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THIS IS TO CERTIFY THAT

Hebel® Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls System
Hebel® Houses and Low Rise Multi Residential PowerProfile® External Walls System
Hebel® Houses and Low Rise Multi Residential PowerPattern® External Walls System

Type and/or use of product:

Wall Cladding System for Houses & Low Rise Multi-Residential External Walls.

Description of product:

Houses and Low Rise Multi-Residential External Wall Systems comprising several proprietary components including 75mm non load bearing steel reinforced Autoclaved Aerated Concrete (AAC) panels. Refer A2 below.

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 – Subject to the limitations and conditions outlined below.	H1P1(1), (2)(a), (b), (c) & (d)	Structural reliability and resistance – Subject to the limitations and conditions outlined below.
	F3P1	Weatherproofing – Refer Limitation and condition 7 & 12	H2P2	Weatherproofing – Refer Limitation and condition 7 & 12
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. Subject to Limitation and condition 10	H4D9	Condensation management – Pliable building membrane. Subject to Limitation and condition 10.
	J4D6	Energy efficiency – External walls. Can be used in conjunction with other building elements to achieve a Total R Value. Refer to 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 to A3
State or territory variation(s):	Not Applicable		H4D9 (Tas)	

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



Richard Donarski - CMI



Don Grehan – Unrestricted Building Certifier

Date of issue: 31/05/2024

Date of expiry: 29/04/2025



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^{XL}, PowerProfile[®] and PowerPattern[®] Houses and Low Rise Multi-Residential External Wall Systems 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. 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.
5. 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.
6. The Hebel[®] PowerPanel^{XL}, PowerProfile[®] and PowerPattern[®] Houses and Low Rise Multi-Residential External Wall Systems have not been tested and certified for impact loading from windborne debris in Region C and D as denoted in AS 1170.2:2021. The building designer should take into consideration internal pressure resulting from dominant openings.
7. To satisfy F3P1 & H2P2 via verification, 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.
8. Design certification for earthquake loading compliance in accordance with AS 1170.4:2007 excludes Meckering Regions and Island Regions. Components approved under this certificate are not part of the seismic-force- resisting system.
9. 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.
10. Installation must be in accordance with appropriate documentation outlined in Section A5 Installation requirements of this Certificate of Conformity and subject to any other Condition & Limitation listed herein.
11. Where a pliable building membrane is recommended or required it must be installed in accordance with AS/NZS 4200.2:2017 and [Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024.](#)
12. Clearance from the underside of the panel to the finished surface level below must comply with Part 7.5.7 of the ABCB Housing Provisions however, may be reduced to a minimum of 25mm where the design wind speed does not exceed N3 and the product is installed in accordance with [Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024](#), incorporating [Hebel PowerPanel^{XL} External Walls Slab Edge Rebate Technical Update TU-033 dated 17/08/2020.](#)
13. Other than the items and information listed, the remainder of the information contained in the product's literature is outside the Scope of Certification.
14. 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.

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.



Certificate of Conformity

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^{XL}, PowerProfile® and PowerPattern® Panels

Product	Hebel® PowerPanel ^{XL}	Hebel® PowerProfile®	Hebel® PowerPattern®
Thickness:	75mm	75mm	75mm
Standard Width:	600mm	600mm	600mm
Standard Length:	2400, 2550, 2700, 2800, 2850, 3000, 3300mm. Tolerance: ±5mm	2400, 2550, 2700, 2800, 2850, 3000, 3300mm. Tolerance: ±5mm	2400, 2700, 2850, 3000, 3300mm. Tolerance: ±5mm
Reinforcement:	4 x 4mm longitudinal steel bars	4 x 4mm longitudinal steel bars	4 x 4mm longitudinal steel bars
Nominal Dry Density:	400 kg/m ³	400 kg/m ³	510 kg/m ³

Hebel® PowerPattern® Track routed with "V" groove lines are available in: 100mm, 150mm, 200mm and 300mm spacing. Also available as a plain panel with no groove (bevelled long edges)

Hebel® PowerProfile® consists of a Hebel® PowerPanel^{XL} and aluminium profile elements fixed externally.

Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems Components

Product	Description
Universal Backing Clip:	Fixed to the Hebel® PowerProfile® Panel and a powder coated aluminium profile snaps onto the clip
Top Hat	The Top Hats are used to fix the Hebel® PowerPanel ^{XL} , PowerProfile® and PowerPattern® panels to the structural support framing. There are two nominal widths available: 24mm and 35mm - incorporating perforated flanges for ease of installation onto external wall frames.
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 Tek screw.
	Fixing of Hebel® PowerPanel ^{XL} , PowerProfile® or PowerPattern® panels to top hat 14-10x90mm Hex Head Type 17 screw.
Hebel® Mortar	Fixing of Hebel® PowerPanel ^{XL} , PowerProfile® or PowerPattern® panels to Top Hat from inside of buildings 14-10x65mm Hex Head Type 17 Screw (Boundary walls only).
	Fixing of Hebel® PowerPanel ^{XL} , PowerProfile® or PowerPattern® panels to Top Hat from inside of buildings 14-10x65mm Hex Head Type 17 screw (Zero Boundary walls only).
Hebel® Mortar	Hebel® Mortar when required is used as a thick bed mortar base to provide a level base for Hebel® PowerPanel ^{XL} , PowerProfile® or PowerPattern® panels 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 ^{XL} , PowerProfile® or PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems panels together at vertical and horizontal joints.
Hebel® Patch	Minor Chips or damage to Hebel® PowerPanel ^{XL} , PowerProfile® or PowerPattern® panels are to be repaired using Hebel® Patch.
Hebel® Anti Corrosion Protection Paint	To coat reinforcement steel that has been exposed during cutting of the panels.
Hebel® external Aluminium Render Bead (optional)	Hebel® external Aluminium Render Bead is used to provide neat and consistent horizontal control joints. *Note; this option is not a Fire Rated option.
Wall Wrap	Thermoseal Wall Wrap XP, Enviroseal RW Plus, Thermoseal Wall Wrap PRIME, Polyair Performa 4.0 XHD.



Certificate of Conformity

A3 Product specification

The properties of the Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems, as described herein, vary with the configuration of the wall structure. It is therefore considered essential that this certificate be read in conjunction with Installation requirements in A5.

Structural Reliability - Structural Reliability and Resistance

Hebel® PowerPanel^{XL} & Hebel® PowerProfile® Systems

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) & H1P1(2)(c) covers wind classifications N1-N5 & C1-C3 as per Table 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6 and 1.2.7 of [Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024](#) and [Houses and Low Rise Multi Residential PowerProfile External Walls Installation Guide HELIT0194May2024](#)
Source: PACE Structural Pty Ltd, Reports No. PS18153 dated 24/04/2024 & PS20153 dated 24/04/2024.

Hebel® PowerPattern® System

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) & H1P1(2)(c) covers wind classifications N1-N5 & C1-C3 as per Table 1.3, 1.4, 1.5, 1.6 & 1.7 of [Hebel® Houses and Low Rise Multi Residential PowerPanel External Walls – Design and Installation Guide \(HELIT178JULY23\)](#).
Source: PACE Structural Pty Ltd, Report No. PS20177 dated 24/04/2024.

Fire resistance and stability - Fire separation of external walls

Hebel® PowerPanel^{XL} & Hebel® PowerProfile® Systems - Depending on the system configuration; Refer [Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024](#) the following FRLs can be achieved.

HELIT016_FEB21 Figures	Fire Resistance Level (FRL)	
3.6.5.7	180/180/180 *	
3.6.7.1	-/120/120	*For an FRL of 180/180/180 when using the Hebel® PowerPattern® System, the internal lining must consist of a minimum of 1 x 16 mm Fyrchek plasterboard. If a reduced FRL of 120/120/120 is required to be achieved, standard grade plasterboard may be used as per the tested system.
3.6.7.2	-/120/120	
3.6.7.5	-/120/120	
3.6.7.9	-/120/120	
3.6.7.10	-/120/120	

