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BY GARY REICHERT

Barndo Digital Magazine

Shield Wall Media Creating Digital Consumer Publication & Website

n the next issue of Frame Building News (August), we are proud to offer a glimpse into our new, online consumer magazine Build My Barndo.

Post-frame construction has been struggling to break into residential construction and single-family homes for years. The barrier remains educating the home buyers about the benefits of post frame. Last year we released a consumer book line including "Pro Tips On: Your Post Frame Home." This year we launch an online consumer magazine, to be found at BuildMyBarndo.com. The first issue is scheduled to be available in early July.

Our brands have decades of trust built with our subscribers and advertisers. We

will work to build that same trust with home buyers.

Forty+ years of Frame Building News and 50+ years of Rural Builder give us a wealth of information to educate consumers. Build My Barndo will focus on articles designed to help home buyers ask the right questions, for instance, "What do I need to know about" ...

- Foundations
- In-floor radiant heat
- Insulation above and below grade
- Metal roof and wall panels
- Wood treatment
- Design and floor plan options

Build My Bardo will also feature an aspirational gallery showing the range of

possibilities available with barndominiums. The gallery will include one truly outstanding project with more detail regarding the products and components used in the construction.

As of this writing we are not taking advertising for the magazine. For the fore-seeable future we will focus on growing the audience and providing value for both the readers and our friends subscribing to or advertising in our trade publications.

If you have a single-family residential home you would like us to feature, a suggestion for a topic, or suggestions to grow our consumer subscriber base, feel free to contact me any time.

Let's grow our businesses together. FBN



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A window installation in progress.

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Cover design by Tom Nelsen

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> Garv Reichert. Publisher, Shield Wall Media

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PHOTO BY COURTESY OF AJ MANIUFACTURING

Installing Windows

Working With J-Channel Trim and Other Tips and Tricks for Post-Frame

By Mike Momb

hen I first became involved with post frame construction 43 years ago, nearly every building we provided was for cold storage or utility usage. Very few clients wanted windows and for those who did, single-pane, aluminum frame sliding windows — field-wrapped with steel Jchannel trim — were considered sufficient.

After having a plethora of them break during transportation, we upgraded to dual-glazed aluminum windows. This was not for the benefit of energy savings, but because they were so much sturdier. I don't believe I ever ordered a vinyl window until becoming a post-frame building contractor a decade later. We would use standard flanged vinyl windows, just like those stocked and sold at major lumber retailers and big box stores.

Vinyl windows were a huge upgrade for our clients; however, to flash them it still required cutting and carefully fitting four pieces of steel J-channel trim around them, adding copious amounts of caulking at all corners. We would then do appropriate chants and offerings in hopes we would not end up with leaking windows.

As luck, or lack thereof, would have it, even with best installation techniques, about one in 10 of them would leak. These leaks became painfully expensive, as it meant having to send someone back for a repair.

When we discovered we could order these windows with integral vinyl J trims, our crews loved them. Installation times were greatly improved and now very rarely was there a leak call back. Even using windows with integral J channels, at window lower corners, a potential for leaks still occurs. If a steel high rib ends up at exactly a wrong point, an opening could be left where water can get into building.

The solution remained (as previously done) to goop on lots of caulking prior to installation of siding, and hope.

Window Choices

Before offering solutions to potential leakage challenges, walls must be properly framed. In today's world, most post-frame buildings are now conditioned buildings, with interior finishes. Many of these are homes and commercial buildings. This makes understanding how International Energy Conservation Code (IECC) requirements impact what all of us should be providing to best meet our client's (and Code) needs.

Two important things to be looking for when considering window choices — *U*-factor and solar heat gain coefficient (SHGC).

U-factor is an inverse to R-value. Window *U*-factors measure how well a window insulates. A lower U-factor means a better insulated window. The 2021 IECC Table R402.1.2 provides maximum assembly *U*-factors for residential fenestration (windows) ranging from 0.50 in Climate Zones 0 and 1 to 0.30 in Climate Zones 3

and greater.

SHGC values for residential construction range from 0.25 in Climate Zones 0 through 3 to 0.40 in Climate Zones 4 and 5. There is no current SHGC requirement for Climate Zones 6 and greater.

Commercial *U*-factors and SHGC are far more complex. The 2021 IECC Table C402.4 provides an in-depth breakdown of requirements, not only by Climate Zone, but also whether windows are fixed, operable or in an entrance door or are a skylight.

If in doubt, provide windows with both low *U*-factors and SHGC values.

