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**Certification Body:**

  
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**THIS TO CERTIFY THAT**

## Hebel PowerPanel<sup>50</sup> Dual Zero Boundary Wall System

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

Low Rise Multi Residential Dual Zero Boundary Wall System.

**Description of product:**

Hebel PowerPanel<sup>50</sup> Dual Zero Boundary Wall System consists of Hebel (non-load bearing) PowerPanel<sup>50</sup> panels screwed to the structural load bearing frame via horizontal steel top hats. The system utilises Hebel Top Hat Direct Fix Clips to fix top hats internally where there is no access from outside.

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

**BCA 2016**

	Volume One	Volume Two
<b>Performance Requirement(s)</b>	BP1.1(a), (b)(i)(ii)(iii) Structural reliability	P2.1.1 (a), (b)(i)(ii)(iii) Structural stability and Resistance to actions
	FP 1.4 Weatherproofing	P2.2.2 Weatherproofing
<b>Deemed-to-Satisfy Provision(s):</b>	Spec C1.1 Fire Resistance – (90/90/90 from panel side only)	3.7.1.5 Construction of External Walls – (90/90/90 from panel side only)
	J1.5 Energy Efficiency – External Walls. (Can be used in conjunction with other building elements to achieve a Total R-Value)	3.12.1.4 Energy Efficiency - External Walls. (Can be used in conjunction with other building elements to achieve a Total R-Value)
<b>State or territory variation(s):</b>	Not Applicable	Not Applicable

  
 John Thorpe - CMI

  
 Don Grehan – Unrestricted Building Certifier

**Date of issue:** 24/09/2018

**Date of expiry:** 2/03/2021



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

**Limitations and conditions:**

1. Fire Resistance Level (FRL) – 90/90/90 is only applicable to walls exposed to fire from the panel side only.
2. The PowerPanel<sup>50</sup> Dual Zero Boundary wall system is limited to Type C Construction for Class 2 to 9 buildings.
3. The wall framing system is to be designed and checked by a qualified professional Structural Engineer to satisfy structural adequacy.
4. Only to be installed in accordance with the Low Rise Multi-Residential PowerPanel<sup>50</sup> Intertenancy and Dual Zero Boundary Walls - Design and Installation Guide Version: [HELIT152FEB18](#).
5. The PowerPanel<sup>50</sup> (with adhesives applied to the edges) in zero boundary applications has been assessed as meeting the Performance Requirements of Clauses FP1.4 and in Volume 1 and P2.2.2 in Volume 2 of the BCA to a maximum Wind Category of N3 (excluding openings).
6. This Certificate is issued based on the evidence of compliance as detailed herein. Any deviation from the specifications contained in this Certificate is outside of this document's scope and the installation of the certified product/system will not be covered by this CodeMark certification. This may result in the product being classified as a non-conforming building product/system.

**Building classification/s:**

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](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.

