

Certificate number: CM40312 Rev3

**Certification Body:**

  
 ABN: 80 111 217 568  
 JAS-ANZ Accreditation  
 No. Z4450210AK  
 PO Box 7144, Sippy  
 Downs Qld 4556  
 +61 (07) 5445 2199  
[www.CertMark.org](http://www.CertMark.org)

**Certificate Holder:**

CSR Hebel®  
 ABN: 55 008 631 356  
 Trinita 3, 39 Delhi Rd,  
 North Ryde BC  
 NSW 2113  
 Ph: 1300 712 896  
[www.hebel.com.au](http://www.hebel.com.au)

**THIS IS TO CERTIFY THAT**

## Hebel® Powerpanel<sup>50</sup> High Rise Façade System

**Type and/or use of product:**

Hebel® High Rise Façade Wall System is certified as a non-loadbearing external wall system to be used where deemed appropriate by state and territory specific applications using this system.

**Description of product:**

External High rise facade System, horizontally installed, comprising 50mm Aerated Autoclaved Concrete panels (AAC) horizontally fixed to steel stud or timber framing and other proprietary components, Refer A2 & A3 for full system components.

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

**BCA 2019 (Amdt. 1)**

	Volume One	Volume Two
<b>Performance Requirement(s):</b>	BP1.1(a)(b)(i), (ii),(iii) &(iv) FP1.4	P2.1.1(a)(b)(i), (ii),(iii) &(iv) P2.2.2
	Structural reliability Weatherproofing – Refer <i>Limitation and Condition 4</i>	Structural reliability Weatherproofing – Refer <i>Limitation and Condition 4</i>
<b>Deemed-to-Satisfy Provision(s):</b>	C1.1(b) C1.9 C1.14 J1.5 F6.2	3.7.2.4 3.12.1.4 3.8.7.2
	Fire resistance and Stability – Refer <i>Limitation and Condition 1</i> Non-combustible building elements – Refer A3 – Refer <i>Limitation and Condition 2</i> Ancillary Elements – Refer A3 Energy Efficiency – External walls. Can be used in conjunction with other building elements to achieve a Total R Value. Refer to A3 Condensation Management – Pliable building membrane	Construction of external walls – Refer <i>Limitation and Condition 1</i> Energy Efficiency – External walls. Can be used in conjunction with other building elements to achieve a Total R Value. Refer to A3 Condensation Management – Pliable building membrane
<b>State or territory variation(s):</b>	Not Applicable	Part 3.12 (NSW, NT, SA, Qld, Tas, ACT)

**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:** 01/04/2021

**Date of expiry:** 08/05/2023



# Certificate of Conformity

## Limitations and conditions:

1. Compliance with FRL is dependant on the system components being as specified in A3. Any deviation from the tested specimen does not form part of this certificate of conformity.
2. The non-combustibility requirements of C1.9 only apply where this system is installed using steel stud frames. Where timber stud frames are used, this system may only be installed where concession for timber framed construction apply, in the NCC.
3. The installation of the 50mm Hebel PowerPanel Horizontal Façade System on site must be in accordance with [CSR 50mm High Rise Façade Details Sheets PP50-H-F 001 – 019 Revision E dated 22/03/2021](#).
4. To satisfy FP1.4 & P2.2.2 via verification, the relevant design is required to meet the criteria of FV1.1 and/or V2.2.1 to the satisfaction of the Appropriate Authority as defined by the NCC. The site specific building must;
  - (a)(i) have a risk score of 20 or less, when the sum of all risk factor scores is determined in accordance with Table FV1.1/V2.2.1a; and
  - (a)(ii) not be subjected to an ultimate limit state wind pressure of more than 2.5kPa; and
  - (a)(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
5. 50mm Hebel PowerPanel has not been tested and certified for impact loading from windborne debris in Regions C & D as denoted in AS 1170.2:2011. The building designer should take into consideration internal pressure resulting from dominant openings.
6. Components approved under this certificate are not part of the seismic-force resisting system.
7. This certificate is limited to the details within this certificate including the above compliance elements, product description, purpose or use.
8. Design certification for earthquake loading compliance in accordance with AS 1170.4:2007 excludes Meckering Regions and Island Regions
9. Other than the items and information listed, the remainder of the information contained in the product's literature is outside the Scope of Certification.
10. 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:

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

**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](http://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.

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. This may result in the product being classified as a non-conforming building product.



