

COMFORTABLE HOMES

Start Inside the Walls



epsbuildings.com

Energy Efficient Construction Checklist

Energy-Efficient Builder

- Use a qualified knowledgeable authorized dealer/builder

Framing

- Structural Insulated Panels are 50% more efficient than stud walls and up to 15 times more air tight
- Completed Thermal Bypass Checklist

Effective Insulation

- Ceiling: R-49 or SIP roof panels
- Wall: R-19 or greater, R-26 SIP panels are ideal
- Basement wall: R-10/13 or greater, or SIP basement panels
- Band/rim joist: R-19 or greater, SIP/floor hangers are best
- Floor above unheated space: R-30 or greater
- Slab Edge insulation: required at Climate Zone 4 and higher (maximum of 25% of the slab edge may be uninsulated in Climate Zones 4-5)

High Performance Windows and Doors

- Make sure windows are ENERGY STAR rated
- U-factor less than or equal to 0.30
- Doors should have an R-value greater than or equal to 5

Tight Construction and Ducts

- Install ducts in conditioned spaces to minimize energy loss
- Seal ducts with mastic and/or UL 181 approved tape
- Size ducts base on the Air Conditioning Contractors of America Manual J and D.

Efficient Equipment

- Geothermal heating and cooling systems
- Natural gas furnaces: AFUE of 94 percent or higher
- Central air conditioner: 13 SEER or greater
- Natural gas water heaters: Up to 60 gal.: 0.62 EF or greater; 60-80 gal.: 0.85 thermal efficiency or greater
- Electric water heaters: 0.93 EF or greater
- Size your equipment properly for your home using Manual J or equivalent calculations. Bigger is not better!
- ENERGY STAR certified thermostat (except for zones with radiant heat)

ENERGY STAR Products

- Include at least one ENERGY STAR certified product category: Heating or cooling equipment; windows; water heating equipment; five or more ENERGY STAR certified light fixtures, appliances, ceiling fans equipped with lighting fixtures, and/or ventilation fans.

Third-Party Verification

- Review plans with Home Energy Rater
- Home Energy Rater does first inspection for air sealing and insulation
- Home Energy Rater tests for leakiness of building envelope and ducts

Energy-Efficiency Cash Rebates

- Energy-efficiency rebates vary by state due to differences in regulatory obligations.
- Look for local and national rebates in your area

Efficiency standards vary by state and by climate zone, check your particular zone for details.





COMFORTABLE HOMES

Start Inside the Walls

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Energy Panel Structures
603 N. Van Gordan Ave., Graettinger, IA 51342

ADDITIONAL MANUFACTURING PLANTS
Perryville, MO Clyde, NY

Phone: 800-967-2130

100% Employee Owned—100% Committed to Quality

Why Choose a Home Built with SIPs?

Enhanced Comfort

Properly installed insulation, like that in SIPs, minimizes temperature variability indoors and helps keep rooms warmer in the winter and cooler in the summer.

Lower Utility Bills

As much as half of the energy used in your home goes to heating and cooling. By preventing heat loss in the winter and heat gain in the summer, SIPs reduce utility bills year round.

Improved Durability

With SIPs, the potential for condensation that can lead to decay of building materials is reduced, helping to improve the durability of your home. SIPs come with the insulation already properly installed, reducing the potential for human error during installation.

Better Resale Position

The improved comfort, lower utility bills, and improved durability of a SIP home can translate into higher resale value compared to a less efficient home.

Lower Ownership Cost

Compared with standard homes, a SIP-Built home can use substantially less energy for heating, cooling, and water heating—delivering substantial annual savings. This adds up to thousands of dollars in savings over the years you own your home.



Unique Features of SIP Construction

EPS SIPs ARE:

- A complete pre-engineered package
- Engineered to IBC Code
- Made with over 35 years experience
- Built by local builders

SIPs also:

- Reduce size of HVAC equipment
- Earn energy efficiency tax credits & rebates
- Are up to 15-times more air tight than stick-built
- Allow subcontractors access sooner
- Save up to 50% or more on energy costs
- Whole-wall R-value outperforms fiberglass insulation



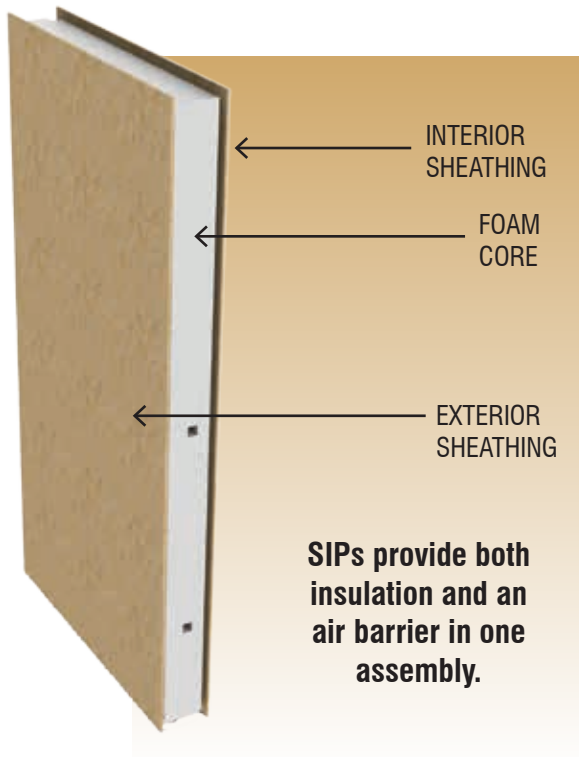
EPS SIPs are Insect resistant:

EPS panels are treated with an effective, non-toxic additive that will deter insects. The additive is environmentally sound and contains no dyes, formaldehyde or ozone-depleting HCFC's. The additive is inert, non-nutritive, highly stable and therefore will not decompose, decay or produce undesirable gases or leachates. The insect-resistant foam panels are recyclable and safe for waste-to-energy systems and landfills. The treatment is a process which uses a natural mineral formulated to resist normally occurring exposure to woodboring insects, specifically carpenter ants and termites. The non-toxic treatment is EPA Registered, meets the standards of ASTM D3345 and WPA EL 12-72, and lasts as long as the rigid insulation.

