



PRODUCT CERTIFICATE

Firth Ribraft® Floor System



BUREAU
VERITAS

CERTIFICATE NO: CM70056 Rev 3

Date of issue: 26 March 2021

KEY INFORMATION

1 CERTIFICATE HOLDER DETAILS
Fletcher Concrete and Infrastructure Ltd
T/A Firth Industries
810 Great South Road
Penrose, Auckland 1061

Info@firth.co.nz
Ph: 0800 800 576
www.firth.co.nz



2 PRODUCT CERTIFICATION BODY
Bureau Veritas Australia Pty Ltd
3/435 Williamstown Road
Port Melbourne VIC 3207
Australia

Ph: 1800 855 190
www.bureauveritas.com.au
Bureau Veritas Australia Pty Ltd
The complaints process for this certificate
can be found here:
www.bureauveritas.com.au/your-feedback

3 SUMMARY OF DESCRIPTION OF BUILDING METHOD OR PRODUCT
The Firth RibRaft® Floor System comprises of polystyrene pods, steel reinforcing rods, plastic spacers and Firth RibRaft® concrete.
*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
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.
Continuation of intended use can be found in item 8. Supporting Information about Intended use of Building Product or Method.

5 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).
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)
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.



This certificate is issued by an independent certification body accredited by JAS-ANZ, the product certification accreditation body appointed by the Chief Executive of the Ministry of Business, Innovation and Employment under the Building Act 2004. The Ministry does not in any way warrant, guarantee, or represent that the building method or product that is 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. The Ministry 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.

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CERTIFICATE V1.3



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Firth Ribraft® Floor System



6 CONDITIONS AND LIMITATIONS OF USE

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 NZ 1170.5:2004) is less than or equal to 0.45 (refer to Figure 6 of the Firth RibRaft® Technical Manual January 2020)
 - b) in any wind zones up to and including Extra High
 - c) in areas with snow loads up to 2.0 kPa
 - d) in all exposure zones (except microclimates)
 - 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 January 2020.
2. The Firth RibRaft® Floor System shall be designed and installed in accordance with the Firth RibRaft® Technical Manual January 2020.

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

7 HEALTH AND SAFETY INFORMATION

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

Sam Guindi
Product Certification Manager

For and on behalf of
Bureau Veritas Australia Pty Ltd

Dene Cook
Divisional Technical Manager

For and on behalf of
Firth Industries



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SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION

9 SUPPORTING INFORMATION ABOUT DESCRIPTION

The system consists of the following components:

- RibRaft® Polystyrene Pod 1100mm x 1100mm x 220mm. 300mm thick pods are also available for deeper edge beams and internal ribs.
- Firth Pod and Reinforcement spacer (300mm and 100mm)
- Firth Reinforcement chair
- Reinforcement Grade 500E
- Mesh reinforcement
- Firth RibRaft® Concrete 20MPa or 25 MPa
- Sand Blinding
- DPM (250 micron polyethylene sheet)

10 SUPPORTING INFORMATION ABOUT INTENDED USE

Further details regarding the use of the product can be found in Firth RibRaft® Technical Manual, January 2020.

11 SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE

N/A



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CERTIFICATE V1.3

12 BASIS FOR CERTIFICATION

- 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 Acceptable Solution H1/AS1
- F2 Hazardous building materials - By comparison with performance Clause F2.3.1

13 SUPPORTING DOCUMENTATION FOR CERTIFICATION

1. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause B1 Structure 1st Edition (Amendment 19), 28 November 2019
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 9), 27 June 2019
4. Structural assessment by Holmes Consulting Firth Ribraft Concrete Floor System, May 2012
5. OPUS Report "Compliance of Firth of Ribraft System with NZBC Clause B2 Durability", 24 May 2010
6. eCubed Building Workshop Report on R value of Ribraft Concrete Floor System, 17 September 2010
7. Firth RibRaft® Technical Manual, January 2020
8. NZS 3604:2011 Timber framed buildings
9. NZS 4214:2006 Methods of determining the total thermal resistance of parts of buildings

14 CONDITIONS RELATING TO NOTIFICATION

- (a) the certificate holder notifies the product certification body (Bureau Veritas) 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 (Bureau Veritas) 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 (Bureau Veritas) in writing of the reason for that suspicion:
- (d) if the certificate holder or the product certification body (Bureau Veritas) 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.