**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.

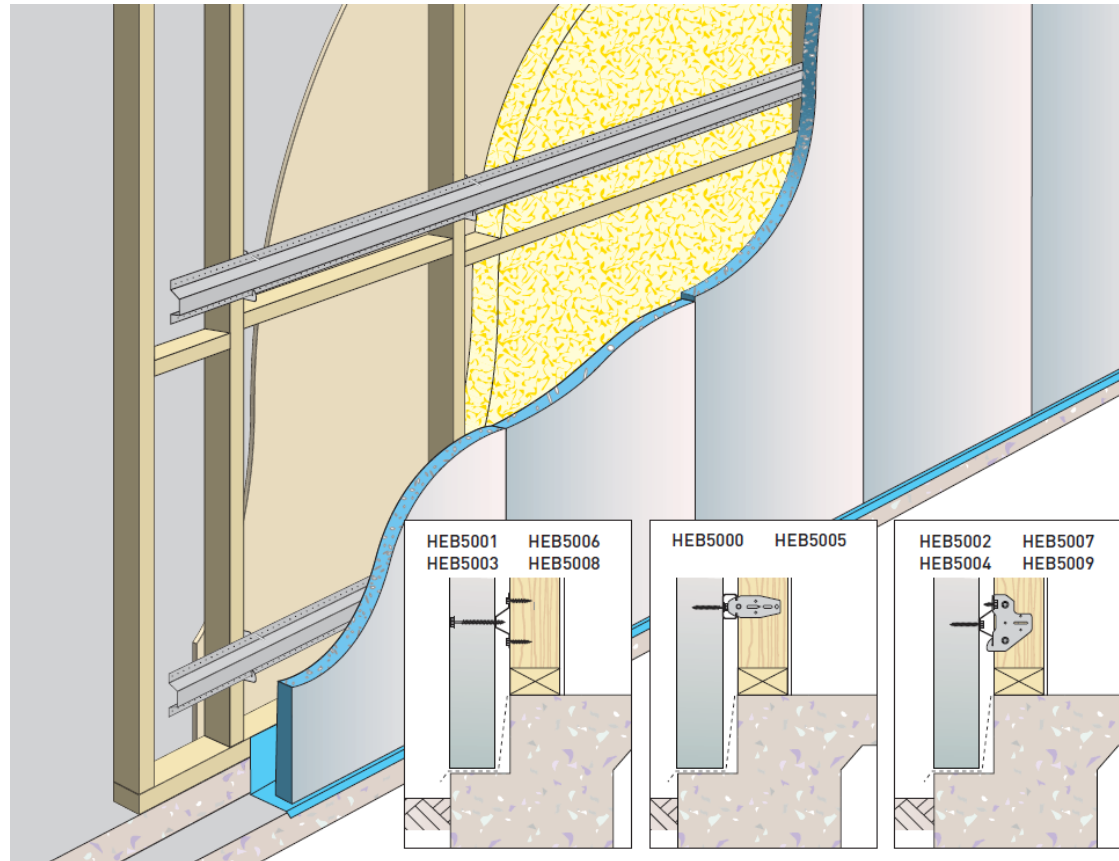
## APPENDIX A – PRODUCT TECHNICAL DATA

### A1 Type and intended use of product

As per page one.

### A2 Description of product

Hebel PowerPanel<sup>50</sup> Zero Boundary Wall System consists of Hebel (non-load bearing) PowerPanel<sup>50</sup> panels screwed to the structural load bearing frame via horizontal steel top hats. The system utilises Hebel Top Hat Direct Fix Clips to fix top hats internally where there is no access from outside.



