Hurricane Resistant

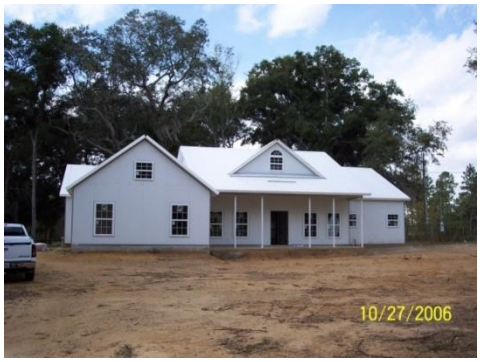
Residential Steel SIPs Construction

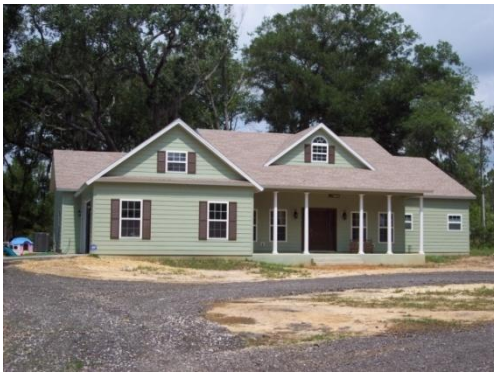
Understanding SIPs Technology

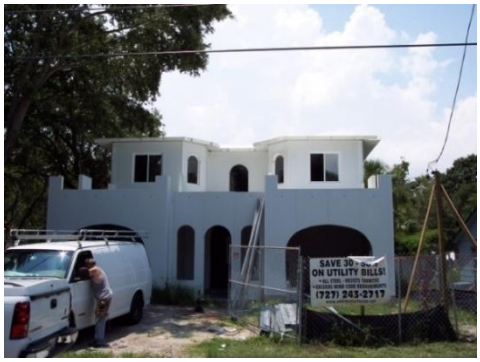
What is a SIP?

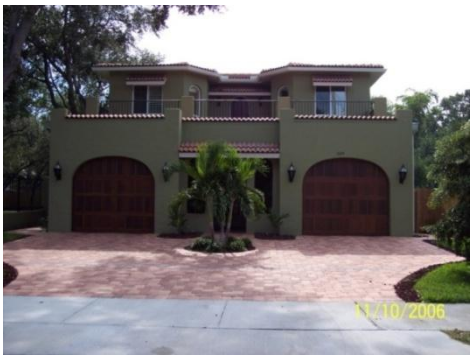
S-I-P stands for Structural Insulated Panel. SIPs have been used for many years to build homes, commercial buildings, high-tech assembly rooms and cold-storage facilities. SIPs provide the frame, insulation, moisture barrier and exterior sheathing. For homes, the interior and exterior wall surfaces are finished with the same materials as in traditional construction. Not only does this simplicity of design provide a superior structure, it also greatly streamlines the construction process.

- ✓ Fortified steel construction ……. 3 times stronger than frame
- ✓ Termite resistant
- ✓ Energy efficient …… using 50 – 60% less energy
- ✓ Green building approved …… low environmental impact
- ✓ Superior indoor air quality – mold resistant
- ✓ Faster construction time
- ✓ Better insurance rates









For more information call Toll Free: 1-877-321-SIPS (7477)

Licenses: Florida CBC036455, Georgia RLCO-000624, Louisiana CL33845

Florida Green Building Coalition, Inc.
Setting the standards for Green Building in the State of Florida

SIPA
Structural Insulated Panel Association

SIPDepot.com

WHY STEEL SIPS?

Although any SIP construction will save 50 – 60% in energy costs, are 3 times stronger than frame, and are more environmentally friendly. Steel is a better choice for the following reasons

Advantages of Steel SIPs vs.OSB

- **Steel will not warp, swell, twist, rot**
- **Rain during construction do not affect materials in any way**
- **No cranes needed for installation a steel SIPs are lighter than OSB**
- **The underside of the roof panel automatically forms an attractive finished soffit overhang or exterior porch ceiling.**
- **Joints are a T&G friction fit they do not require splines, mastic or fasteners greatly speeding installation time**
- **Steel is more stable during manufacturing and panels are held to 1/16" tolerance**
- **OSB is limited to 24ft. in length …Steel SIPs are available up to 53ft. in length, eliminating butt joints**
- **Steel panels are manufactured on a continuous line making them available in square pre-cut lengths in ¼ " increments, but only charged to the nearest ½ ft., OSB often rounds up to the nearest 2 ft. increment – making you pay for waste that gets thrown away**
- **Higher " R – Value" denser foam provides a 4.25 R- value per inch of foam**
- **No Termites … Impervious to termites and carpenter ants , steel skin and foam core offers no food value**
- **No foam grooving is required for window and door openings, after cutouts are made, openings are simply "picture framed" with 18.ga. steel channels**
- **The steel skin is the "vapor barrier" on walls no additional covering is required before siding is applied**
- **Eave overhangs can be 4 feet with no additional support**
- **Sound Control – utilizing a 1-1/2" steel furring strip creates a dead air space for improved STC ratings.**
- **Wiring – utilizing that same air space, wiring is much easier than fishing wire thru OSB and any future retrofit wiring is easier.**
- **Will not support mold growth – painted galv. steel skins are UDSA approved**
- **Indoor air quality is better due to the tighter and cleaner construction material of the interior**
- **Any steel building is safer from lightning strikes**
- **"Monocoque construction" All connections and attachments are with screws having greater pullout strength than nailing**
- **For economy or insulated utility buildings, steel SIPs have been left exposed as the finished siding and roofing.**
- **Properly grounded steel buildings are safer than wood in lightning storms**
- **Zurich Ins. In partnership with the Steel Framing Alliance offer reduced builders risk insurance premiums**
- **In the Gulf Coast Region and other hurricane prone regions Steel SIPs are 30% less to insure that block/truss and 53% less to insure than wood frame construction**
- **LEED points easily attained as steel skins are made from recycled steel , are recyclable and EPS foam core is recyclable**

Hurricane Resistant Commercial Steel SIPs Construction

Understanding Steel SIPs Technology

What is a SIP?

