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...

Exterior:
sand cement plaster or high build coating (optional).

Interior:
glue-fixed GIB® plasterboard (optional).

Grout.

HotBloc®: built in insulation.

Steel reinforcement.

RibRaft®: floor system for improved insulation.
In August 2007, the Department of Building and Housing announced major changes to Clause H1 (Energy Efficiency) of the Building Code. This is the first national change covering solid wall insulation in 30 years.

The thermal insulation standards are applied nationally, with differing R-value requirements specified over Climate Zones 1, 2 and 3 [ref. NZS 4218:2009]. The first wave of changes became effective in October 2007, with the final round coming into effect in September 2008.

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

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 (H1 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.

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!

Firth HotBloc® provides all the structural benefits of a normal masonry block with the added advantage of built-in insulation. Building with HotBloc removes the need for additional insulation - providing the added design flexibility of a solid plastered finish both inside and out.

- a dual function solution
- the easy solution to Clause H1 in the Building Code

- same dimensions as a 25 Series block, and structurally equivalent to a 15 Series block
- Firth 25 Series HotBloc can be used in all seismic zones when used with schedule method under Clause H1 of the Building Code
- Firth 20 Series HotBloc can be used when designed with the calculation method under Clause H1 of the Building Code

**HotBloc® 20 Series**

- Hot-H04 Thermal Half High
- Hot-08 Thermal Sill (projecting) (flush available in Auckland only)
- Hot-09 Thermal Rebate Whole
- Hot-11 Thermal Rebate Half
- Hot-45 Thermal Header
- Hot-STD Thermal Whole, Knock-In Bond Beam
- Hot-CNR (L and R) Thermal Plain Ends and Corners
- Hot-Half Thermal Lintel and Half-End Closer

**HotBloc® 25 Series**

- Hot-08 Thermal Sill (flush)
- HotH25-04 Thermal Half High
- Hot-08 + HotH25-04 Sill Option to achieve 190 height
- Hot25-09 Thermal Rebate Whole
- Hot25-11 Thermal Rebate Half
- Hot25-14 Thermal Whole, Knock-in Bond Beam
- Hot25-15 (L and R) Thermal Plain Ends and Corners
- Hot25-12 Thermal Lintel and Half-End Closer
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.

Effective from 30th September 2008

<table>
<thead>
<tr>
<th>Climate Zones</th>
<th>Minimum R-values (m² °C/W)</th>
<th>Firth HotBloc® + Concrete Floor Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Roof</td>
<td>Wall</td>
</tr>
<tr>
<td>Zone 1 Option 1(a)</td>
<td>3.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Zone 1 Option 1(b)</td>
<td>3.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Zone 2 Option 2(a)</td>
<td>3.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Zone 2 Option 2(b)</td>
<td>3.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Zone 3 Option 3(a)</td>
<td>3.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Zone 3 Option 3(b)</td>
<td>3.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

** RibRaft® floors to be no less than 80m² as a square. If not square, area to perimeter ratio must be greater than 2.3.

More information?

You will find more information on Firth HotBloc® and Firth RibRaft® at 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.

CONCRETE AND MASONRY PRODUCTS: A SUSTAINABLE BUILDING OPTION AND SOLUTION

- Manufacturing plants operating in compliance with relevant legislation
- All products manufactured according to ISO9001
- Strong focus on reducing transport impacts
- Masonry products manufactured according to Lean principles
- Greenstar and environmental product options available
- Environmental Management Plans operative at all sites
- Effective acoustic barrier and fire resistant
- Longer and effective building life
- Demolished concrete can be recycled, reused or as clean fill
- Passive solar heated thermal mass provides energy efficiencies
- Highly durable, low maintenance
- Rainwater and process water reused in most products

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.