

STRUCTURAL INSULATED PANELS



Type A

Wall and Roof
Building Panels
for Residential,
Commercial and
Light Industrial
Construction



porterSIPS™
structural insulated panels

www.portersips.com

Let the SIP Revolution Begin

Don't let the simple appearance of a SIP panel fool you. Despite their low-key looks, SIP panels are revolutionizing the building process in a number



of ways. With SIP construction, homes and commercial buildings are built more quickly, simply, cost effectively, and with a marked improvement in energy efficiency.

Structural Insulated Panels (SIPs) are thick blocks of rigid foam sandwiched between two sheets of 7/16" Oriented Strand Board (OSB) with an industrial adhesive, forming one incredibly solid structural member. SIP panels replace conventional stud/insulation/sheeting ("stick") construction without compromising any elements of building design. The possibilities for energy efficiency, design, and long-term cost savings are opened wide with this innovative building system. It's no wonder that SIP construction has become increasingly competitive with traditional building techniques, and one of the fastest growing segments of the residential building industry.

ENVIRONMENTALLY FRIENDLY

Besides providing excellent structural integrity, working with SIPs also

ensures a high level of environmental sustainability. The finished product will have used fewer materials than a conventionally built home, require less energy to maintain, emit less pollution and result in an improved living space.

SIPs provide superior insulation properties over typical "stick-built" construction. Independent testing has shown that SIP walls are up to 45% more energy efficient and reduce air leakage by up to 90% when compared to fiberglass insulated walls of the same thickness, making them just the thing for an energy-conscious world.

The panels are more environmentally friendly than conventional construction methods. The OSB is made from "new-growth" trees, requiring less virgin lumber than 2 x 4 construction. In addition, no out-gassing is produced from the foam releasing system, and the EPS foam core can be recycled.

WORKING WITH SIPs

Simply put, SIP construction is *superior* construction. Builders have consistently reiterated that SIPs dramatically improve on-site construction quality and workmanship. Because the structural "frame" and the thermal envelope are one and the same, supervision and coordination of trades are simplified. The on-site framing labor

component can be reduced up to 60%, substantially cutting labor costs and shortening the construction timetable.

PorterSIPs are also easy to work with. In most cases, standard carpenters' tools are sufficient to erect a SIP home. Wall panel installation can be done by hand using panels up to 8' x 9'. Larger wall panels and most roof panels require the use of a crane or lift truck.



SIP panels are numbered and have precut wire chases to expedite the building process.

SIP walls and roofs can be erected quickly and made weather-tight early in the construction sequence. Faster completed shells offer a greater degree of security for the job site over the duration of the project.

Once a SIP shell is completed, there are no limitations to the exterior finishes that can be applied. Siding, brick, and stucco are just some of the



SIP panels are manufactured to your specifications and fully compatible with most any home design. Porter Corp's in-house design staff specializes in converting standard home plans to SIP plans. Practically ANY new home can become a PorterSIPs home!



Whether it's a large-scale commercial project, or a residential dream house, SIP construction **saves money, energy, and time**, cutting labor costs up to 60% by shortening the construction timetable.

possibilities for finishing off a SIP construction project. Sloping roof panels can be finished with shingles, tile, metal or other materials.

The structural capacities of SIPs also lend themselves to roofing applications. Flat or sloping roof panels can run from ridge to wall, or can span between framing members, such as rafters or purlins. When used as a sloping roof, SIPs naturally create a dramatic (and energy efficient) cathedral ceiling on the interior.

Cathedral ceilings are an excellent application for PorterSIPs since they have the ability to span exceptionally long distances. Since PorterSIPs also have a greater load capacity than stick construction, they can even act as load bearing walls to place additional floors or ceilings. Many purlins and beams can be eliminated in SIP construction because of these two impressive advantages. (See

"Span/Load" Chart on page four or visit www.portersips.com for details.) Other advantages of SIP construction include a continuous OSB nailing surface on the inside of the exterior walls to attach window coverings, or to hang pictures.