Window Framing & Deflection

Once window thermal performance requirements are met, we move to properly framing a wall to accept window openings. The 2021 International Building Code (IBC) Table 1604.3 outlines allowable deflection limits for various building portions. For exterior walls with flexible

finishes, wind load deflection is 1/120. *Per Footnote "a"*

"For structural roofing and siding made of formed metal sheets, the total load deflection shall not exceed 1/60. For secondary wall members supporting formed metal siding, the design wind load deflection shall not exceed 1/90."

Footnote "f" states

"The wind load shall be permitted to be taken as 0.42 times the component and cladding loads ... Where framing members support glass, the deflection limit therein shall not exceed that specified in Section 1604 3.7"

From 2021 IBC Section 1604.3.7, "The deflection of framing members supporting glass subjected to 0.6 times the "component and cladding" wind loads shall not exceed either of the following:

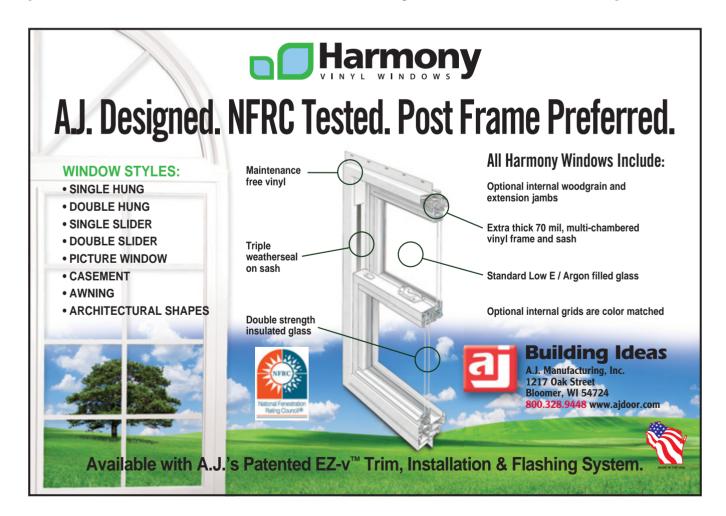
- 1. 1/175 of the length of span of the framing member, for framing members having a length of not more than 13' 6".
- 2. 1/240 of the length of span of the framing member +½ inch, for framing members having a length greater than 13' 6".

To meet these more stringent deflection criteria requirements, it may become necessary to employ bookshelf style wall girts, rather than externally mounted girts. To prevent undue sagging of bookshelf girts below window openings, an appropriately sized and strong externally mounted wall girt may be added directly below bookshelf girt supporting window opening, as an "L". Your engineer can review designs to ensure Code mandated requirements are being met.

Window Leak Prevention

I have seen all sorts of alternative flashing ideas. Some work; most do not.

The most popular is to use a Z, base, or head trim across top of a standard



window, rather than a J-channel. While eliminating water from sitting in a J and reducing amount of water flowing down the side Js, it creates two new leak points — one at each end of trims where they are cut into siding.

Rather than trying to defeat water entering at window lower corners, some builders opt to just allow water to run down inside of steel siding and out on top of base trim (or wainscot Z trim). Builder Roger Higginbotham places a small piece (or strip when there is no wainscoting) of scrap steel under window corners and overlapping trim below (see photo).

Builder Kevin Delay's company orders new construction windows with integral J-channels. They place Plyfoil reflective radiant barrier around the window opening, extending down, and overlapping the trim below (see photo).

A concern with these methods is when inside closures are placed between bottom edge of steel siding and trim — trapping water inside the wall.

Installation Tips

We want to use a Weather Resistant Barrier (WRB) in any instance where the client will not be utilizing closed cell spray foam insulation applied directly to the interior face of steel siding. Rather than making an X or I cut at the window opening, cut along all four edges and remove the cutout. Do not wrap WRB into the opening. At the upper corners of the opening, make a slit in the WRB 6" inches long, upward at a 45-degree angle, away from the opening. Temporarily fold this newly created flap upwards.

Other Tips and Tricks

- Install a sloped sill pan across bottom of window opening.
- Examine window corners for excess vinyl on the face of flanges. This may cause steel siding to lay other-than-flat if not removed. Use a grinding wheel to remove any excess vinyl so the flanges outer face is left smooth.
- A generous door and window sealant bead is run between the window flange and outside of WRB (or window framing if no WRB) at edge of opening sides and top. After the window is properly placed in opening, install self-adhesive flashing tape around window, overlapping tape onto the flange and WRB, working from bottom upwards. Fold down the previously created top WRB tab and tape 45-degree cuts.



Builder Kevin Delay's company orders windows with integral J-channels and overlaps the trim with a reflective radiant barrier.



Builder Roger Higginbotham places a small piece or strip of scrap steel under window corners.