# 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, CertMark International 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<sup>50</sup> is a 50mm thick steel reinforced Autoclaved Aerated Concrete (AAC) Panel. The panel is manufactured in a range of stock sizes as detailed below.

- Panel reinforcement is a single layer of steel mesh with 4 longitudinal wires of 4mm diameter
- Nominal AAC Dry Density: 510kg/m<sup>3</sup>
- Length: 2000mm, 2400mm, 2550mm, 2700mm, 2850mm & 3000mm
- Width: 600mm
- Thickness: 50mm

### System Components:

Product	Description
Hebel®	The core component of the Hebel PowerPanel <sup>50</sup> High Rise Façade Wall System is an AAC panel external wall cladding element installed Horizontally on steel framed buildings or timber framed buildings.
Top Hat	24mm Perforated Top Hats – 0.42mm thick Galvanised steel, F <sub>y</sub> = 550MPa, Coating class AZ150 35mm Perforated Top Hats – 0.55mm thick Galvanised steel, F <sub>y</sub> = 270MPa, Coating class Z275 20mm and 40mm Steel Cavity battens - 0.42 thick Galvanised steel 35mm x 20mm x (250mm or continuous) or 35mm x 40mm x (250mm or continuous) Rondo 310 - 0.55mm thick Galvanised steel, F <sub>y</sub> = 270MPa, Coating class Z275
Fasteners & Fixings	Temporary Fixings to fix steel battens to steel frame – 10-16 x 16mm Hex Head Tek Screw – Class 3. Temporary Fixings to fix steel battens to timber frame – 12-11 x 35mm Hex Head Type 17 Screw – Class 3. Screws to fix 50mm Hebel PowerPanel <sup>50</sup> through batten into steel frame – 14-10 x 100mm MP Bugle Head Type 17 – Class 3 Screw. Screws to fix 50mm Hebel PowerPanel <sup>50</sup> through batten into timber frame – 14-10 x 150mm HEX Head Type 17 – Class 3 Screw.
Hebel® Adhesive	Hebel® Adhesive (supplied in 20kg bags) is used for gluing the PowerPanel <sup>50</sup> High Rise Façade Wall System panels together at vertical and horizontal joints.
Hebel® Patch	Minor Chips or damage to PowerPanel <sup>50</sup> External Wall System panels are to be repaired using Hebel® Patch (supplied in 10kg bags).
Hebel® Anti Corrosion Protection Paint	To coat reinforcement steel that has been exposed during cutting of the panels.

## A3 Product specifications

### Fire – Non-Combustibility

System Component	Hidden Slab Edge	Exposed Slab Edge	Combustibility*
<b>FRAMING SYSTEM</b>			
RONDO 92 x 50 x 1.15mm BMT deflection head track (or approved equivalent)	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of light gauge steel.
RONDO 92 x 32 x 1.15mm BMT base track (or approved equivalent)	✓	✓	
RONDO 92 x 32 x 1.15mm BMT lipped studs (or approved equivalent)	✓	✓	
Cleats: Rondo MAXIframe cleats 201, 201	✓	✓	
Timber stud framed construction (for class 1a & 10a structures), or where permitted under concessions where timber framing can be used for the specified building class(es).	✓	✓	In accordance with BCA Vol 1 Concessions. Refer Specification C1.1- 3.10 & 4.3.
<b>Battens</b>			
20mm Steel Cavity Batten	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of light gauge steel.
40mm Steel Cavity Batten	✓	✓	
Rondo 310	✓	✓	
24 mm Perforated Steel Top Hat	✓	✓	
35 mm Perforated Steel Top Hat	✓	✓	
<b>Wall system components</b>			
Waterproof membrane	✓	✓	<u>Combustible</u> Complies with BCA Clause C1.9
Bradford Enviroseal ProctorWrap™ or DuPont™ Tyvek® HomeWrap®	✓	✓	
Wall wrap tape	✓	✓	
Hebel Façade Top Hat 50 mm x 0.75 mm BMT	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of light gauge steel
10-16mm x 16 hex head Top Hat fastener	✓	✓	
Shelf angle	✓		
M12 Hilti HVU galvanised chemical anchors at 900mm centres	✓		
M10 Hilti HVU galvanised chemical anchors at 450mm centres.	✓		
Galvanised mechanical anchors at 600mm centres: Hilti HSA-F M10 (to fix shelf angle to slab edge)	✓		<u>Non-Combustible</u> Complies with BCA Clause C1.9
Non-compressible packers to suit	✓	✓	
Backing Rod	✓	✓	
Selleys Fireblock XT	✓	✓	
Hebel® PowerPanel <sup>50</sup>	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of Autoclaved Aerated Concrete.
Hebel Anti-Corrosion Protection Paint	✓	✓	<u>Combustibility unknown</u> Complies with BCA Clause C1.14

