The InsulLiving® message.

InsulLiving® has the Answers.

**Quicker**
- Faster Build Times – up to 34% quicker than traditional building methods.
- Lock up in 10 days; once slab is ready.
- Better Cash Flow – builder receives payment sooner.
- Increase house builds per builder per year.
- Quick supply from local manufacturing facilities in all states.
- Turn unskilled labour into capable installers within weeks.

**Leaner**
- Lower construction costs – walling and roofing 50% less on a sq. mtr basis
- Less components and materials than traditional homes.
- Reduced reliance on trades.
- Shorter supply chain.
- Fewer deliveries and decreased logistical issues.
- Ongoing energy savings over the life of the house.

**Smarter**
- Smart InsulWall® walling system – replacing frames, brick, plasterboard, insulation.
- Smart SolarSpan® roofing system – replacing trusses, roof sheets, ceiling, insulation.
- Panels interlock easily to form a complete thermally efficient shell.
- Fully engineered, certified and compliant with the Building Code of Australia.
- Simplified and improved building process.
- Product development from credible Australian companies Bondor, BlueScope, Dulux Acratex.

**Greener**
- Significantly exceeds current Energy Ratings.
- Reduced environmental impact in manufacture, delivery, build and residency.
- Achieve Zero & Positive Energy housing communities.
- Fully reusable, recyclable and non-toxic building materials.
Complying with the increasing thermal and structural requirements of the Building Code of Australia has meant builders are continually adding more and more components to the build, often resulting in more trades, deliveries and greater complexity in both design and building tasks.

Bondor® has been providing thermal building solutions for over 50 years and has developed a smarter residential building system that meets structural and thermal standards whilst simplifying the construction process. This results in a quicker build time with benefits for the builder, the home owner and the environment.

The InsulLiving® building system comprises InsulWall® and SolarSpan® roofing. This smarter innovative residential building system offers a simpler, quicker and more affordable building alternative.

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The InsulLiving® message

“Australian builders and developers deserve a building system that is simple, quick and affordable.”

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The InsulLiving® message

InsulLiving’s perfect ending

The Designer

The Developer

The Builder

The Home Owner

The InsulLiving® System

InsulWall® specification

SolarSpan® specification

About Bondor®

The InsulLiving® edge
InsulWall’s specially coated BlueScope steel shell provides a flat surface, ready for rendering externally and painting or tiling internally, showcasing InsuLiving’s potential for a perfectly flush finish.

SolarSpan® insulated roofing offers designers and builders long spanning wide open spaces, pre-finished with an attractive pre-painted ceiling along with a modern palette of Colorbond® roof colours.

InsulWall® and SolarSpan® combined, form a complete thermal shell to protect the home from cold or hot weather and offer a new level of sustainable and energy efficient housing.
InsulLiving’s perfect finish.

“Achieve a modern design finish with speed and affordability.”
The InsulLiving® system offers residential designers and architects the chance to be more energy and environmentally conscious. Its flat steel panel shell enables ease of rendering externally and painting internally, resulting in a house that looks like any other modern house in the street.

The secrets of Bondor’s panel design and associated cost savings through construction and beyond, are ‘hidden’ from view but are enjoyed by the home owner and resident for the life of the home.

Australian homes have been designed and built basically the same way for many years. The need to protect our environment and to conserve energy has become the catalyst for revolutionary change. InsulLiving® is the next step towards zero energy housing offering a designer friendly system that is Quicker, Leaner, Smarter and Greener.

Some of the benefits to the designer include:

- The freedom to design homes without limitations, and the opportunity to create significant construction cost savings by using the modular benefits of panel.
- The ability to design homes that are much quicker to build yet more suitable to Australian climatic conditions and life styles.
- The development of a more energy conscious and environmentally friendly community.
- Modern roof lines with long spans and open spaces that allow for dramatic design statements.
- A fully insulated building shell with a single (panel) product.
- A proven product that already meets Australian building standards and is ahead of the required star ratings.
Developers are under pressure from Government regulations and changing market trends to develop sustainable energy efficient communities. The InsuLiving® system was developed with a vision for our sustainable future and offers significant scope for developers to build a living community that will change with the needs of its members.

Forward thinking Developers are looking for a means to satisfy growing demand for sustainable living and to get ahead of the curve of developing market demand. InsuLiving® provides a break through vehicle for Developers, it is simply Quicker, Leaner, Smarter and Greener.

The Developer.

