

# HARD AT WORK



**Commercial  
Buildings**



# What Separates EPS From the Rest?

## Engineered Value

EPS pre-engineered buildings are evaluated for cost effective solutions, maximum performance and spans.

Every customer will receive an engineered structure that as designed will support wind and snow loads as specified. EPS designs each structure according to site location requirements, either 2015 or 2018, International Building Code, (IBC).

## Cost Effective Design

EPS offers a wide range of product designs at very competitive prices. From 2' on center to 12' on center and from 20 lb. to 200 lb. snow loads—EPS has you covered.

Solid Core buildings are designed for climate control, comfort, durability and proven energy-efficiency.

## Local Dealer/Builders

Over 400 local dealer/builders serve as independent authorized EPS dealers to give you the complete service and attention to detail you deserve.

## The Entire Package

Whether it is a Solid Core, post frame, or ladder frame, the entire package is engineered—not just individual pieces. This streamlines the entire process from planning through construction and identifies problems ahead of time.



See actual warranty for details and conditions.



# HARD AT WORK

## Commercial Buildings

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

ADDITIONAL MANUFACTURING PLANTS  
 Perryville, MO                      Clyde, NY

**Phone: 712-859-3219**

**100% Employee Owned—100% Committed to Quality**

# Solid Core Buildings

## Built with Structural Insulated Panels



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 wood structural panels, typically oriented strand board (OSB).

### **SIPs Save Energy**

The insulating core of a structural insulated panel provides high-density continuous insulation. SIPs are up to 15 times more air-tight and when combined with other energy efficient technology are 50% more energy efficient than stick building.

### **SIPs Save the Environment**

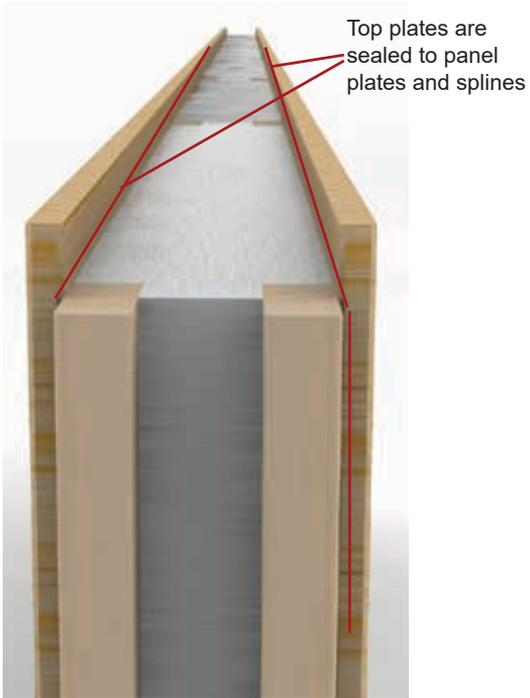
SIPs are both energy efficient and an efficient use of resources, making them an ideal choice for a high-performance green building.

### **SIPs Save Time and Labor**

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

### **SIPs Save Money**

Money is saved by a shorter building cycle of the structure. Quick completion translates to lower loan cost overhead. Job site waste-disposal costs are reduced because SIPs are fabricated off-site.



The wall panels are typically joined using two 2"x 4" spline studs cut to size and then inserted vertically between the panel assembly every four feet.

The panels are routed top and bottom to lock the sill and top plates to the panel system.



# Buildings Engineered for Performance

Our Solid Core System starts with high performance rigid foam insulation chemically bonded to oriented strand board or plywood.

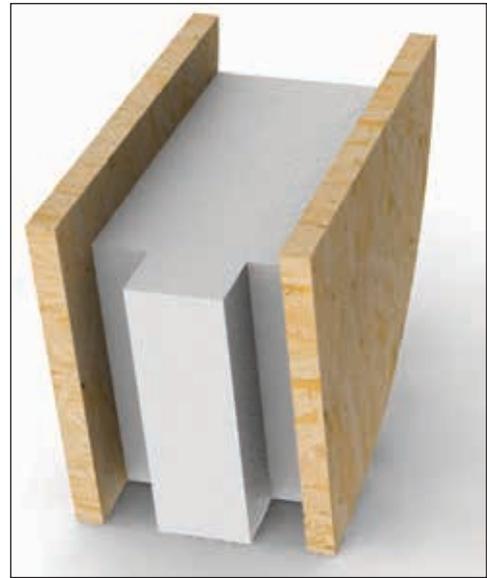
Depending on the size and needs of the structure, the thickness of the foam is adjusted to increase R-value. In addition, the thickness of the OSB or plywood is also adjusted for larger clear spans and buildings.