Hebel® Adhesive	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of Portland cement, fine sand aggregate and calcium carbonate filler.
10-16 x 16mm Hex Head Tek class 3 screws	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of light gauge steel
12-11 x 35mm Hex Head Type 17 Screw	✓	✓	
14-10 x 100mm MP Bugle Head Type 17 – Class 3 Screw	✓	✓	
14-10 x 150mm HEX Head Type 17 – Class 3 Screw	✓	✓	
Pressure equalization slots	✓	✓	Combustibility requirements not applicable
Hebel® patch	✓	✓	<u>Non-Combustible</u> Subject component is constructed out of Portland cement, Calcium Sulfoaluminate cement and calcium carbonate filler.
Flashing / DPC - not supplied by CSR	✓	✓	<u>Combustible</u> Complies with BCA Clause C1.9
Gyprock plasterboard	✓	✓	
Bradford insulation	✓	✓	
<b>COATING SYSTEM</b>			
Dulux Acratex or Rockcote Acrylic coating systems as per section 4.2 of AECOM report dated 02/04/2020	✓	✓	<u>Combustibility unknown</u> Complies with BCA Clause C1.14

## Fire Resistance Levels

The assessment is limited to the term of validity of the NCC 2019 (Amdt 1) Volume One, as appropriate.

System 4 to be used as external walls to achieve a Fire Resistance Level, FRL, from outside only. Where the NCC requires building elements and/or ancillary elements to be non-combustible or achieve specific fire resisting performance requirements, the Hebel Powerpanel<sup>50</sup> High Rise Façade System must be constructed to satisfy such requirements as relevant to the determined building class(es).

Systems 1-3 achieve a two-way FRL of at least -/60/60, and as such are considered to achieve the required FRL for use as spandrel protection by BCA Clause C2.6 assuming that the spandrel performs no load-bearing function.

System	Internal Plasterboard Lining	Assessed in Report Section	Relevant Test Reports	Assessed FRL
1	2 x 16mm CSR Fyrchek	Section 8	FSP 1841 & AS A30:1958	FRL -/120/120 (two-way)
2	1 x 16mm CSR Fyrchek	Section 9	WFRA 2114100.1	FRL -/60/60 (two-way)
3	2 x 13mm CSR Fyrchek	Section 10	EWFA 2406400	FRL -/90/90 (two-way)
4	1 x 10mm Gyprock Plasterboard	Section 11	FSP 1841	FRL -/120/120 (from outside only)

