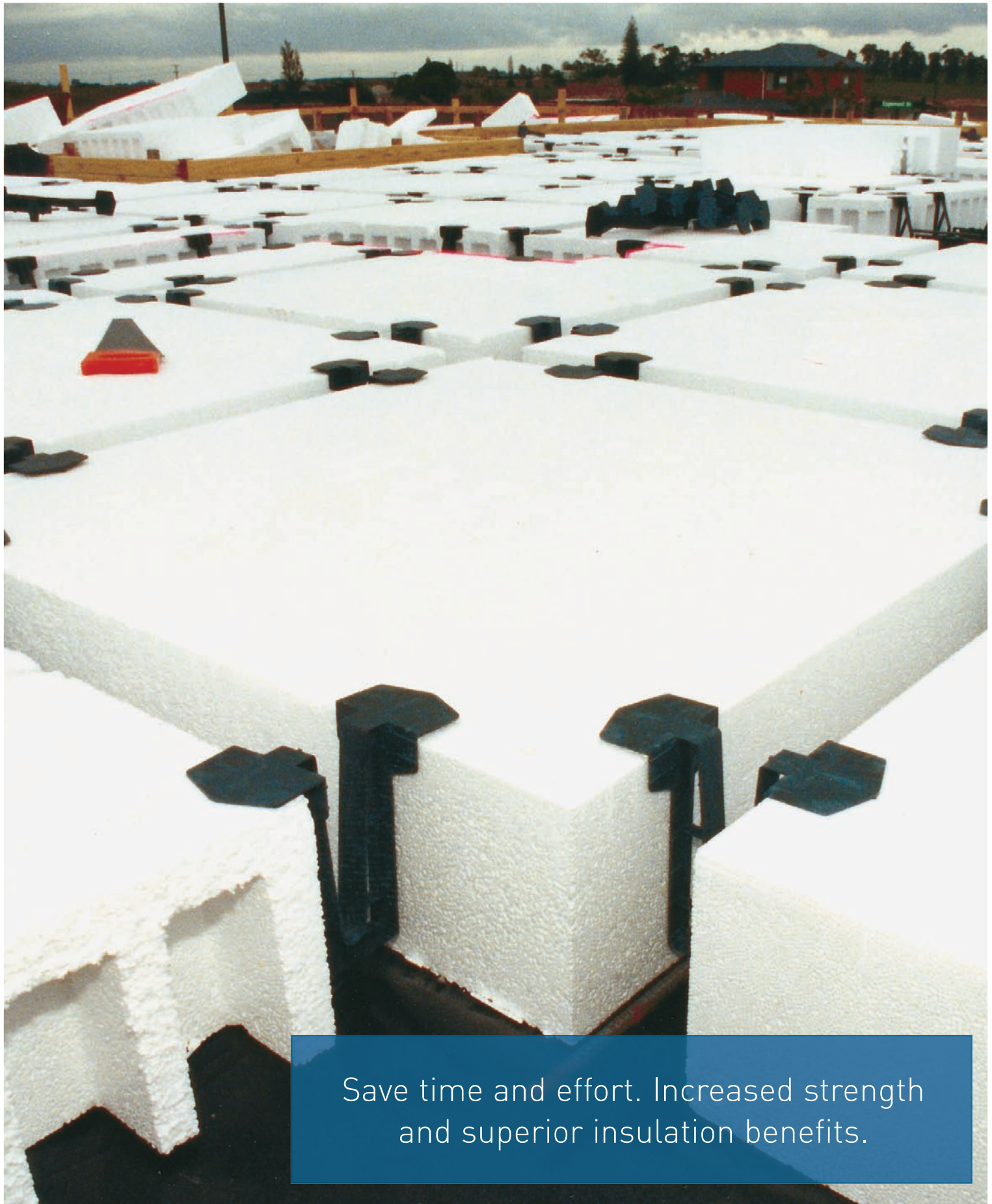


FLOORING SOLUTIONS



Save time and effort. Increased strength
and superior insulation benefits.

The Firth RibRaft® system is one of New Zealand's fastest growing residential and light commercial flooring solutions. The RibRaft® system is an innovative method of concrete floor construction, offering an insulated floor with a quick, practical and efficient construction method. It provides high strength and durability as well as saving time. The



system uses polystyrene pods, steel reinforcing rods, plastic spacers and RaftMix™ concrete. Each of the components simply fit together, dramatically reducing labour and time. Compared to traditional flooring construction RibRaft® offers a number of significant benefits:

Time Savings

With the RibRaft® system the need to dig trenches for footings is eliminated allowing substantial reductions in time and labour. The need for extra sub-trades is also eliminated. With construction occurring above ground and the components not affected by rain, work can often continue even during wet weather.

Energy Efficiency

The insulation benefits (R value) of the RibRaft® floor provides excellent thermal efficiency. Also where in-floor heating is used the polystyrene pods ensure that the ratio of R_{IN} to R_{OUT} is less than the maximum required value of 0.1.

Increased Strength

The raft design offers significantly increased strength and resistance to cracking allowing the system to be built on soils with a minimum bearing pressure of 50kPa. A reinforced concrete perimeter beam and reinforced concrete ribs over the floor area, results in a slab of immense strength.

Reduced Spoil

As the floor is 'on ground' not 'in ground' the amount of excavated material on your construction site is greatly reduced.

To obtain a Firth RIBRAFT® floor

Make decision to use RibRaft®

- RibRaft® specified by architect/designer.
- Change of design from traditional floor.

