Certificate of Conformity

Certification Body:

CMI CERTIFICATION
ABN: 81 663 250 815
JAS-ANZ Accreditation No. Z4450210AK
PO Box 273, Palmwoods Qld 4555 Australia
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Certificate Holder:

CSR Hebel®
ABN: 55 008 631 356
Triniti 3, 39 Delhi Rd North Ryde, NSW 2113
Locked Bag 1345, North Ryde BC NSW 1670 Australia
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Certificate number: CM40233 Rev 1

THIS IS TO CERTIFY THAT

Low Rise Multi Residential Hebel® PowerPanel^{50} AAC External Wall System

Type and/or use of product:

Low Rise Multi Residential External Wall System.

Description of product:

Low Rise Multi Residential Hebel® PowerPanel^{50} comprises a steel reinforced 50mm non load bearing Autoclaved Aerated Concrete (AAC) 510kg/m^3 panel, comprising several proprietary components installed vertically and horizontally.

COMPLIES WITH THE FOLLOWING BCA PROVISIONS AND STATE OR TERRITORY VARIATION(S) **BCA 2022**

	Volume One		Volume Two	
Performance Requirement(s):	B1P1(1), (2)(a), (b), (c) & (d)	Structural reliability	H1P1(1), (2)(a), (b), (c) & (d)	Structural stability and resistance
	F3P1	Weatherproofing – Subject to Limitation and condition 6	H2P2	Weatherproofing – Subject to Limitation and condition 6
Deemed-to-Satisfy Provision(s):	C2D2(2)	Fire resistance and stability – FRL varies, dependant of the configuration of the wall. Refer Limitation and condition 2	H3D3	Fire separation of external walls – Construction of external walls - FRL varies, dependant of the configuration of the wall. Refer Limitation and condition 2
	F8D3	Condensation management - Pliable building membrane. Refer *Limitation and condition 14.*	H4D9	Condensation management - Pliable building membrane. Refer *Limitation and condition 14.*
	G5D3	Construction in bushfire prone areas – BAL-FZ	H7D4	Construction in bushfire prone areas – BAL-FZ
	J4D6	Energy efficiency – External walls. Can be used in conjunction with other building elements to achieve a Total R Value. Refer A3	H6D2(1)(b)(i)	Energy efficiency – External walls. Can be used in conjunction with other building elements to achieve a Total R Value. Refer A3
State or territory variation(s):	G5D3 (NSW)		H4D9 (Tas), H7D4 (NSW, Qld & SA)	

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

Glen Gugliotti – CMI

Don Grehan – Unrestricted Building Certifier

Date of issue: 26/11/2025

Date of expiry: 07/10/2027

Certificate of Conformity

Limitations and conditions:

1. Where the NCC requires building elements and/or ancillary elements to be non-combustible or achieve specific fire resisting performance requirements, the Hebel® Powerpanel^{50} External Wall System must be constructed to satisfy such requirements as relevant to the determined building class(es).
2. Compliance with FRL is dependent on the system components being as specified in A3. Any deviation from the tested specimen does not form part of this certificate of conformity.
3. Reference to the use of timber framing systems in Section A3 is strictly limited to Class 1 & 10 Buildings and structures, Class 2 – 9 Buildings of Type C Construction or otherwise where concession for timber framed construction apply.
4. Construction methods for external walls required to be fire resisting in relation to class 1 and 10 buildings and structures must comply with Part 9.2 of the ABCB Housing Provisions.
5. Only to be installed in accordance with Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24.
6. To satisfy F3P1 & H2P2 via verification, limited to N1 – N3, the relevant design is required to meet the criteria of F3V1 and/or H2V1 to the satisfaction of the Appropriate Authority as defined by the NCC. The site specific building must;
   (i) have a risk score of 20 or less, when the sum of all risk factor scores is determined in accordance with Table F3V1a/H2V1a; and
   (ii) not be subjected to an ultimate limit state wind pressure of more than 2.5kPa; and
   (iii) include only windows that comply with AS 2047.
   Compliance with Weatherproofing is limited to the tested specimen detailed in A3, deviations from this specimen, is subject to site specific design and approval by the regulatory authority. Weatherproofing does not cover wind classifications N4-N6 & C1-C4.
7. Timber stud framing must be constructed in accordance with AS 1684 National Timber Framing Code & steel stud framing must be constructed in accordance with the Nash Standard for residential and low rise steel framing.
8. Structural compliance B1P1(2)(c) or H1P1(2)(c) covers wind classifications N1-N5 & C1-C3. Structural compliance does not cover wind classifications N6 & C4.
9. Hebel® Powerpanel^{50} External Wall System are subject to design and certification of the stud frame by a qualified structural engineer and constructed in accordance with AS 5146.3:2018.
10. Hebel® PowerPanel^{50} has not been tested and certified for impact loading from windborne debris in Region C and D as denoted in AS/NZS 1170.2:2011. The building designer should take into consideration internal pressure resulting from dominant openings.
11. Design certification for earthquake loading compliance to B1P1(2)(d) or H1P1(2)(d) in accordance with AS 1170.4:2007 excludes Meckering Regions and Island Regions. Components approved under this Certificate of Conformity are not part of the seismic-force-resistance system in B1P1(2)(d) or H1P1(2)(d).
12. This Certificate of Conformity is reliant on system components specified in A3. Substitution or omission of any component listed in A3 will void this Certificate of Conformity.
13. Where the clearance from the underside of the panel to the finished surface level below has been reduced to a minimum of 25mm, including sites subject to Saline Soils as defined by AS 2870—2011, installation must be in accordance with Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24 and incorporating Hebel PowerPanel^{50} External Walls Slab Edge Rebate Technical Update TU-033 dated 17/08/2020.
14. Where used in external walls, the AAC panels must be separated from water sensitive framing materials by a pliable building membrane that complies with AS/NZS 4200.1 and that is installed in accordance with AS 4200.2. Such membrane must be vapour permeable for installations in climate zones 6, 7 and 8.
15. Other than the items and information listed, the remainder of the information contained in the product's literature is outside the Scope of Certification.
16. The use of the certified product/system is subject to these Limitations and Conditions and must be read in conjunction with the Scope of Certification below.

Building classification/s:

Class 1,2,3,4,5,6,7,8,9 & 10

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.

Certificate of Conformity

Only criteria as identified within this Certificate of Conformity can be used for CodeMark certification claims. Where other claims are made in a client's Installation Manual, Website or other documents that are outside the criteria on this Certificate of Conformity, such criteria cannot be used or claimed to meet the requirements of this CodeMark certification.

The NCC defines a Performance Solution as one that complies with the Performance Requirements by means other than a Deemed-to-Satisfy Solution. A Building Solution that relies on a CodeMark Certificate of Conformity that certifies a product against the Performance Requirements cannot be considered as Deemed-to-Satisfy Solution.

This Certificate of Conformity may only relate to a part of a Performance Solution. In these circumstances other evidence of suitability is needed to demonstrate that the relevant Performance Requirements have been met. The relevant provisions of the Governing Requirements in Part A of the NCC will also need to be satisfied.

This Certificate of Conformity is issued based on the evidence of compliance as detailed herein. Any deviation from the specifications contained in this Certificate of Conformity is outside of this document's scope and the installation of the certified product will not be covered by this Certificate of Conformity.

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.

When using the CodeMark logo in relation to or on the product/system, the Certificate Holder makes a declaration of compliance with the Scope of Certification and confirms that the product is identical to the product certified herein. In issuing this Certificate of Conformity, CMI Certification Pty Ltd (CMI) has relied on the experience and expertise of external bodies (laboratories and technical experts).

Nothing in this document should be construed as a warranty or guarantee by CMI, and the only applicable warranties will be those provided by the Certificate Holder.

APPENDIX A – PRODUCT TECHNICAL DATA

A1 Type and intended use of product

As per page 1.

A2 Description of product

Hebel® PowerPanel^{50} Wall System Components

Product	Description
Hebel® PowerPanel^{50} panel	The Hebel® PowerPanel^{50} is a 50mm thick AAC panel with a minimum nominal dry density of 510kg/m^3 and up to 3000mm length, installed vertically and horizontally to timber or steel framing via top hats.