Structural Insulated Panels

Create Comfortable Living Spaces

Structural insulated panels are high-performance building panels used in exterior walls, roofs, and floors. The panels are made by sandwiching a core of rigid foam insulation between two skins of oriented strand board (OSB). SIPs create a living environment that is more comfortable because of reduced air flow and noise.



SIPs Save Energy

Building with SIPs creates a superior building envelope with high thermal resistance and minimal air infiltration.

SIPs Save Money

SIPs are one of the most airtight and well insulated building systems available, making them an inherently green product. An airtight SIP building will use less energy to heat and cool, allow for better control over indoor environmental conditions, and reduce construction waste.

SIPs Save Time and Labor

SIPs are ready to install when they arrive at the job site, eliminating the need to perform individual operations of framing, sheathing, and insulating stick-framed walls. This saves builders a significant amount of on-site labor.



SIPs Save Resources

The major components of SIPs, foam and OSB, take less energy and raw materials to produce than other structural building systems. SIPs are also fabricated in a controlled environment, allowing for greater efficiency than site-built framing.

OSB is manufactured from fast growing, underutilized, and often less expensive wood species grown in carefully managed forests. The OSB production process uses small wood chips and highly automated machinery, making OSB a very efficient use of raw materials.

Expanded polystyrene is a lightweight closed cell insulation. Over the lifetime of a house, the expanded polystyrene insulation used in SIPs will save many times the energy embodied in the petroleum used to make it. It takes 24% less energy to produce expanded polystyrene than fiberglass insulation of equivalent R-value.*



*<http://www.epsmolders.org/5.html>



DESIGN *Options*

An EPS house is much more than an energy-efficient building—it's a beautiful place to call home, designed to meet your every need and dream.

Want an open floor plan? We can do that. Need a spacious kitchen? Done. Walls filled with windows to take in the beauty of your view? No problem. A special ceiling to showcase your dining room? Sure thing. Bring us your dreams and we'll help make them a reality.





Interior vaulted ceilings offer a dramatic style to your home.



Tray ceilings can add visual appeal to your home.



Decorative glue-laminated beams give a rustic, open look.



An engineered window wall.



Unique kitchen designs can be incorporated into your home.



Build Your Get Away Play Space



An energy-efficient cabin provides:

Quality: The best construction techniques and details are used to better protect against cold, heat, drafts, moisture, pollution, and noise.

Performance: Your cabin can be erected in days, not weeks. It is engineered for maximum strength and durability. Designs can maximize interior loft and vaulted ceilings.

Responsibility: Your new home uses less energy which results in less pollution. Building green is good for the environment.

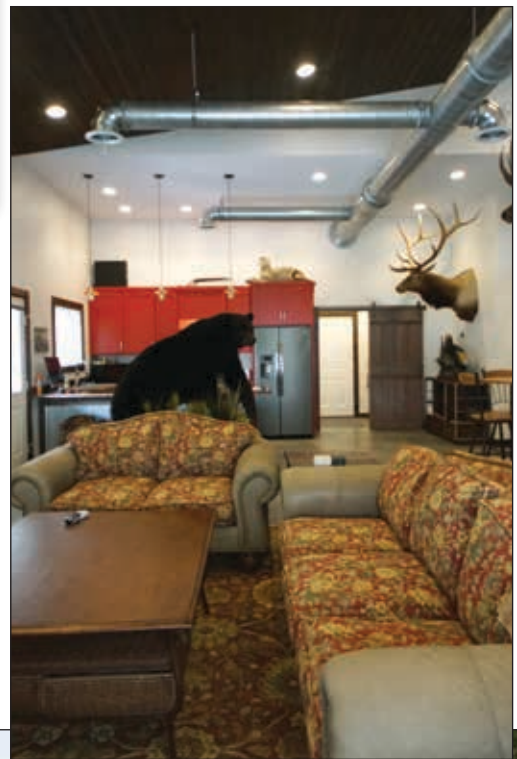
Flexibility: Offers a variety of finish options and is expandable in the future. Flexible design options can fit narrow or odd lot restrictions.



Create a Great Combination – A Shouse



The flexibility of EPS building packages mean it's easy to build for your unique lifestyle. Combine a post frame storage area with a living space, office, play space or workshop built with structural insulated panels. These combinations allow you to take advantage of the benefits of both building types, engineered to fit together in one building package.



Multi-Family Units: Energy Efficient & Cost Effective



Three-story, 120-unit assisted living and memory care apartments rated 50% better than conventionally built.

"We recently finished construction of our second senior care facility utilizing EPS structural insulated panels. Our biggest challenge is to construct a project that will appeal to our residents. It is imperative that we do not compromise on the design of our facility. While these are important issues in the design phase, equally important is our sensitivity to the future operations of the facility including comfort of the residents and costs of operations. We spent several years looking for a product that could deliver on our vision. In selecting EPS and their engineered wall system, we found a partner that could meet our goals. We have marked our operational costs of EPS-built buildings vs. similar sized, traditional-built projects and have noted the efficiency at which they operate, resulting in a significant reduction in energy consumption and savings. Equally important is the positive feedback we have received from our residents regarding the comfort of the building and overall appeal of the design and layout."—Greg Johnson, Coventry Senior Living



Variety of duplexes and multiple attachments.



"SIPs are a viable alternative method that meets the structural requirements of the codes, and they have advantages over stick-built framing as they are constructed in a controlled environment and they have a greater ability to provide thermal performance above traditional fiberglass insulation, as well as providing a thermal moisture barrier with better efficiency than typical methods."

—City Building Inspector

Coventry Senior Living Complex, Mahtomedi, Minnesota earned Energy Tax Credits and ENERGY STAR certified with a HERS Rating of 46.



What is Green Building?



DISPELLING MYTHS:

Myth #1: Green building is too expensive.

There are many strategies for inexpensive green building, from right-sizing the structure to optimal value engineering to reducing waste.

Myth #2: Green building products don't work as well.