<b>System 1</b>	<p>The façade wall systems variations:</p> <ol style="list-style-type: none"> <li>1. The Hebel® 50mm PowerPanels shall be fixed to top hats from outside of the building by 14-10 x 100mm MP Bugle Head Type 17 screws.</li> <li>2. Top Hats/Battens in galvanised steel are to be provided in nominal widths of 20mm, 24mm, 35mm or 40mm and be designed and constructed in accordance with AS 3623:1993 and/or AS/NZS 4600:2018.</li> <li>3. Structural steel stud frame must be designed in accordance with AS 3623:1993 and/or AS/NZS 4600:2018.</li> <li>4. Steel stud frame must be designed to limit the lateral deflection to H/360 under serviceability wind pressures in accordance with AS 1170.2:2011 as per CSR Hebel® drawing PP50-H-F-002.</li> <li>5. The AAC panels must not bear any structural load other than the weight of other AAC panels stacked above them.</li> <li>6. The Hebel® 50mm PowerPanel<sup>50</sup> are to be laid horizontally and not vertically as tested within FSP 1841.</li> <li>7. Two layers of 16mm CSR Fyrchek is to be provided as internal wall lining of the façade system in combination with the Hebel® 50mm PowerPanel<sup>50</sup> as an external lining to the façade.</li> <li>8. The Hebel® 50mm PowerPanel<sup>50</sup> shall be either supported on the concrete slab or on a continuous steel shelf angle fixed to the face of the concrete slab as per CSR Hebel® drawing PP50-H-F-001.</li> <li>9. Hebel® adhesive is to be used at vertical and horizontal joints.</li> <li>10. The Hebel® 50mm PowerPanels are to be interlocked in a stretcher bond arrangement.</li> <li>11. Non-compressible packers may be used between the steel battens and steel studs to align the Hebel® 50mm PowerPanel.</li> <li>12. The maximum stud spacing is 600mm centres three (3) screws to be used per panel per stud. Where 3 screws are required for 600mm wide panels per stud a continuous batten is to be used.</li> <li>13. Selleys Fire Block XT may alternatively be applied behind the top of the steel angle provided all bolt holes are also sealed with Fire Block XT in accordance with manufacturer's specifications.</li> <li>14. A weep hole may be present within the Hebel® 50mm PowerPanels to allow the wall cavity to experience the same pressure as that acting on the outside wall.</li> <li>15. Maximum spacing of control joints is to be limited to 6m as per CSR Hebel® drawing PP50-H-F-006.</li> </ol>
<b>System 2</b>	Vary System 1 described above by substituting the internal plasterboard layers (System 1 Item 7) with a single layer of 16 mm Fyrchek plasterboard.
<b>System 3</b>	Vary System 1 described above by substituting the internal plasterboard layers (System 1 Item 7) with two layers of 13 mm Fyrchek plasterboard.
<b>System 4</b>	Vary System 1 described above by substituting the internal plasterboard layers (System 1 Item 7) with a single layer of 10 mm standard plasterboard.

System Component and Conditions	For Achieving the Following FRL's:			
	System 1 FRL -/120/120 (two-way)	System 2 FRL -/60/60 (two-way)	System 3 FRL -/90/90 (two-way)	System 4 FRL -/120/120 (from outside only)
<b>Hebel® PowerPanels</b>				
Hebel® PowerPanel constitutes the external leaf to the façade.	Yes	Yes	Yes	Yes
Hebel® 50mm PowerPanel dimensions: 2000mm x 600mm x 50mm.	Yes	Yes	Yes	Yes
Panels laid horizontally and not vertically as tested within FSP 1841.	Yes	Yes	Yes	Yes
Hebel® 50mm PowerPanels are to be interlocked in a stretcher bond arrangement	Yes	Yes	Yes	Yes
PowerPanels fixed to top hats from outside of the building by 14-10 x 100mm MP Bugle Head Type 17 screws.	Yes	Yes	Yes	Yes
Panels must not bear any structural load other than the weight of other AAC panels stacked above them.	Yes	Yes	Yes	Yes
Hebel® adhesive is to be used at vertical and horizontal joints.	Yes	Yes	Yes	Yes
Panels shall be either supported on the concrete slab or on a continuous steel shelf angle fixed to the face of the concrete slab as per CSR Hebel® drawing PP50-H-F-001	Yes	Yes	Yes	Yes
A weep hole may be present within the Hebel® 50mm PowerPanels to allow the wall cavity to experience the same pressure as that acting on the outside wall.	Yes	Yes	Yes	Yes
Maximum spacing of control joints is to be limited to 6 m as per CSR Hebel® drawing PP50-H-F-006	Yes	Yes	Yes	Yes
<b>Structural Steel Stud Frame</b>				
Designed to AS 3623:1993 and/or AS/NZS 4600:2018	Yes	Yes	Yes	Yes
Designed to limit the lateral deflection to H/360 under serviceability, wind pressures to AS 1170.2:2011 as per CSR Hebel® drawing PP50-H-F-002.	Yes	Yes	Yes	Yes
Maximum stud spacing is 600mm centres. Three (3) screws to be used per panel per stud. Where 3 screws are required for 600mm wide panels per stud a continuous batten is to be used.	Yes	Yes	Yes	Yes
Selleys Fire Block XT may alternatively be applied behind the top of the steel angle, provided that all bolt holes are also sealed with Fire Block XT in accordance with manufacturer's specifications.	Yes	Yes	Yes	Yes
<b>Steel Top Hats</b>				
Top Hats in galvanised steel are to be provided in nominal widths of 20mm, 24mm, 35mm or 40mm and be designed and constructed in accordance with AS 3623:1993 and AS/NZS 4600:2018.	Yes	Yes	Yes	Yes
<b>Plasterboard Internal Wall Lining</b>				
Two layers of 16mm CSR Fyrchek as internal wall lining of the façade system	Yes	Yes	Yes	Yes
One layer of 16mm CSR Fyrchek as internal wall lining of the façade system	No	Yes	Yes	Yes
Two layers of 13mm CSR Fyrchek as internal wall lining of the façade system	No	No	Yes	Yes
One layer of 10mm CSR Gyprock plasterboard internal wall lining of the façade system	No	No	No	Yes
<b>Packers</b>				
Non-compressible packers may be used between the steel battens and steel studs to align the Hebel® 50mm PowerPanel.	Yes	Yes	Yes	Yes