Product no.	Length (mm)	Width (mm)	Thickness (mm)
99939	2400	600	50
133805	2550	600	50
162758	2700	600	50
162757	2800	600	50
162756	2850	600	50
162760	3000	600	50

Top Hat	Hebel® Perforated Top Hats are used to fix the Hebel® PowerPanel^{50} panel to the structural support framing. There are two nominal widths available: 24mm and 35mm – incorporating perforated flanges for ease of installation on to the external wall frame.
RONDO M515	M515 top hats are used to fix the Hebel® PowerPanel^{50} panel to the structural support framing.
Fasteners & Fixing	Fixing of top hat to timber stud frame; 12-11x35mm hex head type 17 screw.
	Fixing of top hat to steel framing; 10-16x16mm hex head self-drilling screw.
	Fixing of Hebel® PowerPanel^{50} panels to top hat 14-10x65mm bugle head type 17 screw.
Hebel® Mortar	Hebel® Mortar when required is used as a thick bed mortar base to provide a level base for Hebel® PowerPanel^{50} installation as well as providing acoustic and fire protection at the base of the panels.
Hebel® Adhesive	Hebel Adhesive is used for gluing the Hebel® PowerPanel^{50} panels together at vertical and horizontal joints.
Hebel® Patch	Minor chips or damage to Hebel® PowerPanel^{50} panels are to be repaired using Hebel Patch.
Hebel® Anti Corrosion Protection Paint	To coat exposed reinforcement during cutting.
Hebel Base Sealer	For use when sealing the base of Hebel panels that may come into contact with soil levels.
Wall Wrap	Thermoseal Wall Wrap XP, Enviroseal RW Plus, Thermoseal Wall Wrap PRIME, Polyair Performa 4.0 XHD.
Hebel External Aluminium Render Bead	Hebel External Aluminium Render Bead is used to provide neat and consistent horizontal control joints.

A3 Product specification

The properties of the wall systems relevant to the Hebel® PowerPanel[50] Wall System, as described herein, vary with the configuration of the wall structure; It is therefore considered essential that this certificate be read in conjunction with Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24.

Fire resistance Level

FRL of 90/90/90 was achieved from panel side only when tested in accordance with AS 1530.4-2014 by CSIRO.

Source: *CSIRO, Report No: FCO-3241 Revision C; dated 28/03/2024.*

Refer Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24 the following system configurations that achieve an FRL of 90/90/90.

Figure	FRL	Figure	FRL
2.9.3.1	90/90/90	3.5.4.4	90/90/90
2.9.4.7	90/90/90	3.5.5.1	90/90/90
2.9.6.1	90/90/90	3.5.7.1	90/90/90
2.9.6.2	90/90/90	3.5.7.2	90/90/90
2.9.6.5	90/90/90	3.5.7.3	90/90/90
2.9.6.9	90/90/90	3.5.7.7	90/90/90
2.9.6.10	90/90/90	3.5.7.8	90/90/90

Variations to linings and framing

Frame	Orientation of panel	Interior Lining	Direction of Fire	FRL
Timber or Steel	Horizontal or vertical fixed to frame*	Standard grade plasterboard	Outside Only	-/60/60 or 60/60/60
Timber	Horizontal or vertical fixed to frame*	1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Steel	Horizontal or vertical fixed to frame*	1 x 13mm or 1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Timber or Steel	Horizontal or vertical fixed to frame*	Standard grade plasterboard	Outside Only	-/90/90 (or 90/90/90)
Timber or Steel	Horizontal or vertical fixed to frame*	2 x 13mm or 1 x 16mm Fyrchek	Inside and Outside	-/90/90 (or 90/90/90)

*Installation requirements as per A5 of this Certificate of Conformity.
Note: Stud Spacings at 450mm or 600mm centres dependent on applied loading including wind.

Source: *IGNIS Labs Pty Ltd; Report No. IGNL-7109 I01 R01 Hebel Wall Compliance dated 18/05/2023.*

Bushfire Attack Level (BAL)

CSR Hebel Powerpanel[50] 50mm external wall system achieves BAL-FZ and is compliant with AS 3959-2018 Section 9.4.1(c) as the tested system achieved FRL of 90/90/90.

Source: *CSIRO, Report No: FCO-3451 Revision D dated 30/08/2024 and FCO-3241 Revision C dated 28/03/2024.*

Weatherproofing

Hebel® PowerPanel[50] wall panels (with adhesives applied to the edges and with a weatherproof coat) will meet compliance in a horizontal or vertical configuration for up to, and including, Wind category N3.

Source: *Xavier Knight Pty Ltd Report Reference: 220912 revision 6 dated 08/08/2024.*

Structural

Confirmation that the structural capacity design calculations for strength and serviceability requirements were carried out in accordance with the current relevant building and structural engineering codes in particular; AS 1170.2:2021, AS 1170.4:2007, AS 4055:2021 and AS 5146.2:2018. Structural compliance B1P1(2)(c) and H1P1(2)(c) covers wind classifications N1-N4 & C1-C2 as per Section 2.2 Design tables of Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24.

