



# PRODUCT CERTIFICATE

## EMH Prefabricated Panel System (EMH System)



CERTIFICATE NO: CMNZ70051

Version No: 0

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### 1 CERTIFICATE HOLDER DETAILS

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### 2 PRODUCT CERTIFICATION BODY

**Bureau Veritas Australia Pty Ltd**

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**Bureau Veritas Australia Pty Ltd**

The complaints process for this certificate  
can be found here:

[www.bureauveritas.com.au/your-feedback](http://www.bureauveritas.com.au/your-feedback)

### 3 DESCRIPTION OF BUILDING METHOD OR PRODUCT

Name of the product or method in New Zealand, including any brand names used. Description of what it is and the components that make up any system and its physical attributes including the materials and make-up of the product, where applicable.

*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*

The EMH system is a prefabricated panelised timber framed construction system. The system incorporates wall, floor, ceiling and roof panels, and where required by the structural design, glulam beams, which are assembled on site to form the structural system. UPVC double or triple glazed joinery and insulation are incorporated in the prefabricated panels. Exterior claddings are fixed to the structural panels.

The building method's or building product's catalogue or model identification number or numbers or other unique identifiers that might be used to identify the building product or building method

### 4 INTENDED USE OF BUILDING METHOD OR PRODUCT

Intended use of the building method or product as described in the product manual and other instructional materials.

A statement of the function or purpose of the building method or product.

The EMH system incorporates wall, floor, ceiling and roof panels which form the structural system (above the foundation). It includes thermal insulation, window and door joinery and exterior wall cladding, wall and roof underlay, roof battens and purlins, and glulam beams where required by the structural design. Plasterboard internal wall linings are included for fire-rated panels. Roof cladding is outside the scope of the EMH system. The EMH system excludes buildings requiring fire separation between vertically adjoining units (i.e. units one on top of another).

### 5 NEW ZEALAND BUILDING CODE PROVISIONS

The performance clauses of the New Zealand Building Code that are relevant to the intended use and with which the building method or product complies or contributes to (where used as part of a system).

*How the building method or product complies or contributes can be found in item 9. Basis for Certification.*

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

B1 Structure: B1.3.1, B1.3.2, B1.3.3(a, b, f, g, h, j, l, m, q), B1.3.4

B2 Durability: B2.3.1(a, b, c), B2.3.2(a)

C3 Fire affecting areas beyond the fire source: C3.4(a) (for fire-rated panels), (contributes to) C3.6

C6 Structural stability: C6.2

E2 External moisture: E2.3.1, E2.3.2, E2.3.5, E2.3.7

E3 Internal moisture: E3.3.1

F2 Hazardous building materials: F2.3.1, F2.3.3(a, b)

G4 Ventilation: G4.3.1

G6 Airborne and impact sound: G6.3.1

H1 Energy efficiency: H1.3.1(a, b) (contributes to), H1.3.2E (contributes to), H1.3.3 (contributes to)



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### 6 CONDITIONS AND LIMITATIONS OF USE

The building method or product's use is to be in accordance with the installation instructions and requirements against which the building method or product was assessed.

Conditions or limitations of conformity for the performance requirements the building method or product is compliant with, including any requirements for people with the qualifications and skills to install or use the building method or product, any known or demonstrated situations where the building method or product should not be used. A statement as to whether there are any matters that should be taken into account in the use or application of the building product or building method and, if so, what those matters are.

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

The EMH system is certified for buildings within the following scope:

- Stand-alone residential dwellings and terraced houses up to two stories; or other Importance Level 1 & 2 buildings (defined in Table 1.1 of NZS3604:2011);
- where the total height from lowest ground level to highest point of the roof is no greater than 10m
- with light wall cladding (mass of cladding not exceeding 30 kg/m<sup>2</sup>)
- with light roofs (mass of roofing material & substrate not exceeding 20 kg/m<sup>2</sup>)
- with floor live loads not exceeding 1.5 kPa (i.e. domestic self-contained dwellings)
- on concrete floor slabs or on timber sub-floor structures designed and constructed in accordance with NZS3604:2011 para 6.2, founded on "good ground" as defined in NZS3604: 2011, or on engineered concrete raft foundations
- where the E2/AS1 Risk matrix score <20
- where the slope of any roof plane is not greater than 45 degrees nor less than 5 degrees to the horizontal
- where the maximum stud height for wall panels does not exceed 2.5 m ceiling height, or up to 4.8m for walls supporting roof load only;

and located:

