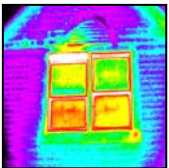
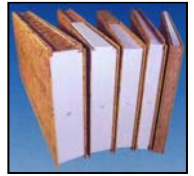


Structural Insulated Panels (SIPs)

SIPs were first patented in 1951 - those first homes are still standing strong and in use today. **SIPs provide the framing, structure, insulation, and sheathing for a building in one step**, and meet all building codes and standards for life safety and fire protection. Environmentally friendly materials are used to make the panels: EPS foam, water-based structural adhesive, and high-recycled content OSB in a cohesive structural “sandwich.” Most SIPs companies don’t use their own product. Verdi begins with **design**, integrates **structural** and **HVAC** systems, then custom fabricates each panel to arrive on-site, in order, and ready to be quickly assembled.



Energy Savings

- Panel assembly ensures a true, superior R-value that will not degrade
- This means heating/cooling units can be sized & run more efficiently

Structural Strength

- The panels are joined by 2x splines, creating a system of diaphragms
- This makes it 2-3 times stronger than traditional frame construction

Time Savings

- Factory pre-fabrication shortens and simplifies the building schedule
- Panels are very straight and square, saving time and raising quality

Lower Costs

- Less time to “in the dry” = lower labor costs, less moisture issues
- Design with SIPs in mind cuts material volume and job-site waste

Built-in Additional Features

- SIPs resist moisture intrusion and provide an excellent sound barrier
- Roofs built from SIPs are vaulted, providing a free “aesthetic upgrade”



There’s often some resistance to try SIPs, especially among subs who are already successful. So we’re committed to training and teamwork, to answer questions and incorporate new ideas to get the best SIPs thermal, structural, and time benefits... at a cost equal to 2x construction. SIPs work with trades as follows:



Framers: SIPs are light and easily cut in the field, but they do require an adjustment from 2x methods. So we prepare a detailed shop drawing and factory pre-cut and mark the panels for quick installation.



Electricians: We pre-route power, lighting, and communications in shop – with room for changes in the field – and wire is simply run within open-web floor framing and in vertical panel routes to the box.



Plumbers: We try to keep plumbing walls on the interior. But this isn’t always how it works out, so we can either route-out the panel or fur it out for piping, or for kitchen sinks simply expose piping as usual.



HVAC Contractors: SIPs provide a high R-value and are very tight, and since we pre-condition fresh air and run ductwork within the conditioned space, the size of HVAC equipment can be cut by 40-50%.



Drywall & Finishes: Panel surfaces align - installers never have to look for a stud. A 2x stud every 4’ joins individual panels, so hanging cabinets or any other heavy finish material is simple and secure.

What is the SIPs System?

SIPs are an extremely strong, easy to install, super insulated structural building material used for exterior walls and roofs. They're made from engineered wood facings bonded to structural-density rigid insulation. As for design, we fabricate SIPs panels to your design, to work in conjunction with any other construction products used in your home.

What is the R-Value of SIPs Panels?

"Whole wall" R-values range from R-18 for 4 ½" panels to R-51 for 12 ¼" thick panels. The thermal efficiency of SIPs is just as important, because R-Value only measures resistance to heat loss by conduction. "Stick" framing promotes other forms of heat loss like convection, radiation, and especially infiltration (leakage). Less air leakage means fewer drafts, less noise, lower energy bills, and a much more comfortable indoor environment.

What is the Cost of SIPs Compared to a Conventional Stick Built Structure?

The cost of building with SIPs is generally the same as traditional stick-and-batt construction, when you factor in the savings in time, labor and on-site waste and clean up. The biggest savings are realized with less expensive heating and cooling systems: SIPs customers have reported anywhere from 40%-60% reduction in their energy costs.

Have SIPs been Thoroughly Tested, and do they have Building Code Acceptance?

SIPs provide superior performance in response to structural loads, wind uplift, and hurricane/earthquake lateral forces. Extensive testing has been performed by independent laboratories for a Third Party Certified product with the recognition of the national building codes, with reports and test data and standard construction details available.

Have Sips been Proven Structurally in Earthquakes and Storms?

SIPs homes withstood a recent 7.2-magnitude earthquake in Kobe, Japan, close to the quake's epicenter. SIPs have also withstood tornados and hurricanes and heavy object impacts since they are extremely strong in racking and shear. SIPs structural characteristics are similar to a steel I-beam: the skins act like the beam flanges, and the rigid core provides the "web"... which yields exceptional stiffness and strength, and predictable performance.

Have Sips been Fire Tested?

SIPs have been fully tested for surface burning characteristics and smoke development, room fire test, thermal barrier and hourly fire tests on wall, ceiling and roof assemblies. Their assembly makes them naturally resistant to the spread of fire: SIPs have no "air" within their solid cores of insulation, so the fire cannot "breathe" and does not run up the wall cavity. A key element of fire safety is protection of the SIPs – and any other underlying structure – with a 15-minute thermal barrier (simply the interior gypsum wallboard used in all construction).

How do SIPs Resist Insects?

SIPs are no more susceptible to insect infestation than other forms of construction. The panels can have additional treatment with Boron, a non-toxic natural mineral for optimum termite resistance. Even with this effective treatment, insect preventative building practices should be employed by the builder, and maintained by the homeowner.

What Exterior or Interior Finishes can be used with SIPs?

All types of sidings, claddings – including brick or stone – and roofing materials can be applied to SIPs. The wood face provides an excellent nail base and eliminates stud searching, much appreciated by sheetrockers.

Since SIPs Structures are so Well Constructed, do they require Mechanical Ventilation?

Yes. Air to air exchangers are used to bring in fresh air, preheat the air and assist in the removal of humidity and stale air. Comfort to the occupants is unparalleled. Cost of operation is minimal. Again, a tighter building envelope will actually reduce the size of heating and cooling equipment, which immediately reduces costs. Furthermore, SIPs keep your costs down from season to season, year after year.

Do SIPs Contain Urea Formaldehyde, CFCs, HCFCs, Or HGCs?

No. Also, the raw materials in SIPs have low energy requirements to make them, the structural skins are made from renewable controlled growth wood resources, and the EPS core is recyclable. And for many years SIPs structures will save fuel used for heating and cooling, with the resulting pollutants dramatically reduced.

Structural Insulated Panels (SIPs)



we know green building
www.theverdicompany.com

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