- Place form-fitted, adhesive-backed inside closure strips across the window bottom where the steel panel top edge will land.
- Cut steel siding panels to allow for 1/4" of space between the final panel placement and the recess of the integrated J-channel. Directly above and below the window, place #12 x 1 1/2" diaphragm screws on each side of every high rib into the underlying wall girt or other horizontal framing member.
- There is a trick for installing steel wall panels into integral J above and below windows. Slide the overlapping panel close to the underlapping panel. Tilt the panel slightly to begin overlap at the point most distant from the window to begin overlap.
- Progress toward the window, along the lap, continuing to slide and straighten at same time. When the overlapping process begins to take some extra effort, slip a putty knife or similar thin, flat surface between the overlap/underlap to create a "ramp" to slide the overlap across underlap. FBN

Mike Momb has been Technical Director for Hansen Pole Buildings, LLC of Browns Valley, Minnesota for more than 20 years. His daily post-frame blog, as well as his weekly "Ask the Pole Barn Guru" column can be followed at the company website, www.HansenPoleBuildings.com/blog/.





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More Post-Frame Windows Tips & Tricks

Compiled by Rocky Landsverk, Editor

f you've been a builder for a long time but are new to post-frame construction, you may have some questions or concerns when it comes to installing windows in a post-frame building. Thankfully, the learning curve doesn't seem steep.

That doesn't mean that post-frame veterans don't have advice for you. It only means that with a few adjustments, you'll be able to make your window installations work great, including making them waterproof. "In my opinion installing a window (in a post-frame building) is no different," said Kyle Stumpenhorst of RR Buildings. "The key differences are in the framing requirements as well as the proper flashing considerations."

Other experts told us the same thing — there are more similarities than differences. An example of a similarity — window openings should be a little larger than the window itself in all installations, by one-half to 1 inch all around to allow for insulation. That means if the window is 47"x47", the rough opening might wind up being 48" square.

Advantages of Post-Frame

You already know that post-frame construction has many advantages over conventional stick-built homes, or you wouldn't be holding this magazine. Among them, Stumpenhorst said, "all load bearing is done at the columns and because of this you don't need to worry about the additional framing of headers."

Obviously, that means less labor and materials, but also the reduction of thermal bridging, which improves energy performance. "You are able to insulate right next to the window frame box," Stumpenhorst said. If you need to, conduct an Internet search for a definition of the term "thermal bridging."

Window Choices

There are a few options for post-frame window installers, including buying windows that have preinstalled J-channels. Stumpenhorst personally prefers to get windows without a built-in J-channel, opting for a vinyl-clad exterior window with a nailing fin.

"While it may seem appealing, and definitely easier since you will not be installing J-channel yourself, the ability to properly seal it becomes almost impossible," Stumpenhorst said. "There are also some great postframe specific windows on the market. They allow you to install your metal directly over the window opening and then come back and cut the hole out. The top channel that we would create with a piece of J-channel is already built into the window as well, so ease of install is definitely there."

Stumpenhorst said RR Buildings doesn't use those particular windows because he likes to use a "belt and suspenders approach of multiple layers of air and water sealing that exist with a standard nailing fin window."

There are also a lot of great reasons to simply buy windows made for the J-channel situation involved with post-frame



construction. The AJ Manufacturing Harmony windows, for instance, come with trim systems that are made for the situation. The EZ-v[™] trim systems cover the "rough edges" of steel around the edges of windows and doors.

Typical Window Installation Methods

There are three basic ways in which to install a window: Insert, nail fin, and post-frame trim.

"Insert" window installations typically refer to replacement windows with no exterior installation trim. The carpenter removes the old sash and slides the new window into the existing window frame. The craftsman and their homeowners will want to ensure the existing window is solid and not rotted or damaged.

Nail fin installations involve a nailing fin or "mounting flange" — a thin strip on the exterior of the window that is set back and available for nails or screws. Those can also come with a J-channel attached. In this case, the windows are installed before the siding goes onto the building. The structure might be sheeted in OSB and weatherization wrap, with window tape over the nail fins, but most post-frame structures are not sheeted and don't have weatherization wrap, so the windows are installed directly onto the framing members.

"Residential windows will, many times, come with a 3/4" J-channel as part of the window," said Scott Thommesen, sales rep for AJ Manufacturing. "This 3/4" J-channel is fine for horizontal vinyl siding

Top Tips and Tricks

By Scott Thommesen, AJ Manufacturing

1. Allow for expansion and contraction.

Vinyl windows expand and contract quite a bit after installation and for the life of the window. So, when installing a vinyl window, it must either sit solid on the sill or on shims. The window will conform to whatever is under it.

