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EFFICIENT BUILDING SOLUTIONS

STRUCTURAL INSULATED PANELS

Stronger. Straighter. Greener.

ROOFS • WALLS • FLOORS • RESIDENTIAL • COMMERCIAL

# The Premier Advantage


CANADIAN DISTRIBUTOR OF PREMIER SIPS

STRUCTURAL INSULATED PANELS

BY INSULFOAM A CARLISLE Company

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# About Insulfoam's Premier SIPs

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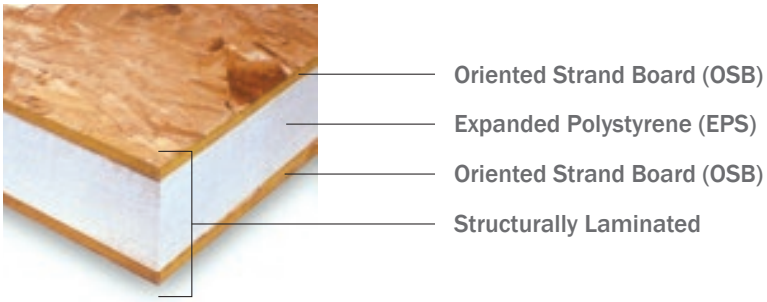
Insulfoam has been manufacturing Premier SIPs since 1968, and is the nation's largest SIPs manufacturer. West-Eco has been chosen as a Canadian Distributor, and provides technical, marketing, sales and logistics services to customers throughout Canada. Over the years, no other company has done more SIPs 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, provincial 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?

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# The Premier SIPs Difference

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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.

A CARLISLE Company

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
- 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.

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# The Science Behind Premier SIPs

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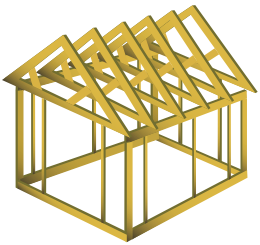
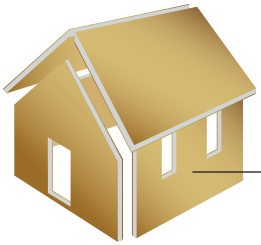
Before you start comparing numbers, you need to determine the true energy efficiency of your building envelope. A building's energy efficiency is more than just an insulation's tested R-value. The whole-wall R-value is a more accurate measurement of real-world performance compared to the insulation's 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.



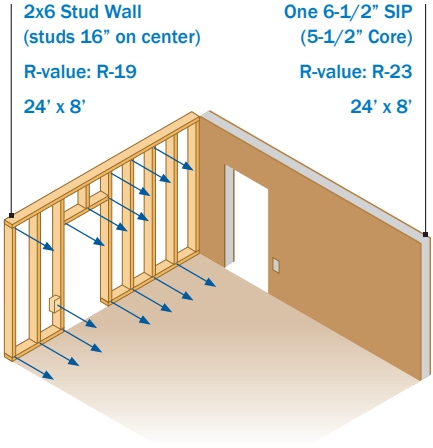
Stick Framed Home




SIPs Home

## 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.



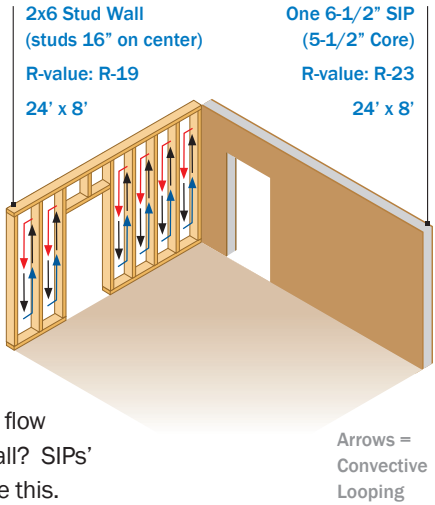

SIPs can be manufactured up to 8'x24' without joints in the OSB, whereas typical stick-frame sheathing is typically only 4' wide. Air can also leak through electrical and plumbing holes that are drilled in lumber studs.

## 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

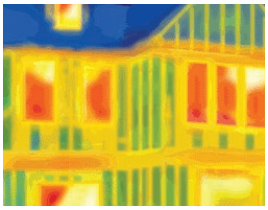
As warm air rises and cold air sinks in a conventionally framed wall cavity, a natural phenomenon called thermal or convective looping occurs, wasting valuable energy. Unless the insulation is a solid material to stop this air movement, it doesn't matter what the insulation's R-value is. What good is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

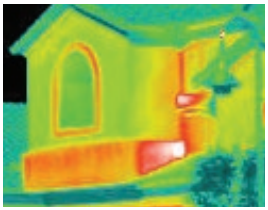


## Thermal Bridging

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.





Top: stick walls transfer heat through studs (indicated in yellow)

Bottom: SIPs dramatically reduce Thermal Bridging in walls as shown with solid green walls

## 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:

| Build Components | R-Value |
|---|---|
| 2x6 stick wall with R-19 fiberglass and studs at 24" o.c. | R-13.7 |
| 2x4 stick wall with R-13 fiberglass and studs at 16" o.c. | R-9.6 |

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

| Core Thickness | SIPs R-Value @ 24˚C | SIPs R-Value @ 4˚C | SIPs R-Value @ -4˚C |
|---|---|---|---|
| 3-1/2" | 15 | 16 | 17 |
| 5-1/2" | 23 | 25 | 26 |
| 7-1/4" | 30 | 32 | 33 |
| 9-1/4" | 37 | 40 | 42 |
| 11-1/4" | 45 | 49 | 51 |

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# How Green Are Premier SIPs?

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*"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.

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# The ABC's of Working with SIPs

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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.

### DISTRIBUTED IN CANADA BY

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