## Multiple finish options

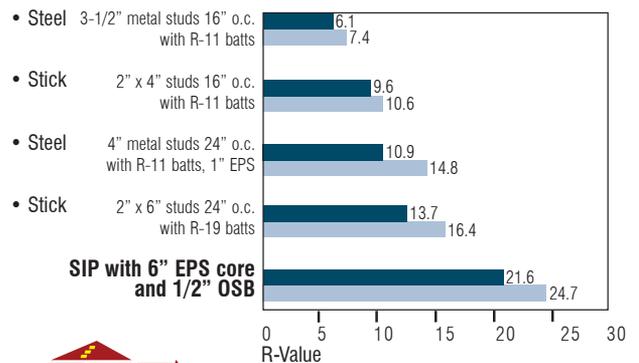
The 3/4" OSB provides a 15-minute thermal barrier, sound control, and strength for superior performance. EPS offers several main types of finishes: Laminated glass board, Fiber-Reinforced Plastic (FRP), liner steel or embossed aluminum can be used for durability and power washing and USDA finishes.

Ceiling options include: R-33 pop up panels with interior glass board or embossed aluminum finish; corrugated steel panels with blown in insulation or drywall with blown-in insulation.

You can choose from several cost effective, energy efficient, options to fit your needs.



### COMPETITION



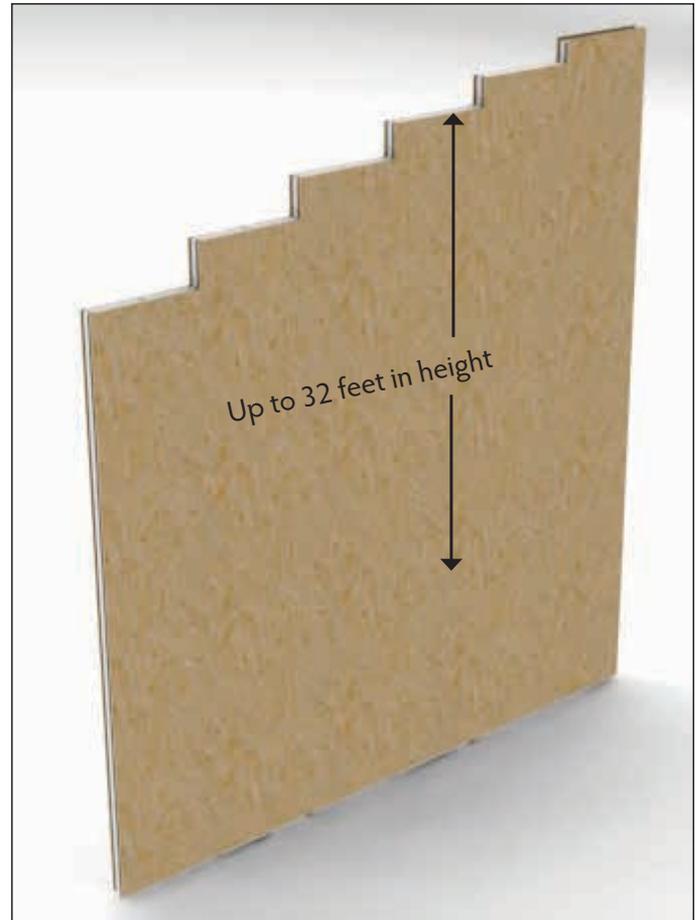
■ Whole Wall = Clear wall area plus corners, foundation & windows  
 ■ Clear Wall R-Value = Only the center section of a wall