## A3 Product specification

### Zero Boundary Wall System

Product	Description															
Hebel PowerPanel <sup>50</sup> panel	<p>The core component of PowerPanel<sup>50</sup> Dual Zero Boundary Wall System is the 50mm thick, steel mesh reinforced Hebel PowerPanel<sup>50</sup> panel. The panel is manufactured in a range of stock sizes as detailed below:</p> <table border="1"> <thead> <tr> <th colspan="3">Panel Weight (kg)</th> </tr> <tr> <th>Length (mm)</th> <th>Width (mm)</th> <th>Weight (kg) at 35% M.C.</th> </tr> </thead> <tbody> <tr> <td>2400</td> <td>600</td> <td>50</td> </tr> <tr> <td>2700</td> <td>600</td> <td>56</td> </tr> <tr> <td>3000</td> <td>600</td> <td>62</td> </tr> </tbody> </table> <p><b>Note:</b> Average panel weight calculated at 35% moisture content.</p>	Panel Weight (kg)			Length (mm)	Width (mm)	Weight (kg) at 35% M.C.	2400	600	50	2700	600	56	3000	600	62
Panel Weight (kg)																
Length (mm)	Width (mm)	Weight (kg) at 35% M.C.														
2400	600	50														
2700	600	56														
3000	600	62														
Top Hat	Hebel Perforated Top Hats are used to fix the Hebel PowerPanel <sup>50</sup> panel to the structural support framing. There are two nominal widths available: 24mm and 35mm – incorporating perforated flanges for ease of installation on to external wall frame.															
Hebel Top Hat Direct Fix Clip	For attaching 24mm and 35mm top hat to structural stud frame.															
RONDO 314 Direct Fix Clip	For attaching RONDO 301 batten to structural stud frame in Hebel Zero Boundary Wall applications.															
RONDO 301 Batten	RONDO 301 battens are used to fix the Hebel PowerPanel <sup>50</sup> panel to the structural support framing. For use with RONDO 314 direct fix clip.															
Hebel Adhesive	Hebel Adhesive (supplied in 20kg bags) is used for bonding the panels together at vertical joints.															
Hebel Mortar	Hebel Mortar (supplied in 20kg bags) is used to provide a level base for panel installation as well as providing acoustic and fire protection at the base of the panels.															
Hebel Patch	Minor chips or damage to PowerPanel <sup>50</sup> panels are to be repaired using Hebel Patch (supplied in 10kg bags).															
Hebel anti-corrosion protection paint	To coat exposed reinforcement during cutting.															
Fire & Acoustic Sealant	To attain the specified FRL and / or R <sub>w</sub> requirements, all perimeter gaps and penetrations must be carefully and completely sealed with a fire and acoustic rated sealant installed to manufacturer's specifications.															
Backing Rod	Backing rod is used to enable correct filling of joints with sealant. It is recommended that backing rod be of open cell type to enable sealant to cure from behind. The diameter of backing rod must be appropriate for the width of the gap being filled.															

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## Number of top hats – panel supported at base (such as slab edge or shelf angle)

Wind Category	Ultimate wind pressure (kPa)			Number of top hats per panel					
	Away from corners	Within 1200mm of corners	Stud spacing (mm)	Panel length (mm)					
				≤ 2400		≤ 2700		≤ 3000	
	Panel location		Panel location		Panel location				
	Typical	Corner	Typical	Corner	Typical	Corner			
N2	0.67/-0.62	-1.25	600	4	4	4	4	4	4
N3,C1	1.05/-0.98	-1.95	600	4	4	4	4	4	5
N3,C1	1.05/-0.98	-1.95	450	4	4	4	4	4	4
N4,C2	1.56/-1.45	-2.90	450	4	6	4	6	4	6

### Notes:

1. Negative pressure indicates wind suction.
2. All top hats to be spaced evenly, with top and bottom top hats installed 250mm (maximum) from the end of the PowerPanel<sup>50</sup>.
3. Corner panel location applies to a PowerPanel<sup>50</sup> panel within 1200mm of corners.

Source: Table 1.3.1 Low Rise Multi Residential PowerPanel<sup>50</sup> Intertency and Zero Boundary Wall Design and Installation Guide [HELIT152FEB18](#).

## Number of screws per panel at each top hat location – panel supported at base on slab edge

Wind category	Ultimate Wind Pressure (kPa)			Number of screws per panel per top hat			
	Away from corners	Within 1200mm of corners	Stud Spacing (mm)	Panel location			
				Typical		Corner	
	Top hat location		Top hat location				
	Ends	Middle	Ends	Middle			
N2	0.67/-0.62	-1.25	600	2	2	3	4
N3,C1	1.05/-0.98	-1.95	600	2	3	3	4
N3,C1	1.05/-0.98	-1.95	450	2	3	4	4
N4,C2	1.56/-1.45	-2.90	450	3	3	4	4

Source: Table 1.3.2 Low Rise Multi Residential PowerPanel<sup>50</sup> Intertency and Zero Boundary Wall Design and Installation Guide [HELIT152FEB18](#).