Variations to linings and framing

Frame	Orientation of panel	Interior Lining	Direction of Fire	FRL
Timber or Steel	Vertical fixed to frame*	Standard grade plasterboard	Outside Only	-/60/60 or 60/60/60
Timber	Vertical fixed to frame*	1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Steel	Vertical fixed to frame*	1 x 13mm or 1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Timber or Steel	Vertical fixed to frame*	Standard grade plasterboard	Outside Only	-/90/90 or 90/90/90
Timber or Steel	Vertical fixed to frame*	2 x 13mm or 1 x 16mm Fyrchek	Inside and Outside	-/90/90 or 90/90/90
Timber or Steel	Vertical fixed to frame*	Standard grade plasterboard	Outside Only	-/120/120 or 120/120/120
Timber or Steel	Vertical fixed to frame*	2 x 13mm or 2 x 16mm Fyrchek	Inside and Outside	-/120/120 or 120/120/120

*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 I01R01 Hebel Wall Compliance dated 18/05/2023, CSIRO Ref No. FCO-3003 Rev D dated 28th March 2024 (**180/180/180 only**) and Warringtonfire Report No. 27915, Revision 28.1 dated 19/04/2024.

Fire resistance Level (FRL 180/180/180) - Compliance with FRL 180/180/180 subject to the following conditions:

- The Hebel® AAC panel density may vary from either Dry Density min. 510kg/m³ or Dry Density min. 410kg/m³.
- The wall may vary to include structural steel framing designed in accordance with AS 4600-2018 or NASH Standard part 2, or AS 3623 for ambient temperature and where appropriate, designed to support the weight of the panels.
- The wall may vary to include structural timber framing designed in accordance with AS 1720.1-2010 or AS 1684 part 2, 3 or 4 for ambient temperature and where appropriate, designed to support the weight of the panels.
- Wall framing spacing may be up to 600-mm centres
- The Hebel® AAC shall be vertically orientated and fixed to steel tophats or timber battens as per test evidence within FCO-3003.
- Panels will be fixed through the panel into the battens/tophats.
- The panels shall be supported at the base with either slab, shelf angle, masonry wall or the panel below.
- Where the height per level is 3300-mm or less, the panels are fixed to framing by steel tophat sections spaced at maximum 1200-mm centres over the panel height, and top and bottom tophat at maximum 150mm from the panel ends.
- The Hebel® AAC panel shall be vertically orientated as per test evidence within FCO-3003, though may vary in length from 2.4m to 3.3m.
- The wall length may increase
- Panel to batten fixings spacings may decrease not increase
- Batten/tophat spacings may decrease not increase
- The inclusion of an additional panel fixing method (Hebel direct fix clip).
- The wall cavity may include sarking between batten and framing.
- The wall cavity may include glasswool, rockwool or any non-combustible insulation.
- The wall linings shall be one of the following:
 - 10mm Gyprock Plasterboard Plus.
 - Any other standard grade, water grade, acoustic grade, fire grade plasterboard manufactured in accordance with AS 2589 and with a density greater than 5.7kg/m².
 - Fibre cement 6mm or thicker with or without tiles adhered.
- Where more than one level is constructed, a horizontal or vertical joint detail where applicable is to be followed as shown in HELIT016MAY2024.
- Where a vertical control joint is required, the inclusion of Selleys FireBlock XT sealant as an alternative to the FireSeal sealant.
- The gap at the base of the panels when used in conjunction with a concrete slab rebate as detailed in HELIT016MAY2024 must follow as applicable:
 - Gaps less than 3mm wide - Hebel thick bed mortar
 - Gaps less than 10mm wide - Selleys Fireblock XT or CSR FireSeal for 10mm depth
 - Gaps less than 20mm wide - Selleys Fireblock XT or CSR FireSeal for 16mm depth
- Where Hebel® PowerPanels are supported by a steel shelf angle fixed to the vertical face of the concrete slab as detailed in HELIT016MAY2024 must follow as applicable:
 - Selleys Fireblock XT is to be applied to all gaps at the base of the panels and between the steel shelf angle and the vertical face of the concrete slab.
 - The steel shelf angle is required to have a horizontal angle leg length of 75mm (BMT 1.2-mm) with a minimum of 40mm cover to the bottom of the Hebel® PowerPanel. The steel shelf angle is to be kept a minimum of 15mm clear of the timber bottom plate;
 - The steel shelf angle shall be installed in sections up to 3m long and at the ends or any joins in the angle, a 10mm gap filled with Selleys Fireblock XT is required. The angle is fixed to the slab edge at up to 900mm centres with a metal anchor.
- All soffit and eaves linings are to be designed to maintain the FRL of the external wall system.