Experts agree that new green products work as well as, if not better than, their traditional counterparts.

Myth #3: Green Products are hard to find.

The number of green products and systems that are available has grown exponentially over the past few years.

Myth #4: Green homes are "weird" or "ugly."

It's honestly hard to tell the difference these days. Even solar power can be integrated in attractive and effective ways.

Myth #5: It's an all-or-nothing proposition.

Most builders employ some green techniques and continue to add more each year. It's simply a matter of how far you want to go with the idea.

LIFECYCLE ANALYSIS

Life cycle analysis (LCA) is the evaluation of the environmental impact of a particular product that takes into account its entire life cycle, from raw material extraction through production, operation, and demolition.

The LCA is the only way to truly gauge the environmental impact of a building material through a comprehensive analysis that judges all aspects of a material's interaction with the environment.

For example, many products save energy for homeowners. But how much energy do they save compared to how much energy was invested in producing and transporting the product? Are the carbon dioxide emissions prevented by the product greater than any harmful pollutants generated in the production process? Does the recycled product take more energy to create than a new product? These are the questions that LCA asks to determine the true ecological footprint.

A comparative LCA study conducted by BASF Corporation reveals that SIPs have a significantly lower environmental impact than conventional wood framing and fiberglass insulation. Not only do SIPs save energy, they also help decrease carbon emissions, water pollution, deforestation, damage to natural habitats, and emissions of other ozone harming gases.

Living Green:

According to ENERGY STAR, qualified homes built in 2010 are the equivalent of:

- Eliminating emissions from 65,251 vehicles
- Saving 394,704,024 lbs. of coal
- Planting 107,864 acres of trees
- Saving the environment 774,093,958 pounds of CO₂

Steps to Your New Home

Before a project can start

Before an engineer can get started they need a good set of detailed drawings. These drawings need to have a floor plan, foundation plan, elevations and a door and window rough opening schedule. The opening locations will also need to be dimensioned on the plan view. EPS engineers provide detailed structural drawings and panel shop drawings to ensure a structurally sound building. After the engineer has all the information, a detailed set of preliminary drawings will be drafted. These drawings will then be sent to the dealer/builder for approval. An approval letter will accompany the drawings. Once the approval letter is returned to the engineer the project will be completed and turned into production. Any changes to the preliminary drawings over and above what was ordered will be required and a subsequent change order will be sent to the dealer/builder. If the drawings need engineering seals additional lead times may apply.

Design Considerations

The following are features of residential structures that may affect the structure. These items need to be discussed with EPS personnel prior to placing the order.

- Roofing materials. The standard loading assumes standard roof sheathing and asphalt shingles. Roofing materials such as clay tile and slate are much heavier and must be addressed.
- Floor coverings. Areas with heavy flooring materials such as slate, granite, stone or gypcrete covering must be accounted for.
- Architectural features such as stone fireplaces, glass block walls, etc. can impose large loads on the floor system and need to be noted.
- Decks that are attached to the EPS structure need to be noted to ensure that a proper surface is provided for attachment.
- Window walls. Walls with a large number of openings may not be feasible to build with SIPs. This will be noted on the preliminary drawings. Materials will be provided to stick build these areas.
- Window and door rough openings and locations. Due to the nature of SIP panels, all window and door rough openings and locations are necessary for the building design.



EPS Basement Panels

1

More Comfort

- Wood walls eliminate the damp “musties” that often accompany a concrete wall.
- Wood foundations make basements warmer and dryer than poured concrete or concrete block.

Stronger

- Wood foundation walls are stronger than concrete block walls. A foundation wall’s biggest challenge is resisting lateral forces rather than holding up the weight of the building.

Better

- Energy Efficiency: EPS panelized foundation panels have R-Values of 33. It would take 412” of concrete walls to equal.
- Design flexibility: EPS panelized foundation panels can be easily designed for any building type, size or shape.
- Treatment of a minimum of .60 lbs./ft³ of preservative retention meeting AWPA standard C22. The preservative treatment is effective in resisting damage from moisture and insects.

Easier

- Wood foundations for most homes can be installed in a day, as opposed to at least 4 days for forming, pouring and curing.
- Panelized foundations allow ease of construction scheduling.
- Ease of finishing: panelized walls, attaching drywall, paneling and trim is made simpler.

EPS Wall Panels

2



Fabricated panels are cut to fit each project and ready to assemble. The panel edges are factory routed to accept plates and splines. Window and door rough openings are cut out and routed. Walls go together quickly as they tilt-up and fit together using splines to connect two adjoining panels. Foam sealant is used between panel joints.

EPS Roof Panels or Trusses

3



SIP roof panels can be used to create large, open spans or vaulted ceilings. EPS manufactures trusses which may be feasible depending on design applications.



Benefits Of ENERGY STAR®

A New ENERGY STAR Certified Home Delivers:

- Better indoor air quality
- More comfortable
- Reduced drafts
- And may qualify for local and national credits and rebates
- Requires less maintenance
- Has overall higher quality

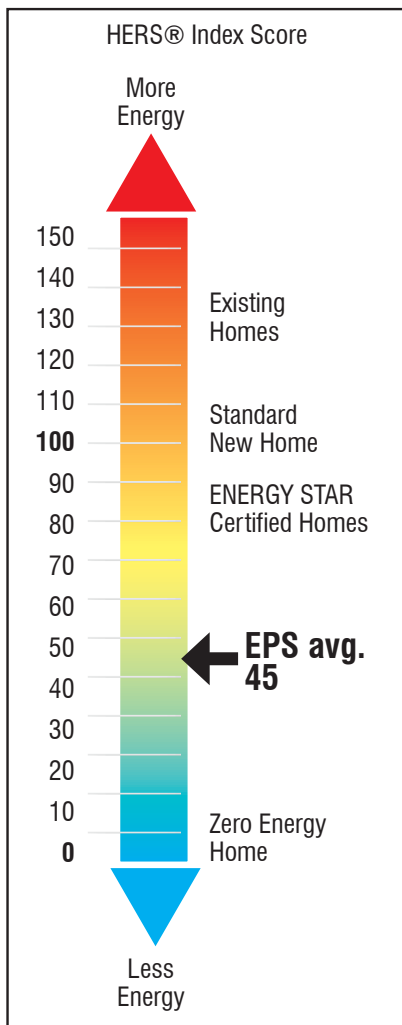
To earn the ENERGY STAR, a home must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. ENERGY STAR certified homes can include a variety of energy-efficient features that contribute to improved home quality and homeowner comfort, and to lower energy demand and reduced air pollution. At the top of the list is effective insulation. SIPs provide effective insulation for the house envelope to ensure even temperatures throughout the house, reducing energy use and increasing comfort. SIPs provide effective insulation by providing both insulation and an air barrier in one assembly.

