Stronger. Straighter. Greener.

The Premier Advantage
Let’s face it, in the building industry, it all comes down to one thing: performance.

That’s why Premier SIPs are the best choice. When considering energy-efficient framing options, our SIPs allow you to save time, energy, environmental resources and—everyone’s favorite—money, all while offering one of the highest performing building envelopes available today.
About Insulfoam’s Premier SIPS
Insulfoam has been manufacturing Premier SIPS since 1968, and is the nation’s largest SIPS manufacturer. We provide technical, marketing, sales and logistics services to customers throughout North America. Over the years, no other company has done more SIPS testing than Insulfoam, as evidenced by our extensive code reports and technical bulletins.

Unlike most SIP manufacturers, Insulfoam is a division of one of the largest construction material companies in the nation, Carlisle Companies, Inc., offering you the peace of mind that our SIPS are backed by a stable, publicly-traded company.

What SIPS Are

Premier SIPS consist of an insulating, expanded polystyrene (EPS) foam core laminated between two sheets of oriented strand board (OSB) using a structural adhesive. This engineered system provides an extremely strong building panel that needs no additional frame or skeleton for support. Premier’s large, pre-fabricated SIPS make the framing process faster than other building methods and enable a more airtight, well-insulated building for high energy efficiency.
Building with Tomorrow’s Standards—Today

When it comes to energy efficiency requirements, virtually all local, state and federal building departments have set aggressive requirements to help lessen energy consumption and carbon footprints of homes and commercial/public buildings. In many cases, such standards become increasingly stringent year-by-year, with the eventual target of net-zero energy consumption.

Premier SIPs are rigorously tested to meet and exceed building code standards and energy efficiency requirements, helping them achieve some of the highest insulation/R-values (and load capacities) in the SIPs industry.

With Premier SIPs as the foundation, the targeted performance measures below can be achieved today, providing immediate energy efficiency savings (up to 60%) over traditional construction. So why wait?

SIPS are the foundation for any level of energy efficiency TODAY!
When comparing Premier SIPS to conventional framing, ask yourself, “What type of backing do I receive when building with stick-frame construction?”

Chances are, when comparing warranties to conventional framing, you won’t find much. With Premier SIPS, we offer a limited 20-year warranty* for a building owner’s peace of mind.

*Premier SIPS warranty application forms must be completed to qualify for extended warranty.

While other SIP manufacturers may offer a similar warranty, Insulfoam’s Premier SIPS have the backing of one of the largest publicly traded building material companies in the nation, Carlisle Companies, Inc. Warranties, and the assurance they provide, are only as good as the company behind them.

Once you’ve chosen a SIP product that outperforms traditional stick construction, rest assured that with Premier SIPS, you will have the support of the most experienced technical department in the SIP industry. Couple that with a knowledgeable regional sales force and distribution network and you can be confident we will be there to provide assistance should you have the need.

Other features to consider when comparing Premier SIPS to stick framing:

**Stronger.** According to independent third party testing, Premier SIPS are stronger, providing you with a durable home or building.

- Premier SIPS have been subjected to independent third party laboratory tests to demonstrate the superior strength characteristics of our SIP panels providing you with a strong durable structure.
• Capable of spanning up to 20 feet without trusses, ideal for cathedral and vaulted ceilings
• Continuous OSB sheathing allows building owners the option to hang shelves and pictures virtually anywhere
• Insect & mold resistant from application of non-toxic, environmentally-sound EPS additive & OSB topical treatments

**Straighter.** Don’t settle for the imperfections of lumber. With Premier SIPS, you are getting an engineered product that is consistent and without the warps, twists and cupping of common dimensional lumber.

• Engineered and prefabricated product is straight and predictable
• Reduced callbacks, warps, twists and cupping as dimensional lumber dries are virtually eliminated
• Solid drywall backing and factory pre-cut doorways, windows, walls, floors and archways mean faster finish work

**Greener.** Energy efficient: with “green-washing” rampant, the right question is, “does the product perform?” Premier SIPS do!

• Up to 60% more energy efficient than 2x6 R19 construction*, and factory cut SIPS dramatically reduce jobsite waste over stick-frame construction
• SIPS create a tighter envelope (blower door tests down to .05 ACH), significantly reducing air infiltration and outside pollutants, creating exceptional indoor air quality (IAQ) and a healthier environment
• Ideal product for green certifications, including LEED, National Green Building Standard, Energy Star, Building America, and qualifies for federal & regional energy tax credits
• While other foam cores off gas over time, reducing product R-value, EPS maintains its R-value and energy performance

*USDOE Oak Ridge National Laboratory (ORNL) Independent Study

**Insect & Mold Resistant**

Using a non-toxic, naturally mined mineral, the InsulFoam® EPS insulation used in Premier SIPS has been proven to not support the growth of three types of common building molds and through extensive research and testing, Insulfoam has developed an effective, non-toxic additive that will deter insects in the InsulFoam® EPS core. Additional topical treatments are available to assist in water proofing efforts for wet climates.
“SIPs are so significant to airtight construction that Energy Star has waived the requirement for blower door tests for SIP construction across the U.S.”

