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CERTIFICATE NO: CM20243

PRODUCT CERTIFICATE



CSR Hebel® PowerPanel⁵⁰ & PowerPanel^{XL} External Wall Cladding Systems

Date of issue: 23/07/2021

Renewal Date: 22/07/2024

KEY INFORMATION

1 CERTIFICATE HOLDER DETAILS

CSR Building Product (NZ) Limited

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Phone: 0800 443 235

Email: info@hebel.co.nz

www.hebel.co.nz



2 PRODUCT CERTIFICATION BODY



SAI Global Certification Services Pty Limited

(ACN 108 716 669) Trading as "SAI Global"

JAS-ANZ Accreditation No. Z1440295AS

680 George St, Sydney, NSW 2000

www.saiglobal.com

3 SUMMARY OF DESCRIPTION OF BUILDING METHOD OR PRODUCT

CSR Hebel® PowerPanel⁵⁰ and CSR Hebel® PowerPanel^{XL} are lightweight steel-reinforced Autoclaved Aerated Concrete (AAC) panels mounted vertically on cavity battens, screw fixed to the structural framing.

PowerPanel^{XL} is 75mm thick and PowerPanel⁵⁰ is 50mm thick. The panels have square edges and are manufactured in a range of stock sizes.

Continuation of description can be found in item 9. Supporting Information about Description of Building Product or Method.

Matters that should be taken into account in the use or application of the building method or product can be found in item 6. Conditions and Limitations of Use.

4 SUMMARY OF INTENDED USE OF BUILDING METHOD OR PRODUCT

CSR Hebel® PowerPanel⁵⁰ and CSR Hebel® PowerPanel^{XL} are for use as non-loadbearing external wall cladding system. It is designed to be installed on either timber or steel structural framing where domestic construction techniques are used for buildings less than or equal to 10m in height.

Continuation of intended use can be found in item 10. Supporting Information about Intended use of Building Product or Method.

5 BUILDING CODE PROVISIONS — New Zealand Building Code (NZBC)

Clause B1 Structure — B1.3.1; B1.3.2; B1.3.3(a, e, f, h, i, m); B1.3.4

Clause B2 Durability — B2.3.1(b)

Clause C3 Fire affecting areas beyond the fire source — C3.4(a); C3.5; C3.6 (contributes to); C3.7(a)

Clause E2 External moisture — E2.3.2; E2.3.3; E2.3.5 (contributes to); E2.3.7

Clause F2 Hazardous building materials — F2.3.1

Clause H1 Energy efficiency provisions — H1.3.1; H1.3.2E (contributes to)

If designed, used, installed & maintained in accordance with the scope of this Certificate, the above-mentioned product will meet the following provisions of the NZBC.

How the building method or product complies or contributes can be found in item 12. Basis for Certification.

Any qualifications on the extent of that compliance can be found in item 6. Conditions and limitations of use.



The certificate holder must maintain compliance with the conditions set out in section 15 of the Building (Product Certification) Regulations 2008.

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CSR Hebel® PowerPanel⁵⁰ & PowerPanel^{XL} External Wall Cladding Systems