Source: Stephen Grubits & Associates; Rep. 2013/277.87 R1.6; Determination of FRL by Calculation; Dated 16/04/2020.

## Variations to linings and framing

Frame	Orientation of panel	Interior Lining	Direction of Fire	FRL
Timber or Steel	Horizontal fixed to frame*	Standard grade plasterboard	Outside Only	-/60/60 or 60/60/60
Timber	Horizontal fixed to frame*	1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Steel	Horizontal fixed to frame*	1 x 13mm or 1 x 16mm Fyrchek	Inside and Outside	-/60/60 or 60/60/60
Timber or Steel	Horizontal fixed to frame*	Standard grade plasterboard	Outside Only	-/90/90 or 90/90/90
Timber or Steel	Horizontal 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:** IGNS Solutions Pty Ltd; Report No. IGNS-8349 I02R04 Hebel Wall Compliance dated 17/03/2021. **(Report is available upon request, contact Hebel Technical Services)**

## Weatherproofing

- The walls are constructed in accordance with AS 5146.3:2015 and appropriate limitations and/or requirements arising from the use of Hebel PowerPanels of 50mm thickness.
- External coating system to be in accordance with AS 5146.3:2015.
- External coating of the panel shall contain an embedded fibreglass mesh reinforcing coat with maximum aperture of 10mm by 10mm and minimum weight of 145g/m<sup>2</sup> (incorporated in the base levelling coat) – entire wall for horizontally orientated panels. Where fibreglass mesh is installed in the base levelling coat for class 2-9 buildings, the fibreglass mesh base material i.e. glass is non-combustible and therefore the requirements of clause C1.9 Non-combustible building elements do not apply to the following: (v) Glass, including laminated glass.
- The first (texture) coat and second (finish) coats must be acrylic latex coatings complying with AS/NZS 4548.1-4:1999.
- The coatings must be suitable and compatible with AAC Hebel substrate (with priming where required).
- Coatings to comply with AS/NZS 4548.5:1999.
- Coating manufacturer to specify minimum coating dry film thickness to comply with AS/NZS 4548.5:1999.
- Approved coating systems:
  - a. Rockcote Armorflex
  - b. Dulux AcraTex

## Thermal Properties – Hebel Horizontally Installed Façade Wall System incorporating 50mm Hebel PowerPanel50 (dry density 510kg/m<sup>3</sup>) on Steel Frame

Description of Specimen	Insul Path		All Wall (bridged)			
	Total R, m <sup>2</sup> ·K/W					
	Winter	Summer	Winter	Summer	Winter	Summer
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 600mm centres (13mm Gyprock Plasterboard)	R3.55	R3.35	R2.70	R2.59	U0.370	U0.386
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (13mm Gyprock Plasterboard)	R3.55	R3.35	R2.51	R2.42	U0.399	U0.414
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 600mm centres (1x16mm Fyrchek Plasterboard)	R3.57	R3.37	R2.74	R2.63	U0.365	U0.381
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (1x16mm Fyrchek Plasterboard)	R3.57	R3.37	R2.54	R2.45	U0.396	U0.408
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 600mm centres (2x13mm Fyrchek Plasterboard)	R3.63	R3.42	R2.86	R2.74	U0.350	U0.365
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (2x13mm Fyrchek Plasterboard)	R3.63	R3.42	R2.67	R2.57	U0.375	U0.389
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 600mm centres (2x16mm Fyrchek Plasterboard)	R3.66	R3.46	R2.92	R2.80	U0.343	U0.358
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (2x16mm Fyrchek Plasterboard)	R3.66	R3.46	R2.74	R2.63	U0.366	U0.380
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 600mm centres (13mm Gyprock Plasterboard)	R3.35	R3.15	R2.60	R2.48	U0.385	U0.403
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 450mm centres (13mm Gyprock Plasterboard)	R3.35	R3.15	R2.42	R2.32	U0.414	U0.431
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 600mm centres (1x16mm Fyrchek Plasterboard)	R3.37	R3.16	R2.63	R2.51	U0.380	U0.398
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 450mm centres (1x16mm Fyrchek Plasterboard)	R3.37	R3.16	R2.45	R2.35	U0.408	U0.425
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 600mm centres (2x13mm Fyrchek Plasterboard)	R3.43	R3.22	R2.74	R2.62	U0.365	U0.382
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 450mm centres (2x13mm Fyrchek Plasterboard)	R3.43	R3.22	R2.57	R2.46	U0.389	U0.406
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 600mm centres (2x16mm Fyrchek Plasterboard)	R3.46	R3.25	R2.80	R2.67	U0.357	U0.374
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.5 HP and 20mm steel batten and steel studs at 450mm centres (2x16mm Fyrchek Plasterboard)	R3.46	R3.25	R2.64	R2.52	U0.379	U0.396