Source: *PACE Structural Pty Ltd, Structural Design Certificate PS20145 dated 24/04/2024.*

Thermal Properties of 50mm Hebel® PowerPanel50 (dry density 510 kg/m³) Wall Systems

Description	Insulation Path		Overall (Pine Framing 12.13% area)		Overall (Steel framing 9.5% area)	
	Total R_{TI} m²K/W		Total R, m²K/W		Total R, m²K/W	
	Summer	Winter	Summer	Winter	Summer	Winter
50mm Hebel® PowerPanel[50] (4% M.C.), 24+64=88mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.72	R0.74	R0.76	R0.69	R0.70
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.84	R2.98	R2.68	R2.80	R2.44	R2.56
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.50	R2.64	R2.33	R2.45	R2.00	R2.11
50mm Hebel® PowerPanel[50] (4% M.C.), 35+64=99mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.72	R0.74	R0.76	R0.69	R0.70
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60
50mm Hebel® PowerPanel[50] (4% M.C.), 31mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.84	R2.98	R2.68	R2.80	R2.44	R2.56
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.50	R2.64	R2.33	R2.45	R2.00	R2.11
50mm Hebel® PowerPanel[50] (4% M.C.), 16+64=80mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.72	R0.74	R0.76	R0.69	R0.70
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.56	R1.60	R1.59	R1.63	R1.49	R1.53
50mm Hebel® PowerPanel[50] (4% M.C.), 12mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 64mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.70	R1.72	R1.72	R1.74	R1.61	R1.63
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.77	R2.91	R2.61	R2.72	R2.36	R2.46
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.49	R2.63	R2.32	R2.44	R1.99	R2.09
50mm Hebel® PowerPanel[50] (4% M.C.), 24+70=94mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.72	R0.74	R0.76	R0.69	R0.70
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60
50mm Hebel® PowerPanel[50] (4% M.C.), 20mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.97	R3.13	R2.78	R2.91	R2.53	R2.65
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.63	R2.79	R2.43	R2.56	R2.08	R2.19
50mm Hebel® PowerPanel[50] (4% M.C.), 35+70=105mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.73	R0.74	R0.77	R0.69	R0.71
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60

50mm Hebel® PowerPanel[50] (4% M.C.), 31mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.95	R3.16	R2.77	R2.93	R2.51	R2.67
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.61	R2.82	R2.41	R2.58	R2.06	R2.21
50mm Hebel® PowerPanel[50] (4% M.C.), 16+70=86mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.73	R0.74	R0.77	R0.69	R0.71
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.56	R1.60	R1.59	R1.63	R1.49	R1.53
50mm Hebel® PowerPanel[50] (4% M.C.), 12mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 70mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.70	R1.72	R1.72	R1.74	R1.61	R1.63
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.90	R3.06	R2.71	R2.84	R2.44	R2.56
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford New Generation SoundScreen R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.63	R2.78	R2.42	R2.55	R2.07	R2.18
50mm Hebel® PowerPanel[50] (4% M.C.), 24+90=114mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.73	R0.74	R0.77	R0.69	R0.71
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60
50mm Hebel® PowerPanel[50] (4% M.C.), 20mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford Gold Wall Batts R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.95	R3.16	R2.77	R2.93	R2.51	R2.67
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.11	R3.31	R2.78	R2.93	R2.32	R2.46
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Polymax Wall Batt R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.11	R3.31	R2.78	R2.93	R2.32	R2.46
50mm Hebel® PowerPanel[50] (4% M.C.), 24mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.7 HP, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.32	R3.51	R2.91	R3.06	R2.42	R2.55
50mm Hebel® PowerPanel[50] (4% M.C.), 35+90=125mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.73	R0.74	R0.77	R0.69	R0.71
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.63	R1.68	R1.66	R1.71	R1.55	R1.60
50mm Hebel® PowerPanel[50] (4% M.C.), 31mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.89	R1.93	R1.92	R1.96	R1.81	R1.85
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford Gold Wall Batts R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.95	R3.16	R2.77	R2.93	R2.51	R2.67
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²	R3.11	R3.31	R2.78	R2.93	R2.32	R2.46
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Polymax Wall Batt R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.11	R3.31	R2.78	R2.93	R2.32	R2.46
50mm Hebel® PowerPanel[50] (4% M.C.), 35mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.7 HP, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.32	R3.51	R2.91	R3.06	R2.42	R2.55
50mm Hebel® PowerPanel[50] (4% M.C.), 16+90=106mm unventilated unreflective air space, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R0.70	R0.73	R0.74	R0.77	R0.69	R0.71
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP Plus e=R0.09*R1.36/R0.05, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.56	R1.60	R1.59	R1.63	R1.49	R1.53