Energy Star for Homes, U.S. Environmental Protection Agency
Before you start comparing numbers, you need to determine the true energy efficiency of your building envelope. A building’s energy efficiency is more than just an insulation’s tested R-value. The whole-wall R-value is a more accurate measurement of real-world performance compared to the insulation’s R-value alone. Many studies show a building’s airtightness has more of an impact on energy efficiency than the R-value of the materials themselves. In fact, air leakage is responsible for 40% of heat/cooling loss (wasted energy).

**Airtightness in SIPS vs Stick Framed Construction**

In a study by the Department of Energy’s Oak Ridge National Laboratory, two identical test rooms were built side by side. One stick-framed, one SIP-framed. Rooms were tested for air infiltration and the SIP room was FIFTEEN times more airtight, and more energy efficient than the stick-framed room. This alone illustrates how critical airtightness is to a building’s energy efficiency. The science behind air infiltration in framing products explains the key types of air movements and their effect on energy efficiency.
Air Transfer

Air leaks through joints in sheathing and the inevitable gaps between lumber connections and between wood framing and the insulation. SIPs dramatically reduce air transfer within walls and roofs by minimizing these joints and by providing solid, continuous insulation across each panel’s height, width and depth.

SIPs can be manufactured up to 8’x24’ without joints in the OSB, whereas typical stick-frame sheathing is typically only 4’ wide. Air can also leak through electrical and plumbing holes that are drilled in lumber studs.

Airtightness

The airtightness of a SIPs home has been repeatedly confirmed with blower door tests. In fact, Energy Star does not require a blower door test for SIPs homes to earn the Energy Star rating.

Convective Looping

As warm air rises and cold air sinks in a conventionally framed wall cavity, a natural phenomenon called thermal or convective looping occurs, wasting valuable energy. Unless the insulation is a solid material to stop this air movement, it doesn’t matter what the insulation’s R-value is. What good is insulation if heat-carrying air can flow through it and the cavities in the wall? SIPs’ solid insulation core helps eliminate this.
Thermal Bridging

Thermal bridging occurs where there is a continuous element (such as studs within traditionally framed walls, and stud-to-siding connections) between the cold and warm faces of a wall. These wood elements form a bridge between the inside and outside that can allow heat or cold to pass through by conduction. Simply installing R-19 batt insulation in a stick wall doesn’t mean the whole wall will have a R-19 R-value because there is still a significant amount of thermal bridging in traditionally framed stick walls.

Stick-framed buildings rely on lumber at regular intervals to provide structural support. 15-25% of the shell of a stick-framed home is lumber, compared to as little as 3% in the shell of a typical SIP framed home.

Whole Wall R-value (Energy Efficiency)

When all of these factors are considered, it makes sense that the ORNL’s whole wall R-Value tests showed the following R-values for SIP versus stick-framed buildings:

<table>
<thead>
<tr>
<th>Build Components</th>
<th>R-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x6 stick wall with R-19 fiberglass and studs at 24” o.c.</td>
<td>R-13.7</td>
</tr>
<tr>
<td>2x4 stick wall with R-13 fiberglass and studs at 16” o.c.</td>
<td>R-9.6</td>
</tr>
</tbody>
</table>

SIPs maintained their stated R-value in whole wall testing:

<table>
<thead>
<tr>
<th>Core Thickness</th>
<th>SIPs R-Value @ 75°</th>
<th>SIPs R-Value @ 40°</th>
<th>SIPs R-Value @ 25°</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1/2”</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>5-1/2”</td>
<td>23</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>7-1/4”</td>
<td>30</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>9-1/4”</td>
<td>37</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>11-1/4”</td>
<td>45</td>
<td>49</td>
<td>51</td>
</tr>
</tbody>
</table>
Out of nine net-zero energy test houses in the U.S., five are made from SIPS. These five houses are the closest available to net-zero energy construction.

Oakridge Independent National Laboratories
You’ve heard the “Green” buzzwords (sustainable, recycle, rapidly renewable, low carbon). Try to focus on a product’s actual performance and energy efficiency, rather than these popular terms. Insulfoam’s Premier’s SIPs help reduce energy consumption, lower construction waste, support healthier indoor air quality and create a more comfortable living and working environment. The clear advantage of building with Premier SIPs is a stronger, advanced construction product with fewer impacts on the environment.