Design

- Follow the RibRaft® Technical Manual or for specific design consult an engineer.

Provide council with plans for their approval

Building consent approved

- Installation undertaken by a specialist RibRaft® installer. Contact Firth Information Service for a list of installers in your area. The installer will order all materials and arrange for full construction.
- Own installation. Contact Firth Information Service or your local RibRaft® distributor to order materials and for detailed installation advice.

The Installation Process



STEP ONE

Cut building platform to level surface approximately 330mm below finished floor level. Council to inspect site before slab construction commences.



STEP TWO

Place a layer of sand, up to 50mm thick over the entire building area, extending 1m outside the perimeter. Shear key piles will be constructed at this stage if necessary.*



STEP THREE

Lay damp proof membrane (minimum thickness of 0.25mm) over the entire building platform at least to slab edge. Cut around and tape securely to plumbing pipes and laps. Set up formwork for slab perimeter and rebate if required.



STEP FOUR

Place Firth RibRaft® pods in a grid pattern (1200mm centres) as per your RibRaft® layout plan. Position pods with relevant spacers i.e. Firth 300mm spacers for edge beams and internal load bearing ribs; Firth 100mm spacers for standard internal ribs. The pods can be cut to accommodate the size and shape of the house and allow for load bearing walls.



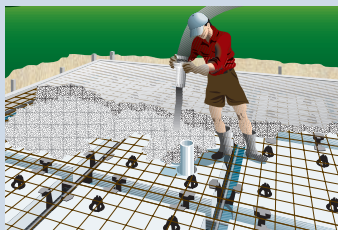
STEP FIVE

Place reinforcing bars in edge beams and ribs being careful to ensure the steel is positioned in the lugs provided in the spacers. Lap all reinforcing steel as required and tie all corner steel laps. If required at this stage the plumbing can be installed and inspected as necessary.



STEP SIX

Place reinforcing mesh to mesh chairs on top of the pods. Ensure 50mm cover to edge formwork. Lap and tie mesh. Tie reinforcing bar to perimeter mesh. Re-entrant corners need additional shrinkage control steel tied to top of mesh.



STEP SEVEN

Pour Firth RaftMix™ concrete, taking care to ensure that the pods remain in place. For convenience it is easiest to use a concrete pump. It is desirable to pour some concrete over the pods before placing in the ribs. Concrete thickness above the pods is 85mm. Vibrate concrete, finish surface and ensure adequate curing takes place.

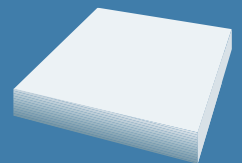
NOTE: The installation process described above is as per the Firth RibRaft® Floor System Manual. Different installation techniques may be required for designs that fall outside the scope of this Manual.

* Some regions throughout New Zealand require the use of shear key piles, refer to RibRaft® Floor System Manual. This manual is available from www.firth.co.nz or by phoning 0800 800 576.

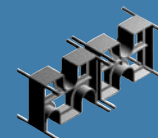
COMPONENTS AVAILABLE FROM FIRTH



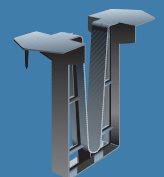
Polystyrene Shear Key Support
345mm x 100mm



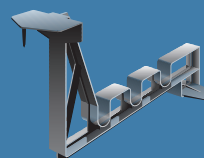
Firth RibRaft® Pod
220mm & 300mm depth



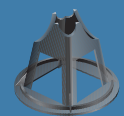
200mm Spacer



100mm Spacer

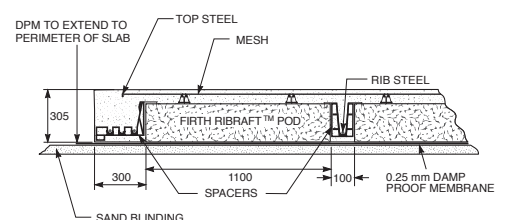
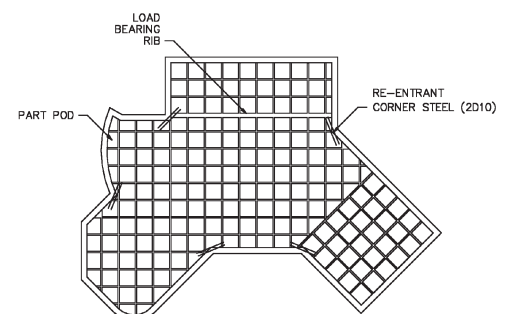


300mm Spacer



Mesh Chair

SAMPLE FLOOR DESIGN





SUSTAINABILITY: THE FIRTH CONCRETE & CONCRETE MASONRY SUSTAINABILITY LIFECYCLE

- ✓ Environmentally compliant manufacturing plants
- ✓ Surplus water and some aggregates recycled
- ✓ Low transport impacts
- ✓ Leftover concrete returned from construction sites
- ✓ Passive solar heated thermal mass makes completed buildings more energy-efficient

- ✓ Most wash water returned from construction sites
- ✓ Highly durable, low maintenance buildings and no rot
- ✓ High degree of noise control
- ✓ Inherent fire resistance
- ✓ Overall longer effective building life
- ✓ Demolished concrete can be recycled as hard fill or aggregate

For more on Firth's contribution to building a sustainable tomorrow today, visit www.firth.co.nz or call us on 0800 800 576 for our free brochure.



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