50mm Hebel® PowerPanel[50] (4% M.C.), 12mm unventilated semi-reflective air space, Bradford Polyair Performa 4.0 XHD eR0.05/R0.03, 90mm unventilated reflective air space (stud frame), 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R1.70	R1.72	R1.72	R1.74	R1.61	R1.63
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated semi-reflective air space, Bradford Thermoseal Wall Wrap XP e=R0.09*R1.36/R0.87, Bradford Gold Wall Batts R2.0, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R2.89	R3.08	R2.70	R2.85	R2.43	R2.57
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.11	R3.30	R2.77	R2.91	R2.31	R2.44
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Polymax Wall Batt R2.5, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.11	R3.30	R2.77	R2.91	R2.31	R2.44
50mm Hebel® PowerPanel[50] (4% M.C.), 16mm unventilated nonreflective air space, Bradford Enviroseal RW Plus, Bradford Gold Wall Batts R2.7 HP, 10mm Gyprock Plasterboard Plus (5.7kg/m²)	R3.31	R3.50	R2.91	R3.04	R2.41	R2.53

Notes: *Above calculations all include 10mm Gyprock Plasterboard Plus (5.7 kg/m² density) indoor lining. Assumes Bradford Polyair Performa 4.0 XHD is compressed at fixings, so air space adjacent to it is reduced by its 4mm thickness. Assumes thermal resistance of 50mm* Hebel® PowerPanel[50] *(dry density 510 kg/m³) is R0.313 m².K/W for 4.0% M.C. Pine framing assumed to be 45mm wide and studs 600mm centres + top and bottom plates and one noggin. Steel framing assumed to be 35mm thick and studs 600mm centres + top and bottom plates and one noggin. (No thermal break present). For 6mm skim render, add R0.04 m².K/W. Total R would be almost the same with 20mm battens instead of 24mm. Total R-values apply to installation of both vertically and horizontally orientated 50mm thick* Hebel® PowerPanel[50] *when fixed to the structural frame variety of battens/top hats as a cladding system.*

Source: *James M Fricker; Report i107w26011n-w2720; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 08/03/2024.*

Thermal Properties of 50mm Hebel® PowerPanel[50] (dry density 510 kg/m³) Wall Systems incorporating Thermoseal wall wrap PRIME

Hebel® PowerPanel[50] and Thermoseal wall wrap PRIME					Insulation path Total R, m² K/W		Overall (90x45mm pine framing 12.13% area) Total R, m² K/W		Overall (90x35mm pine framing 12.13% area) Total R, m² K/W		Overall (Steel Framing 5.8% area) Total R, m² K/W	
Panel	Frame	Insulation	Wall Wrap	Batten	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Hebel® PowerPanel[50]	90mm stud frame	No batts	Thermoseal wall wrap PRIME	24mm top hat	1.31	1.37	1.34	1.40	1.33	1.39	1.22	1.27
	70mm stud frame				1.31	1.37	1.32	1.38	1.33	1.39	1.21	1.27
	90mm stud frame	90mm Gold Batts R2.0			2.61	2.82	2.42	2.58	2.46	2.63	2.07	2.21
	70mm stud frame	75mm R1.5 batt			2.08	2.24	1.96	2.09	2.02	2.16	1.74	1.87

Notes:

- System Total R determinations based upon AS/NZS 4859 Parts 1&2:2018, Thermal insulation materials for buildings.
- Overall Total R determinations include thermal bridging per the Standard and typical construction.
- Pine framing assumed to be 45 or 35mm wide and studs 600mm centres + top and bottom plates and one noggin.
- Steel framing assumed to be 35mm wide and studs 600mm centres + top and bottom plates and one noggin. (No thermal break present.)
- Assumes thermal resistance of 50mm Hebel PowerPanel[50] (dry density 510kg/m3) is R0.313 m².K/W for 4.0% moisture content.
- Bradford Thermoseal Wall Wrap PRIME e0.9/0.05 assumed to have hemispherical infrared emittances as stated

Source: *James M Fricker; Report i107w2509p-w26111p; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 15/04/2024.*

A4 Manufacturer and manufacturing plant(s)

This field is optional. Contact Certificate Holder for details.