2. If using shims, shim every weight point.

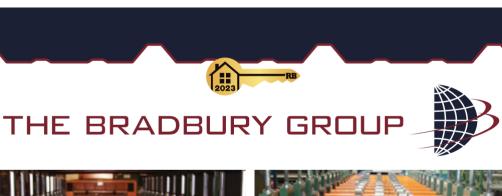
On double hungs, the weight points are on the two sides (all the weight of a double hung is on the bottom corners). Sliders have three weight points: Each bottom corner and two-thirds of the weight is in the center. If you don't shim at least all three weight points, the window will fail in weeks. I have seen far too many installations where installers have shimmed the bottom of a window, nailed it in, and then pulled the shims back out, leaving a window 'hanging' on the nail fin. The spray foam they put under it does not stop the window from moving. Six months later, somebody is back at the home because the frame is badly sagged and the sash no longer makes good contact with the frame. These windows then need to be reinstalled or, in some cases, replaced on the contractor's dime and time. I can't emphasize enough about how important it is for proper shimming across a window or just set it directly on a flat sill.



PHOTO BY COURTESY OF AJ MANIUFACTURING

3. Square the window with the sash.

When installing a window, put away your squares and levels. You need to already have a level sill that you are installing this window on. Use the sash to square up your window. Here's how: Set the window on the sill and slide open the sash 1/8". Be sure that reveal is perfect before nailing your window into place. Remember, after the window is installed, if it leaks and that sash isn't seating the frame evenly, it's likely an installation problem. Check the reveals all around the entire operating sash to be sure they are all equal on all side of the operating sash. If your window is slightly out of level, if the reveals around the operating sash are perfect, that window will still perform the way it was designed.







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but is too small for post-frame vertical steel ribs." So, some window manufacturers, including AJ, have designed a larger J-channel that is designed specifically to accommodate up to a 1 1/4" rib. Water infiltration does need to be addressed in this situation, typically with a trimming and flashing method on the outside of the windows and behind the seal.

Post-frame windows have installation and flashing systems specifically designed for post-frame vertical steel. In the case of AJ, this is where their EZ-v™ trim system comes in. The siding is installed before the windows. "It works using J-channels top and bottom, and a brickmold-style trim on the sides," Thommesen said. "It uses the J-channel on the top of the window as a drip cap, capturing the water running down the siding and displacing it off the side of the window. The brickmolds on the sides

seal the window to the steel siding and the J-channel on the bottom blocks any pressurized rain. All these parts also cover any sealant that is used and trims the window with a finished appearance."

Flashing and Post-Frame Windows

To the topic of flashing, Stumpenhorst said that "many times a steel-clad exterior is used in absence of any structural sheathing. This also saves labor and material use, not having to sheath the walls, and instead we rely on shear strength from the properly installed steel exterior and permanent bracing in the walls."

But because of this, you need to take extra care in the window flashing installation, so water doesn't get behind the steel and rot the framing and/or ruin the insulation. That can be different for contractors who learned to trim windows with vinyl siding

in more conventional or typical building methods. When Stumpenhorst sees examples of these contractors working on their first post-frame home, the top J-channel is sometimes installed in a manner that could allow water behind the siding.

"While we always back-seal our bottom and side J-channels with a high-quality sealant, the most important detail is the top J-channel, because that J-channel can act like a gutter," he said. "You need to funnel all the water out and over the metal, not to the edges of the window and down the side where your cut panel meets the trim."

He also suggested that you remember the layout of the metal. "Because there are high ribs in the metal," he said, "the last thing you want is for a rib to land right along the side of a window. This will funnel water directly behind the steel because it is almost impossible to properly seal." FN



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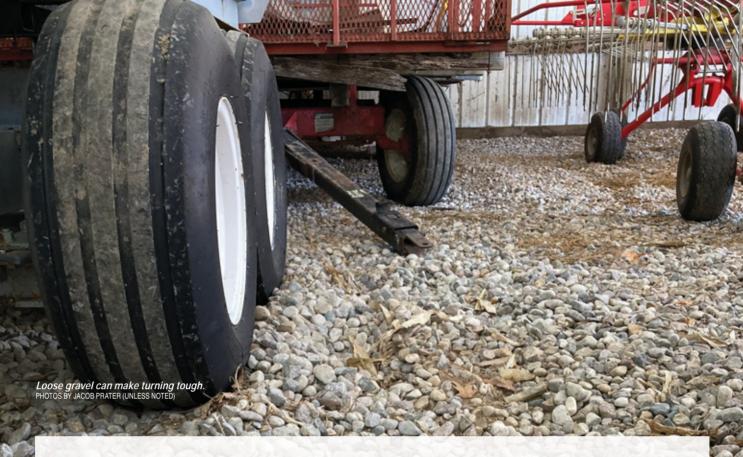








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Dirt and Gravel Floors

Your Options and How To Weigh Their Cost vs. Practicality

By Jacob Prater

f you are putting up a post-frame building and need to save some money, you might look to the floor to save a few bucks. Or if you have a particular use that doesn't call for a concrete floor, then you might consider some options other than concrete.