Source: CSIRO Report No. FCO-3003 Rev D dated 28/03/2024.

Certificate of Conformity

Thermal Properties of Hebel® PowerPanel^{XL} and PowerProfile® Systems

75mm Hebel® 413kg/m ³ PowerPanel ^{XL} Wall Systems				Insulation path		Overall		Overall		
Assumes 75mm Hebel® PowerPanel ^{XL} thermal resistance is R0.60 m ² .K/W for 4.0% moisture content						(Pine Framing 12.13% area)		(Steel Framing 5.8% area)		
Stud Frame	Top Hat Cavity	Wall thickness mm	Batts	Wall Wrap	Summer	Winter	Summer	Winter	Summer	Winter
64mm Stud Frame	24mm	173	None	None	0.99	1.00	1.02	1.04	0.99	1.01
		173	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.92	1.97	1.88	1.92
		173	None	Polyair Performa 4.0 XHD	2.18	2.22	2.18	2.21	2.14	2.17
		173	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.13	3.27	2.91	3.03	2.91	3.03
		173	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.79	2.93	2.56	2.67	2.54	2.65
	35mm	184	None	None	0.99	1.00	1.02	1.04	0.99	1.01
		184	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.92	1.97	1.88	1.92
		184	None	Polyair Performa 4.0 XHD	2.18	2.22	2.18	2.21	2.14	2.17
		184	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.13	3.27	2.91	3.03	2.91	3.03
		184	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.79	2.93	2.56	2.67	2.54	2.65
70mm Stud Frame	24mm	179	None	None	0.99	1.00	1.03	1.04	0.99	1.01
		179	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.93	1.97	1.88	1.92
		179	None	Polyair Performa 4.0 XHD	2.18	2.22	2.19	2.22	2.14	2.17
		179	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.26	3.42	3.03	3.15	3.02	3.16
		179	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.93	3.08	2.68	2.79	2.64	2.77
	35mm	190	None	None	0.99	1.02	1.03	1.06	1.00	1.02
		190	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.93	1.97	1.88	1.92
		190	None	Polyair Performa 4.0 XHD	2.18	2.22	2.19	2.22	2.14	2.17
		190	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.26	3.42	3.03	3.15	3.02	3.16
		190	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.93	3.08	2.68	2.79	2.64	2.77
90mm or 92mm Stud Frame	24mm	199	None	None	0.99	1.02	1.04	1.06	1.00	1.02
		199	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.95	1.99	1.88	1.93
		199	None	Polyair Performa 4.0 XHD	2.18	2.22	2.21	2.24	2.14	2.18
		199	90mm Bradford Gold Wall Batts R2.0	Thermoseal Wall Wrap XP	3.25	3.44	3.07	3.23	3.02	3.18
		199	90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	3.41	3.60	3.09	3.24	3.02	3.17
		199	90mm Bradford Polymax Walls Batts R2.5	Enviroseal RW Plus	3.41	3.60	3.09	3.24	3.02	3.17
		199	90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	3.61	3.79	3.23	3.37	3.16	3.31
	35mm	210	None	None	0.99	1.02	1.04	1.06	1.00	1.02
		210	None	Thermoseal Wall Wrap XP Plus	1.92	1.96	1.95	1.99	1.88	1.93
		210	None	Polyair Performa 4.0 XHD	2.18	2.22	2.21	2.24	2.14	2.18
		210	90mm Bradford Gold Wall Batts R2.0	Thermoseal Wall Wrap XP	3.25	3.44	3.07	3.23	3.02	3.18
		210	90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	3.41	3.60	3.09	3.24	3.02	3.17
		210	90mm Bradford Polymax Walls Batts R2.5	Enviroseal RW Plus	3.41	3.60	3.09	3.24	3.02	3.17
210	90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	3.61	3.79	3.23	3.37	3.16	3.31		

- Notes:**
- All above walls have 10mm Gyprock Plasterboard Plus indoor lining.
 - The above results are for 75mm Hebel® PowerPanel^{XL} (dry density 413kg/m³) external wall system with assumed thermal resistance of R0.60 m².K/W at 4% M.C..
 - For 6mm skim render, Total R-values are R0.04 more than those above.