6 CONDITIONS AND LIMITATIONS OF USE

- a) The product is to be designed and installed in accordance with the Hebel PowerPanel⁵⁰ External Wall System – New Zealand Design and Installation Guide HELIT003SEP20 and the Hebel PowerPanel^{XL} External Wall System – New Zealand Design and Installation Guide HELIT002SEP20, as relevant.
- b) The product is for use in Importance Level 1 and Importance Level 2 buildings up to and including three storeys high that are less than or equal to 10m in height and situated in wind zones up to and including Extra High as determined in NZS 3604:2011 – Timber-framed buildings and NASH Standard Part 2:2019 Light Steel Framed Buildings.
- c) Where the building is situated in an Extra High wind zone or where the cladding system is used on an external wall frame without an internal lining, a rigid wall underlay shall be used.
- d) The design and installation of timber and steel stud loadbearing wall frames are not covered by this certification and must comply with NZ 3604:2011 for timber framing and NASH Standard Part 2:2019 Light Steel Framed Buildings.
- e) The Hebel PowerPanel⁵⁰ and PowerPanel^{XL} External Wall is for use in Earthquake Zone up to and including seismic zone 3 as defined in NZS 3604:2011.
- f) The use of Hebel PowerPanel⁵⁰ External Wall as a fire rated system, in whole or in part, is restricted to Buildings within risk group SH as defined by NZBC C/AS1 Clause 1.1.1.
- g) The use of Hebel PowerPanel^{XL} External Wall as a fire rated system, in whole or in part, can be used in risk group SH and other risk groups subject to all other requirements for the relevant risk group as set out in C/AS2 being met.
- h) The Fire Resistance Rating (FRR) of Hebel PowerPanel⁵⁰ and PowerPanel^{XL} systems must be as listed below in item 11 of this certificate “SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE” assessed with various Winstone Wallboards fire rated wall lining for fire exposure from both sides.
- i) The Hebel PowerPanel⁵⁰ and PowerPanel^{XL} is for use as an external wall system on buildings where the wall face concerned has a building envelope risk matrix score of less than 20 as determined using Acceptable Solution E2/AS1 Section 3.
- j) The Hebel PowerPanel⁵⁰ and PowerPanel^{XL} External Wall cladding system has been tested for weatherproofing requirements and achieved serviceability limit state wind pressures of +680Pa and -1270Pa and water penetration by static pressure of +300Pa for the cavity system. Construction details and fixing must follow the details contained within the Design and Installation guides, as relevant.
- k) The Hebel PowerPanel⁵⁰ and PowerPanel^{XL} External Wall must be protected in accordance with the coating requirements in the Hebel PowerPanel⁵⁰ External Wall System – New Zealand Design and Installation Guide HELIT003SEP20 and the Hebel PowerPanel^{XL} External Wall System – New Zealand Design and Installation Guide HELIT002SEP20, as relevant.

NOTE: Together, items 3, 4, 5 and 6 define scope of use.

Reference Documents:

- Hebel PowerPanel⁵⁰ External Wall System – New Zealand Design and Installation Guide HELIT003SEP20.
- Hebel PowerPanel^{XL} External Wall System – New Zealand Design and Installation Guide HELIT002SEP20.

7 HEALTH AND SAFETY INFORMATION

- Hebel products are cement-based, which may irritate the skin, resulting in itching and occasionally a red rash. The wearing of gloves and suitable clothing to reduce abrasion and irritation of the skin is recommended when handling Hebel product. Refer to the Hebel Material Safety Data Sheets and the Design and Installation Guide for further information regarding health and safety.

Reference Documents:

- CSR Safety Data Sheet – Autoclaved Aerated Concrete (for NZ) – LWS-SDS-189 (Date Issued: 23/08/2016).
- CSR Hebel PowerPanel 75mm – Autoclaved Aerated Concrete Panels – Type II Environmental Product Declaration (Version 0, Date Issued 3 December 2017).



