



# Building Product Information Sheet | Class 1

**Product Name:**

Firth RibRaft, RibRaft X-Pod, RibRaft TC2, RibRaft TC3

**Product Line:** Part of the Firth RibRaft concrete floor foundation range

**Product Description & its intended use (*measurements, materials, usage*):**

Firth RibRaft foundation systems have been developed to provide strong and stiff foundations for a variety of building forms but typically those within the scope of NZS3604. Firth RibRaft is suitable for use in good ground conditions. RibRaft TC2 and TC3 are predominantly used in sites prone to liquefactions where surface structures/shallow foundation solutions are appropriate (refer MBIE guidance for repairing and rebuilding houses affected by the Canterbury earthquakes). Firth RibRaft X-Pod is suitable for a variety of ground conditions including, good, liquefaction prone, and expansive soils. All require Specific Engineering Design unless the scope of the structure is entirely within that of the Code Marked RibRaft Technical Manual (Jan 2020). Building Product Warranty statements are available on the Firth website.

**Product Identifier:**

**Place of Manufacture:** Aotearoa New Zealand

**Legal & Trading name of Manufacturer(s):** Fletcher Concrete and Infrastructure Limited

**Address for Service:**

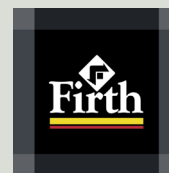
810 Great South Road  
Penrose  
Auckland

**Website:** <https://www.firth.co.nz>

**Email Address:** [info@firth.co.nz](mailto:info@firth.co.nz)

**Phone No.:** 0800 FIRTH 1 / 0800 347 841

**NZBN (If applicable):** N/A



### Relevant Building Code Clauses:

Firth RibRaft range is a concrete foundation system. To ensure compliance with the NZBC, design shall be conducted by suitably qualified persons familiar with a range of NZ Design Standards. In addition, construction shall be conducted by appropriately skilled persons in strict accordance with the designer's specification and Firth's product technical manuals.

With appropriate design, construction, and maintenance (see below), Firth RibRaft range can demonstrate compliance with:

- B1-Structure: Performance clauses B1.3.1 to B1.3.4
- B2- Durability: Performance clauses B2.3.1 and B2.3.2.
- E2- External moisture: Performance clauses E2.3.2 and E2.3.3
- F2- Hazardous materials: Performance clauses F2.3.1
- H1- Energy Efficiency H1.3.1 (a) and H1.3.2E

### Statement on how the building product is expected to contribute to compliance:

To ensure compliance with the NZBC, design shall be conducted by suitably qualified persons familiar with a range of NZ Design Standards. Geotechnical input is required to define the ground conditions of the proposed site. Construction shall be conducted by appropriately skilled persons in strict accordance the designer's specification, Firth's installation guide, and good trade practice.

Structure - B1: Compliance is achieved by the designer checking ground bearing capacities and structural member capacities in accordance with NZS3101. Refer separate Building Product information sheets for additional requirements where slab edge insulation is used. Where the scope of the structure is completely within the scope of the Firth Code Marked technical manual (Jan 2020), these checks can be conducted by following the process outlined in the manual.

Durability - B2: The concrete strength selected shall be as defined in the Firth Technical Manual which is the same as required in NZS3604. Concrete shall be Firth Certified Concrete.

External Moisture E2 - Vapour barriers (polythene) shall be provided below the flooring system. To provide moisture protection of the framing bottom plate, detailing shall be in accordance with E2/AS3.

Hazardous Building Materials - F2: Firth Certified Concrete® comply with the requirements of section F2.3.1 of the NZBCS.

Energy Efficiency- Compliance with the required R value is determined by calculations conducted in accordance with H1. Firth website provides a calculator to assist with these calculations.

### Limitations on the use of the building product:

The Firth RibRaft systems have been designed to be used with Firth Certified Ready mixed concrete. The ground conditions of the project shall be determined as suitable by geotechnical specialists. The system shall be subject to specific engineering design unless the scope is entirely within the scope of the Firth Code Marked Technical Manual (Jan 2020).



### **Design requirements that would support the use of the building product:**

Provided on the Firth Website is software to calculate the expected floor R value for a range of scenarios.

The Firth RibRaft Technical Manual provides additional information. Note the Manual dated Jan 2020 is Code Marked but excludes slab edge insulation while the August 2023 includes slab edge insulation and requires SED as it is currently not Code Marked.

The design of X-Pod floor systems for a range of ground conditions can be conducted using Wafflesuite. This software program is the property of Cresco NZ Ltd but supplied courtesy of Firth industries with access through the Firth website.

### **Installation requirements:**

Firth RibRaft can be a specifically designed element so installation shall be in accordance with the designer's specifications and details. Installation information is also provided in Firth RibRaft technical manual, X-Pod installation guide, Best Practice guide (for steel fibre floors TC2 and TC3) (refer Firth website).

### **Maintenance Requirements:**

Firth RibRaft shall be maintained by annual inspection and cleaning as necessary.

The landscaping shall allow for large trees to be kept sufficiently away from the edge of the slab. As a guide, trees should be as far away from the edge of the slab as they are tall when fully grown. The building owner shall ensure that the ground surrounding the system be maintained so that the integrity of the system is not jeopardised. At no time shall the ground immediately adjacent to the system be allowed to settle away to expose the underside of the slab.

### **Is the building product/building product line subject to warning or ban under section 26?**

Yes  No

**If yes, description of warning or ban under section 26:** N/A

**Date:** 08/11/23