

## **CSR Hebel® POWERFLOOR SYSTEMS**



**KEY INFORMATION** 

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Date of issue: 18/10/2021 Renewal Date: 17/10/2024

### 1 CERTIFICATE HOLDER DETAILS

CSR Building Product (NZ) Limited

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### 2 PRODUCT CERTIFICATION BODY

### 🌓 SAI GLOBAL

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

### SUMMARY OF DESCRIPTION OF BUILDING METHOD OR PRODUCT

CSR Hebel<sup>®</sup> PowerFloor System comprises of:

- lightweight steel reinforced autoclaved aerated concrete (AAC) panel installed over steel or timber floor joist system forming a platform floor, and
- Winstone Wallboards GIB<sup>®</sup>, and
- 90mm ceiling batts with thermal resistance R1.8.

CSR Hebel® PowerFloor panels are 75mm thick reinforced with corrosion-protected steel mesh and have tongue and groove edges.

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.

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### SUMMARY OF INTENDED USE OF BUILDING METHOD OR PRODUCT

CSR Hebel® PowerFloor Systems are for use as floor systems in low rise residential, commercial, and industrial buildings.

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

### BUILDING CODE PROVISIONS – New Zealand Building Code (NZBC)

Clause B1 Structure — B1.3.1; B1.3.2; B1.3.3(a, b, f, i, j, m); and B1.3.4.

**Clause B2 Durability** — B2.3.1(a); and B2.3.2.

**Clause C3 Fire affecting areas beyond the fire source** — C3.4(a); C3.6.

Clause C4 Movement to place of safety — C4.3 (contributes to).

Clause C6 Structural Stability – C6.2 (contributes to).

Clause F2 Hazardous building materials — F2.3.1.

Clause G6 Airborne and impact sound — G6.3.1; and G6.3.2.

H1 Energy efficiency – H1.3.1(a) (contributes to); and 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. 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.

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## **CSR Hebel® POWERFLOOR SYSTEMS**

#### 6 CONDITIONS AND LIMITATIONS OF USE a) The product is to be designed and installed only in accordance Hebel® PowerFloor Low Rise Residential & Commercial Floor System Design and Installation Guide New Zealand (HELIT014 – SEP21). The product is certified for use only in low rise residential and commercial applications where no access to floors is required for the purpose of conducting firefighting and rescue operations. b) The product is not certified for external use in balconies and the design and weathertightness considerations are outside the scope of this certification. c) d) The design and installation of timber and/or steel structural floor joists or supporting framing are not covered by this certification and must comply with the relevant design standards. The Fire Resistance Rating (FRR) of Hebel® PowerFloor system for fire exposure from the underside assessed with various Winstone Wallboards ceiling lining must be as detailed for each system in e) Hebel® PowerFloor Low Rise Residential & Commercial Floor System Design and Installation Guide New Zealand (HELIT014- SEP21). Refer to the system index below in item 10 "SUPPORTING INFORMATION ABOUT INTENDED USE". The product is not certified for use in Firecells where the requirements of clauses C3.8 of the building code applies. g) Where the building is within exposure zone D and microclimates as defined in NZS 3604:2011, compliance with B2 Durability is subject to the exposed surface being protected by a suitable acrylic coating. h) Energy Efficiency and Sound Insulation performance is dependent on the appurtenant ceiling system, floor covering type, and the use of 90mm ceiling batts with thermal resistance R1.8. Refer to the Hebel® PowerFloor Low Rise Residential & Commercial Floor System Design and Installation Guide New Zealand (HELIT014– SEP21) for exact values for each ceiling system. The floor lining must be tested and assessed separately to comply with C3.4(b) of the building code. i) The product is for use in Earthquake Zone up to and including seismic zone 3 as defined in NZS 3604:2011. i) k) Other components as part of the system not manufactured by Hebel must also be installed in accordance with the manufacturers standard and specifications. NOTE: Together, items 3, 4, 5 and 6 define scope of use. **Reference Documents:** Hebel® PowerFloor Low Rise Residential & Commercial Floor System Design and Installation Guide New Zealand (HELIT014– SEP21).