Source: James M Fricker; Report 107w25011n_w2520; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 29/04/2024.

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Thermal Properties of Hebel® PowerPattern® System

75mm Hebel® 510kg/m³ PowerPattern® System					Insulation path		Overall		Overall	
Assumes Hebel® PowerPattern® thermal resistance is R0.41 m².K/W.							(Pine Framing 12.13% area)		(Steel Framing 5.8% area)	
Stud Frame	Top Hat Cavity	Wall thickness mm	Batts	Wall Wrap	Summer	Winter	Summer	Winter	Summer	Winter
64mm Stud Frame	24mm	173	None	None	0.80	0.81	0.83	0.85	0.80	0.82
		173	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.73	1.78	1.69	1.73
		173	None	Polyair Performa 4.0 XHD	1.99	2.03	1.99	2.02	1.95	1.98
		173	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	2.94	3.08	2.72	2.84	2.72	2.84
		173	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.60	2.74	2.37	2.48	2.35	2.46
	35mm	184	None	None	0.80	0.81	0.83	0.85	0.80	0.82
		184	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.73	1.78	1.69	1.73
		184	None	Polyair Performa 4.0 XHD	1.99	2.03	1.99	2.02	1.95	1.98
		184	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	2.94	3.08	2.72	2.84	2.72	2.84
		184	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.60	2.74	2.37	2.48	2.35	2.46
70mm Stud Frame	24mm	179	None	None	0.80	0.81	0.84	0.85	0.80	0.82
		179	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.74	1.78	1.69	1.73
		179	None	Polyair Performa 4.0 XHD	1.99	2.03	2.00	2.03	1.95	1.98
		179	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.07	3.23	2.84	2.96	2.83	2.97
		179	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.74	2.89	2.49	2.60	2.45	2.58
	35mm	190	None	None	0.80	0.83	0.84	0.87	0.81	0.83
		190	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.74	1.78	1.69	1.73
		190	None	Polyair Performa 4.0 XHD	1.99	2.03	2.00	2.03	1.95	1.98
		190	70mm Bradford Soundscreen Batts R2.0	Thermoseal Wall Wrap XP	3.07	3.23	2.84	2.96	2.83	2.97
		190	70mm Bradford Soundscreen Batts R2.0	Enviroseal RW Plus	2.74	2.89	2.49	2.60	2.45	2.58
90mm or 92mm Stud Frame	24mm	199	None	None	0.80	0.83	0.85	0.87	0.81	0.83
		199	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.76	1.80	1.69	1.74
		199	None	Polyair Performa 4.0 XHD	1.99	2.03	2.02	2.05	1.95	1.99
		199	90mm Bradford Gold Wall Batts R2.0	Thermoseal Wall Wrap XP	3.06	3.25	2.88	3.04	2.83	2.99
		199	90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	3.22	3.41	2.90	3.05	2.83	2.98
	35mm	199	90mm Bradford Polymax Walls Batts R2.5	Enviroseal RW Plus	3.22	3.41	2.90	3.05	2.83	2.98
		199	90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	3.42	3.60	3.04	3.18	2.97	3.12
		210	None	None	0.80	0.83	0.85	0.87	0.81	0.83
		210	None	Thermoseal Wall Wrap XP Plus	1.73	1.77	1.76	1.80	1.69	1.74
		210	None	Polyair Performa 4.0 XHD	1.99	2.03	2.02	2.05	1.95	1.99
	210	90mm Bradford Gold Wall Batts R2.0	Thermoseal Wall Wrap XP	3.06	3.25	2.88	3.04	2.83	2.99	
	210	90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	3.22	3.41	2.90	3.05	2.83	2.98	
	210	90mm Bradford Polymax Walls Batts R2.5	Enviroseal RW Plus	3.22	3.41	2.90	3.05	2.83	2.98	
	210	90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	3.42	3.60	3.04	3.18	2.97	3.12	

Notes: All above walls have 10mm Gyprock Plasterboard Plus indoor lining. The above results are for 75mm Hebel PowerPattern (dry density 510kg/m3) with assumed thermal resistance of R0.41 m².K/W. (It is 75mm PowerPanel with 10mm deep routing). For 6mm skim render, Total R-values are R0.04 more than those above.