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**Dual Zero Boundary Wall System – for use with 16mm batten (RONDO 301) with direct fixing clip (RONDO 314)**

**Number of top hats – panel supported at base on slab edge**

Wind Category	Ultimate Wind Pressure (kPa)		Stud Spacing (mm)	Number of top hats per panel					
	Away from corners	Within 1200mm of corners		Panel length (mm)					
				≤ 2400		≤ 2700		≤ 3000	
	Panel location			Panel location		Panel location			
Typical	Corner	Typical	Corner	Typical	Corner				
N2	0.67/-0.62	-1.25	600	4	5	4	5	4	6
N3,C1	1.05/-0.98	-1.95	600	4	7	4	8	5	9
N3,C1	1.05/-0.98	-1.95	450	4	5	4	5	4	6

**Source:** Table 1.3.3 Low Rise Multi Residential PowerPanel<sup>50</sup> Intertency and Zero Boundary Wall Design and Installation Guide [HELIT152FEB18](#).

**Number of screws per panel at each top hat location**

Wind Category	Ultimate wind pressure (kPa)		Stud Spacing (mm)	Number of screws per panel per top hat			
	Away from corners	Within 1200mm of corners		Panel location			
				Typical		Corner	
	Top hat location			Top hat location			
Ends	Middle	Ends	Middle				
N2	0.67/-0.62	-1.25	600	2	2	2	2
N3,C1	1.05/-0.98	-1.95	600	2	2	2	2
N3,C1	1.05/-0.98	-1.95	450	2	2	2	2

- Notes:**
1. Negative pressure indicates wind suction.
  2. All top hats to be spaced evenly, with top and bottom top hats installed 250mm (maximum) from the end of the PowerPanel<sup>50</sup>.
  3. Corner panel location applies to a PowerPanel<sup>50</sup> panel within 1200mm of corners.

**Source:** Table 1.3.4 Low Rise Multi Residential PowerPanel<sup>50</sup> Intertency and Zero Boundary Wall Design and Installation Guide [HELIT152FEB18](#).

## A4 Manufacturer and manufacturing plant(s)

CSR Hebel  
112 Wisemans Ferry Road,  
SOMERSBY NSW 2250.

## A5 Installation requirements

1. Only to be installed in accordance with Low Rise Multi Residential PowerPanel<sup>50</sup> Intertenancy and Dual Zero Boundary Walls Design and Installation Guide [HELIT152FEB18](#).
2. Earthquake loading has not been considered in this design guide. It is the designer's responsibility to ensure the connection system has adequate capacity to resist any imposed earthquake loading.
3. Hebel Perforated Top Hats in galvanised steel are provided in nominal widths of 24mm and 35mm and have been designed and constructed in accordance with AS 3623-1993 and AS/NZS 4600-2005 (NCC Performance Requirement).
4. The wall framing presented in the Low Rise Multi Residential PowerPanel<sup>50</sup> Intertenancy and Zero Boundary Walls Design and Installation Guide Version: [HELIT152FEB18](#) for various wall systems are nominated for the acoustic and fire performance values. It is the designer's responsibility to determine an appropriate wall framing system to satisfy structural adequacy.