**Notes:** The above table gives Total R & Total U values for the thermally bridged whole wall surface (no glazing). The All Wall (bridged) results do not have any thermal break product present, and metal battens are fixed direct onto metal studs, but not noggins. Assumes thermal resistance of 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) is R0.313 m<sup>2</sup>·K/W for 4.0% M.C.. R-values calculated per AS/NZS 4859 Parts 1&2:2018, Thermal insulation materials for buildings (This update includes revised framing details to reduce thermal bridging).

**Source:** James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859 Parts 1&2:2018; Dated 21/06/2019.

## Thermal Properties – Hebel Horizontally Installed Façade Wall System incorporating 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) on Timber Frame

Description of Specimen	Insul Path		All Wall (bridged)	
	Total R, m <sup>2</sup> ·K/W			
	Winter	Summer	Winter	Summer
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 600mm centres (13mm Gyprock Plasterboard)	R3.54	R3.35	R2.98	R2.86
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 450mm centres (13mm Gyprock Plasterboard)	R3.54	R3.35	R2.89	R2.79
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 600mm centres (1x16mm Fyrchek Plasterboard)	R3.56	R3.37	R3.00	R2.88
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 450mm centres (1x16mm Fyrchek Plasterboard)	R3.56	R3.37	R2.91	R2.80
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 600mm centres (2x13mm Fyrchek Plasterboard)	R3.62	R3.43	R3.07	R2.95
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 450mm centres (2x13mm Fyrchek Plasterboard)	R3.62	R3.43	R2.99	R2.87
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 600mm centres (2x16mm Fyrchek Plasterboard)	R3.66	R3.46	R3.11	R2.99
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.7 HP, and 90x45mm timber studs at 450mm centres (2x16mm Fyrchek Plasterboard)	R3.66	R3.46	R3.03	R2.91
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 600mm centres (13mm Gyprock Plasterboard)	R3.35	R3.15	R2.86	R2.73
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 450mm centres (13mm Gyprock Plasterboard)	R3.35	R3.15	R2.78	R2.67
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 600mm centres (1x16mm Fyrchek Plasterboard)	R3.37	R3.17	R2.88	R2.75
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 450mm centres (1x16mm Fyrchek Plasterboard)	R3.37	R3.17	R2.80	R2.69
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 600mm centres (2x13mm Fyrchek Plasterboard)	R3.43	R3.22	R2.95	R2.82
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 450mm centres (2x13mm Fyrchek Plasterboard)	R3.43	R3.22	R2.87	R2.75
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 600mm centres (2x16mm Fyrchek Plasterboard)	R3.46	R3.26	R2.99	R2.85
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with 20mm steel batten and Bradford Gold Wall Batt R2.5 HP, and 90x45mm timber studs at 450mm centres (2x16mm Fyrchek Plasterboard)	R3.46	R3.26	R2.91	R2.79

**Notes:** The above table gives Total R values for the insulation path & for the thermally bridged path for the whole wall surface (no glazing). The All Wall (bridged) results do not have any thermal break product present, and metal battens are fixed direct onto timber studs. Assumes thermal resistance of 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) is R0.313 m<sup>2</sup>·K/W for 4.0% M.C.. R-values calculated per AS/NZS 4859 Parts 1&2:2018, Thermal insulation materials for buildings, 27/11/2020 (This update includes revised framing details to reduce thermal bridging).

