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Structural Insulated Panels

Dispelling the Myths to Give You the “Green” Edge with Surprising Paybacks

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In today’s challenging economy, you need every advantage you can get over your competition.

How about putting thousands of dollars *each year* back into your customers’ pockets? How about getting them into their new-and-improved dream home quicker?

Structural insulated panels (SIPs) give you the “green” edge that helps the environment—and pays back your customers with significant utility savings every day. Contrary to popular belief, SIPs help you build affordably, with even faster and stronger construction than conventional techniques.

Evaluate the Options

Structural insulated panel systems work in walls and roofs for new construction and additions, on foundations ranging from poured concrete to blocks and insulated concrete forms. Last year, more than 8,300 single-family homes were built with structural insulated panels.

Some SIPs use Expanded Polystyrene (EPS) insulation, which features an R-value of 3.5 to 4.0 per inch. Others, like Thermocore’s panels, utilize polyurethane foam, with an R-value of 6.0 to 7.0 per inch. Both materials sit between a skin of two oriented strand boards (OSB), which comes from sustainable, fast-growing trees. In fact, SIPs consume only half the lumber of stick framing, removing the wood that sparks fires and leaving the rest of the trees in the forest.

SIPs have been used in home construction for decades, but many builders still hesitate, sometimes because of faulty information.

MYTH: SIPs limit your design freedom.

REALITY: With panels up to 8x24 feet, you can design any shape or size building. Just supply your architectural drawings or CAD files to the SIP manufacturer. After you provide input and final approval on the panel drawings, the SIPs arrive at your jobsite ready to install.

MYTH: SIPs create more work at the jobsite.

REALITY: Pre-configured, pre-engineered panels come numbered with double-spline, tongue-and-groove joinery for fast, simple assembly. One half-day session trains an entire labor crew to install the panels. In fact, one builder erected the complete walls for a 2,000-square-foot house—ready for drywall—in just two days. Weather causes fewer scheduling hiccups and delays because the panels aren't affected by temperature or precipitation.

With some manufacturers, your crew cuts the panels to fit on the jobsite. If you're looking to avoid trimming and fixing, choose panels custom-engineered to your specifications. Panels from Thermocore, for instance, include the sill plate, top plate, and other 2-by material; corner nailers; header and post pockets; and door and window openings framed with 2x4 wood bucks. Thermocore's four-inch-thick panels even accommodate standard window jambs. Some SIPs include drilled electrical chases. Thermocore pre-installs electrical boxes and ¾-inch conduit based on the builder's architectural drawings. Roof panels come with subfacia, ridge, and gable cuts.

MYTH: Panels cost more than traditional construction.

REALITY: With SIPs, faster construction and less labor equal higher productivity and lower costs. Material and labor expenditures stay predictable in this fluctuating market and crane time

is limited. For the homeowner, the initial panel cost typically adds about \$10 to monthly mortgage payments—but studies show savings of \$80 to \$120 per month in energy costs. One homeowner in central Kentucky built a 44 percent larger home with Thermocore panels, yet reduced heating and cooling costs by 61 percent over his previous stick-built home, saving \$115 every month.

SIPs that require trimming at the jobsite involve some waste, but when they're custom-designed at the factory, any leftovers in the production process get recycled into the next order, and waste is virtually eliminated at the jobsite, cutting your costs.

MYTH: R-values always shrink in actual use.

REALITY: According to Oak Ridge National Laboratories, conventional fiberglass insulation does, in fact, lose 30 percent of its R-value once you take it out of the bag and put it in the wall. In order to achieve R-19 construction, your batts must be at least 6 ½-inch thick—which means even 2x6 construction compresses the fiberglass and diminishes its thermal effectiveness.

On the other hand, studies conducted by Oak Ridge National Laboratories on polyurethane panels showed no measurable loss of R-value, even in the field. For instance, Thermocore's wall panels maintain R-24 and roof panels sustain R-40 values. Through the use of thermal imaging, Thermocore even verifies the energy performance of each panel before it leaves the plant.

For the best energy benefits, look for Energy Star partners with a five-star rating. Even if you don't pursue certification, past involvement in LEED projects ensures the panels actually help the environment and save money.

MYTH: SIPs pose a hazard for fire, mold, and other dangers.

REALITY: Look for panels with 1/A fire ratings to eliminate fire chases. For instance, polyurethane withstands 750-degree temperatures without damage. Even at that temperature, it chars without burning, minimizing the spread of fire. To repel moisture, many EPS manufacturers include interior and exterior vapor barriers. Polyurethane serves as its own vapor barrier to resist moisture. In addition, polyurethane foam prohibits the growth of mold, and most over-the-counter chemicals such as insect sprays and construction adhesives won't damage polyurethane.

MYTH: SIPs outgas and contain dangerous chemicals.

REALITY: According to a study in the *Journal of the American Medical Association* (Vol. 245, No. 3), structural insulated panels used in residential construction present no bleed-off of toxic products. The study found no reports of toxicity occurring to people in homes insulated with polyurethane. In fact, the drop in energy use in one home built with SIPs cuts greenhouse gases as much as eliminating a car from the highways.

The Next Generation of Homebuilding

Have you stayed away from structural insulated panels because of inaccurate rumors? You may be missing a whole new market. There's plenty of green out there to save right now. After all, it's great to build for the environment, but it's even more fun to put green in your wallet!

What to Tell Your Customers about Structural Insulated Panels

- The energy efficiency qualifies most homeowners for tax credits and boosts the home's value
- Draft-free building envelope improves air quality and provides a quieter home
- Panel strength results in sturdier construction
- Computer-cut, straight edges enhance the quality of trim and window work
- Panel construction eliminates shrinkage, nail pops, and warping of studs

Patrick Egan of Thermocore Panel Systems, headquartered in Mooresville, Indiana, is passionate about making the world a better place—one home at a time. For more information on how Thermocore's polyurethane panels can streamline your building process, give you a competitive advantage, and save your customers thousands of dollars each year, contact Pat at 317-831-8888 or e-mail salesinfo@thermocore.com.