Source: OAK RIDGE NATIONAL LABORATORY



# Buildings That Provide Flexibility

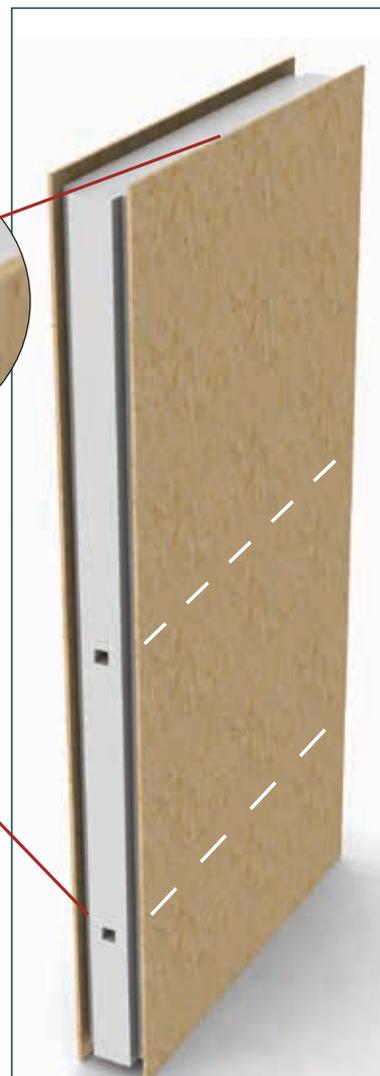
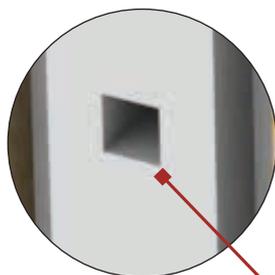
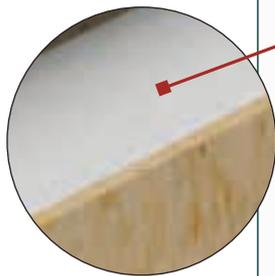
If your project calls for walls up to two stories high, no problem. A major advantage of our panel system over stick built structures is that the EPS panels can be manufactured up to 32 feet. (See EPS load charts for required spans.)



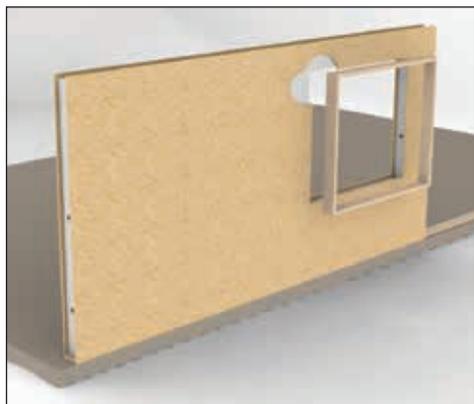
The panel system goes together amazingly fast. All panels are labeled with location and type.

# 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.



# 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.

EPS has state-of-the-art production facilities and six truss lines to give you cost-effective solutions.