**Source:** James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859 Parts 1&2:2018; Dated 27/11/2020.

## Thermal Properties - Hebel Horizontally Installed Façade Wall System incorporating 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) Steel Frame

Description of Specimen	Insul Path		All Wall			
	Total R, m <sup>2</sup> ·K/W					
	Winter	Summer	Winter	Summer	Winter	Summer
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 600mm centres (13mm Gyprock Plasterboard) - (reflective wrap)	R4.04	R3.86	R3.15	R3.04	U0.318	U0.328
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (1x16mm Fyrchek Plasterboard) - (reflective wrap)	R4.06	R3.88	R2.97	R2.88	U0.337	U0.347
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (2x13mm Fyrchek Plasterboard) - (reflective wrap)	R4.12	R3.93	R3.09	R2.99	U0.324	U0.334
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and steel studs at 450mm centres (2x16mm Fyrchek Plasterboard) - (reflective wrap)	R4.15	R3.97	R3.15	R3.05	U0.318	U0.328

**Notes:** The above table gives Total R & Total U values for the thermally bridged whole wall surface (no glazing). The All Wall (bridged) results do not have any thermal break product present, and metal battens are fixed direct onto metal studs, but not noggins. Assumes thermal resistance of 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) is R0.313 m<sup>2</sup>·K/W for 4.0% M.C.. R-values calculated per AS/NZS 4859 Parts 1&2:2018, Thermal insulation materials for buildings (This update includes revised framing details to reduce thermal bridging).

**Source:** James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859 Parts 1&2:2018; Dated 11/03/2020.

## Thermal Properties – Hebel Horizontally Installed Façade Wall System incorporating 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) Timber Frame

Description of Specimen	Insul Path		All Wall			
	Total R, m <sup>2</sup> ·K/W					
	Winter	Summer	Winter	Summer	Winter	Summer
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and 90x45mm timber studs at 600mm centres (13mm Gyprock Plasterboard) - (reflective wrap)	R4.04	R3.86	R3.30	R3.20	U0.303	U0.313
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and 90x45mm timber studs at 450mm centres (1x16mm Fyrchek Plasterboard) - (reflective wrap)	R4.05	R3.88	R3.21	R3.12	U0.311	U0.320
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and 90x45mm studs at 450mm centres (2x13mm Fyrchek Plasterboard) - (reflective wrap)	R4.11	R3.94	R3.29	R3.19	U0.304	U0.313
50MM HEBEL POWERPANEL 50 (4% M.C.) SYSTEM with Bradford Gold Wall Batt R2.7 HP and 20mm steel batten and 90x45mm studs at 450mm centres (2x16mm Fyrchek Plasterboard) - (reflective wrap)	R4.15	R3.97	R3.33	R3.24	U0.300	U0.309

**Notes:** The above table gives Total R & Total U values for the thermally bridged whole wall surface (no glazing). The All Wall (bridged) results do not have any thermal break product present, and metal battens are fixed direct onto timber studs, but not noggins. Assumes thermal resistance of 50mm Hebel PowerPanel<sup>50</sup> (dry density 510kg/m<sup>3</sup>) is R0.313 m<sup>2</sup>·K/W for 4.0% M.C.. R-values calculated per AS/NZS 4859 Parts 1&2:2018, Thermal insulation materials for buildings (This update includes revised framing details to reduce thermal bridging).

**Source:** James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859 Parts 1&2:2018; Dated 27/11/2020.

## A4 Manufacturer and manufacturing plant(s)

CSR Hebel®  
112 Wisemans Ferry Road  
Somersby NSW 2250.

## A5 Installation requirements

The installation of the certified System must be in accordance with [CSR 50mm High Rise Façade Details Sheets PP50-H-F 001 – 019 Revision E dated 22/03/2021](#).