Conserving Natural Resources

Premier SIPs make efficient use of raw materials:

- **OSB (Oriented Strand Board)** – OSB is the primary skin type used in Premier SIPs. The strand nature of OSB allows it to be produced from small-diameter trees which are harvested earlier in the growing cycle, allowing for faster cycles of tree replenishment. The production process for OSB is highly automated so the yield of finished product is exceptionally high.
**The heating and cooling energy savings provided by EPS insulation can return up to 200 times the amount of energy required to produce it and reduce emissions by up to 100 times the volume produced during the manufacturing process.**

- **Insulating Foam** – The InsulFoam® expanded polystyrene (EPS) that is sandwiched between the two OSB skins is manufactured using heat and steam, and contains no chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) or formaldehyde—and unlike other foams is 100% recyclable.

- **Mastic** – Premier SIPs uses a NO VOC mastic to seal the joints between panels and lumber connections. The NO VOC mastic helps reduce emissions.

**Why is Green Building Important (and Why Are SIPs important)?**

Buildings account for 39% of the total U.S. energy consumption and 38% of carbon dioxide emissions. Green buildings use less energy, reduce carbon dioxide and pollutants in the environment and play an important role in reducing the burden on the world’s natural resources.

Choosing to construct buildings that use natural resources more efficiently can help create a sustainable future. Legislators and governments recognize this and are mandating new energy-efficient building codes, so building green is no longer an option in many places.

There are economic benefits as well, since energy-efficient buildings cost less to operate and can cost less to construct. Efficient structures can also create a healthy indoor environment, and studies have shown that buildings with healthier indoor air quality can actually improve employee, student and occupant productivity.
Energy Certifications

Premier SIPS have been incorporated in buildings receiving green ratings under the following certified programs:

**LEED Certified**

A LEED project validates environmental achievement and provides verification toward federal, state and local government incentives. The rating system is offered for both residential and commercial projects and SIPS offer a significant amount of points towards the certification process. An overview follows* (full details are available by request).

<table>
<thead>
<tr>
<th>LEED for Homes</th>
<th>Up to 34 Points for Using PBS SIPS</th>
<th>LEED for New Construction (Commercial)</th>
<th>Up to 30 Points for Using PBS SIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>90-136 Points</td>
<td>Platinum</td>
<td>80+ Points</td>
</tr>
<tr>
<td>Gold</td>
<td>75-89 Points</td>
<td>Gold</td>
<td>60-79 Points</td>
</tr>
<tr>
<td>Silver</td>
<td>60-74 Points</td>
<td>Silver</td>
<td>50-59 Points</td>
</tr>
<tr>
<td>Certified</td>
<td>45-59 Points</td>
<td>Certified</td>
<td>40-49 Points</td>
</tr>
</tbody>
</table>

**National Green Building Standard**

Developed by the NAHB and the ICC, the ICC-700-2008 National Green Building Standard is ANSI approved and is the basis for many other green building codes and guidelines in development. SIPS can help enable builders and homeowners to qualify for the highest levels of points within the program. Full program and point details are available by request*.

<table>
<thead>
<tr>
<th>ICC &amp; NAHB Green</th>
<th>Up to 205 Points Possible for Using PBS SIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerald</td>
<td>697 Points</td>
</tr>
<tr>
<td>Gold</td>
<td>558 Points</td>
</tr>
<tr>
<td>Silver</td>
<td>406 Points</td>
</tr>
<tr>
<td>Bronze</td>
<td>222 Points</td>
</tr>
</tbody>
</table>

*Points calculated as of August 2010
Energy Star Certified

Using SIPs can cut energy consumption by as much as 60%, making SIP homes Energy Star Certified. Energy Star homes:

- Save homeowners money on utility bills
- Typically have higher appraised value
- Qualify for energy-efficient mortgages and tax credits
- Are usually more durable and comfortable than standard homes

Builder’s Challenge

Developed by the Building America division of the U.S. Department of Energy, this program is dedicated to research and practices towards zero-energy construction. This rating program’s scale is based on the popular HERS (Home Energy Rating System) index – a metric used by Energy Star and the Residential Energy Services Network (RESNET). SIPs give builders an advantage in meeting this challenge.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Can Premier SIPs Qualify?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum R-14 wall insulation</td>
<td>YES - Exceed this</td>
</tr>
<tr>
<td>Minimum R-40 roof insulation</td>
<td>YES - Exceed this</td>
</tr>
<tr>
<td>Whole house air infiltration lower than 5 ACH50</td>
<td>YES - Exceed this</td>
</tr>
<tr>
<td>Air barrier &amp; insulation integrity inspection</td>
<td>YES</td>
</tr>
</tbody>
</table>

(A complete SIP envelope eliminates many of the concerts for gaps in cavity insulation materials.)