S-I-P stands for Structural Insulated Panel. 26. ga. Galvalume or G-90 galvanized painted skins over a solid foam core. SIPs have been used for many years to build homes, commercial buildings, high-tech assembly rooms and cold-storage facilities. SIPs provide the frame, insulation, moisture barrier and exterior sheathing. For homes, the interior and exterior wall surfaces are finished with the same materials as in traditional construction. Not only does this simplicity of design provide a superior structure, it also greatly streamlines the construction process.

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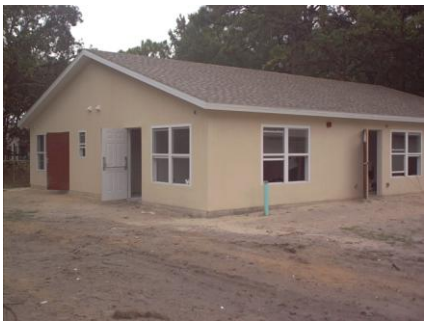

For More Information call Toll free: 1-877-321-SIPS (7477) **or e mail at:**

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SIPA
Structural Insulated Panel Association

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Our Insurance Carriers

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HOW MUCH
DO THEY LOVE THEM?

JUST COMPARE THE OPTIONS

Construction Type	*Frame*	*Concrete Block*	*Steel SIPS*
Annual Premium	**$4800.00**	**$3250.00**	**$2250.00**

Policy Limits – Homeowners (Builders Risk Available)

Dwelling	$500,000
Other Structures	$ 50,000
Personal Property	$250,000
Loss of Use	$ 50,000
Personal Liability	$300,000
Medical Payments	$ 2,000

Deductibles Wind 2%, All Other Perils $2500
Replacement Cost Valuation

This document is provided for comparison purposes only. The final cost of insurance coverage is based on the facts, information and rates available at the time coverage is bound. This document is not intended to modify or change policy language and rates can change without prior notice. September 6, 2007.

FEMA FEMA

House of Steel Survives Charley

Punta Gorda, FL – When Bob and Robin Leonard built their home in 2004 on a canal off Pirate Harbor in Charlotte County they wanted a beautiful, low-maintenance building. They chose a highly engineered, above code steel-panel construction that would endure a major storm.

The structural sandwich panel home was engineered to withstand 150 mph sustained winds, exceeding the current 130 mph required by the Florida Building Codes. When neighbors rebuilt after Hurricane Charley, many asked the Leonards about their house of steel. The Leonards gladly told their story.

"We were in the northeast quadrant of Hurricane Charley. Winds went well beyond 140 mph and this house did what it was supposed to do; it swayed," Leonard said. "The only damage came after the wind pushed the front door open and we nailed wood braces to the floor to close it."

The Leonards used a consumer software package to design their home. They brought the drawings to their steel-panel panel manufacturer for engineered plans, permit prints, and manufacturing specifications. After the city's building department approved the plans, Leonard said, the eight-month project started.

Three-and-a-half feet of compacted fill material served as the base for the steel-reinforced reinforced concrete footings. Six-inch steel I-beam posts anchored to reinforced concrete footings held up the cupola and main frame. Surrounding the ground floor, a grade beam added stability to the building as it swayed when pushed by winds.

The structural sandwich panel assembly consisted of a lightweight foam core securely laminated between two relatively thin metal facings. The manufacturer bonded a pre-formed expanded polystyrene board to the metal skins with adhesive.

Composing the outer structure, the design specified top and bottom channels that anchored six-inch thick structural sandwich panels to create walls. These channels had plates that connected them and supported the roof system's I-beam rafters. The floor system layered nine-inch structural panels supported by I-beams, topped with sub-floor

and finished with hardwood flooring.

The Leonard's home boasts its height as an additional strength. Floodplain regulations adopted by the city required building the lowest floor of the house on or above the 11-foot base flood elevation (BFE), but the house exceeds that requirement.

Since they lost power as a result of Hurricane Charley, the Leonards added a propane-fueled generator. To keep intense wind from opening the front door, they bought shuttering to cover the outside and bracing for inside the door.

2008 Showcase Home

Congratulations to **Chris Kavala and Marquis Const. & Dev. Inc.** for **"Boltin Steel Insulated Panel Home" of Dade City, Florida.** This recognizes your commitment to, and understanding of, the best practices associated with high performance, quality, durability, comfort and health in resource efficient home building.

Michael P. Vogel, Program Director

Resource Efficient HOMES ACROSS AMERICA
comfort • health • performance • durability

Peaks to Prairies
Pollution Prevention Information Center

Pollution Prevention P2R Resource Exchange

Montana State University Extension

A partnership program of Peaks to Prairies Pollution Prevention Information Center, Pollution Prevention Resource Exchange, and Montana State University Extension Service.