Some of the benefits to the developer include:

- InsuLiving’s capability to build large scale sustainable communities.
- A 50% reduction in building materials resulting in fewer transport journeys and a reduced carbon footprint during construction.
- Improved insulation and energy efficiency resulting in a lower carbon footprint and environmental impact over the life of the dwelling.
- A simpler, reduced construction process leading to more responsible use of scarce skills and resources and the opportunity to provide meaningful work for less skilled workers.
- Modern flexible design options for home differentiation.
- The modular nature of an InsuLiving® home means they can be tailored to fit with the life journey of the community members i.e. starting simply when finances are tight and growing with a family through the addition of new modules. Finally modularity means that downsizing, deconstruction and recycling are easily catered for.
The most dramatic benefits of the InsulLiving® system are achieved by the Builder. In this case, the entire house shell is erected without any framing, brickwork or plasterboard.

The panels do the work of all these components, and they are erected by relatively unskilled labour. The finished house will look as good as any other traditionally built house in the street but it is constructed in a fraction of the time and with significantly less material.

The astute builder will be able to satisfy the growing market for sustainable residential building and save money as he constructs homes to meet our climatic conditions, and needs of the future.

It is time for a change to how Australian homes are built and the InsulLiving® system offers the opportunity for the progressive builder to meet these changing requirements with an efficient and effective system that still meets the aesthetic standards of the community. An InsulLiving® home is a beautiful home, costing far less to build, in much less time, and with ongoing savings to the home owner and resident. Simply it is Quicker, Leaner, Smarter, Greener – Everyone wins.

The InsulLiving® Builder will enjoy the following benefits:

- Quicker build time – 34% faster than traditional, with ‘lock up’ for the average home to be easily achieved within 10 days from the slab being ready.
- Obviously quicker build leads to improved cash flow and the ability to more quickly meet the housing demand.
- The InsulLiving® system comprises a very limited number of components with the panel acting as structural member, insulation, internal and external cladding.
- Fewer trades to be coordinated, means a simplified building process.
- Significant savings in material costs – estimated 50% less material than the traditional approach.
- The opportunity to differentiate and build a home that meets Australia’s future housing needs.
- Access to Bondo’s fully engineered system assisting the council approval and certification process.

### The InsulLiving® System “Achieves More. With Less.”

<table>
<thead>
<tr>
<th>Traditional build – 8 steps</th>
<th>InsulLiving® build – 4 steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Steel / timber wall framing</td>
<td>1 Base channel, InsulWall®, top roof Channel</td>
</tr>
<tr>
<td>2 Roof trusses (steel or timber) truss roof</td>
<td>2 Services – electrical/plumbing</td>
</tr>
<tr>
<td>3 Services – electrician / plumber</td>
<td>3 Lay roof, insulation, ceiling at once with SolarSpan® roof panels</td>
</tr>
<tr>
<td>4 Roof – tiles, metal sheeting</td>
<td>4 Render exterior, finish interior as normal</td>
</tr>
<tr>
<td>5 Battens, ceiling, insulation</td>
<td></td>
</tr>
<tr>
<td>6 Brick / clad external</td>
<td></td>
</tr>
<tr>
<td>7 Sheet interior with plasterboard</td>
<td></td>
</tr>
<tr>
<td>8 Render exterior &amp; finish interior</td>
<td></td>
</tr>
</tbody>
</table>
The needs of the Australian home owner are also changing. They want a home to their design, but also want to be environmentally friendly and cost conscious. That means considering time to build, as well as energy and ongoing maintenance costs. The InsulLiving® system addresses all the needs of today’s environmentally conscious home owner, providing freedom of design, reduced cost and build time and savings in energy for the life of the home.

Building with insulated panels is the future for residential accommodation in Australia. The Bondor InsulLiving® system comes fully engineered and tested and the benefits are clear through the entire building supply chain. House construction as we know it is about to change and the InsulLiving® system is at the forefront of this revolution. The system is Quicker, Leaner, Smarter and Greener.

The benefits to the home owner:

- Freedom to design the home they want to live in.
- Quicker build time – 34% faster than traditional builds means earlier occupancy.
- Thermal efficiency to result in ongoing significant energy savings.
- Acoustic benefits with the insulated panels acting to ‘dampen’ outside noise.
- No chance of structural damage due to termite infestation.
- Easy maintenance and the modular system makes it simple to complete additions whilst maintaining the overall aesthetics and integrity of the home.
- High ceilings provided by the SolarSpan® insulated roofing system resulting in the wide open appearance of all rooms.