A5 Installation requirements

1. Only to be installed in accordance with Houses and Low Rise Multi Residential PowerPanel50 External Walls Vertical & Horizontal Installation Guide version HELIT181APRIL24, and incorporating Hebel PowerPanel^{50} External Walls Slab Edge Rebate Technical Update TU-033 dated 17/08/2020.
2. The Hebel® PowerPanel^{50} Wall System is only to be installed by a suitably qualified tradesperson or builder.
3. The walls are constructed in accordance with AS 5146.3:2018.
4. Stud wall support frame to be designed and certified by others.
5. External coating system to be in accordance with AS 5146.3:2018.
6. External coating of the panel shall contain an embedded fibreglass mesh reinforcing coat with maximum aperture of 10 mm by 10 mm and minimum weight of 145 g/m2 (incorporated in the base levelling coat) – entire wall for horizontally orientated panels and 200 wide fibreglass mesh positioned centrally over panel adhesive joints for vertically orientated panels
7. The first (texture) coat and second (finish) coats must be acrylic latex coatings complying with AS/NZS 4548.5-1999.
8. The coatings must be suitable and compatible with Hebel® PowerPanel^{50} substrate (with priming where required).
9. Coatings to comply with AS/NZS 4548.5-1999.
10. Coating manufacturer to specify minimum coating dry film thickness to comply with AS/NZS 4548.5-1999.
11. The minimum clearance of the Hebel® PowerPanel^{50} system may be varied from the bottom of the wall cladding under the ABCB Housing Provisions Part 7.5.7 to a minimum of 25mm provided the coating at the base of Hebel® PowerPanel^{50} shall return to the underside of the panel to ensure continuity of the weather tightness layer.

Source: *Xavier Knight Pty Ltd Report Reference: 220912 revision 6 dated 08/08/2024.*

When Hebel® PowerPanel^{50} are installed with their base below ground the following conditions must apply:

- The maximum depth of embedment of Hebel® PowerPanel^{50} products below grade is 100mm (i.e. no more than 100mm above the lowest part of the Hebel® PowerPanel^{50}).
- Hebel® PowerPanel^{50} must not be used to retain garden beds, earth, soil or other organic matter, Hebel® PowerPanel^{50} is not to be used as a retaining wall structure.
- The base of the Hebel® PowerPanel^{50} must be coated with “Hebel Base Sealer” prior to installation.
- The lower 150mm of the rear face of the Hebel® PowerPanel^{50} may be coated with “Hebel Base Sealer” prior to installation, however, this is not essential.
- The lower 200mm of the front / external face of the Hebel® PowerPanel^{50} must be coated with “Hebel Base Sealer” after installation but prior to render coating, covering the panel to panel joints.
- To promote drying of the soil and subsurface adjacent to the external wall, drainage of the Finished Ground Level (and pavements) must fall away from the building at a minimum grade of 1:100.
- Even when coated, the builder must ensure external walls are not constantly wet.
- CSR Hebel details shown on drawings CSR-03 Rev C & CSR-05 Rev B apply.
- DPC must be installed to maintain a continuous damp barrier around the perimeter of the building.
- Suitable Termite protection must be installed in accordance with AS 3660.1:2014 and maintained in accordance with AS 3660.2:2017.

Source: *Clarkson Consulting Services Pty Ltd; Report 19211 Rev C dated 10/05/2023.*

A6 Other relevant technical data

Acoustic Properties

Based on expert opinion, predicted results for the panel only is:

Rw = 35 Ctr = -4

Source: *Acoustic Logic Consultancy Pty Ltd; Report No: 20130786.1/0209A/R0/GW; dated 2 September 2013.*

Proximity to Breaking Surf

The Face-Sealed Hebel® PowerPanel^{50} Wall Systems, constructed with steel framing elements manufactured from Grade Z275 or Grade AZ150 coated steel, and using AS 3566.2-2002 Class 3 fasteners, when installed in accordance with CSR Hebel Design and Installation Guides, meet the NCC Durability requirements for use within 300m of breaking surf, as long as the external coating and cladding is maintained.