Under the American Clean Energy and Security Act (ACES) of 2009, the DOE is required to establish codes that achieve 30% improved savings on energy in 2011 (over the 2006 IECC Index), and 50% energy savings by 2014 for all new homes. Many states require even higher energy savings. SIPs-framed structures are already achieving up to 60% energy savings, and are the perfect enabler for those trying to achieve even greater savings. Why wait?
Energy Efficient Loans

Special mortgages allow debt-to-income ratios to be stretched (up to 2%) when purchasing an energy-efficient home. Lenders are finally acknowledging the value of reduced energy bills when it comes to the total cost of owning a home, and some are now willing to offer higher loan amounts knowing that monthly payments can be more than offset by reduced utility rates. The following table* illustrates this point:

<table>
<thead>
<tr>
<th></th>
<th>Non-Energy Efficient Home</th>
<th>SIP Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost to Build</strong></td>
<td>$250,000</td>
<td>$260,000</td>
</tr>
<tr>
<td><strong>Down Payment</strong></td>
<td>$50,000</td>
<td>$52,000</td>
</tr>
<tr>
<td><strong>Interest</strong></td>
<td>5.5%</td>
<td>5.5%</td>
</tr>
<tr>
<td><strong>Monthly Payment</strong></td>
<td>$1136</td>
<td>$1153</td>
</tr>
<tr>
<td><strong>Average Monthly Utility Payment (power/gas)</strong></td>
<td>$150</td>
<td>$90</td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>$1289</td>
<td>$1243</td>
</tr>
<tr>
<td><strong>Monthly Savings</strong></td>
<td>$0</td>
<td>$40</td>
</tr>
</tbody>
</table>

Even with higher monthly mortgage payments, the owner of the SIP home can have reduced living expenses every month.

*This information is for illustrative purposes only, and individual circumstances will vary.
The ABC’s of Working with SIPS
Whether you are an architect, a builder, or an end customer, you will enjoy the advantages that come from building with structural insulated panels.

**Architect’s Advantages**

- Endless design resources including: specifications, drafters to panelize your plans and a staffed technical center for SIPs conversion assistance
- Ideal for residential and light commercial applications
- High design values for wind loads, snow loads, and seismic activity
- Premier SIPs make it easy to achieve green certifications by improving energy efficiency up to 60%
- Keeps designers on the cutting edge of technology

“Working with the panels proved very easy from a design standpoint. We were able to translate my concepts from drawing to structure without sacrifice.”

Glen Aasland, Architect – Vail Associates, Colorado
• The benefits of building with an engineered product rather than the unpredictable characteristics of dimensional lumber
• Structures may not require a roof truss system, making SIPs ideal for extra living space & cathedral ceilings
• Factory-controlled manufacturing for precision and accuracy

**Builder Benefits**

• Programmed delivery and faster framing installation with jumbo pre-cut roof, wall and floor panels
• Consistent and predictable engineered product
• Stronger than traditional lumber framing
• Reduced callbacks and warranty claims
• Up to 60% less jobsite construction waste
• Reduced HVAC system costs
• Fewer trades to coordinate
• Can help contractors qualify for valuable tax credits
• Premier SIPs are a true differentiator when it comes to quality construction

“Premier SIPs arrive on site pre-cut, install very fast with less framing waste. They have a higher insulating value than conventional insulation. Premier has made the transition from conventional framing to SIPs easy.”

Chuck Walker, KB Homes Project Superintendent, Sacramento, CA
“It only costs an average of $200 to $300 a year to heat one of my Premier homes. That’s anywhere from one-fifth to one-sixth the typical costs for this region, so the savings are pretty significant and the homeowners love that.”

Scott Bergford, President of Scott Homes

Customer Comforts

- Reduces temperature gradient when moving from floor to floor, making for a more comfortable environment
- Wall construction with Premier SIPS reduce ambient noise
- Warmer in the winter, and cooler in the summer
- Reduced heating/cooling bills by up to 60%
- Superior indoor air quality, with reduced infiltration of outside pollutants, may benefit individuals with respiratory ailments
- Stronger than traditional framing methods to protect against mother nature
- Peace of mind through a sound warranty
- In most instances, Premier SIP homes have a higher resale value
- May help homeowners qualify for federal and regional tax credits
Exceptional Design & Construction Support

A dedicated support team is available to help you every step of the way. Insulfoam and its distribution network is ready to help you convert from your current building practices to SIPs. In the office or in the field, our construction support is why our clients come back to us year after year.

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