Reduce Energy Bills by Up To 50%

InsulLiving’s 8-Star Carbon Emissions Saving (Tonnes / Year)

<table>
<thead>
<tr>
<th>CLIMATE ZONE</th>
<th>CO2, SAVED (TONNES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darwin</td>
<td></td>
</tr>
<tr>
<td>Brisbane</td>
<td></td>
</tr>
<tr>
<td>Perth</td>
<td></td>
</tr>
<tr>
<td>Adelaide</td>
<td></td>
</tr>
<tr>
<td>Sydney</td>
<td></td>
</tr>
<tr>
<td>Melbourne</td>
<td></td>
</tr>
<tr>
<td>Hobart</td>
<td></td>
</tr>
<tr>
<td>Canberra</td>
<td></td>
</tr>
</tbody>
</table>

- All new homes in Australia must have a minimum 6-star energy rating, most homes built before energy ratings were introduced in 2003 are 2 stars or less.
- The InsulLiving® system combined with sympathetic design allows us to go beyond the minimum 6-star rating and achieve 8-star housing.
- Studies have shown that for each 1 star improvement in energy star rating a 3% increase in selling price can be achieved. For example: A $400,000 house moving from 6 to 8 star gains $24,000.

Note: Additional Carbon Savings achieved from InsulLiving’s 8-star rating over 6-star.
The InsulLiving® System.

“A fully engineered, BCA compliant Building System that is lightweight, straight forward and green.”

InsulWall®

InsulWall® by Bondor® is a complete walling system combining insulation between two steel skins to form a structural and load bearing panel. InsulWall® panels lock easily together, and when coupled with SolarSpan® roofing, they form a fully insulated, structural shell. InsulWall® is produced using innovative steel, exclusively made by BlueScope, which allows the direct rendering on the outside, and painting on the inside, without costly and time consuming additional layers.
The InsulLiving® Difference

Bondor’s InsulLiving® System combines not only lightweight and strong insulated roofing and walling but also residential specific floor and roof channels as well as bracing options offering builders and designers a fully engineered, BCA compliant building system that is acceptable even in cyclonic regions and purpose designed for use in Australia.

SolarSpan®

SolarSpan® by Bondor® combines roofing, insulation and ceiling in one durable, functional and attractive panel. It is up to 50% faster to install than conventional roofing including trusses and insulation. Large spans are achievable, reducing the need for support structures and enabling spacious living areas.

It offers an attractive smooth ceiling without the need for plastering or painting and superior thermal performance when compared to a traditional roofing system and maintains its insulating integrity for the life of the home.
InsulWall® specification.

**Panel Specifications**

<table>
<thead>
<tr>
<th>WIDTH</th>
<th>THICKNESS</th>
<th>STEEL THICKNESS</th>
<th>CORE MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200mm</td>
<td>90 &amp; 140mm</td>
<td>0.6mm (standard)</td>
<td>Standard core EPS SI grade, other core types available</td>
</tr>
</tbody>
</table>

**Panel External Coating**

External coating will be strictly to the guidelines as per DuSpec Specification Sheet (Exterior) (issue 2 dated 19/01/2010) using Dulux AcraTex Coventry Coarse for InsulWall® by Bondor.

**Panel Internal Coating**

Internal coating will be strictly to the guidelines as per DuSpec Specification Sheet (Interior) (issue 2 dated 19/01/2010) Dulux Acratex Wash and Wear 101 Advanced L/G for broad wall and Dulux Acratex Wash and Wear Kitchen and Bathroom L/G for wet areas to InsulWall® by Bondor.

**Technical Data**

<table>
<thead>
<tr>
<th>PANEL THICKNESS (MM)</th>
<th>90</th>
<th>140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass (kg/m²)</td>
<td>11.8</td>
<td>12.5</td>
</tr>
<tr>
<td>U value (W/m²K)</td>
<td>0.43</td>
<td>0.27</td>
</tr>
<tr>
<td>R value (m²K/W)</td>
<td>2.35</td>
<td>3.69</td>
</tr>
</tbody>
</table>

**Wind Loading**

**Non-Cyclonic**

<table>
<thead>
<tr>
<th>WIND CLASS</th>
<th>140MM THICK EXTERNAL WALL – MAXIMUM WALL HEIGHT / SPAN (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2</td>
<td>5.4</td>
</tr>
<tr>
<td>N3</td>
<td>4.2</td>
</tr>
<tr>
<td>N4</td>
<td>3.6</td>
</tr>
</tbody>
</table>

**Cyclonic**

<table>
<thead>
<tr>
<th>WIND CLASS</th>
<th>140MM THICK EXTERNAL WALL – MAXIMUM WALL HEIGHT / SPAN (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>3.6</td>
</tr>
<tr>
<td>C2</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Note: For engineering assumption and criteria refer to Bondor® technical support.