- in any wind zone up to and including Very High (as defined in NZS 3604: 2011) for S8000 series windows and doors, Very High for S9000 series windows and High for HST S9000 series sliding door
- In all exposure zones as defined in NZS3604.2011 (except microclimates)
- All climate zones as defined in Acceptable Solution H1/AS1
- Snow loading zones to 1.5 kPa in NZS3604:2011
- Earthquake zones up to and including Zone 3 as defined in NZS3604:2011 as modified by Acceptable Solution B1/AS1
- 1m or more from a relevant (notional) boundary.

Subject to the following conditions and limitations:

1. Buildings must be designed in accordance with the Design Manual EMH Panel System V2, February 2023, and Production Requirements EMH Panel System V2.3, 30 October 2022.
2. EMH panels and associated components must be installed in accordance with the Installation Manual EMH Panel System V1.8, 13 March 2022.
3. Buildings shall only comprise standard EMH panels.
4. Where the Classified Use of the building is not a detached dwelling, household unit in a multi-unit dwelling, outbuilding or ancillary building, or for fire-rated panels used in other buildings where a Material Group Number better than 2-5 is required, a lining or finish with a Material Group Number complying with Building Code clause C3.4(a) must be fixed to the internal face of the EMH panels
5. Wall underlay must not be exposed to the weather for more than 90 days; roof underlay must not be exposed to the weather for more than 30 days.
6. The designer must specify the use of safety glass for use in specific situations to comply with F2.3.3 (for example by complying with the referenced standard NZS4223-3:2016).



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7. Establishing compliance with the performance criteria in Building Code clauses H1.3.1(a) and H1.3.2E shall be in accordance with either of the following:
  - the calculation method in Acceptable Solution H1/AS1 (Fifth Edition Amendment 1) or the modelling method in H1/VM1 (Fifth Edition Amendment 1), for all housing and buildings up to 300m<sup>2</sup>.
  - the calculation method in H1/AS2 (First Edition Amendment 1) or the modelling method in H1/VM2 (First Edition Amendment 1), for buildings greater than 300m<sup>2</sup>.
8. The designer must provide a design statement for lodging with the building consent application, stating the particular models of panel and weatherboard incorporated within the design, calculations demonstrating compliance with H1 Energy Efficiency, and confirming the design has been done in accordance with the Design Manual and Production Requirements.
9. The installer must provide a statement for lodging with the application for a Code Compliance Certificate, certifying the EMH Panel System has been installed in accordance with the consented plans and specifications and the EMH Installation Manual.

The EMH system excludes buildings requiring fire separation between vertically adjoining units (ie where one unit is on top of another).

### 7 HEALTH AND SAFETY INFORMATION

Health, safety, and well-being declarations associated with installation, maintenance, and use of the building method or product, and their specific editions and dates necessary to ensure the performance requirements of clauses F1 to F9 of the Building Code can be met.

The compliance with any manufacturer's installation instructions, maintenance, OH & S statements, MSDS's and other Health and Safety declarations will provide the necessary Health and Safety Information pertaining to the product.

### 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

Sam Guindi  
Product Certification Manager

For and on behalf of  
Bureau Veritas Australia Pty Ltd



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### 9 BASIS FOR CERTIFICATION

How the performance requirements in the Building Code were met for each of the provisions. Where used as part of a system, the specific contribution to compliance.