Source: James M Fricker; Report 107w25011n_w2520; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 29/04/2024.

Certificate of Conformity

Thermal Properties of Hebel® PowerPanel^{XL} and PowerProfile® System with Thermoseal wall wrap PRIME

PowerPanel ^{XL} and Thermoseal wall wrap PRIME					Insulation path Total R, m ² K/W		Overall (90x45mm pine framing 12.13% area) Total R, m ² K/W		Overall (90x35mm pine framing 12.13% area) Total R, m ² K/W		Overall (Steel Framing 5.8% area) Total R, m ² K/W	
Panel	Frame	Insulation	Wall Wrap	Batten	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
PowerPanel ^{XL}	90mm stud frame	No batts	Thermoseal wall wrap PRIME	24mm top hat	1.62	1.66	1.65	1.68	1.64	1.68	1.54	1.57
	70mm stud frame				1.62	1.66	1.63	1.66	1.64	1.68	1.53	1.57
	90mm stud frame	90mm Gold Batt's R2.0			2.90	3.10	2.72	2.87	2.76	2.92	2.45	2.59
	70mm stud	75mm R1.5 batt			2.37	2.52	2.25	2.37	2.31	2.44	2.09	2.20

- 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 75mm Hebel® PowerPanel (dry density 413kg/m³) is R0.60 m².K/W for 4.0% moisture content.
 - For 75mm 400 kg/m³ panels, the total R values will be slightly higher, thus the displayed values can be used conservatively for 400 kg/m³ wall panel systems.
 - Bradford Thermoseal Wall Wrap PRIME e0.9/0.05 assumed to have hemispherical infrared emittances as stated

Source: James M Fricker; Report 107w2509p-w26111p; Thermal performance calculations of Hebel® PowerPanel^{XL} and Thermoseal wall wrap PRIME to AS/NZS 4859 Parts 1 & 2:2018; Dated 15/04/2024.

- Weatherproofing** Compliance of Hebel® wall panels (with adhesives applied to the edges and with a weatherproof coat) in a horizontal or vertical configuration is applicable to:
- Class 1 and 10 buildings with a wind classification not exceeding N3W_{serv} as per AS 4055:2021, provided the ultimate limit state wind pressure is also below 2.5 kPa (as required by NCC 2022 H2V1).
 - Class 2-9 buildings of Type C construction having a serviceability wind pressure not exceeding +0.68/-1.27 kPa, provided the ultimate limit state wind pressure is also below 2.5 kPa (as required by NCC 2022 F3V1).
 - External walls with a risk score of max 20, determined in accordance with the NCC verification method table F3V1a, or H2V1a, as appropriate, provided that the buildings parameters result in no item/s on the NCC's verification method risk rating table have a "very-high" risk severity.
 - Windows/doors must comply with AS 2047

Source: Xavier Knight Pty Ltd Report Reference: 220912 dated 20/05/2024.

A4 Manufacturer and manufacturing plant(s)

This field is optional. Contact Certificate Holder for details.

A5 Installation requirements

Installation of the Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems must be in accordance with the following appropriate documentation and the Additional Requirements listed below.