**Early Fire Hazard Properties**

AS1530.3 Indices

<table>
<thead>
<tr>
<th></th>
<th>Ignitability</th>
<th>Spread of Flame</th>
<th>Heat Evolved</th>
<th>Smoke</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2–3</td>
</tr>
</tbody>
</table>

**Acoustic Properties**

Rw value for InsulWall® is 24–25.

Refer Bondor® for your specific application.
### Technical Data

<table>
<thead>
<tr>
<th>PANEL THICKNESS (MM)</th>
<th>60</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight kg/m²</td>
<td>10.58</td>
<td>10.94</td>
<td>11.30</td>
<td>11.64</td>
<td>11.98</td>
</tr>
<tr>
<td>R value at 8°C (m²K/W)</td>
<td>1.6</td>
<td>2.3</td>
<td>2.9</td>
<td>3.6</td>
<td>4.2</td>
</tr>
<tr>
<td>R value at 20°C (m²K/W)</td>
<td>1.6</td>
<td>2.2</td>
<td>2.8</td>
<td>3.5</td>
<td>4.1</td>
</tr>
</tbody>
</table>

### Early Fire Hazard Properties

**AS1530.3 1989**

<table>
<thead>
<tr>
<th>INDEX</th>
<th>TEST RANGE</th>
<th>EXTERNAL TOP SKIN</th>
<th>EXPOSED CORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignitability</td>
<td>0 – 20</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Spread of Flame</td>
<td>0 – 10</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Heat Evolved</td>
<td>0 – 10</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Smoke</td>
<td>0 – 10</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

### Wind Loading

<table>
<thead>
<tr>
<th>WIND CLASS</th>
<th>100mm</th>
<th>125mm</th>
<th>150mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Span</td>
<td>Multi-Span</td>
<td>Single Span</td>
</tr>
<tr>
<td>N2</td>
<td>5.1</td>
<td>6.0</td>
<td>5.7</td>
</tr>
<tr>
<td>N3</td>
<td>3.9</td>
<td>4.8</td>
<td>4.5</td>
</tr>
<tr>
<td>N4</td>
<td>3.3</td>
<td>3.3</td>
<td>3.6</td>
</tr>
<tr>
<td>C1</td>
<td>3.3</td>
<td>2.7</td>
<td>3.6</td>
</tr>
<tr>
<td>C2</td>
<td>2.7</td>
<td>2.1</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Note: For engineering assumption and criteria refer to Bondor® technical support.
Bondor® is Australia’s leader in complete thermal building solutions and lightweight architectural panels and façade systems and has been so since the 1950’s.

Because Bondor® has been an integral part of the Australian building industry for over 50 years we have a depth of knowledge about Australian conditions, building techniques and regulations. Our experience covers manufacturing, design and installation on lightweight panel systems supported by our in-house technical support and engineering team.

Construction of the InsulLiving® Project House (built on the Sunshine Coast in 2011) confirms our confidence in the InsulLiving® system. The InsulLiving® home was designed as a positive energy home that reduces the demand for heating and cooling and returns power back to the grid.

The Bondor® Advantage:

• Manufacturing operations within easy reach with sites in Queensland, New South Wales, Victoria, Tasmania, South Australia and Western Australia.

• The biggest range of insulating core options including Expanded Polystyrene (EPS), Polyisocyanurate (PIR), and Mineral Wool, to suit every application.

• A reputation and experience that was first developed through the supply and installation of temperature controlled buildings.

• The pioneer in the development of residential insulated roofing products, leading the Australian market for over 20 years.

• Continued industry leadership with the development of the InsulLiving® system for residential house construction.

• A commitment to research and development through an in-house team of engineers and technical support staff as well as close relationships with Australian universities and research establishments.

• A service offer that includes strong back up, engineering and technical support.

• The tenacity to develop and improve our products for example the development of the breakthrough InsulLiving® system in partnership with BlueScope and Dulux Acratex over a period of about 5 years.

SolarSpan® and InsulWall® is readily available, with Bondor® manufacturing and distribution facilities across Australia.

The InsulLiving® Life Cycle.

Bondor’s sustainable future for Australia.
The InsulLiving® edge.

“It’s time for a change in the way houses are built in Australia.”

- Bondor® has developed the InsulLiving® system to address the changing times and needs.
- InsulLiving® offers advantages to Designers, Developers, Builders, Home Owners and Communities.
- InsulLiving® houses are as beautiful as any modern house in the street.
- InsulLiving® homes offer a more comfortable living environment in all climatic conditions.

For more details contact your local Bondor® office.
The manufacturer reserves the right to change the specification without notice. SolarSpan® is a trademark of Metecno Pty Limited. COLORBOND® and colour names are trademarks of BlueScope Steel. Check against actual COLORBOND® sample as printed colours may not be accurate.