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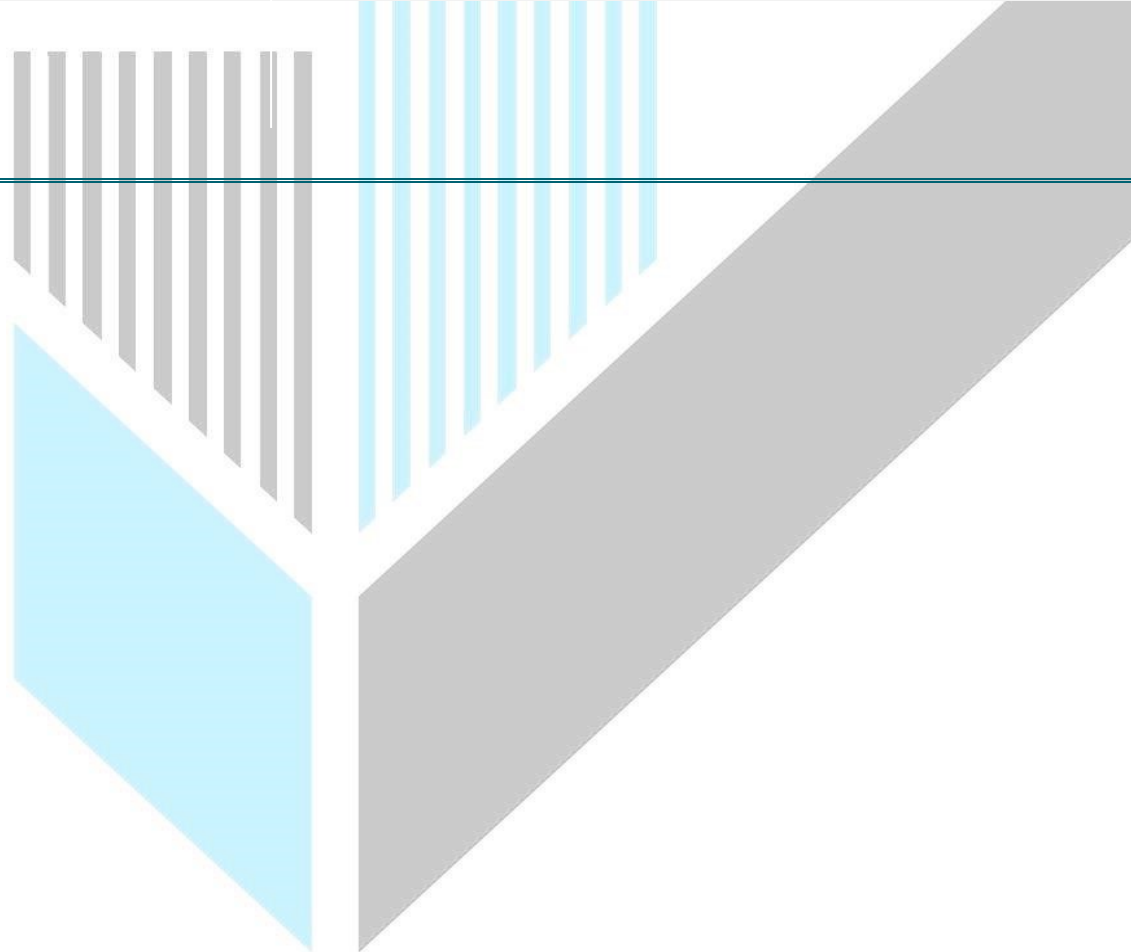
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8 SIGNATURES

Name and Signature of the Product Certification Body's (PCB) authorised representative and, where different, the person assigned by the PCB to make the certification decision

Frank Camasta
Global Head of Technical Services
SAI Global Assurance



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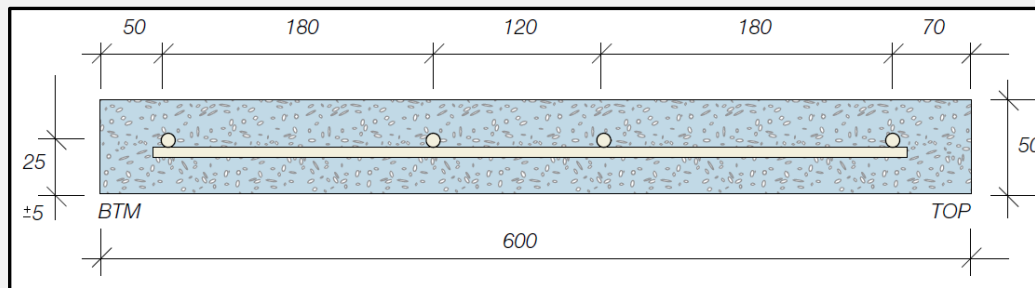
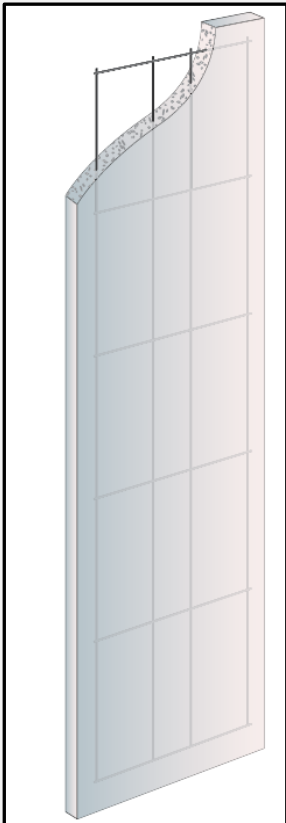
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SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION

9 SUPPORTING INFORMATION ABOUT DESCRIPTION

CSR Hebel® PowerPanel⁵⁰ is a 50mm thick, steel reinforced building panel made from AAC (Autoclaved Aerated Concrete) containing steel reinforcement with an anti-corrosion layer on the steel for maximum durability supplied in lengths of 2200mm to 3000mm with standard width of 600mm.