ENERGY STAR certified new homes must meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency. These homes are independently verified to be at least 15% more energy efficient than homes built to the 2004 International Energy Conservation Code (IECC), and feature additional measures that deliver a total energy efficiency improvement of up to 30 percent compared to typical new homes and even more compared to most resale homes.

EPS built homes can average as much as 50% better efficiency than standard existing home construction.



Lower Numbers Mean Higher Savings



■ An ENERGY STAR home receives a certificate showing the HERS Rating. The lower the number, the lower the energy costs. A standard new American construction home that adheres to current energy guidelines is awarded a default HERS Index score of 100, which serves as a benchmark against which all other homes are measured. A higher HERS Index score translates into a less energy efficient home, and vice-versa. A typical American resale home scores 130 on the HERS Index, making it 30% less energy efficient than a new construction home. On the other hand, if a house gets a HERS Index score of 50, it means that it's 50% more energy efficient than a standard new construction home.

To get a HERS rating, a home energy rater must conduct on-site inspections and testing of the home. These tests are done during and after construction to make sure the home meets strict EPA guidelines.

Energy Comparison Profile Residential

Location: North-central Iowa
Size: 5918 sq. feet

Levels: One Bedroom: 3
Heating/Cooling: Electric hydronic distribution

HERS® Index Score

More Energy

150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Existing Homes

Standard New Home

ENERGY STAR Qualified Homes

← **This Home 53**

Less Energy

HEATING & COOLING COMPARISONS

	Reference	EPS	DIFF	%DIFF
Annual End-Use Cost (\$/yr)	\$1807	\$682	\$1155	63.9%
Heating	\$189	\$64	\$125	65.2%
Cooling				
SAVINGS				

Figures are estimates only and may vary depending on climate zone. Does not represent a guarantee of performance.

Contact your local EPS Dealer to see how much you can save in an Energy Efficient Home

10000-EP5020

Energy Comparison Profile Residential

Location: Northwest Iowa
Size: 4,570

Levels: One Bedroom: Three
Heating/Cooling: Geothermal

HERS® Index Score

More Energy

150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

Existing Homes

Standard New Home

ENERGY STAR Qualified Homes

← **This Home 34**

Less Energy

5 Stars Plus Confirmed Rating

HEATING & COOLING COMPARISONS

	Reference	EPS	DIFF	%DIFF
Annual End-Use Cost (\$/yr)	\$1958	\$232	\$1725	88.1%
Heating	\$200	\$59	\$145	72.6%
Cooling				
SAVINGS				

Figures are estimates only and may vary depending on climate zone. Does not represent a guarantee of performance.

Contact your local EPS Dealer to see how much you can save in an Energy Efficient Home

10000-EP5020

■ Ask to review our ENERGY STAR profiles for comparisons on energy usage and costs.

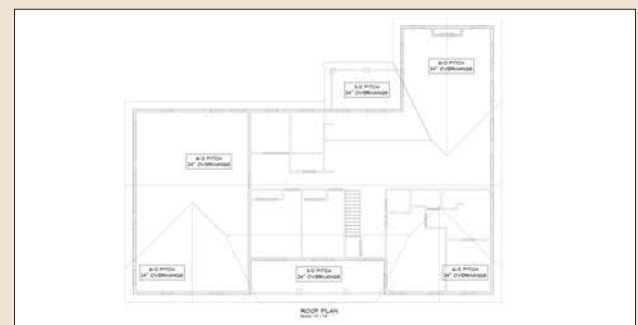
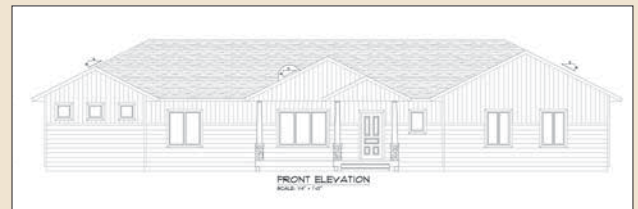
Efficient, Cost-Effective Design



- ▶ Jumbo 8' x 24' panels can make construction much faster.
- ▶ Pre-assembled wall options are solid and fast to erect in the field.
- ▶ Pre-assembled, factory-insulated headers, along with window and door cutouts.

Floor Plans

EPS Builders can provide a custom floor plan, elevation drawings and 3D Rendering of your new home! This allows you to make adjustments, change room sizes and see the new home before committing to a final purchase. Drawings available for new homes, commercial and ag buildings. Also available are site plans and virtual tours.