### 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 of issue 3 December 2017.



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## **PRODUCT CERTIFICATE**



### **CSR Hebel® POWERFLOOR SYSTEMS**

### 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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## **PRODUCT CERTIFICATE**

## CSR Hebel<sup>®</sup> POWERFLOOR SYSTEMS

SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION

### SUPPORTING INFORMATION ABOUT DESCRIPTION

The core component of CSR Hebel® PowerFloor System is an autoclaved aerated concrete (AAC) containing steel reinforcement with an anti-corrosion layer on the steel for maximum durability.





The Hebel® PowerFloor panel has a density 510kg/m<sup>3</sup> and is available in a stock length of 1800mm x 600mm width or 2400mm x 600mm width, with a mass of up to 56kg/panel.

Installation Components and Accessories:

- A. Screws for fixing Hebel PowerFloor panels to Timber Joists:
  - 14-10 x 100mm MP Bugle Head Batten Screws.
  - 14-10 x 125mm Hex Head Screws.
- B. Screws for fixing Hebel PowerFloor panels to Steel Joists:
  - 14-10 x 95mm Hex Head Self-Tapping Screws.
  - 14-10 x 135mm Hex Head Self-Tapping Screws.
- GIB Plasterboard: C
  - 13mm GIB Fyreline.
  - 16mm GIB Fyreline.
  - 19mm GIB Fyreline.
  - 13mm GIB standard plasterboard.
  - 13mm GIB Braceline/Noiseline.



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Other Installation Components and Accessories:

- Hebel Adhesive.
- Fuller<sup>®</sup> Max Bond<sup>™</sup>.
- Hebel Patch.
- Hebel anti-corrosion protection paint.

Fixing details, floor coverings, control joints, penetrations & notching details, and installation sequence are provided in Hebel® PowerFloor Low Rise Residential & Commercial Floor System Design and Installation Guide New Zealand (HELIT014-SEP21)

### SUPPORTING INFORMATION ABOUT INTENDED USE

Below is a system index for Hebel® PowerFloor Systems and Fixing Details.

Hebel PowerFloor System Description	Floor Covering Type	Applications & Benefits	System No.	System Details Page No.	Minimum overlap 1 joist spacing not less than 450mm Internal fixing, two screws at each joist at 100mm min. Internal fixing, two screws at each joist at 100mm min. Internal fixing, two screws at each joist at 100mm min. Internal fixing, two screws at each joist at 100mm min.
	• Carpet • Medium duty underlay	Carpeted floor with a high level thermal performance.	Hebel 1474 Hebel 1475 Hebel 1476	22	The screw fixing, two screws in every panel toget ages in the screw fixing the screws in every panel toget ages in the screw fixing the screws in every panel toget ages in the screw fixing the screws in every panel toget ages in the screws
	8mm Ceramic tiles     Flexible adhesive     Waterproof membrane (not required in dry areas)	<ul> <li>Rigid floor system, with good thermal performance. Suitable for wet or dry areas.</li> </ul>	Hebel 1478 Hebel 1479 Hebel 1481	25	
	Vinyl sheet floor covering     Masonite underlay	<ul> <li>Inexpensive floor with a hard surface and high level of thermal performance.</li> </ul>	Hebel 1486 Hebel 1487 Hebel 1491	23	
	<ul> <li>19mm T&amp;G hardwood flooring</li> <li>70 x 35mm timber battens</li> </ul>	<ul> <li>Attractive solid timber finish with a high level of thermal performance.</li> </ul>	Hebel 1494 Hebel 1495 Hebel 1501	24	