Panel Weight (kg)	
Length (mm)	600
2200	49
2400	53
2550	57
2700	60
3000	67



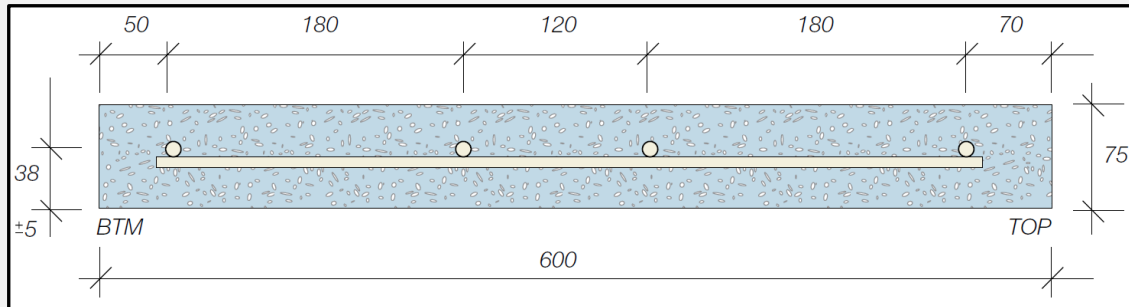
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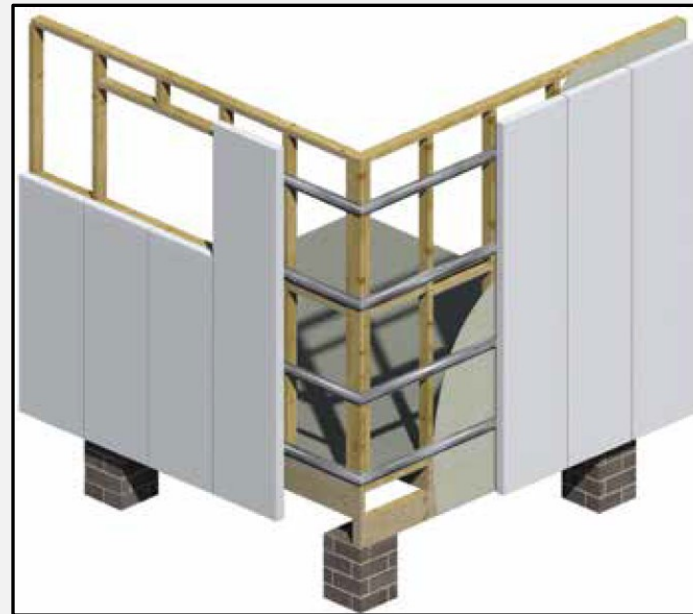
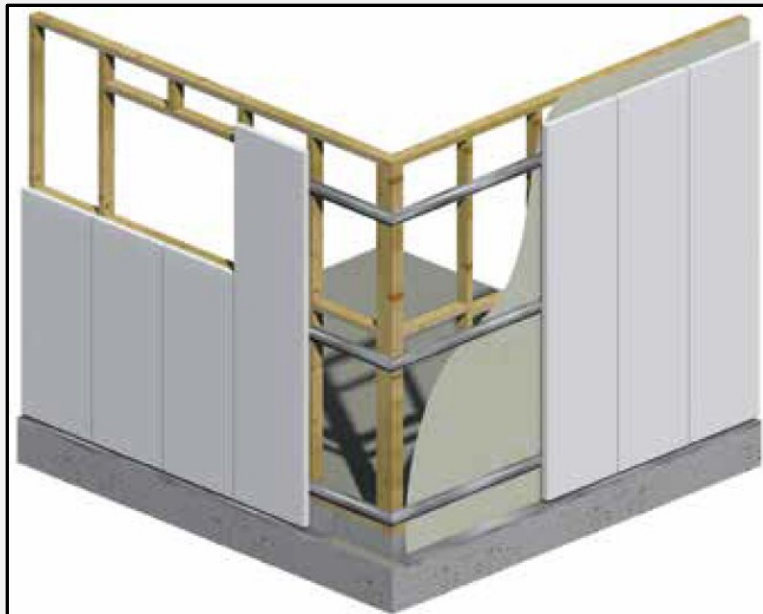
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CSR Hebel® PowerPanel^{XL} is a 75mm thick, steel reinforced building panel made from AAC (Autoclaved Aerated Concrete) containing steel reinforcement with an anti-corrosion layer on the steel for maximum durability supplied in lengths of 2400mm to 3000mm with standard width of 600mm.