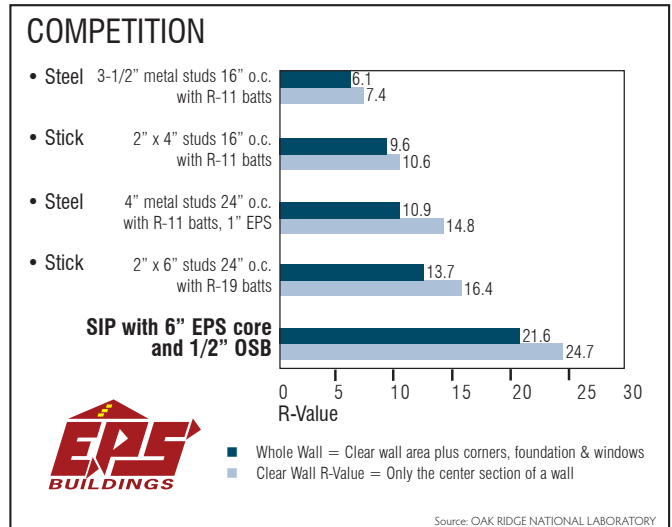
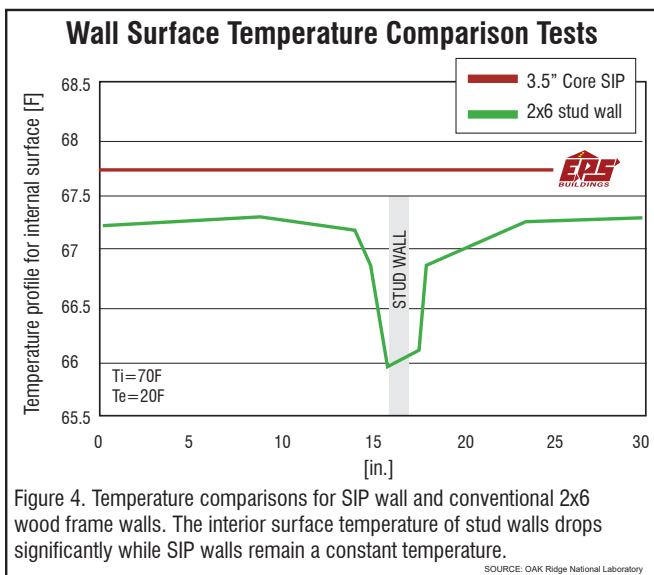
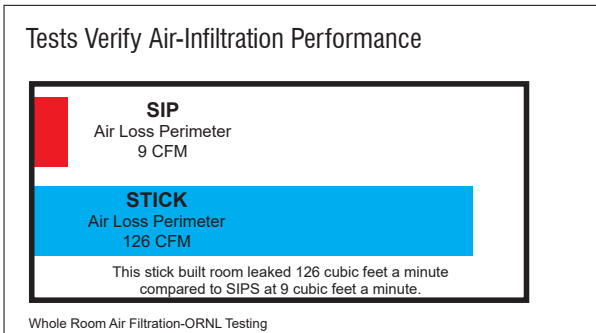
Keeping Your Family Comfortable

With people spending 90% of their time indoors, buildings should create a safe environment for occupants, free from mold, volatile organic compounds (VOCs) or other harmful airborne pollutants.

A SIP home allows for better control over the indoor air quality because the airtight building envelope limits incoming air to controlled ventilation. Controlled ventilation filters out contaminants and allergens and also allows for incoming air to be dehumidified, reducing the possibility of mold growth.



Wall Type	Plate Thickness	Panel Thickness	Panel Make Up	Whole Wall R-Value at exterior temp. of		Whole Wall R-Value NEOPOR®		Weight (PSF)
				75°	40°	75°	40°	
R-18	3 ⁵ / ₈	4 ¹ / ₂	7 ¹ / ₁₆ OSB, 3 ⁵ / ₈ EPS, 7 ¹ / ₁₆ OSB	18.0	20.6	20.25	22	3.3
R-26	5 ⁵ / ₈	6 ¹ / ₂	7 ¹ / ₁₆ OSB, 5 ⁵ / ₈ EPS, 7 ¹ / ₁₆ OSB	22.8	24.1	29.25	31.5	3.5
R-33	7 ³ / ₈	8 ¹ / ₄	7 ¹ / ₁₆ OSB, 7 ³ / ₈ EPS, 7 ¹ / ₁₆ OSB	30.1	31.8	37.00	40.0	3.6
R-40	9 ¹ / ₄	10 ¹ / ₈	7 ¹ / ₁₆ OSB, 9 ¹ / ₄ EPS, 7 ¹ / ₁₆ OSB	38.5	40.0	46.0	50.0	3.9



LOOK AT THESE ADVANTAGES:

- No sagging insulation
- No purlins or girts to compress insulation and reduce R-value
- Reduced air infiltration
- Translates into large savings on your utility bills

Proven More Energy Efficient

Energy savings is measured in whole wall R-Value not just insulation values.

Our 6-inch core walls outperform standard steel or stick built walls by over 50% when combined with other energy efficient technologies.

Interior wall temperatures are much improved over stick or steel walls. Solid core walls have no sagging insulation, no compressed insulation, no air movement, only solid cores. With no thermal shortcuts to external walls, they simply translate to large savings on your utility bills.

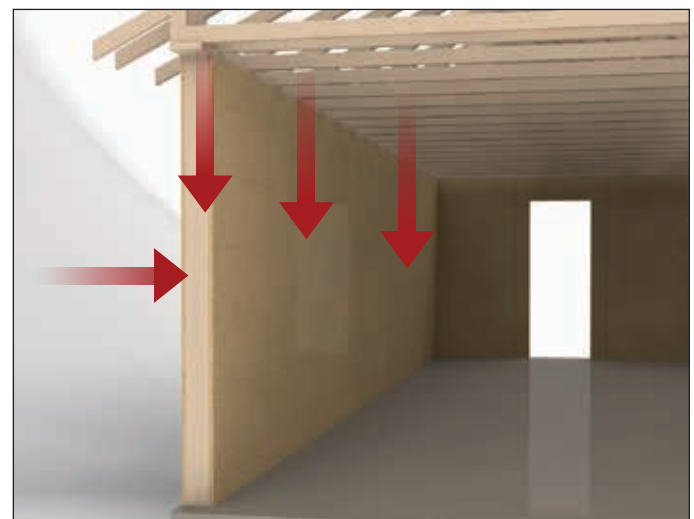
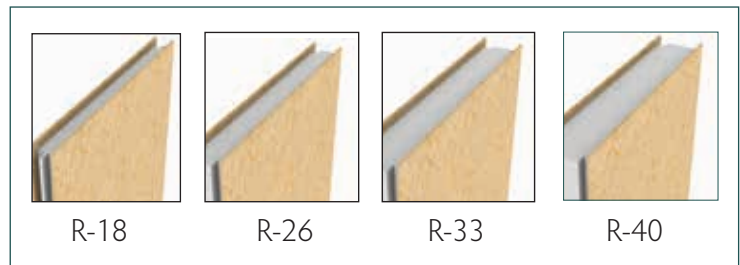
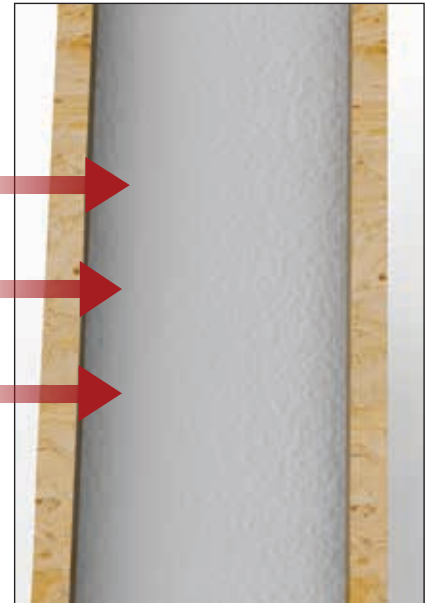
The results speak for themselves. Our core panel system is up to 15 times better at stopping air infiltration. This offers you a comfortable building by virtually eliminating drafts.