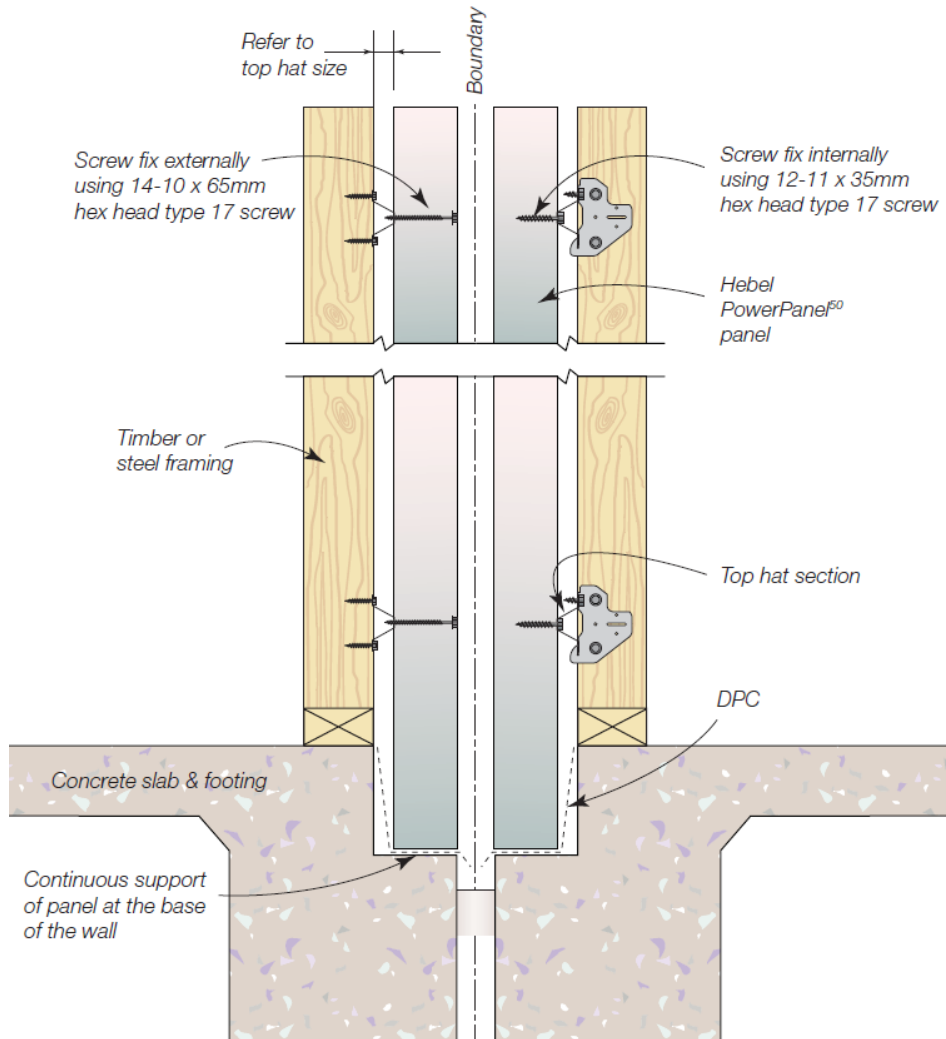
## Fixings for PowerPanel<sup>50</sup> Dual Boundary Wall System

Application	Fixing Type
Fix PowerPanel <sup>50</sup> to top hat from outside of building	14x10 x 65mm hex head type 17 screws
Fix PowerPanel <sup>50</sup> to top hat from inside of building	12-11 x 35mm hex head type 17 screws
Fix Hebel direct clip to timber frame or fix top hat/batten direct to timber frame	12-11 x 35mm hex head type 17 screws
Fix Hebel direct clip to steel stud frame or fix top hat/batten direct to steel frame	10-16 x 16mm hex head self-drilling screws
Fix 24mm or 35mm top hat to direct fix clip	10-16 x 16mm hex head self-drilling screws

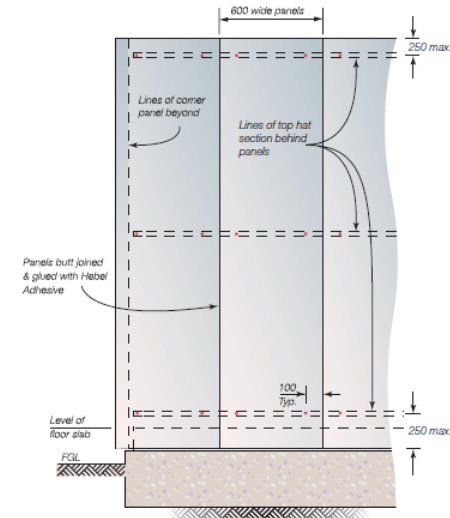
**Source:** Table 1.3.6 Low Rise Multi Residential PowerPanel<sup>50</sup> Intertenancy and Zero Boundary Walls Design and Installation Guide [HELIT152FEB18](#).

