

Certificate no: CMNZ70056

Version: 4

Original issue date: 20 January 2020

Version date: 22 October 2024

1. Certificate Holder Details



Fletcher Concrete and Infrastructure Ltd
Firth Industries

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2. Product Certification Body

Bureau Veritas Australia Pty Ltd

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Complaints: The complaints process for this certificate can be found here:
www.bureauveritas.com.au/your-feedback

Sam Guindi – Bureau Veritas Product Certification Manager

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Firth Ribraft® Floor System



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3. Description of Building Method or Product

Name of the product or method in Aotearoa 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. Continuation of description can be found in item 10 – Supporting Information about Description. [Delete if not applicable]. 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

The Firth RibRaft® Floor System comprises of polystyrene or recycled plastic pods (Cleva Pods®) steel reinforcing rods, plastic spacers, optional insulation and Firth RibRaft® concrete.

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. Continuation of intended use can be found in item 11 – Supporting Information about Intended use. [Delete if not applicable]

The Firth RibRaft® Floor System is a method of concrete floor construction, suitable for all slab-on-ground concrete floors for domestic or residential buildings that fall within the scope of NZS 3604:2011 Timber framed buildings.

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 8. 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, q, m), B1.3.4

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

E2 External Moisture: E2.3.3, E2.3.7

F2 Hazardous Building Materials: F2.3.1

H1 Energy Efficiency: H1.3.1 (contributes to), H1.3.2E (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.

1. The Firth RibRaft® Floor System shall only be used in buildings which fall within the scope of NZS 3604:2011 – Timber-framed buildings, located:
 - a. Where the Seismic Hazard Factor Z (defined in NZS 1170.5:2004) is less than or equal to 0.45 (refer to Figure 6 of the Firth RibRaft® Technical Manual October 2024), and
 - b. in any wind zones up to and including Extra High, and
 - c. in areas with snow loads up to 2.0 kPa, and
 - d. in all exposure zones (except microclimates), and
 - e. and where the ground Ultimate Bearing Capacity exceeds the value specified in Table 2 for the types of construction in Table 1 of the Firth RibRaft® Technical Manual October 2024.
2. The Firth RibRaft® Floor System shall be designed and installed in accordance with the Firth RibRaft® Technical Manual October 2024.

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. 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 analysis and comparison with Acceptable Solution B1/VM1

B2 Durability – By analysis and comparison with Acceptable Solution B2/AS1 and Verification Method B2/VM1

E2 External moisture – By analysis and comparison with Acceptable Solution E2/AS1

H1 Energy efficiency - By analysis and comparison with Verification Method H1/VM1

F2 Hazardous building materials - By comparison with performance Clause F2.3.1



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9. 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 B1 Structure 1st Edition (Amendment 21), 2 November 2023
2. Acceptable Solutions and Verification Methods For New Zealand Building Code Clause B2 Durability (Amendment 12), 28 November 2019
3. Acceptable Solutions and Verification Methods For New Zealand Building Code Clause E2 External moisture 3rd edition (Amendment 10), 5 November 2020
4. H1 Energy Efficiency, Verification Method H1/VM1, Energy efficiency for all housing, and buildings up to 300 m², Fifth edition Amendment 1, 4 August 2022
5. Structural assessment by Holmes Consulting Firth Ribraft Concrete Floor System, May 2012
6. Assessment of the Proposed Updates Contained in the August 2024 Version of the RibRaft® Technical Manual, Cresco Group, August 2024
7. OPUS Report "Compliance of Firth of Ribraft System with NZBC Clause B2 Durability", 24 May 2010
8. Firth New H1 report 12 May 2022 & Firth - Brick edge Slab R-values, Sustainable Engineering, 20 May 2022
9. Firth RibRaft® Technical Manual, October 2024
10. NZS 3604:2011 Timber framed buildings

10. Supporting Information About Description (Optional)

Any supporting information for section 3.

The system consists of the following components:

- RibRaft® Polystyrene or recycled plastic pods (Cleva Pods®) 1100mm x 1100mm x 220mm. 300mm thick polypods are also available for deeper edge beams and internal ribs.
- Firth Pod and Reinforcement spacer or Cleva Pod® spacer (300mm and 100mm)
- Firth Reinforcement chair
- Reinforcement Grade 500E
- Mesh reinforcement
- Firth RibRaft® Concrete 20MPa or 25 MPa
- RibRaft HotEdge® Insulation, when specified.
- Sand Blinding
- DPM (250 micron polyethylene sheet)
- Underslab insulation when specified



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11. Supporting Information About Intended Use (Optional)

Any supporting information for section 4.

Further details regarding the use of the product can be found in Firth RibRaft® Technical Manual, October 2024.

12. Supporting Information About Conditions and Limitations of Use (Optional)

Any supporting information for section 6.

N/A

All CodeMark certificates that are current must be registered with MBIE. MBIE maintains a register of valid product certificates. [Please find the register here.](#)

If the certificate is not listed on this register or it appears as (SUSPENDED), it is not a valid CodeMark certificate and does not have to be accepted by a building consent authority as establishing compliance with the New Zealand Building Code.



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