PowerPanel^{XL} System	Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024 , incorporating Hebel PowerPanel^{XL} External Walls Slab Edge Rebate Technical Update TU-033 dated 17/08/2020 .
PowerProfile® System	Houses and Low Rise Multi Residential PowerProfile External Walls Installation Guide HELIT0194May2024 and Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024 .
PowerPattern® System	House and Low Rise Multi Residential PowerPattern® External Walls Installation Guide HELIT206May2024 ; and Hebel® Houses and Low Rise Multi Residential PowerPanel External Walls – Design and Installation Guide (HELIT178JULY23) ; and Houses and Low Rise Multi Residential PowerPanel^{XL} External Walls Design and Installation Guide HELIT016May2024 ,

Additional Requirements:

1. The walls are constructed in accordance with AS 5146.3:2018.
2. Stud wall support frame to be designed and certified by others.
3. External coating system to be in accordance with AS 5146.3:2018 and comply with AS/NZS 4548.5-1999 and must be suitable and compatible with AAC substrate (with priming where required).
4. The first (texture) coat and second (finish) coats must be acrylic latex coatings complying with AS/NZS 4548.5-1999.
5. The coatings must be suitable and compatible with AAC Hebel substrate (with priming where required).
6. Coating manufacturer to specify minimum coating dry film thickness to comply with AS/NZS 4548.5-1999.
7. Coatings to comply with AS/NZS 4548.5-1999.
8. Xavier Knight validated the system to vary the minimum clearance from the bottom of the wall cladding under the BCA requirement to a minimum of 25mm provided the coating at the base of 50 and 75mm Hebel panels shall return to the underside of panel to ensure continuity of the weather tightness layer.

When Hebel® PowerPanel^{XL}, PowerProfile® or PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems are installed with their base below ground, the following conditions must apply:

1. The maximum depth of embedment of Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems panels below ground is 100mm (i.e. no more than 100mm above the lowest part of the Hebel® PowerPanel^{XL}, PowerProfile® or PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems).
2. Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems must not be used to retain garden beds, earth, soil or other organic matter, Hebel® PowerPanel^{XL}, PowerProfile® or PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems is not to be used as a retaining wall structure.
3. The base of the Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems must be coated with “Hebel Base Sealer” prior to installation.
4. The lower 150mm of the rear face of the Hebel® PowerPanel^{XL} PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems may be coated with “Hebel Base Sealer” prior to installation, however, this is not essential.
5. The lower 200mm of the front / external face of the Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems must be coated with “Hebel Base Sealer” after installation but prior to render coating, covering the panel to panel joints.
6. 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.
7. Even when coated, the builder must ensure external walls are not constantly wet.
8. CSR Hebel® details shown on drawings CSR-03 Rev C & CSR-05 Rev B apply.
9. DPC must be installed to maintain a continuous damp barrier around the perimeter of the building.
10. 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 dated 10/05/2023.

A6 Other relevant technical data

Bushfire - The 75mm Hebel® PowerPanel^{XL}, PowerProfile® and PowerPattern® Houses and Low Rise Multi-Residential External Wall Systems can contribute to satisfying the NCC Performance Requirements for the construction of buildings in bushfire prone areas up to BAL - FZ, where the configuration achieves an FRL of 30/30/30 or -/30/30 in accordance with AS 3959:2018 clause (9.4.1). Refer to Installation requirements in A5 for further information.

Non Combustibility of the Panel - The certificate holder has provided the Certificate of Test for Combustibility for Materials in accordance with AS 1530.1:1994 for 75mm Hebel® PowerPanel^{XL} Panel (Density 400kgm³) and the 75mm Hebel® PowerPattern® Panel (Density 510kgm³). **The material is NOT deemed combustible - Limited to the panel only.**

Source: CSIRO; NATA Accreditation No. 165; Report No. FNC12490 dated 11/11/2019 and CSIRO; NATA Accreditation No. 165; Report No. F-FNC12427A; dated 02/09/2019.

Non Combustibility of Acratex and Rockcote coating systems

Acratex and Rockcote coatings:

	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.