Choose from the standard R-18, R-26, R-33 or R-40 walls. All types of buildings can be engineered in just about any dimension.

Proven stronger

Impact resistance is another standard feature of structural insulated panels. The continuous bonding of EPS insulation to the OSB or plywood offers incredible strength and resistance to impact.

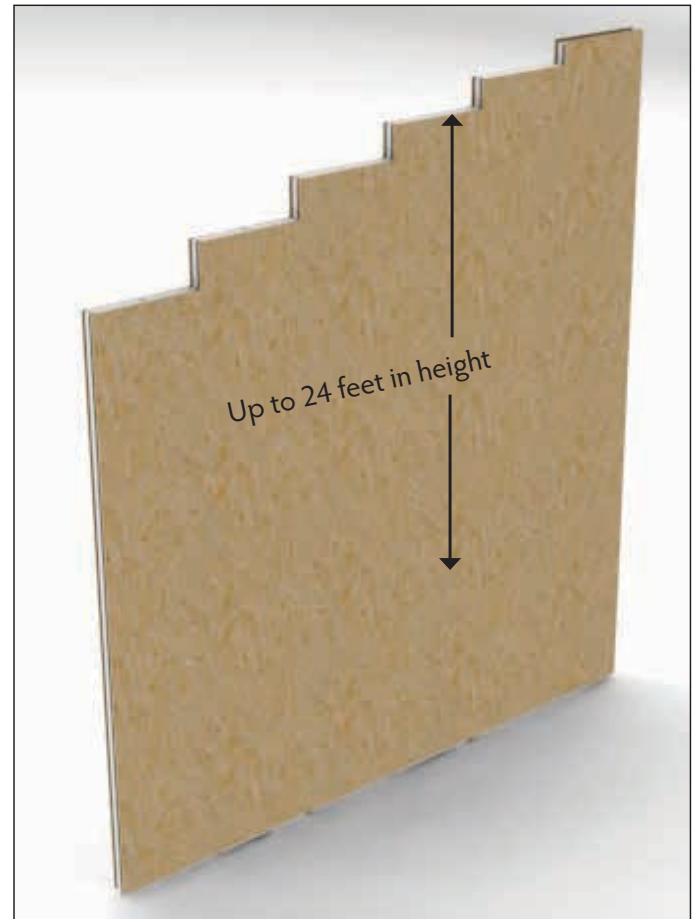
Vertical and horizontal stress loads are tested two times stronger than conventional stud walls. EPS walls resist up to 7,000 pounds per foot which results in structures that are stronger, straighter, taller and wider.



EPS is third-party inspected and certified under NTA Listing Report EPS102108-21. Visit www.epsbuildings.com/technicalspecs for our construction manual details and code reports.

Technology Provides Flexibility

If your project calls for walls up to two stories high, no problem. A major advantage of our panel system over stick built structures is that the EPS panels can be manufactured up to 24 feet. (See EPS load charts for required spans.)



Build it Your Way

EPS panel systems offer complete customization of roof materials. The most popular are trusses with purlins or structural insulated panels over the top of trusses which offer open attic designs.

Shingles, standing seam roofs or virtually any roofing material can also be used.

As with the roofing, siding options are also limitless. Brick, vinyl, cement board siding or just about any material is easily attached to our core panel surface.

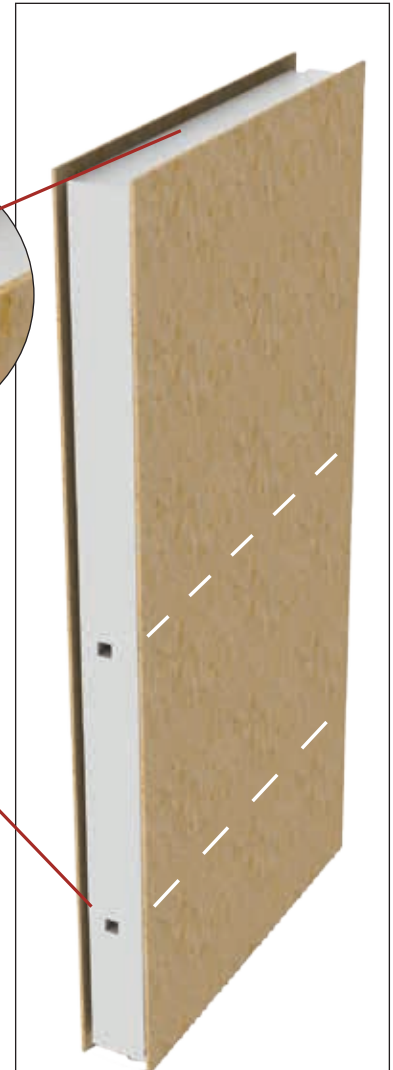
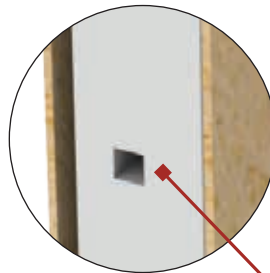
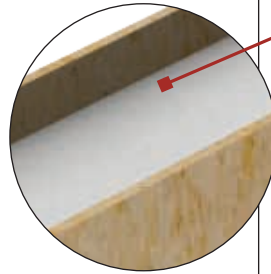
EPS buildings are engineered with IBC codes to your wind and snow loads and can be stamped in 50 states.