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# **PRODUCT CERTIFICATE**



## CSR Hebel<sup>®</sup> POWERFLOOR SYSTEMS

### 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:

#### 12 **BASIS FOR CERTIFICATION**

- A. Structure by testing and comparison with provisions of Verification Method B1/VM1 and Acceptable Solution B1/AS1 AS5146.2:2015 due to its acceptance within the Building Code of Australia (BCA), the material standard AS5146.2:2015 is therefore considered to be an alternative solution under the NZBC.
- Β. Durability – by testing and comparison with provisions of Verification Method B2/AS1 clause 3.1.1 – Section 3 of NZS3101.1:2006 (+A1-3). Definitions of environmental conditions in NZ3101.1&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 considered to be an alternative solution under the NZBC.
- Fire affecting areas beyond the fire source by testing and comparison with the provisions of Acceptable Solution C/AS1 and C/AS2. С.
- **Movement to place of safety** by testing and comparison with the provisions of Acceptable Solution C/AS1 and C/AS2. D.
- **Structural stability (Fire)** by testing and comparison with the provisions of Acceptable Solution C/AS1 and C/AS2. Ε.
- F. . 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. G.
- Н. Airborne and impact sound – by testing and comparison with the provisions of Verification Method G6/VM1.

#### SUPPORTING DOCUMENTATION FOR CERTIFICATION 13

### 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 C4 Movement to place of safety 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.
  - e. Clause C6 Structural stability 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.
  - Clause F2 Hazardous building materials F2/VM1, Amendment 3 (1 January 2017). f. .
  - Clause G6 Airborne and impact sound G6/VM1, Amendment 2 (1 December 1995). g.
  - h. Clause H1 Energy efficiency H1/AS1 and H1/VM1 4<sup>th</sup> edition, Amendment 4 (28 November 2019).

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### CSR Hebel<sup>®</sup> POWERFLOOR SYSTEMS

### **Test Reports**

1. Lautrec Consulting Engineers, Hebel PowerFloor Low Rise Residential & Commercial Floor (75mm) System Review (dated 18 June 2021).

This letter from a Chartered Professional Engineer verifies that Hebel PowerFloor is 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 – 50mm thick panels 600 x 3000mm Evaluation of Properties of 50mm AAC Product, Job No. 10953 (dated 19/04/2017).

This report provides test results of full panel bending to AS 5146.2:2015 Reinforced Autoclaved Aerated Concrete – Part 2: Desian.

#### 3. Pace Structural – Structural Design Certificate for the 75mm Hebel® PowerFloor System, File PS20085 (dated 11 August 2020).

This certificate confirms that the structural capacity span tables for strength and serviceability requirements of Hebel PowerFloor and its immediate fixings and supports as detailed in the Hebel® PowerFloor Low Rise Residential & Commercial Floor System New Zealand Design and Installation Guide (HELIT014–JUN20) are structurally adequate to support imposed floor dead and live loads in accordance with the current relevant building and structural engineering codes in particular AS/NZS 1170.0:2011, AS/NZS 1170.1:2011, NZS 3604:2011, NZS 1170.5:2004 and AS 5146.2:2018 and in accordance with accepted engineering design practice and principles.

#### Pace Structural – Structural Design Certificate for the 75mm Hebel® PowerFloor System Diaphragm Capacity, File PS19167 (dated 11 April 2021). 4.

This certificate provides the structural design capacity calculations to determine in-plane shear capacity of Hebel PowerFloor 75mm AAC floor panel when constructed in accordance with Hebel® PowerFloor Low Rise Residential & Commercial Floor System New Zealand Design and Installation Guide (HELIT014–JUN20).

### 5. Mahaffey Associates Pty Ltd – Durability Review: AS3600:2009 Exposure Classifications – Hebel Panels (dated 30 July 2013).

This report states that results of the accelerated test showed in relatively benign environments (exposure classification A1 and A2) and B1 exposure classification the Hebel panels will provide service life of at least 50 years without any additional surface coating to the panels and that under normal ambient conditions the protective coating is durable and capable of protecting the reinforcement from chloride-induced corrosion provided it is undamaged.

#### 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 PowerFloor tested to the requirements of AS 1530.1:1994 and determines that the product is NOT deemed combustible.

### 7. BRANZ – Fire Resistance of CSR Hebel Panels with Winstone Wallboards Fire Rated Wall and Ceiling Systems – Report No. FC13639-001 Issue 1 (dated 4 March 2021).