# 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.

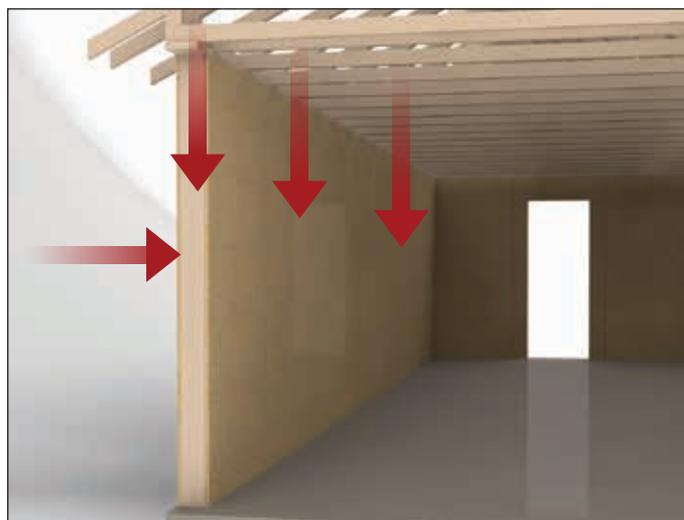
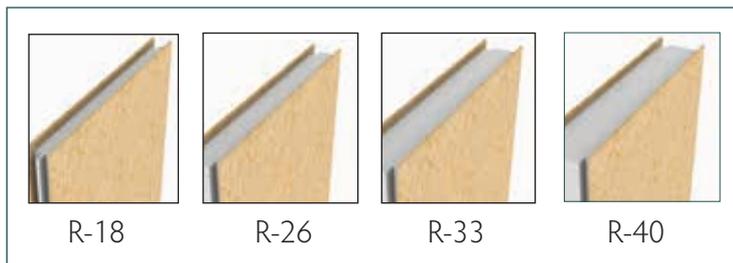
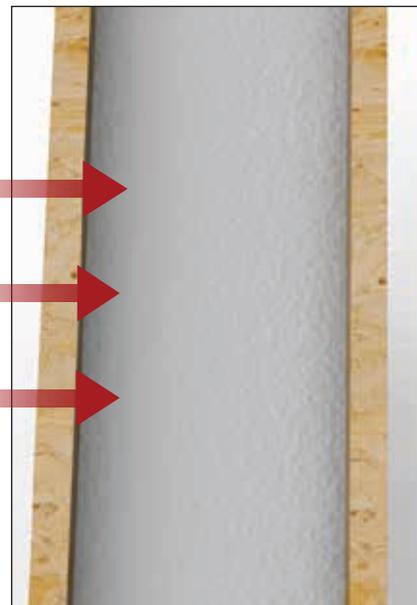
The results speak for themselves. Our core panel system is up to 15 times better at stopping air infiltration. This offers you a comfortable building by virtually eliminating drafts.

Choose from the standard R-18, R-26, R-33 or R-40 walls. All types of agricultural 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.



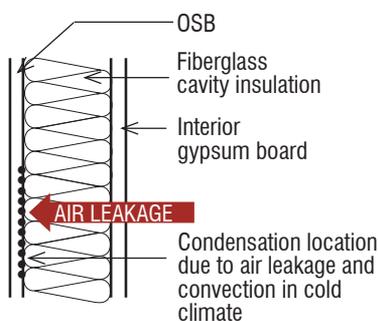
# Solid Core Wall Properties

Solid Core (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 unique property of SIP assemblies is 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).

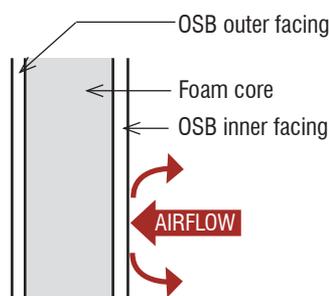
However, the resistance to vapor flow inward and outward is the same irrespective of which side of the panel you are considering. The typical panel is “bi-laterally” symmetrical- the resistance to vapor flow is identical from one side of the panel centerline to the next. Under dry cup conditions it is 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).

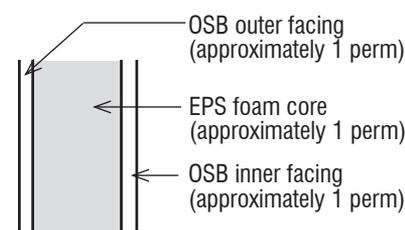


- Typical Stick Frame Wall**
- Cavity within typical frame wall is prone to airflow and convection
  - Condensation can occur at exterior sheathing in cold climates

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).

$$1/1 \text{ OSB} + 1/1 \text{ EPS} + 1/1 \text{ OSB} = 3 \text{ reps}$$

$$1/3 \text{ reps} = 0.33 \text{ perms}$$

Figure 4.6

# Post Frame Buildings

## Advantages of Post Frame:

- ▶ Embedded post foundations can be more easily installed during winter construction than pouring concrete foundations.
- ▶ There is greater design flexibility when using post-frame construction techniques. For example:
  - Long span trusses create large building open areas without the need for interior load-bearing walls.
  - Wide post spacings create flexibility for large wall openings.
- ▶ Building system cost savings are considerable. Savings can be realized in: materials, labor, the use of more cost-effective construction equipment, lower interest costs due to quicker erection, less building maintenance and energy savings.
- ▶ State-of-the-art engineering is built into our post-frame construction providing dependable guaranteed performance.
- ▶ Site preparation is easy and post-frame structures are very adaptable to problem sites such as steep slopes and flood plains.

## Durability

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.



