mm centres, and ceiling panel to panel joins at not more than 1200mm centres. Classification: Group Number 1, SMOGRA _{RC} : <100.	Via. ilac-MRA IANZ Accreditation No. 37
8	CSIRO Manufacturing and Infrastructure Technology G J Griffin, V P Dowling	CMIT-(C)-2003-201	September 2003	CSIRO-MIT-FSTL Specimen ID 03/21. Assessment of the Performance of Sandwich Panels with an Expanded Polystyrene (EPS) Core in the ISO 9705 Room Fire Test. 100mm thick EPS core (Class SL) faced on both sides with 0.6mm Colorbond steel, aluminium channels and angles and aluminium rivets. Time for the total heat rate release to reach 1 MW – 18 minutes, 20 seconds, SMOGRA _{RC} = 14.0 (x1000) m ² /s ² .	Not Applicable
9	CSIRO Manufacturing and Infrastructure Technology G J Griffin, V P Dowling	CMIT-(C)-2004-089	March 2004	CSIRO MIT Specimen ID 04/01 and 04/02. Assessment of the Performance of Sandwich Panels with an Expanded Polystyrene (EPS) Core in the ISO 9705 Room Fire Test. 250mm thick EPS core (Class S) faced on both sides with 0.4mm Colorbond steel. Test 04/01: steel angles and steel rivets – flashover did not occur and negligible heat release, SMOGRA _{RC} = 2.4 m ² /s ² Test 04/02: aluminium F-moulds and angles and aluminium rivets. Time to reach flashover – 13 minutes, 5 seconds, SMOGRA _{RC} = 12.0 (x1000) m ² /s ² .	Not applicable
10	CSIRO Manufacturing and Infrastructure Technology G J Griffin, V P Dowling	CMIT-(C)-2004-368	October 2004	CSIRO MIT Specimen ID 04/07. Assessment of the Performance of Sandwich Panels with an Expanded Polystyrene (EPS) Core in the ISO 9705 Room Fire Test. 250mm thick EPS core (Class SL) faced on both sides with 0.4mm Colorbond steel. Test 04/34: aluminium F-moulds and angles and aluminium rivets. Time to reach flashover – 6 minutes, 55 seconds, SMOGRA _{RC} = 13.2 (x1000) m ² /s ² . Test 04/35: steel angles and steel rivets – flashover did not occur and negligible heat release, SMOGRA _{RC} = 2.1 (x1000) m ² /s ²	Not applicable

Ref	Author	Reference	Date	Description	NATA Registration
11	CSIRO Manufacturing and Infrastructure Technology G J Griffin, V P Dowling	CMIT-(C)-2004-469	December 2004	CSIRO MIT Specimen ID 04/08 and 04/09. Assessment of the Performance of Sandwich Panels with an Expanded Polystyrene (EPS) Core in the ISO 9705 Room Fire Test. Test 04/36: 250mm thick EPS core (Class S) faced on both sides with 0.4mm Colorbond steel, steel angles and steel rivets. Time to reach flashover – 19 minutes, 40 seconds, SMOGRA _{RC} = 24.2 (x1000) m ² /s ² . Test 04/37: 150mm thick EPS core (Class S) faced on both sides with 0.4mm Colorbond steel, aluminium angles and aluminium rivets. Time to reach flashover – 10 minutes, 5 seconds, SMOGRA _{RC} = 18.1 (x1000) m ² /s ² .	Not applicable
12	Clarkson Consulting Services Pty Ltd Scott Clarkson	ThermalPS_Therm-Loc CodeMark Report_210323R3.0	23/03/2021	CodeMark Application – Therm-Loc EPS-FR Panel System. Provides context for the clauses claimed and basis for the supporting evidence of compliance.	Not applicable
13	Clarkson Consulting Services Pty Ltd Scott Clarkson	Thermal PS_Therm-Loc_Material R value Calc_210331	31/03/2021	Therm-Loc Thermal Performance Calculations. Provides product R-values for the thickness range specified based on AS 1366.3-1992.	Not applicable

The Certificate Holder has chosen not to make the above identified evidence of compliance publicly available, due to the documents being considered commercial in confidence.