Panel Weight (kg)	
Length (mm)	600
2400	63
2550	67
2700	71
3000	78

The below wall configuration consists of Hebel (non-load bearing) PowerPanel⁵⁰ / PowerPanel^{XL} panels installed vertically secured by top hats to the structural loadbearing frame and either supported at base or suspended.



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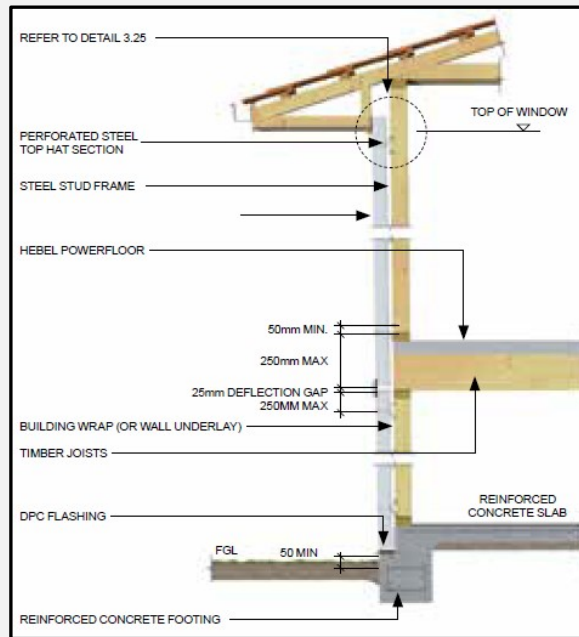
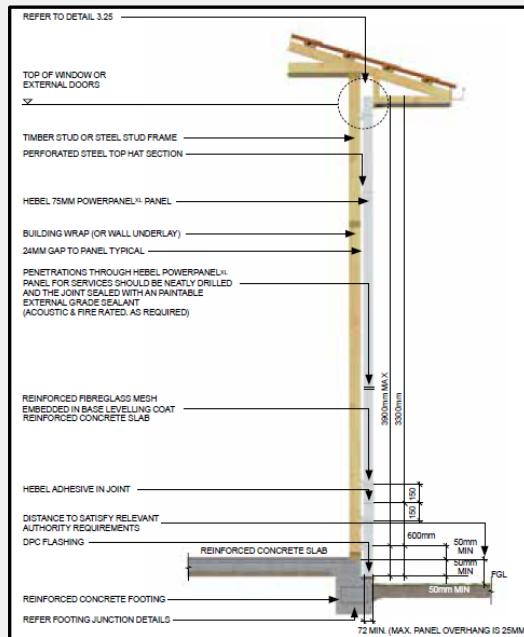
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Installation Components and Accessories:

- Top Hat – 20mm, 24mm, and 35mm.
- 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 screws.
- Fixing of Hebel PowerPanel⁵⁰ panels to Top Hat 14-10x65mm Hex Head Type 17 Screw from outside of building.
- Fixing of Hebel PowerPanel^{XL} panels to Top Hat 14-10x90mm Hex Head Type 17 Screw from outside of building.
- Hebel Adhesive.
- Hebel Mortar.
- Hebel Patch.
- Hebel anti-corrosion protection paint.

10 SUPPORTING INFORMATION ABOUT INTENDED USE

Hebel PowerPanel^{XL} / PowerPanel⁵⁰ External Wall System is intended for use as non-loadbearing in single storey or two-storey constructions not exceeding 10m in height.



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11 SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE

All conditions and limitations are as stated above in item 6. **Conditions and Limitations of Use** and below information:

CSR Hebel PowerPanel⁵⁰ PowerPanel^{XL} with Winstone Wallboards GIB® plasterboard achieved the following Fire Resistance Rating (FRR) when tested to AS1530.4:2014.