# Buildings that are Versatile

*From commercial storage to:*



- Storage/office combo
- Churches & schools
- Community buildings
- Your custom design



- ▶ Design flexibility
- ▶ Wider clear spans
- ▶ Cost-effective design

- ▶ Single source supplier
- ▶ Local dealer/builders
- ▶ Proven satisfaction

# Ladder Frame Buildings



- 2" x 6" and 2" x 8" Wall Framing, 4' o.c.
- 4' o.c. Trusses with 2-ply columns
- Roof purlins, 2" x 4" flat-24" o.c.
- 24" o.c. Ladder Girt Spacing



- ▶ Faster and easier to frame
- ▶ More competitive than conventional building designs
- ▶ Liner steel ceiling is faster using 4' o.c. spacing
- ▶ Vertical exterior and interior options using steel, OSB plywood or drywall
- ▶ Reduces additional framing labor and materials
- ▶ Easy to add future insulation
- ▶ Easier header and opening installation
- ▶ Fully guaranteed with warranty

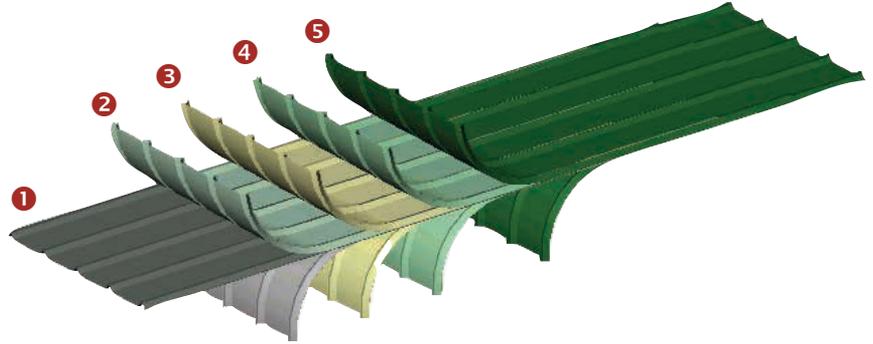


**Like all EPS designs, this Ladder Frame Design is Pre-Engineered and can be tailored to your needs in a Quality, Cost-effective Building Solution for you!**

# EPS 29 ga. Steel Layer System

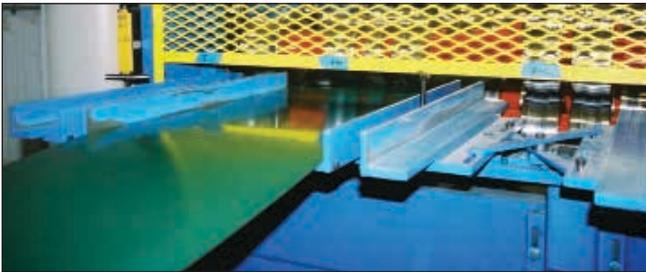
EPS roll forms our own steel. We utilize computer controlled instruments to achieve exact matches of measurements, color and uniformity. EPS paint coating carries a 40-year warranty for chipping, cracking or peeling.

- 1 ASTM A446, Grade "E" full-hard, G-100 galvanized base.\*
- 2 Zinc coating guards against corrosion.
- 3 Pre-treated film provides superior adhesion of the primer.
- 4 Urethane primer provides additional corrosion protection as well as ensuring permanent bonding of the finish coat.
- 5 Siliconized polyester finish coat adds fade-resistant color and long-lasting protection.



The paint systems utilized by Energy Panel Structures, Inc. are based on unique polyester and silicon polyester resins that are not sensitive to moisture but are extremely flexible. All paint systems employed are designed for longer lasting color and the reduction of white rust corrosion. The paint systems are used in architectural, commercial, and agricultural building panels.

All of the colors have been rigorously tested for performance using the highest standards as set by the National Coil Coaters Association as well as ASTM standards. The tests illustrate that the paint systems utilized are superior to the control standards for film integrity, chalk and fade. We offer a complete coating system, with primers and backers designed to provide optimum field performance in terms of adhesion, fabrication capability, resistance to abrasion and long-term corrosion resistance under normal conditions.