This report contains the results from assessment of fire resistance of CSR Hebel fire rated external wall system and floor/ceiling systems with Winstone Wallboards Limited fire rated plasterboard in accordance with AS1530.4-2005/2014.

### 8. 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 49.8m<sup>2</sup>/kg.



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### 9. BRANZ – Test Report for Group Number and Average Specific Extinction Area (ASEA), Report No. FH 4544 (dated 4 February 2011).

The report provides the results of testing Winstone Wallboards GIB® Braceline/Noiseline (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 52.6m<sup>2</sup>/kg.

### 10. BRANZ – Appraisal for Winstone Wallboards GIB® Fire Resistance Ratings and Material Group Number, Appraisal No. 289 (dated 8 November 2012, Amended 15 April 2019).

The appraisal states that Winstone Wallboards GIB® plasterboards without applied paint or wallpaper finishes achieve a material Group Number of 1-S.

### 11. CSR – Hebel PowerPanel 75mm Autoclaved Aerated Concrete Panels Type II Environmental Product Declaration – Version 0 (Date of issue: 3 December 2017, valid for 5 years).

This document contains a breakdown of the products composition and does not indicate any substances likely to give rise to harmful concentrations at the surface of the material where the material is exposed, or in the atmosphere of any space.

### 12. CSR Safety Data Sheet – Autoclaved Aerated Concrete (for NZ) – LWS-SDS-189 (Date Issued: 23/08/2016).

This document is issued by the supplier in accordance with New Zealand Workplace Exposure Standards. It contains information about the products composition and statement that the product as supplied is non-hazardous. It also provides information about the dust of the product if it was cut, sawn, abraded or crushed which would be classified as hazardous according to NZ EPA.

#### 13. CSIRO – Laboratory Measurement of Airborne Sound Transmission Loss – Measurement No. TL413 (dated 17 December 2002).

This report contains the sound transmission loss value (TL) for the nine variations of the floor system constructed using timber joists and lightweight concrete panels, with various plasterboard ceilings installed beneath it and/or floor coverings installed above it, have been determined. The measurements were performed in compliance with the requirements of AS1191-1985 "method for laboratory measurement of airborne sound transmission loss of building partitions".

### 14. CSIRO – Laboratory Measurement of Airborne Sound Transmission Loss – Measurement No. TLi413 (dated 28 November 2002).

The IIC (ASTM E989-89). L<sub>nw</sub> and C<sub>l</sub> (ISO 717-2:1996) for nine variations of a floor systems constructed using timber joists and lightweight concrete panels, with various plasterboard ceilings installed beneath it and/or floor coverings installed above it, have been determined from the values of the (normalized) third-octave impact sound pressure levels measured beneath the test floor.

### 15. PKA Acoustic Consulting – Hebel PowerFloor NZ ACOUSTIC PERFORMANCE ASSESSMENT – PKA-A099 v1 (dated 3 December 2018).

This report details the acoustic performance of the Hebel PowerFloor flooring systems when compared to airborne and impact sound insulation requirements of the New Zealand Building Code separating occupancies. Reference is made to New Zealand building materials or generic products where applicable.

### 16. CSR Insulation Research Laboratory – ASTM C518 Thermal Transmission Properties Measurement Report No. NR-12140 (dated 10 October 2012).

This report contains the results of thermal testing in accordance with ASTM C518-10 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. Testing demonstrates the products achieves a thermal resistance of  $0.31m^2K/W$ .

#### 17. James M Fricker Pty Ltd – Report on Thermal Performance of Hebel PowerFloor Systems (NZ) Report No. i107enz (dated November 2013).

This report contains the results of thermal determinations based on testing to AS/NZS 4859.1:2002/Amdt 1 2006 and calculations in accordance with NZS 4214:2006.



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## CSR Hebel<sup>®</sup> POWERFLOOR SYSTEMS

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### 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.

Information regarding SAI Global's complaints process can be found at the following link: Complaints Process. **CERTIFICATE V1.2** 

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