Hebel external wall	Internal lining	FRR	Hebel external wall	Internal lining	FRR
PowerPanel ⁵⁰	10mm GIB Fyreline	30/30/30	PowerPanel ^{XL}	10mm GIB Fyreline	30/30/30
	13mm GIB Standard			13mm GIB Standard	
	10mm GIB Standard			10mm GIB Standard	
	13mm GIB Fyreline			13mm GIB Fyreline	
	2 x 10mm GIB Fyreline			2 x 10mm GIB Fyreline	
	16mm GIB Fyreline			16mm GIB Fyreline	
	2 x 16mm GIB Fyreline		2 x 16mm GIB Fyreline	120/120/120	

Winstone Wallboards GIB® standard (10mm thick plasterboard) when tested to ISO 5660.1 achieved Group Number 1 and Average Specific Extinction Area (ASEA) of 49.8m²/kg as determined in accordance with Appendix A of C/VM2.

The Hebel PowerPanel⁵⁰ and PowerPanel^{XL} External Wall have not been assessed for airborne and impact sound.

12 BASIS FOR CERTIFICATION

- Structure** – by testing and comparison with provisions of Verification Method B1/VM1 and Acceptable Solution B1/AS1 – AS 5146.2:2015 – due to its acceptance within the Building Code of Australia (BCA), the material standard AS5146.2:2015 is therefore an acceptable Alternate Solution under the NZBC.
- Durability** – by testing and comparison with provisions of Verification Method B2/AS1 clause 3.1.1 – Section 3 of NZS 3101.1:2006 (+A1-3). Definitions of environmental conditions in NZS 3101.1 & 2:2006 (+A1-3) have been derived from the general concepts followed by AS 3600:2009 – due to its acceptance within the NZS3101.1&2:2006 (+A1-3), the AS3600:2009 exposure classifications are therefore an acceptable Alternate Solution under the NZBC.
- Fire affecting areas beyond the fire source** – by testing and comparison with the provisions of Acceptable Solution C/AS1, C/AS2.
- External moisture** – by testing and comparison with the provisions of Verification Method E2/VM1.
- Hazardous building materials** – by analysis and comparison with the Performance Requirements of F2.3.1.
- Energy efficiency provisions** – by evaluation and comparison with the provisions of Acceptable Solution H1/AS1.



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SUPPORTING DOCUMENTATION FOR CERTIFICATION

[Building regulations 1992 \(SR 1992/150\)](#) – Reprinted as at 1 January 2017.

- **Acceptable Solutions and Verification Methods for New Zealand Building Code:**
 - a. **Clause B1 Structure** – B1/VM1, B1/AS1, Amendment 19 (28 November 2019).
 - b. **Clause B2 Durability** – B2/AS1, Amendment 12 (28 November 2019).
 - c. **Clause C3 Fire affecting areas beyond the source** – C/AS1 Acceptable Solution for Buildings with Sleeping (residential) and Outbuildings (Risk Group SH), Amendment 5 (5 November 2020) and C/AS2 Acceptable Solution for Buildings other than Risk Group SH, Amendment 2 (5 November 2020) and Verification Method: Framework for Fire Safety Design For New Zealand Building Code Clauses C1-C6 Protection from Fire.
 - d. **Clause E2 External Moisture** – E2/VM1 3rd edition, Amendment 10 (5 November 2020).
 - e. **Clause F2 Hazardous building materials** – F2/VM1, Amendment 3 (1 January 2017).
 - f. **Clause H1 Energy efficiency provisions** – H1/AS1 4th edition, Amendment 4 (28 November 2019).