- B1 Structure - By testing and comparison with Acceptable Solution B1/AS1 and Verification Method B1/VM1
- B2 Durability - By testing and comparison with Acceptable Solution B2/AS1 and Verification Method B2/VM1
- C3 Fire affecting areas beyond the fire source - By testing and comparison with Acceptable Solution C/AS2
- C6 Structural stability - By analysis and comparison with Verification Method C/VM2
- E2 External moisture - By comparison with Acceptable Solution E2/AS1
- E3 Internal moisture - By comparison with Acceptable Solution E3/AS1
- F2 Hazardous building materials - By testing and comparison with Code Clause F2.3.1 and Acceptable Solution F2/AS1
- G4 Ventilation - By comparison with Acceptable Solution G4/AS1
- G6 Airborne and impact sound - By comparison with Acceptable Solution G4/AS1
- H1 Energy efficiency - By analysis and comparison with Acceptable Solution H1/AS1

### 10 SUPPORTING DOCUMENTATION FOR CERTIFICATION

Reference to any acceptable solutions, verification methods, New Zealand Standards, or other compliance pathways referenced against each individual performance requirement the building method or product is compliant with, and their specific version and date.  
Reference to documents describing tests and evaluations and any other documents relied on for certification or used to prove compliance, including their full title, specific version and date.

1. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause B2 Durability Second edition (Amendment 12), 28 November 2019
2. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause F2 Hazardous building materials First edition (Amendment 3), 1 January 2017
3. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause G4 Ventilation Fourth edition, 27 June 2019
4. Compliance Document for New Zealand Building Code Clause G6 Airborne and Impact Sound First edition (Amendment 2), 1 December 1995
5. C/AS2 Acceptable Solution for Buildings other than Risk Group SH for New Zealand Building Code Clauses C1-C6 Protection from Fire First edition (Amendment 2), 5 November 2020
6. C/VM2 Verification Method: Framework for Fire Safety Design For New Zealand Building Code Clauses C1-C6 Protection from Fire (Amendment 6), 5 November 2020
7. Verification Methods E2/VM1 and Acceptable Solutions E2/AS1, E2/AS2 and E2/AS3 for New Zealand Building Code Clause E2 External Moisture Third edition (Amendment 10), 5 November 2020
8. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause E3 Internal Moisture Second edition (Amendment 7), 5 November 2020
9. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause B1 Structure First edition (Amendment 20), 29 November 2021
10. H1 Energy Efficiency, Acceptable Solution H1/AS1, Energy efficiency for all housing, and buildings up to 300 m<sup>2</sup>, Fifth edition (Amendment 1), 4 August 2022
11. H1 Energy Efficiency, Acceptable Solution H1/AS2, Energy efficiency for buildings greater than 300 m<sup>2</sup>, First edition (Amendment 1), 4 August 2022
12. H1 Energy Efficiency, Verification Method H1/VM1, Energy efficiency for all housing, and buildings up to 300 m<sup>2</sup>, Fifth edition (Amendment 1), 4 August 2022
13. H1 Energy Efficiency, Verification Method H1/VM2, Energy efficiency for all housing, and buildings greater than 300 m<sup>2</sup>, First edition (Amendment 1), 4 August 2022
14. NZS3602:2003 Timber and wood-based products for use in building
15. NZS3604:2011 Timber framed buildings
16. Engco Consulting Engineers Ref. 18609 B1 assessment (Amendment F), 13 July 2022
17. DANCERT Certificate no DVC 4894-G Certification of JSC "ETNA" compliance with the requirements of IGU 10-2016 Provisions certification according to EN 1279 - Insulated glazing units, 1-10-2019.
18. Declaration of Conformity UAB "ETNA" EN 1279-5 Insulating glass units to be used in buildings and construction works
19. Exova Certificate of Conformance of Performance 2358-CPR-086 Certifies glulam to EN 14080:2013