Some options are better than others and your choice comes down to the budget and the use. Regardless of what you decide to use as material for the floor, there is one thing you really should do: You must build up a pad to

raise the floor of your building even if you are building on a flat or slightly crowned site. This may cost you a bit of money and you may have to bring in some fill, but it's vital to avoid drainage and puddling issues. Even if you think it's *pretty* flat or that you are on a high spot, it is still a good idea to do this.

Building Up a Pad

Building up a pad like this is actually a prerequisite for some builders or they won't even put up a building for you. When asked about different types of floors in post-frame buildings, Dan Heinen, who is getting close to 60 years of experience, replied, "Yeah they can all work (dirt and gravel), but you have to build up a pad first. We put a few in on flat or even slightly raised ground without a compacted pad and they all ended up with puddling and mud inside them with either gravel or dirt floors."

The problem as he explained to me was two-fold:

1. Compaction inside the building from livestock or machines leads to a small grade into the building.















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MAIL TO:

Shield Wall Media ATTN: Barb Prill PO Box 255, Iola, WI 54945 2. Snow piled around the building with frozen ground makes for an easy accumulation of water in your building when it melts.

Lest you think you can get away with it, a farmer neighbor of mine, Jason Zilich, described his ordeal with a building erected by his grandfather. "It was always damp and sometimes puddled," he said. "When I got the farm I had to excavate around it to create a grade away from the building to get water to move away from it instead of slowly leaking in." His building was constructed without a raised pad on flat ground.

Choosing Your Floor

Once you've set yourself up for success with that compacted pad raised up, then you've got options. Concrete is often an ideal floor, but it is expensive and may not be your best choice for some uses. You also may need to get that building up fast and therefore you might intend to pour concrete later.

In any event, your other options are gravel (or something like it) and dirt.

Dirt floors are your cheapest option, but they may not be a good choice. Some of the performance of a dirt floor comes down to the properties of the material. Sand, for instance, won't make a good compacted pad as it doesn't really compact very well, but it might be pretty good as a surface layer on top of your pad (it will act a bit like gravel, more on that later).

Anything silty isn't going to compact very well, and really clayey soil may not be great, either. Your pad will ideally be a compactible mixture of sand and clay (think about making a brick here). A compacted dirt floor like this may be good enough for parking machinery or an open-air building, but if you intend to store hay it is likely to get moldy.

Herein lies the problem with dirt floors: They simply wick moisture up from the ground and as a result you will have moisture in your building if it is closed up. If that isn't an issue, then a dirt floor can work just fine for you. A coat of a couple inches of sand could help reduce that moisture problem, but even better is to bring in several inches of gravel to put on top.

Gravel Floor Pros and Cons

Gravel floors can be cheap and effective

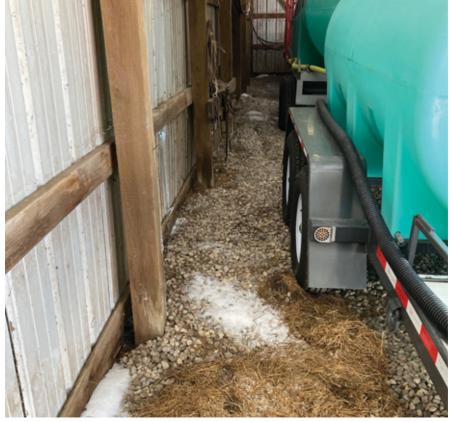


and are great for a variety of uses. There only real downside is when you have to lay down on them or move something around in your building that has smallish wheels that don't move well through the gravel or you have to make some tight turns with machinery. Beyond this they work really well for trucks, tractors, and various other machines that might be parked and moved in and out of your building.

As far as moisture goes, they are a real

improvement over dirt floors. That farmer I mentioned — the one who had to excavate around his dirt floor building to create a pad many years after the initial construction — had moldy hay with that dirt floor. He eventually brought in several inches of gravel and solved the problem.

One other thing of note with gravel floors is that they slowly compact and you are likely going to be bringing in a bit more gravel every now and then to address that slow compaction. Also know



This building has had gravel added after the initial build.

that gravel will sometimes get dragged out with your machines.

Upgraded Options

There are other options for a floor in your building in addition to dirt and gravel, and with a little creativity you can sometimes use some locally sourced cheap material and get a good result. Crushed recycled asphalt (or even cold patch asphalt) can be ideal for a cheap floor in a machine shed. It packs to a smooth surface so driving on it is great, but it is only a slight step up from a dirt floor when it comes to moisture, so it isn't a good choice if moisture is a problem for your intended building use.