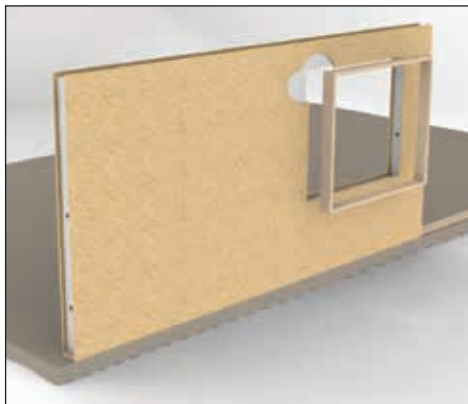
The panel system goes together amazingly fast. All panels are labeled with location and type.

Save Time—Save Money

Electrical wire chases are internal in our panel system. Vertical wire chases are located every four feet between the panel splines and horizontally 16 and 42 inches off the panel floor.



It is important to discuss the wiring installation with the electrician early in the construction process. For each outlet, holes are cut centered on the vertical and horizontal chase. The foam is removed and the electrical wire is pulled through the chase to the outlet and the box is installed.



Windows 40 inches or smaller in width do not require headers. Two-by framing is put into the routed panel.



Headers are used for doors and larger openings with vertical studs that lock the top header in place.



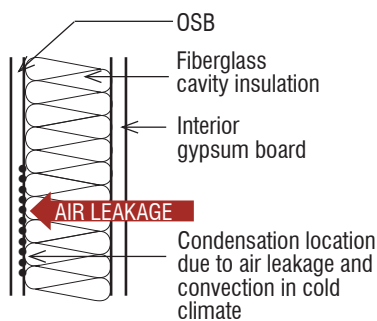
SIP Wall Properties

SIP assemblies have several unique properties. One of them is that they are “air tight” because their cores are “solid” and “homogenous.” The foam cores do not make them prone to “convection” and “condensation” due to air leakage. Since SIP cores are “air impermeable” convective air flows and condensation due to air leakage are not possible (see Figure 4.5).

Another of the unique properties of SIP assemblies are the panel permeance characteristics. The three distinct layers in a SIP (inner layer, outer layer and the core) are typically of equal vapor resistance. For example, if OSB is used as both the inner and outer layers, the permeance of each OSB layer is approximately 1.0 perm. The core is EPS –Type I and is 3.5 inches thick; the permeance of the core is also approximately 1.0 perm (EPS –Type I has a vapor resistance of approximately 3.5 perms per inch-therefore 3.5 inches yields approximately 1.0 perm). The typical, almost ubiquitous, 4.5 inch thick standard SIP, is therefore “uniformly” vapor semi-impermeable. The overall vapor resistance is about 0.33 perms (1 perm plus 1 perm plus 1 perm: Figure 4.6).

However, the resistance to vapor flow inward and outward is the same irrespective of which side of the panel you are considering. The typical panel is “bi-laterally” symmetrical- the resistance to vapor flow is identical from one side of the panel centerline to the next. Under dry cup conditions it is also identical between the inner and outer layers and the core of the panel is OSB skinned. What does this mean? Well, the panel, if it has a core at least 3.5 inches thick (or thicker) and if the core has a vapor resistance of 3.5 perms or less per inch, then the panel can be used in any climate zone on the planet. It is a “universal” assembly.

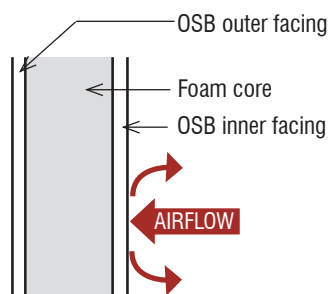
The 4.5 inch thick standard SIP with OSB linings also meets the typical building code requirements for vapor retarders (US-IBC-1.0 perms) and vapor control layers (CDN-NBCC-60 ng/Pa-s-m²) by virtue of the vapor permeability characteristics of the OSB inner lining. No additional interior plastic polyethylene vapor barrier is required-or desirable (exception: sub arctic and arctic climates).



Typical Stick Frame Wall

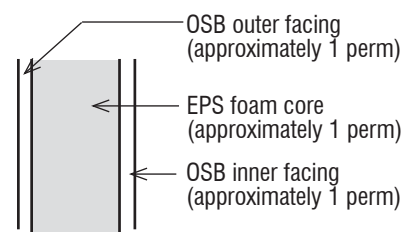
- Cavity within typical frame wall is prone to airflow and convection
- Condensation can occur at exterior sheathing in cold climates

Figure 4.5



SIP Wall

- Core is “solid” and “homogenous” and “air impermeable”
- Convection and air leakage is not possible within SIP
- Condensation due to convection and air leakage within SIP is not possible



The resistance of a SIP to water vapor flow by diffusion is the sum of the individual resistances of the layers. This sum is determined by adding the reciprocals of the permeance of the individual layers. The sum is then inverted (i.e. we take the reciprocal of the sum of the reciprocals to convert it back to perms).