**Wall and roof steel roll former up to 48' length**



**Trim roll formers from 10 to 30 feet**

Two 3-line trim roll form machines with mandrel 10,000 lb. uncoiler, coil car and cut to length slitter. EPS also uses three different break presses and standard trim are all hemmed for added strength and aesthetics.



EPS uses all color-matched screw fasteners on our walls and roofs that carry the same warranty as the paint on the steel.

\*New York Location uses AZ50 Galvalume

# Proven Results—Satisfied Customers

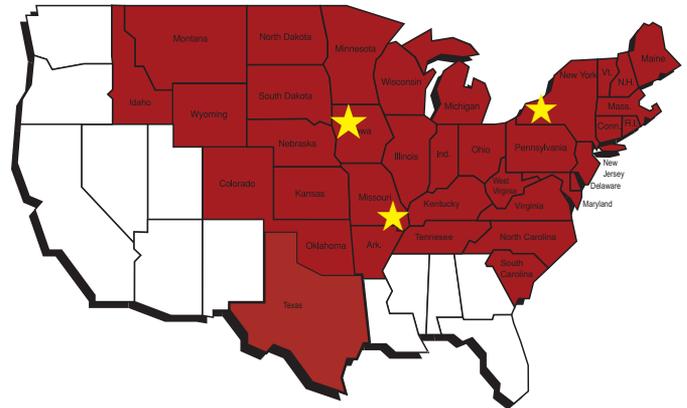
Energy Panel Structures, Inc. was established in 1981 and is an employee-owned division of the MacArthur Company, St. Paul, Minnesota, (founded in 1913).

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



# Better Technology Builds Better Buildings



The jumbo panel press automates production of 8'x24' or 4' x 32' panels. The foam thickness can range from 2 to 13-inches.



Adhesive application is automated.



Jumbo sheets of 8x24 OSB/Plywood are automatically placed.



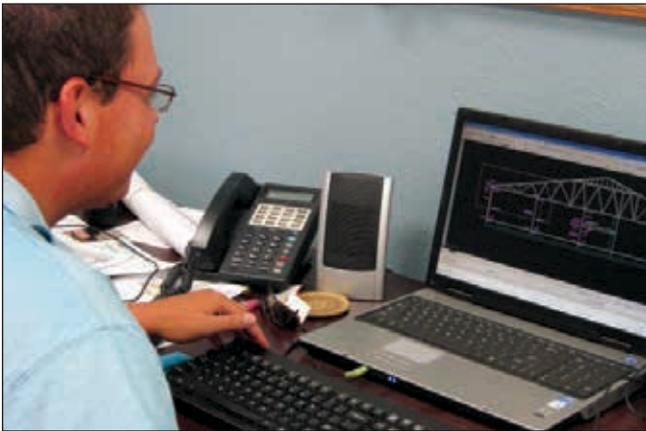
The Weinmann CNC uses adaptive technology for more complex panels and cuts angles, bevels, windows, and doors



CNC cutting eliminates waste and improves efficiency.



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



**With nearly 40 years of building experience, EPS is very confident in our manufacturing process and in the long-standing relationships we have with our suppliers. We strive to provide our dealers and customers with products in which they can be confident, and therefore provide an extensive warranty covering our building products.**

**A summary of the warranty includes:**

- Guaranteed to be engineered to meet wind and snow loads
- 20 year warranty on Structural Insulated Panels (SIPS)
- 1 year warranty on all EPS parts and other products

*For EPS suppliers and EPS fabricated materials:*

- Lifetime borate treated framing lumber
- Lifetime Supa-Timber® products
- 50-year structural columns
- 40-year EPS roll-formed painted steel
- Limited lifetime warranty on painted screws
- 20 year Expanded Polystyrene Core foam
- 5-year A.J. commercial/agricultural walk doors
- 10-year Sequentia Fiberglass Reinforced Plastic
- 5-year Plyco sliding doors, 90 mph wind

All warranties are governed by the terms and conditions contained in the attached Owner Original Warranty. Buyer should carefully read all terms and conditions to fully understand the scope and coverage of the Owner Original Warranty. Certain restrictions apply and are responsibilities of owner & contractor. See your EPS Dealer for more details.

# Your business is unique.



## YOUR BUILDING SHOULD BE TOO.