Another option is crushed concrete. This will basically act just like gravel and could be a nice option if locally available for the right price.

Sometimes the best way to make comparisons is to learn from what others have done. Along that vein, here is the tale of my neighbor and his buildings. You al-

ready heard part of it; the excavating around a dirt floor building and subsequent hauling-in of gravel, but that isn't his only building or learning experience with dirt floors. He's got another building that had a dirt floor, too.

You must build up a pad to raise the floor of your building even if you are building on a flat or slightly crowned site.

A couple of gravity boxes with grain were parked in this shed and this led to a rat infestation with burrows in the dirt floor and under an adjacent concrete floored building. This was a huge mess and vermin are definitely something to consider when deciding about using a dirt floor.

The rest of the tale follows a pattern. All of his sheds have slowly been getting floor upgrades. All the dirt floor buildings are now gravel or concrete and the newest buildings



Snow around a building can lead to water intrusion.

he has put up all have concrete floors.

Summary

The message here is simple. Go ahead and plan and budget for the floor that you need, but if you try and do it on the cheap to get your building up quickly, then expect to do some improvements later and deal with some potential issues in the interim. **FBN**





The Metal Connector Plates in Wood Trusses are Modern Marvels

■ By Sean Shields

russes are incredibly efficient structural framing elements. By using a series of interconnected triangles, trusses transfer significant forces to their heels, allowing for the very large roof spans typically seen in today's post-frame construction.

When installing trusses, builders and installers should keep in mind that while long-span trusses have superior performance within the plane of the truss, when trusses bend out-of-plane there is the potential trusses can be damaged to the point of needing repair. One area where damage can occur is at the truss joint, and

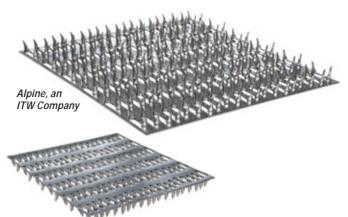
to better understand the impact of potential damage this article will look at the metal connector plate itself.

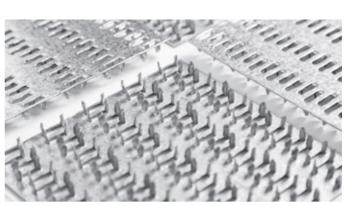
How the Connector Plate Functions

Beyond the triangular construction, the workhorse of every truss is the metal connector plates that hold the various webs and chords together at the joints. At a truss joint, the teeth of a connector plate transfer various forces from one wood web or chord into the plate itself (see the Joint Forces graphic, page 20). Shear and axial forces in the truss plate are then transferred across the joint line, where teeth on one side of the joint trans-

fer the forces into the adjoining wood web or chord. In this way, the truss connector plate acts like a bridge between one wood member and another.

When a component manufacturer designs a truss, they use software to identify the paths each type of load will travel through the truss. The magnitude of the forces being resisted and the span of the truss impacts everything from the quantity and location of webs to the grade of lumber and size of the connector plates. At a basic level, a truss designer works through these variables to arrive at the most efficient configuration at each location of a building.





Eagle Metal Products

The Efficiency of the Connector Plate

It's hard to appreciate how sophisticated today's metal connector plates are just by looking at them, particularly when they are already embedded in a truss on the jobsite. Without getting too deep into engineering principles and complex formulas, let's look at a simple example to understand what a connector plate can do. Take a simple splice joint between two bottom chord SPF #2 wood members. A 3"x6" plate embedded on both

sides of that truss joint would provide 4,264 pounds of lateral resistance (i.e., holding the two members together as the forces in the truss act to pull them apart). A typical 10d gun nail in SPF #2 has 94.3 pounds of lateral resistance. This means it would take 46 nails on each side of the splice to resist the same force as a 3"x6" plate. The next time you look at the large plates on your long-span trusses, try to imagine how many nails you would have to use to replace them!

There are currently four plate manufacturers in the United States:

- 1. MiTek
- 2. Alpine, an ITW Company
- 3. Eagle Metal Products
- 4. Simpson Strong-Tie

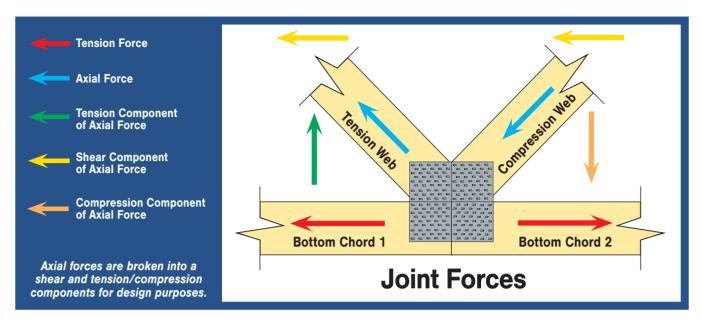
At first glance, every connector plate may look the same. However, each of these manufacturers has developed their own product. While the mechanical properties of the sheet steel used are similar, once that material is stamped into a truss



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plate, it has its own unique strength properties.

