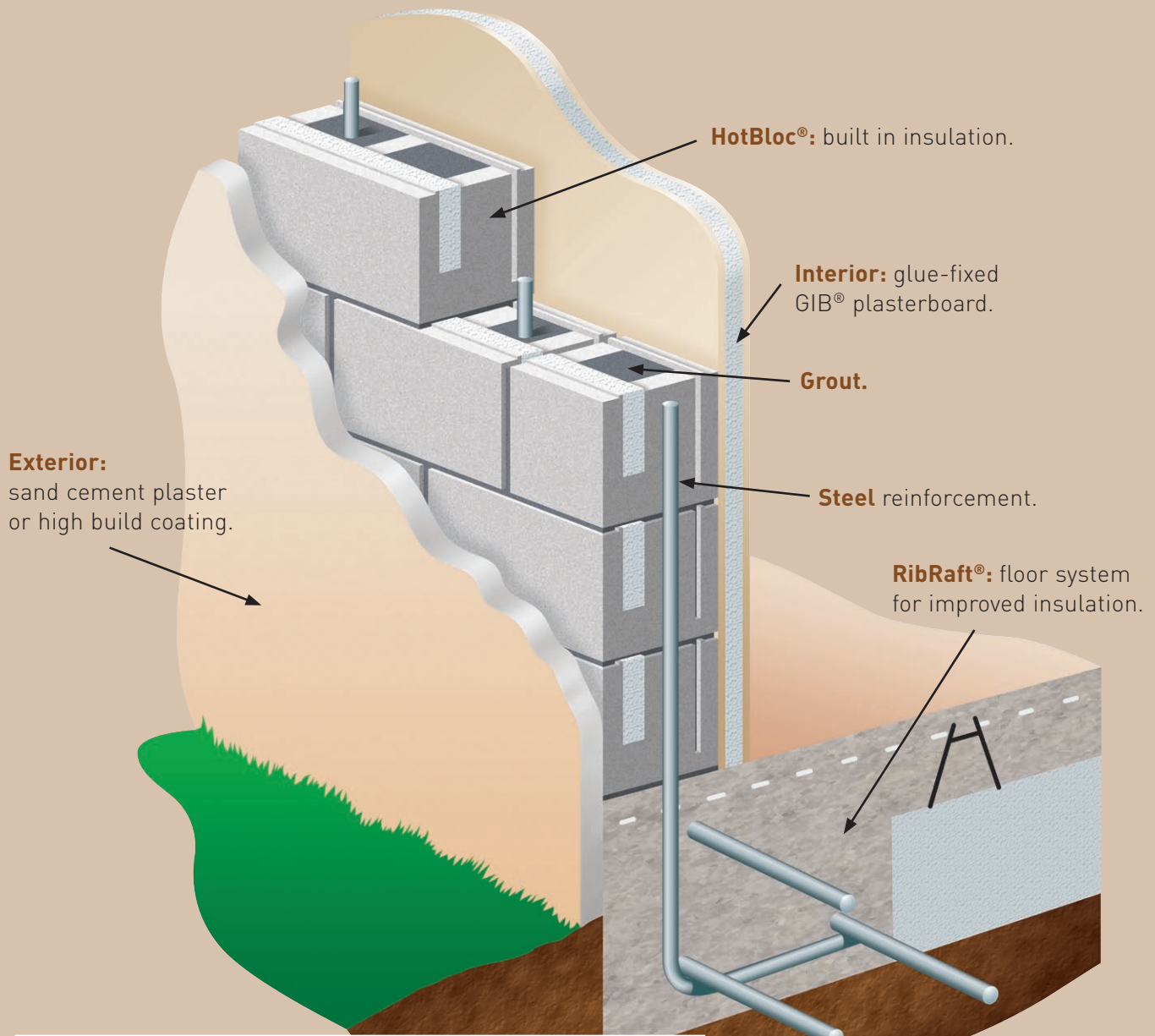




# ENERGY EFFICIENT MASONRY CONSTRUCTION

The easy solution to the new Clause H1 Table 2(b) Insulation Code



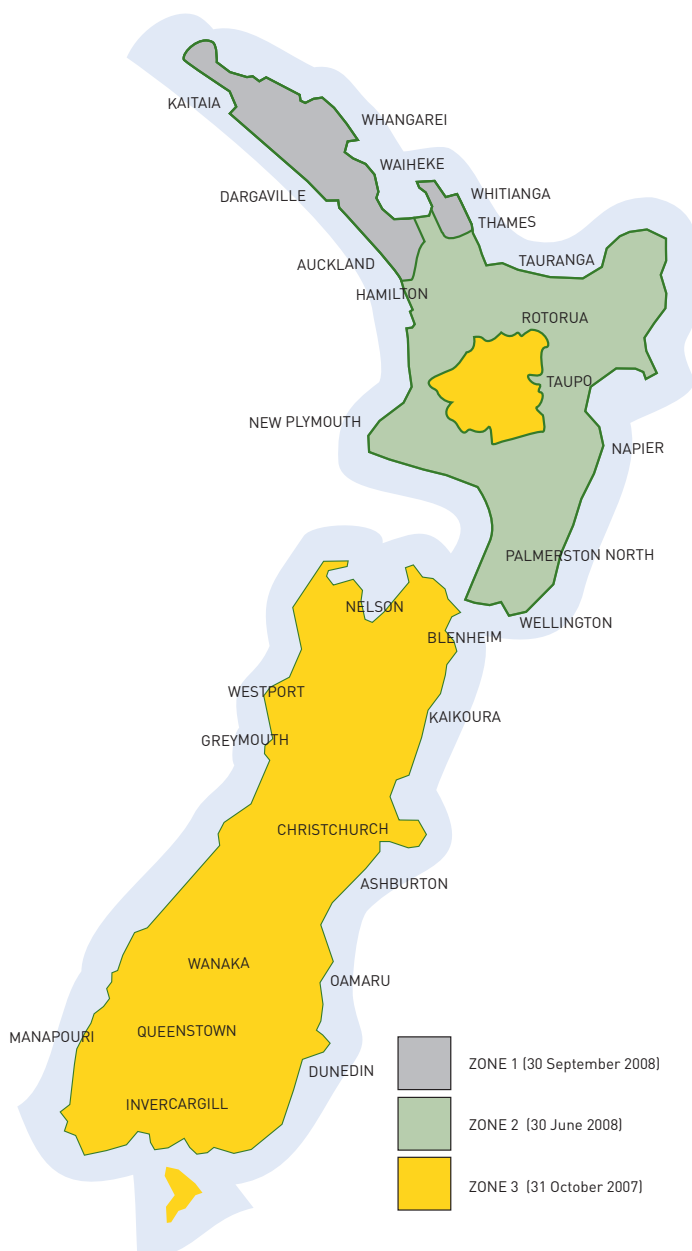
IT'S GETTING HARDER TO MEET  
THE NEW STANDARDS FOR  
BUILDING THERMAL INSULATION.

So you should receive this warmly...

## After many years, NZ's thermal insulation standards are changing

On 17th August 2007, the Department of Building and Housing announced major changes to Clause H1 (Energy Efficiency) in the Building Code. This is the first change covering solid wall insulation in Zones 1 and 2 for 30 years, or 11 years in the case of Zone 3.

The new thermal insulation standards are applied nationally, with differing R-value requirements specified over Climate Zones 1, 2 and 3 (ref. NZS 4218:2004). The first wave of changes becomes effective from 31st October 2007, with two further rounds coming into effect from 30th June and 30th September 2008 respectively.



## The big shift - the benefit of thermal mass is only recognised if it is available to the interior

The new R-values required for masonry recognise the energy and comfort benefits of thermal storage capability of solid construction. However, for these benefits to be realised the mass must not be isolated from the interior by insulation (replacement Table 2(b) Note 11). This means that much higher R-values will be required if a strap, insulate and line solution is used.

As a result, from 31st October it will become harder to specify and implement a cost-effective, practical and aesthetically pleasing solution that delivers the required R-values for thermal mass masonry construction. This initially applies to Zone 3 – covering the South Island.

## There is only one efficient, cost-effective and innovative answer that complies – absolutely!

**Firth HotBloc®**  
**+** **Firth RibRaft®**  
**=** **Clause H1**  
**Table 2 (b) Compliance**

Firth HotBloc® solid masonry and Firth RibRaft® floors are recognised as industry-leading products from New Zealand's only national concrete masonry company, a leader in both design and technical innovation.

Firth HotBloc® provides both thermal mass\* and an integrated insulation component in one product. Use of HotBloc® solid masonry in solid-filled external walls forms part of the building's exterior envelope. In combination with the Firth RibRaft® insulated concrete floor system, Firth HotBloc® delivers the necessary R-values without the need for any specialist wall insulation.

So together, Firth HotBloc® and Firth RibRaft® provide you with the cost-effective and energy-efficient thermal mass solution that answers all the requirements outlined in Clause H1 of the new Building Code.

Problem solved in one!