Test Reports

1. **Lautrec Consulting Engineers, Hebel Powerpanel 50/XL External Wall System Review (dated 11 June 2021).**
This letter from a Chartered Professional Engineer verifies that Hebel PowerPanel⁵⁰ and PowerPanel^{XL} are designed in accordance with B1 of the New Zealand Building Code, and that the design tables in the Hebel Design and Installation guides are accurate.
2. **BEMAC Laboratories – CSR Hebel Pty Ltd AAC – 50mm thick panels 600 x 3000mm Evaluation of Properties of 50mm AAC Product, Job No. 10953 (dated 4/05/2017)**
This report provides the results of full panel bending test of a Hebel panel 50mm thick panel to AS 5146.2 Reinforced Autoclaved Aerated Concrete – Part 2: Design.
3. **Pace Structural – Structural Design Certificate PS20117 – Hebel PowerPanel⁵⁰ (dated 23/09/2020)**
The certificate states the structural design capacity calculations on the proposed Hebel PowerPanel⁵⁰ External Wall System in relation to the following:
 - Structural adequacy of the Hebel PowerPanel⁵⁰ External Wall System and its fixings to the support frame in the New Zealand Design and Installation Guide (HELIT003SEP20).
 - Structural adequacy of Tables 1.4, 1.5, 1.6, 1.7, 1.8, 1.9,1.10 and Tables 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 of New Zealand Design and Installation Guide (HELIT003SEP20).
 - Compliance with the NZBC Clause: B1 Structure: B1.3.1, B1.3.2, B1.3.3(a), (b), (h), (f), (i), (j), (m) and B1.3.4.
4. **Pace Structural – Structural Design Certificate PS20117 – Hebel PowerPanel^{XL} (dated 23/09/2020)**
The certificate states the structural design capacity calculations on the proposed 75mm Hebel PowerPanel^{XL} External Wall System in relation to the following:
 - Structural adequacy of the 75mm Hebel PowerPanel^{XL} External Wall System and its fixings to the support frame in the New Zealand Design and Installation Guide (HELIT002SEP20).
 - Structural adequacy of Tables 1.4, 1.5, 1.6, 1.7, 1.8, 1.9,1.10 and Tables 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 of New Zealand Design and Installation Guide (HELIT002SEP20).
 - Compliance with the NZBC Clause: B1 Structure: B1.3.1, B1.3.2, B1.3.3(a), (b), (h), (f), (i), (j), (m) and B1.3.4.
5. **Mahaffey Associates Pty Ltd – Durability Review: AS3600:2009 Exposure Classifications – Hebel Panels (dated 30 July 2013).**
This report states that the assessment should be based on untreated Hebel panels, used in above-ground exterior environments, in application such as road barriers and building facades.
6. **CSIRO, Test Certificate, Combustibility test for materials in accordance with AS 1530.1:1994, report No. FNC12427A (dated 2 September 2019).**
This test certificate provides the results of 50mm PowerPanel tested to the requirements of AS 1530.1:1994 and determines that the product is NOT deemed combustible.
7. **CSIRO, Test Certificate, Combustibility test for materials in accordance with AS 1530.1:1994, report No. FNC12490 (dated 22 November 2019).**
This test certificate provides the results of single leaf 50mm PowerPanel^{XL} wall tested to the requirements of AS 1530.1:1994 and determines that the product is NOT deemed combustible.