## A6 Other relevant technical data

### Acoustic

Note: all penetrations and junctions shall be acoustically sealed

System	Wall Structure	R <sub>w</sub>	R <sub>w</sub> +C <sub>tr</sub>
1	<ul style="list-style-type: none"> <li>Air seal and Dulux coating system</li> <li>50mm Hebel Powerpanel (510Kg/m<sup>3</sup> dry density)</li> <li>20mm steel batten (minimum)</li> <li>92mm steel stud frame filled with 90mm thick Bradford Gold Wall Batts insulation</li> <li>One layer of 13mm Gyprock Standard Plasterboard</li> </ul>	49	-14
2	<ul style="list-style-type: none"> <li>Air seal and Dulux coating system</li> <li>50mm Hebel Powerpanel (510Kg/m<sup>3</sup> dry density)</li> <li>20mm steel batten (minimum)</li> <li>92mm steel stud frame filled with 90mm thick Bradford Gold Wall Batts insulation</li> <li>One layer of 16mm Fyrchek Plasterboard</li> </ul>	50	-13
3	<ul style="list-style-type: none"> <li>Air seal and Dulux coating system</li> <li>50mm Hebel Powerpanel (510Kg/m<sup>3</sup> dry density)</li> <li>20mm steel batten (minimum)</li> <li>92mm steel stud frame filled with 90mm thick Bradford Gold Wall Batts insulation</li> <li>Two layers of 13mm Fyrchek Plasterboard</li> </ul>	52	-9
4	<ul style="list-style-type: none"> <li>Air seal and Dulux coating system</li> <li>50mm Hebel Powerpanel (510Kg/m<sup>3</sup> dry density)</li> <li>20mm steel batten (minimum)</li> <li>92mm steel stud frame filled with 90mm thick Bradford Gold Wall Batts insulation</li> <li>Two layers of 16mm Fyrchek Plasterboard</li> </ul>	53	-9

Source: Acoustic Logic; Report No. A-20171728.16/0306A/R1/GW; Dated 03/06/2019.

## APPENDIX B – EVALUATION STATEMENTS

### B1 Evaluation methods

1. Fire Safety Provisions A5.2(1)(d)&(e). Reports from Accredited Testing Laboratories and a professional engineer.
2. Structural Provisions A5.2(1)(e). Reports from a professional engineer.
3. Thermal Provisions A5.2(1)(e). Reports from a professional engineer.
4. Weatherproofing Provision A5.2(1)(e). Reports from a professional engineer.

### B2 Reports

1. AECOM; Letter dated 2 April 2020; Expert opinion validating Report No DTF 1021' by CSIRO testing to the FV1 And V2.2.1 dated 27 Jan 2015; Dated 02/04/2020.
2. CSIRO; NATA Accreditation 165; Report number DTF1021; Water penetration testing to the Verification Methods FV1 & V2.2.1; Dated 27/01/2015.
3. CSIRO; NATA Accreditation FNC12427A; Certificate of Test for Combustibility Test for Materials in accordance with AS 1530.1:1994; Dated 24/07/2019.
4. CSR; PP50-H-F-002 - 50mm Hebel PowerPanel High Rise Façade System Installation Drawings; Verifies compliance with Condensation Management; Dated 13/03/2020.
5. IGNIS Solutions Pty Ltd; Report No. IGNS-8349 I02 R04; Hebel External Wall Compliance; Dated 17/03/2021. **(Report is available upon request, contact Hebel Technical Services).**
6. James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859.1:2018; Dated 11/03/2020.
7. James M Fricker; Report No. i107g; Determination of R values by calculation in accordance with AS/NZS 4859.1:2018; Dated 21/06/2019.
8. James M Fricker; Report No. 107G; Overall "Total R" (Thermally Bridged) Thermal Performance Calculations to AS/NZS 4859 Parts 1 & 2:2018; Dated 27/11/2020.
9. PACE Structural; File PS19068; Structural Design Capacity Calculations; Dated 31/03/2021.
10. Stephen Grubits & Associates; Rep. 2013/277.53 R2.5; Determination Non-Combustibility of the tested wall system; Dated 01/05/2020.
11. Stephen Grubits & Associates; Rep. 2013/277.87 R1.6; Determination of FRL by Calculation; Dated 16/04/2020.
12. The Coatings Consultancy; Reference No. TCC18056-20200227; NCC Fire Resistance Deemed-to-Satisfy Provisions C1.14, Classification of latex membrane and textured coatings as paints; Dated 27/02/2020.
13. The Coatings Consultancy; Reference No. TCC18056-20201201; NCC Non-Combustibility Requirements for External Coatings of Hebel High Rise Facade Systems-Testing and Classification; Dated 01/12/2020.

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