Each of the four plate manufacturers have developed proprietary truss design software that incorporates their plates' performance characteristics based on years and years of testing and evaluation.

A Finely Tuned Manufacturing Process

The metal connector plate is truly a modern marvel, and the proprietary design software is an incredibly robust tool that allows today's component manufacturer to apply complex engineering principles to lay out efficient truss configurations every time. Yet, it's also important for builders and installers to know that the truss manufacturing process provides the precision necessary to ensure every truss performs as intended.

Today's truss manufacturer uses computer-guided saws to ensure every cut is at exactly the right angle, and every chord and web member is exactly the correct length. Assembly on the modern gantry table comes with computer-aided joint configurations and laser-guided plate placement. This approach ensures each truss joint has sufficient wood fiber to embed the connector plate teeth into.

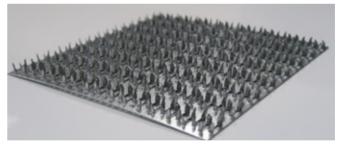
One key differentiator between the plates of the four plate manufacturers is the teeth orientation and how the teeth are rotated or aligned (see the photos on the final page as examples). After a truss is laid out on the assembly table, the plates are embedded using rollers or hydraulic presses. These approaches ensure the teeth of the connector plate have the proper connection to the fiber of the wood webs and chords at every joint.

Inspecting Potential Field Damage

During truss installation, it is not uncommon for long span trusses to bend out of plane. Long span trusses are heavy, and as we've covered in previous articles, they are not designed to resist out-of-plane bending. It is up to the installer to follow the best practices, like those found in the Building Component Safety Information (BSCI) handbook to minimize it in the field.



Simpson Strong-Tie



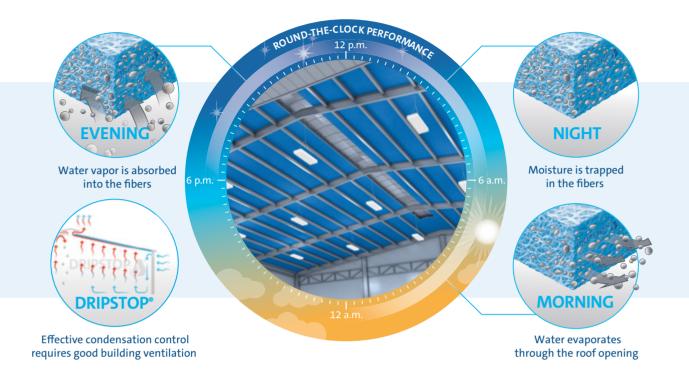
MiTek

If sudden or excessive out-of-plane bending does occur, it is recommended that installers inspect the joints of the truss. In particular, installers should look for damage to each truss plate in the form of rippling on the surface or bending at the edges. It is also possible that bending at the joint may cause the plate to back out of the wood. The ANSI/TPI 1 Standard requires an "embedment gap," the space between the underside of the plate and the wood member, be 1/32" or less. For reference, this is typically the thickness of a credit card. Again, the manufacturing process ensures the teeth of connector plates are properly embedded into the wood fiber. Using a hammer in the field to try to re-embed truss plates is strongly discouraged.

Damage or tearing of the wood fiber by the connector plate teeth around the truss joint is also possible when a truss bends



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too far out of plane. Torn wood fiber can potentially weaken the strength of a joint. If plate damage, plate pull out, or wood fiber damage is observed, the recommended course of action is to contact the component manufacturer immediately so they can advise on a potential repair.

It should also be noted that installing proper temporary bracing during erection, and permanent restraint and bracing over the life of the building, is also essential for keeping the trusses from bending out of plane. Similar damage to the plates and wood fiber around the joints can occur over the life of the building if the restraint and bracing guidance recommended by the component manufacturer and BCSI is not followed.

Addressing Corrosive Environments

Metal connector plates used in wood trusses are typically fabricated from hotdip galvanized steel meeting the requirements of ASTM A653/A653M, with a coating that meets or exceeds the designation G60. The zinc coating protects the steel base metal by providing, in essence, a sacrificial layer that corrodes at a rate over 50 times slower than uncoated steel. For most wood truss applications, the G60 coating provides more than adequate protection against corrosion.

The Manufacturers

Contributing to this article were the four companies who produce these plates for distribution in the United States. We thank them for their contributions to the article and the graphics.