Acoustic Properties of Hebel® PowerPanelXL/PowerProfile® Systems

Stud Frame	Top Hat Cavity	Hebel® Panel	Plasterboard	Batts	Wall Wrap	RW	Ctr	
64mm Steel	24mm	PowerPanelXL	10mm Light Weight	None	Thermoseal wall wrap XP Plus	40	-10	
					Polyair Performa 4.0 HXD	40	-10	
				70mm Bradford Soundscreen Batts R _m 2.0	Thermoseal wall wrap XP	43	-11	
	35mm				Enviroseal RW Plus	43	-11	
					Thermoseal wall wrap XP Plus	40	-9	
					Polyair Performa 4.0 HXD	40	-9	
92mm Steel	24mm	PowerPanelXL	10mm Light Weight	70mm Bradford Soundscreen Batts R _m 2.0	Thermoseal wall wrap XP	44	-11	
					Enviroseal RW Plus	44	-11	
					Thermoseal wall wrap XP Plus	40	-9	
					Polyair Performa 4.0 HXD	40	-9	
					90mm Bradford Gold Wall Batts R2.0	Thermoseal wall wrap XP	44	-11
					90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	44	-11
	35mm	PowerPanelXL	10mm Light Weight	90mm Bradford Polymax Wall Batts R2.5	Enviroseal RW Plus	44	-11	
				90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	44	-11	
				None	Thermoseal wall wrap XP Plus	40	-9	
					Polyair Performa 4.0 HXD	40	-9	
					90mm Bradford Gold Wall Batts R2.0	Thermoseal wall wrap XP	44	-11
					90mm Bradford Gold Wall Batts R2.5	Enviroseal RW Plus	44	-11
		90mm Bradford Polymax Wall Batts R2.5	Enviroseal RW Plus	44	-11			
		90mm Bradford Gold Wall Batts R2.7	Enviroseal RW Plus	44	-11			

Source: Acoustic Logic Report No. 20140366.34/1909A/R3/GW dated 19/07/2017.

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

1. Fire safety provision A5G3(1)(d) & (e). Reports from Accredited Testing Laboratories and Qualified Professional Engineer.
2. Structural Provision A5G3(1)(e). Reports from Qualified Professional Engineer.
3. Thermal provision A5G3(1)(e). Reports from Qualified Professional Engineer.
4. Weatherproofing A5G3(1)(e). Reports from Qualified Professional Engineer.

B2 Reports

1. Xavier Knight Pty Ltd; Report Reference 220912 Revision 4; Weatherproofing Assessment – Hebel® PowerPanel, PowerPanel^{XL}, PowerPanel⁵⁰, PowerProfile, PowerPattern external walls, and dual zero boundary walls in low rise buildings; Dated 20/05/2024. 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-3003 Revision D; Assessment Review Fire resistance of CSR Hebel® 75mm single reinforcement Hebel® PowerPanel external wall system in accordance with AS 1530.4-2014; Dated 28/03/2024. This report provides evidence for compliance with of C2D2(2) and H3D3.
4. Ignis Labs Pty Ltd; Report No. IGNL-7109 I01R01; Hebel® External Wall Compliance Fire Resistance Level; Dated 18/05/2023. This report provides evidence for compliance with of C2D2(2) and H3D3.
5. James M Fricker Pty Ltd; Report i107e; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 29/04/24. This report provides evidence for compliance with J4D6 and H6D2(1)(b)(i).
6. James M Fricker Pty Ltd; Report i107f; Thermal performance calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 29/04/24. This report provides evidence for compliance with J4D6 and H6D2(1)(b)(i).
7. James M Fricker Pty Ltd; Report Number. i107f; Thermal performance calculations of Hebel® PowerPanel^{XL} with Thermosteel 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).
8. PACE Structural; File PS18153; Structural Design Certificate – 75mm Hebel® PowerPanel^{XL} External Wall System; 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).
9. PACE Structural; File PS20153; Structural Design Certificate – Hebel® PowerProfile® External Wall System; 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).
10. PACE Structural; File PS20177; Structural Design Certificate – Hebel® PowerPattern External Wall System; 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).
11. The Coatings Consultancy Pty Ltd; Reference No. TCC20049-20230810; Clearance between external Hebel® PowerPanel^{XL} Walls and Finished Ground Level; Dated 10/08/2023. This report provides evidence for compliance with F3P1 and H2P2.
12. WarringtonFire; NATA Accreditation No. 3277; Report No. 27915 Revision 28.1; Fire assessment report 75mm Hebel® PowerPanel systems to AS1530.4:2014 and AS4072.1:2005; Dated 19/04/2024. This report provides evidence for compliance with of C2D2(2) and H3D3.

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