\* Refer to NZ Building Code compliance document NZS4218:2004 'Energy efficiency – housing and small building envelope' revised by the Department of Building and Housing Clause H1 Energy Efficiency – Third Edition, Table 2 (b) effective 31st October 2007

## Choosing the right solution made easy!

To make it even easier and faster for you to know which combination of Firth HotBloc® masonry and Firth RibRaft® insulated concrete floors will meet the required insulation standards across each of the 3

Climate Zones, we've prepared a simple time-phased selector guide below. These charts also clarify the exact requirements defined in each of the successive implementation stages.

### Stage 1 - effective From 31st October 2007

Climate Zones	Minimum R-values (m <sup>2</sup> °C/W)					Firth HotBloc® + Concrete Floor Solution
	Roof	Wall	Floor	Glazing (vertical)	Glazing (skylights)	
<b>Zone 1</b>	3.0	0.6	1.3	0.15	-	Minimum of 20 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 2</b>	3.0	0.6	1.3	0.15	-	Minimum of 20 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 3 Option 3(a)</b>	3.5	1.2	1.5	0.26	0.31	Minimum of 25 Series HotBloc® walls with 10mm GIB® plasterboard and exterior plaster + <b>**RibRaft® floor</b>
<b>Zone 3 Option 3(b)</b>	3.5	1.0	1.3	0.31	0.31	Minimum of 25 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab

\*\* RibRaft® floors to be no less than 80m<sup>2</sup> as a square. If not square, area to perimeter ratio must be greater than 2.3

### Stage 2 - effective From 30th June 2008

Climate Zones	Minimum R-values (m <sup>2</sup> °C/W)					Firth HotBloc® + Concrete Floor Solution
	Roof	Wall	Floor	Glazing (vertical)	Glazing (skylights)	
<b>Zone 1</b>	3.0	0.6	1.3	0.15	-	Minimum of 20 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 2 Option 2(a)</b>	3.5	1.0	1.5	0.26	0.26	Minimum of 25 Series HotBloc® walls + <b>**RibRaft® floor</b>
<b>Zone 2 Option 2(b)</b>	3.5	0.9	1.3	0.31	0.31	Minimum of 25 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 3 Option 3(a)</b>	3.5	1.2	1.5	0.26	0.31	Minimum of 25 Series HotBloc® walls with 10mm GIB® plasterboard and exterior plaster + <b>**RibRaft® floor</b>
<b>Zone 3 Option 3(b)</b>	3.5	1.0	1.3	0.31	0.31	Minimum of 25 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab

\*\* RibRaft® floors to be no less than 80m<sup>2</sup> as a square. If not square, area to perimeter ratio must be greater than 2.3

## Stage 3 - effective From 30th September 2008

Climate Zones	Minimum R-values (m <sup>2</sup> °C/W)					Firth HotBloc® + Concrete Floor Solution
	Roof	Wall	Floor	Glazing (vertical)	Glazing (skylights)	
<b>Zone 1 Option 1(a)</b>	3.5	0.8	1.5	0.26	0.26	Minimum of 25 Series HotBloc® + <b>**RibRaft® floor</b>
<b>Zone 1 Option 1(b)</b>	3.5	0.8	1.3	0.31	0.31	Minimum of 25 Series HotBloc® + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 2 Option 2(a)</b>	3.5	1.0	1.5	0.26	0.26	Minimum of 25 Series HotBloc® walls + <b>**RibRaft® floor</b>
<b>Zone 2 Option 2(b)</b>	3.5	0.9	1.3	0.31	0.31	Minimum of 25 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab
<b>Zone 3 Option 3(a)</b>	3.5	1.2	1.5	0.26	0.31	Minimum of 25 Series HotBloc® walls with 10mm GIB® plasterboard and exterior plaster + <b>**RibRaft® floor</b>
<b>Zone 3 Option 3(b)</b>	3.5	1.0	1.3	0.31	0.31	Minimum of 25 Series HotBloc® walls + RibRaft® floor <b>or</b> concrete floor slab

\*\* RibRaft® floors to be no less than 80m<sup>2</sup> as a square. If not square, area to perimeter ratio must be greater than 2.3.

## More information?

You'll find more information on Firth HotBloc® and Firth RibRaft® at [www.firth.co.nz](http://www.firth.co.nz). Or if you'd like to ask any questions specifically relating to the new thermal

insulation standards and Firth's integrated solutions, please call us on 0800 800 576.

## 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](http://www.firth.co.nz) or call us on 0800 800 576 for our free brochure.



0800 800 576  
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