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- 8. BRANZ – Fire Resistance of CSR Hebel Panels with Winstone Wallboards Fire Rated Wall and Ceiling Systems – Report No. FC13639-001 Issue 1 (dated 4th March 2021).**
This report contains the results from assessment of fire resistance of CSR Hebel fire rated PowerPanel^{XL} and PowerPanel⁵⁰ external wall cladding system and floor/ceiling systems with Winstone Wallboards Limited fire rated plasterboard in accordance with AS 1530.4:2005/2014. It was concluded the wall cladding system using either 10mm GIB Fyrelite or 10mm GIB Standard achieved a FRR of 30/30/30.
- 9. CSIRO, Fire-resistance test on a Hebel Panel Wall, FSV 0979 (dated 8 August 2003).**
This report provides the test results of 75mm PowerPanel with a tongue and groove profile along the long edge tested to the requirement of AS1530.4-1997 and determined the product achieved an FRL of -/90/90.
- 10. BRANZ, Test Report for Group Number and Average Specific Extinction Area (ASEA) – Report No. FH 4540 (dated 4 February 2011).**
The report provides the results of testing Winstone Wallboards GIB® standard (10mm thick plasterboard) as a ceiling lining product when tested to ISO 5660.1 and returns a material Group Number 1 and Average Specific Extinction Area (ASEA) of 49.8m²/kg.
- 11. CSIRO, Water penetration testing to the Verification Methods FV1 & V2.2.1 (weatherproofing), of the National Construction Code (NCC) 2015, on a Hebel 75mm panel wall system, Report No. DTF1021 (dated 27th January 2015).**
This report details the performance of a representative wall system under simulated conditions of serviceability loading and weather tightness. Testing was conducted in accordance with the Verification Methods FV1 and V2.2.2, following the required test methods from the Australian Standard AS/NZS 4284:2008, 'Testing of building facades', and to the specified requirements of the test sponsor.
- 12. AECOM, Hebel 50mm and 75mm Panels – External Cladding for Low- and High-Rise Buildings (dated 08 April 2021).**
The results of this test report demonstrated that the 50 mm Hebel wall panels (with adhesive applied to the vertical edges between panels) comply with the performance requirements of NCC 2016 for wind terrain category N2, specifically Verification Methods FV1 for clauses FP1.4 (volume one) and V2.2.1 for clause P2.2.2 (volume 2).
- 13. CSR Safety Data Sheet – Autoclaved Aerated Concrete (for NZ) – LWS-SDS-189 (Date Issued: 23/08/2016).**
- 14. CSR - Hebel PowerPanel 75mm - Type II Environmental Product Declaration, Version 0 (Date of issue: 3 December 2017, valid for 5 years).**
- 15. James M Fricker – “System Total R” (Thermally Bridged) Thermal Performance Calculations for New Zealand Application, per NZS 4214:2006.**
This report contains the total R-Value of the External Wall System using the isothermal planes method per NZS 4214:2006.
- 16. CSR Insulation Research Laboratory – ASTM C518 Thermal Transmission Properties Measurement, Report No. NR-12139 (dated 10/10/2012)**
This report contains the results of testing to ASTM C518, the product achieves a thermal resistance of 0.54m²KW⁻¹.
- 17. CSR Insulation Research Laboratory (Accreditation No. 993) – ASTM C518 Thermal Transmission Properties Measurement, Report No. NR-12140 (dated 10/10/2012).**
This report contains the results of testing to ASTM C518, the product achieves a thermal resistance of 0.43m²KW⁻¹.



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14 CONDITIONS RELATING TO NOTIFICATION

- (a) the certificate holder notifies the product certification body in writing of any intended change to any of the following particulars:
- (i) the name, address, or contact details of the certificate holder;
 - (ii) any address of a location where a certified product is produced or manufactured;
- (b) the certificate holder notifies the product certification body in writing of any intended change, modification, or alteration to any of the following:
- (i) the certified building method or product;
 - (ii) the method of its production or manufacture;
 - (iii) the product quality plan prepared in respect of the certified building method or product;
 - (iv) the application or installation instructions for the certified building method or product;
 - (v) any documentation relating to the use and maintenance of the certified building method or product;
- (c) if the certificate holder has any reason to suspect that the certified building method or product does not comply with the Building Code, the certificate holder notifies the product certification body in writing of the reason for that suspicion:
- (d) if the certificate holder or the product certification body finds that a certified building method or product that has been released on the market does not comply with the Building Code, the certificate holder discloses that fact in disclosure statements published in a form that is acceptable to the product certification body and to the chief executive:
- (e) if the certificate is suspended or revoked, the certificate holder—
- (i) notifies all customers to whom the building method or product is regularly supplied; and
 - (ii) immediately ceases using the certificate, the mark of conformity, and any reference to the number of the certificate.



The certificate holder must maintain compliance with the conditions set out in section 15 of the Building (Product Certification) Regulations 2008.

This certificate is issued by SAI Global, an independent certification body accredited by the product certification accreditation body appointed by the Chief Executive of Ministry Business, Innovation and Employment (MBIE) under the Building Act 2004. MBIE does not in any way warrant, guarantee or represent that the building method or product, the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. MBIE disclaims 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 building method(s) or product(s) referred to in this certificate.

This certificate may only be reproduced in its entirety. It is advised to check that this certificate is currently valid and not withdrawn or suspended by referring to the Register of Product Certificates on the Building Performance website <http://www.building.govt.nz>.

Information regarding SAI Global's complaints process can be found at the following link: [Complaints Process](#).

CERTIFICATE V1.2