PorterSIPs are manufactured as 4' x 8' or 8' x 24' panels, but can be custom cut to any size or configuration in our factory. Common core thickness ranges from 3 5/8" to 11 3/8" respectively. Special shapes, cuts and finishes are available.

ENERGY EFFICIENCY

SIPs are an incredibly efficient building system in terms of stretching heating and cooling dollars. A typical savings of 35-40% on these costs can be seen by building with PorterSIPs rather than conventional stick framing. This efficiency is measured by the "R" factor and "whole wall" rating of various building systems.

The "whole wall" rating evaluates the material and framing configured in a typical wall. Since framing (whether wood or metal) is a much better conductor of heat than insulation, the greater the amount of framing, the lower the "R" factor of the "whole wall." For example, a 4 1/2" SIP wall exhibits a whole wall "R" factor of 13.9 versus a 2x4 stick wall "R" factor of 9.68 (16" on center). The efficiency of the SIP wall even *exceeds* a 2x6 stick wall ("R" = 13.69 – 24" on center) for energy savings. (See "Energy Efficiency" Chart on page four or visit www.portersips.com for details.)

With this marked improvement in efficiency, SIPs have become the preferred building system in extreme climates and in areas where fuel is expensive or choice is limited. In particular, homes using LP gas or electric heat will find a quicker "pay back" by opting for a SIPs building system.

ENERGY EFFICIENCY RATINGS/WHOLE WALL "R" VALUE COMPARISONS

System	Wall Type	Insulation	Whole Wall "R" Value
Stick	2 x 4@16" O.C.	R-11 BATT	9.6
	2 x 6 @ 24" O.C.	R-19 BATT	13.7
Metal	3 1/2" Metal	R-11 BATT	6.1
SIPS	4 1/2" SIP	3 5/8" EPS	13.9
	6 1/2" SIP	5 5/8" EPS	21.6
	8 1/4" SIP	7 3/8" EPS	28.3
	10 1/4" SIP	9 3/8" EPS	36.0
	12 1/4" SIP	11 3/8" EPS	43.7

SIP VS. STICK BUILDING SPAN/LOAD COMPARISON CHART

Roof Panel Thickness	Comparable Stick Method	Span Distance	Load in Lbs. Per Sq. Ft. (SIP)	Load In Lbs. Per Sq. Ft. (Stick)
4 1/2"	2"x4"@24" OC	7'6"	52	29
6 1/2"	2"x6"@24" OC	11'6"	43	29
8 1/4"	2"x8"@24" OC	13'6"	46	33
10 1/4"	2"x10"@24" OC	15'6"	49	38
12 1/8"	2"x12"@24" OC	17'6"	51	40

Charts are effective as of 4/1/2004, and for comparison (not design) purposes only. Please refer to ICC-ES or www.portersips.com for complete current information.



Using PorterSIPs in your new home design can translate into an impressive 35-40% savings in energy efficiency.

TOP NOTCH MANUFACTURING AND CUSTOMER SERVICE

PorterCorp has over 40 years of experience in SIP panel manufacturing. PorterCorp's specially-tooled manufacturing facility uses state of the art machinery and is staffed with experienced operators. Our laminating process securely bonds the SIP foam core interior with its OSB exterior to produce an insulated panel that is unrivaled in its quality and durability.

CNC cutting machinery assures dimensional accuracy so that customers receive precisely-cut, tight-fitting panels.

The structure of virtually any residential or commercial building – roof, floor, and walls – can be constructed using PorterSIPs. PorterCorp's in-house design service specializes in assisting customers with converting conventional construction plans into

panel plans. With the added ease of construction and impressive energy savings, it's clear to see why PorterSIPs are becoming the informed choice in new building systems.

Contact PorterCorp about your project and be part of the SIPs revolution.

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