Source: *The Coatings Consultancy Pty Ltd; Report #TCC18025-B-20231018; dated 18/10/2023.*

Non-Combustibility

Hebel® PowerPanel^{50} - The Certificate Holder has provided the Certificate of Test for Combustibility for Materials in accordance with AS 1530.1:1994 for Hebel® PowerPanel^{50} Panel– Autoclaved Aerated Concrete (AAC).

The material is NOT deemed combustible - Limited to the PowerPanel^{50} panel only.

Source: *CSIRO; NATA Accreditation No. 165; Report No. FNC12427A dated 02/09/2019.*

Acratex and Rockcote coating systems

	Dulux AcraTex	Rockcote
Primer	AcraTex Green Render Sealer; AcraTex AcraPrime WB	Masonry Primer Hi Op; Decorative AAC Texture Base
Texture/ Levelling Coat	AcraTex Coventry Coarse	Smooth Set 1mm; Quicksand spray acrylic
Texture & Finish	AcraTex AcraSkin AcraTex AcraShield	Armour Flex

All these Dulux AcraTex and Rockcote coatings satisfy the requirements discussed above for classification as paints and therefore fall under the exemption in NCC Part C2 Fire Resistance and Stability Clause C2D10 Non-combustible building elements cl. C2D10 (4) (o) A paint, lacquer or a similar finish or coating.

Source: *The Coatings Consultancy Pty Ltd; Reference No. TCC18056-20230518; NCC Non-Combustibility Requirements for External Coatings of Hebel High Rise Facade Systems; Dated 18/05/2023*

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

1. Fire Safety Provisions A5G3(1)(d)&(e). A report issued by an Accredited Testing Laboratory & a certificate or report from a professional engineer or other appropriately qualified person.
2. Structural Provisions A5G3(1)(e). Reports from a professional engineer.
3. Energy Efficiency Provisions A5G3(1)(e). A report from a professional engineer.
4. Weatherproofing Provision A5G3(1)(e). Reports from a professional engineer and other appropriately qualified person.

B2 Reports

1. Xavier Knight Pty Ltd; Report Reference 220912 Revision 6; Weatherproofing Assessment – Hebel® PowerPanel, PowerPanelXL, PowerPanel50, PowerProfile, PowerPattern external walls, and dual zero boundary walls in low rise buildings; Dated 08/08/2024. Report confirms compliance with F3P1 and H2P2.
2. Clarkson Consulting Services Pty Ltd; Report 19211 Rev C; Hebel® Wall Systems – Installation below ground; Dated 10/05/2023. This report confirms compliance with compliance F3P1 and H2P2.
3. CSIRO; NATA Accreditation No. 165; Report No. FCO-3241 Revision C; Fire resistance in accordance with AS1530.4:2014; Dated 28/03/2024. This report provides evidence for compliance with of C2D2(2) and H3D3
4. CSIRO; NATA Accreditation No. 165; Assessment Report No. FCO-3451 Revision D; Bushfire performance of CSR Hebel® PowerPanel external wall systems in accordance with AS 1530.8.2-2018; Dated 30/08/2024. This report confirms compliance with G5D3 and H7D4.
5. IGNIS Labs Pty Ltd; Report No. IGNL-7109 I01 R01; Hebel® External Wall Compliance; Dated 18/05/2023. This report provides evidence for compliance with of C2D2(2) and H3D3.
6. PACE Structural; File No. PS20145; Structural design certificate Hebel® PowerPanel50 External Wall; Dated 24/04/2024. This report provides evidence for compliance with B1P1(1), (2)(a), (b), (c) & (d) and H1P1(1), (2)(a), (b), (c) & (d).
7. The Coatings Consultancy Pty Ltd; Reference No. TCC20049-20230810; Clearance between external Hebel®l PowerPanel Walls and Finished Ground Level; Dated 10/08/2023. This report provides evidence for compliance with F3P1 and H2P2.
8. James M Fricker Pty Ltd; Report Number 107w26011n-w2720; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 08/03/2024. This report provides evidence for compliance with J4D6 and H6D2(1)(b)(i).
9. James M Fricker Pty Ltd; Report Number 107w2509p-w26111p; Thermal performance calculations of Hebel® PowerPanel50 with Thermoseal wall wrap PRIME in accordance with AS/NZS 4859 Parts 1 & 2:2018; Dated 15/04/2024. This report provides evidence for compliance with J4D6 and H6D2(1)(b)(i).

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