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20. Fraunhofer Institute for Wood Research Certificate of Factory Production Control 0765-CPR-778 21 January 2016 Certification of OSB 3 ECO to DIN EN 13986:2004
21. GEALAN statement of Titanium Dioxide Content, 24 February 2020
22. IFT Test report 12-002117-PR08 13 August 2013 Tests on Gealan uPVC Windows and Doors Model S 8000 IQ and S 8000 IQ plus to EN 12208 (and other tests)
23. IFT Test report 14-001246-PR19 2 April 2014 Tests on Gealan uPVC Door Model HST S9000 to EN 12208 (and other tests)
24. Irish Agrément Board Certificate No 07/0297 22 Pro Clima Intelligent Vapour Control and Airtight Systems Intello and Intello Plus, January 2015
25. Letter regarding effectiveness of timber preservatives, 24 May 2019
26. Modo Architects Reference 1905 H1 Energy Efficiency and G4 Ventilation of EMH Panel System, 1 July 2019
27. Oculus report Reference J190025 Opinion regarding control of external and internal moisture, 10 July 2019
28. Winstone Wallboards - Opinion regarding fire resistance and noise control (letter 13 February 2023)
29. Scion Test P21:2010 1200mm x 2.4m OSB Wall, 1 March 2019
30. Scion Test P21:2010 400mm x 2.4m OSB Wall, 1 March 2019
31. Scion Test P21:2010 600mm x 2.4m OSB Wall, 1 March 2019
32. Solitex Extasana Wall Underlay Codemark Certificate GM-CM30032-RevE, 12/10/2018
33. BRANZ Appraisal 876 Solitex Mento 1000 Roof Underlay
34. IFT Test report 1-002166 4 March 2013 Tests on Gealan uPVC Windows and Doors Model S9000 to EN 12208 (and other tests)
35. Installation Manual EMH Panel System V1.8, 13 March 2022
36. Design Manual EMH Panel System V2, 13 February 2023
37. Production Requirements EMH Panel System V2.3, 30 October 2022



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### SUPPORTING INFORMATION

#### 11 SUPPORTING INFORMATION ABOUT DESCRIPTION (OPTIONAL)

Any supporting information for section 3

The EMH system consists of prefabricated panels that incorporate window/door joinery and thermal insulation, wall or roof underlay, and an internal vapour control barrier. Wall, ceiling and floor panels are supplied with factory-fixed battens for fixing wall or ceiling lining. Exterior wall panels are supplied with factory-fixed cavity battens and weatherboard cladding. (Note: some weatherboards may be supplied loose-fitted not fixed, to facilitate on-site assembly of the panels). Wall panels that are fire-rated are supplied with plasterboard wall lining for on-site installation.

The following models are included:

- External wall (EW-1), (EW-2), (EW-3)
- External wall (fire rated) (FW-1), (FW-2) (both FRR two way 30/30/30)
- Internal non-load bearing wall (IW-2)
- Internal load bearing wall (IW-1))
- Ground (sub) Floor (GF-1)
- Ceiling panels (insulated (C-2) and not insulated (C-1))
- Floor/Ceiling Mid-floor panel (MF-1), (MF-2)
- Roof panels (insulated (R-2) and not insulated (R-1))
- Intertency Walls (II-FW) FRR two way 60/60/60, (EE-FW) FRR two way 30/30/30, (EI-FW) FRR two way 30/30/30
- Garage Wall External (GW-1) (GW-2), (GW3)

The following weatherboard claddings are included:

- Vertical shiplap (smooth or rough sawn)
- Rusticated horizontal weatherboard (smooth or rough sawn)
- Bevelback horizontal weatherboard (smooth or rough sawn)

The following window and door models are included:

- Gealan S8000 IQ and IQplus series windows and doors
- Gealan S9000 series windows and doors
- Gealan HST S9000 sliding door

For full panel specifications see the certificate holders Design Manual EMH Panel System V2, February 2023



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### 12 SUPPORTING INFORMATION ABOUT INTENDED USE (OPTIONAL)

Any supporting information for section 4

N/A

### 13 SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE (OPTIONAL)

Any supporting information for section 6

1. The design floor live load shall not exceed 1.5 kPa (i.e. domestic self-contained dwellings);
2. Loadbearing walls supporting roof and ceiling panels shall have studs aligned with the supported rafter or joist where possible. If this is not achieved then the loaded dimension of the wall shall be limited to 4.2m.
3. Loadbearing walls supporting floor panels shall have studs aligned with the floor joists where possible. If this is not achieved then a double top plate shall be provided
4. Standard junction details are provided in the EMH Production Requirements manual. Alternatives shall not be submitted without specific design by a Chartered Professional Engineer (Structural).



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