$$\frac{1}{1} \text{ OSB} + \frac{1}{1} \text{ EPS} + \frac{1}{1} \text{ OSB} = 3 \text{ perms}$$

$$\frac{1}{3} \text{ perms} = 0.33 \text{ perms}$$

Figure 4.6

Proven Results—Satisfied Customers

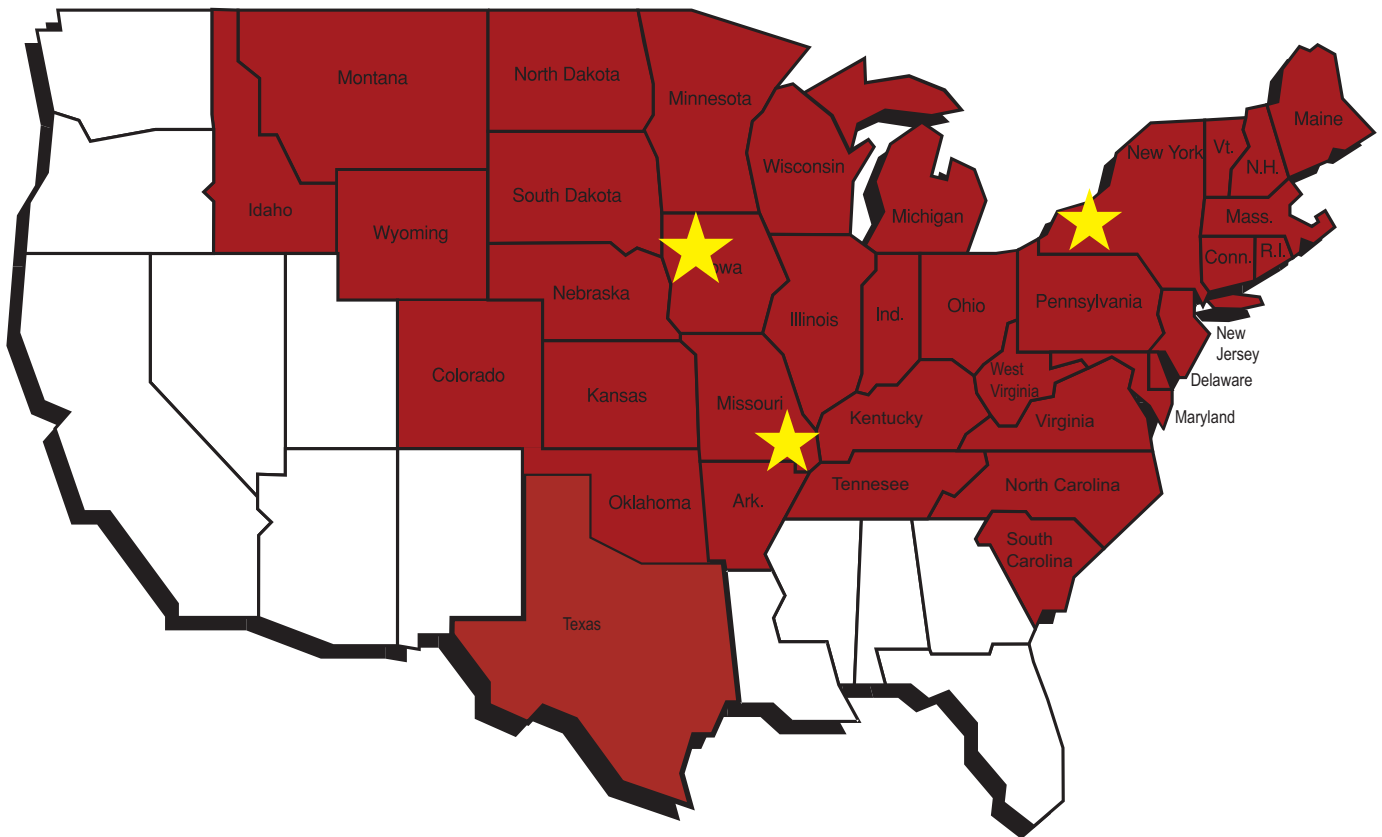
Energy Panel Structures, Inc. was established in 1981 and is an employee-owned division of the MacArthur Company, St. Paul, Minnesota, (founded in 1913).

EPS is one of the fastest growing building manufacturers in the U.S. with over 175,000 square feet of manufacturing area on 15 acres headquartered in Graettinger, Iowa.

In 2010, EPS started manufacturing at a location in Perryville, Missouri.

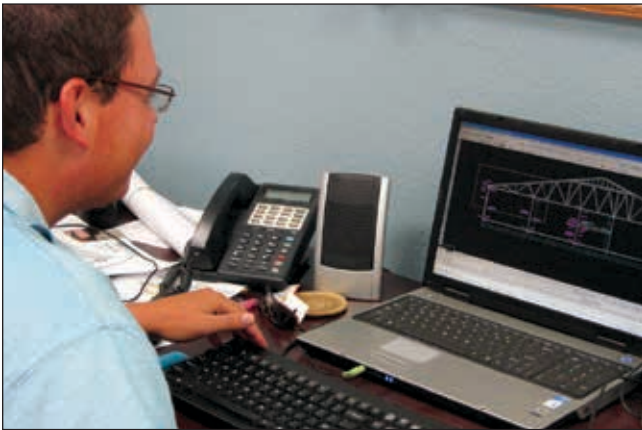
In 2013, Fingerlakes Construction, (FLC), became part of the EPS family of companies including the manufacturing plant in Clyde, New York.

EPS Service Area





EPS Headquarters, Graettinger, Iowa



Our engineering staff can solve your building needs using state-of-the-art design software. EPS buildings are reviewed and detailed by on-staff engineers.



Clyde, New York



Perryville, Missouri



EPS nail laminated column machine manufactures straighter, stronger and longer lasting columns than conventional solid posts.



EPS utilizes state-of-the-art truss manufacturing lines.

Employee-Owners

Our commitment to cost-effective pre-engineered building systems has led to unprecedented growth. EPS is known for a diverse market of products from agricultural, commercial, residential and industrial building systems.

With an independent dealer network of over 400 building professionals, EPS serves all of the U.S. except the far west and southwest states. EPS will completely engineer and manufacture your building to your specific needs.



EPS Headquarters, Graettinger, Iowa



Perryville, Missouri



Clyde, New York

Finish your new home project with . . .



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- Storage building
- Shop space
- Toy storage
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Our post frame construction uses nail-laminated columns that are placed in direct contact with the ground or on top of concrete. These laminated columns are pressure treated with preservatives approved by the Environmental Protection Agency to increase their longevity. EPS columns carry a 50-year warranty* and are custom engineered and manufactured for your project.

An EPS Solid Core building provides the same energy-efficiency and comfort that is built into your new SIP home.



**Homes That are as
Smart as They are**

Beautiful