## Construction Details of The Powerpanel<sup>50</sup> Dual Zero Boundary Wall System

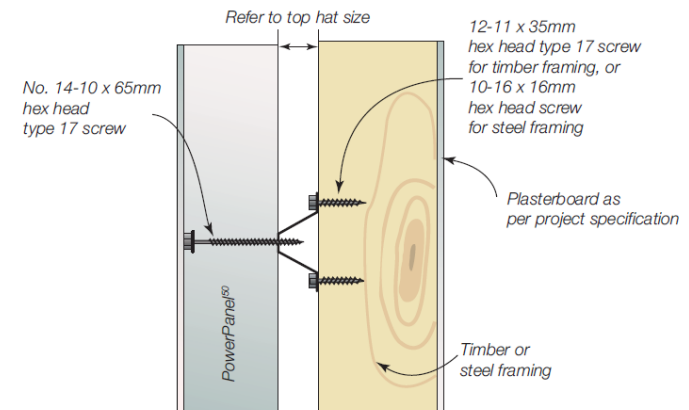
### Typical Dual Zero Boundary Wall PowerPanel<sup>50</sup> panel connection details



### Hebel PowerPanel<sup>50</sup> Dual Zero Boundary Wall system fixing detail



### Screw layout drawing (external fixing)





## A6 Other relevant technical data

### Screw pull-out test

<b>Substrate</b>	AAC - 50mm thick panels cut to 300mm square specimens
<b>Fastener:</b>	Hex Head Type 17, 12ga, 12 - 11 x 35
<b>Embedment Depth(mm):</b>	33
	Maximum Force (N) mean over 10 specimens tested 697N
<b>Result</b>	Maximum Force (N) Standard Deviation over 10 specimens tested 106N
	Maximum Force (N) Characteristic over 10 specimens tested 455N
<b>Notes:</b>	<ol style="list-style-type: none"> <li>All specimens failed with no spalling</li> <li>Characteristic value calculated as per AS 5146.2 App B</li> </ol>

Source – BEMAC Consulting Engineers report 10953 dated: 22/02/2017

## APPENDIX B – EVALUATION STATEMENTS

### B1 Evaluation methods

1. Fire Assessment - A2.2 (a)(i) & and 1.2.2 (a)(i). Reports from accredited test laboratories.
2. Structural Provision - A2.2 (a)(iii) and 1.2.2 (a)(iii). Reports from accredited Professional Engineer.
3. Structural Provision - A2.2 (a)(i) and 1.2.2 (a)(i). Reports from accredited test laboratories.
4. Weatherproofing Performance - A2.2 (a)(iii) & and 1.2.2 (a)(iii). Reports from Professional Engineers.
5. Thermal Performance - A2.2 (a)(iii) & and 1.2.2 (a)(iii). Reports from Professional Engineers.

### B2 Reports

1. CSIRO; NATA Accreditation No. 165 Assessment report FCO-3241; Dated 07/08/2017.
2. Pace Structural; File No. PS18013; Structural Design Certificate; Dated 16/02/2018.
3. BEMAC Laboratories; NATA #1393; Screw Pullout Test report 10953 dated 22/02/2017.
4. BEMAC Laboratories; NATA #1393; Full Panel Bending Test – 3000x600x50mm panel report 10953 dated 04/05/2017.
5. AECOM Engineers; Report Reference: Hebel 50mm Panels – Zero Boundary Wall; Report on compliance with FV1; Dated 07/11/2017.
6. AECOM Engineers; Report Reference: Hebel Wall System Report; Compliance with FV1; Dated 06/11/2017.
7. James M Fricker Pty Ltd; Report Number i107e; Total R Thermal Performance Calculations to AS/NZS 4859.1:2002/Amdt 1 (2006), Dated 19/12/2016.

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