- MiTek
- Alpine, an ITW Company
- Eagle Metal Products
- ·Simpson Strong-Tie

This is particularly important to consider when it comes to post-frame buildings because these buildings can be used for certain agricultural purposes, for salt, or bulk fertilizer storage. In these environments, additional corrosion protection may need to be applied to the connector plates. One common method is using connector plates with a thicker zinc coating, either a G185 coating or plates that are hot dip galvanized per ASTM A153, after original plate

manufacturing. To pursue this option, the component manufacturer would need to be advised of this preference prior to truss design and manufacturing.

In addition to the post-plate-manufacture hot-dip galvanizing, the ANSI/TPI 1 Standard allows for field-applied epoxies and coal tar epoxies meeting the SSPC Technology Guide No. 19 as coatings that provide increased corrosion protection. When either is used, the surface of the connector plates must be cleaned, and the coatings must be applied in accordance with the SSPC guidance. In any case, it is the responsibility of the building owner to ensure this additional corrosion protection is applied in order to avoid rust build up on the connector plates, which may negatively impact the long term performance of the plate and the corresponding truss. *FBN*

Sean Shields is Director of Communications for the Structural Building Components Association, better known as the SBCA (www.sbcacomponents.com), and has authored over a hundred articles focused on structural framing and off-site construction since 2004.

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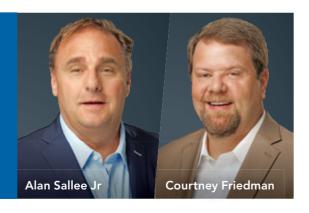
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Aldrich Lumber Puts Starwood Rafters System to Good Use



PROJECT DETAILS

BUILDER: Aldrich Lumber, Billings, Montana

BUILDING LOCATION: Montana **PROJECT & SIZE:** 60'x150'x19'

PRIMARY SUPPLIER: Starwood Rafters

ROOF, SIDING, FASTENERS, TRIM: ASC Building

Products, 29-gauge Strata Rib XL

OVERHEAD DOORS: C.H.I. Overhead Doors.

30'x18' bifold on each endwall, 12'x14' overhead

doors on endwall, 10'x10' on sidewall.

ENTRY DOORS: Thermatru

TRUSS SYSTEM: Starwood 60' Lam-Ply Truss System @ 10' o.c., matching 20'x150' lean-tos, interior 60' wide **LUMBER:** 2x6 Select Struct Roof Purlins. Wall Girts from Idaho Forest. 3x4 Ply Glulam Support Coluns by

Titan Timbers

FOUNDATION: Concrete footers.

ou wouldn't think a clear span of this size would even be possible, but builders likeAldrich Lumber have been using Starwood Rafters' system to accomplish it for decades.

This is Starwood Rafters' 60th year in business. The Wisconsin company was founded by Joseph Wosney and is now run by his sons, Corey and Steve. Joseph Wozney and two partners developed its Lam-Ply Truss in the early 1970s. It combines plywood, glu-lams, and dimensional lumber to make a truss that is stronger than a conventional web truss. This allows the builder to space them further apart to reduce erection time and labor costs. This design also limits bird nesting and improves ventilation in livestock facilities.

The Lam-Ply Truss can span up to 72 feet and is used in many applications, from machinery storage to livestock facilities, to horse arenas. It also has been developed with a gambrel-style and a mono-slope design.

Aldrich Lumber of Billings, Montana, has been around more 105 years and is one of Starwood's top dealers. In the case of this project, Aldrich was creating an uninsulated



multiple-use building. It is used for cold storage of farm equipment, and calving during that season.

The premium 29-gauge metal has ex-

posed fasteners. The 2x6 turned girt wall system is 24" o.c., with structural glulam support columns for upright supports.

The 2x6 roof purlins are 24" o.c and

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Building on a Solid Foundation

FootingPad Sees Outstanding Growth

By Linda Schmid

s they say, you can look at something as a problem or an opportunity. Glen George and Jerry Eckhoff looked at post-frame builders lugging around heavy bags of concrete and they saw an opportunity.

In 2008, George and Eckhoff designed FootingPad®, a structural post foundation engineered using a lightweight, fiberreinforced composite that is so strong it can be used as a substitute for concrete footings of equal diameter. At a small fraction of the weight of concrete, these footings are easier to handle, transport, and install compared to bagged concrete mix or precast concrete cookies.

George was no stranger to innovation. In 1976, he founded AG-CO in St. Johns, Michigan. Originally a post-frame builder, the company soon expanded into supply-side distribution of



FootingPad

horse stalls and other building materials. Then, realizing the versatility of plastics for creating innovative, high-strength building materials, George developed Wellcraft egress window wells, AG-CO cupolas, FootingPad, and other patented products.

FootingPad's Spread

FootingPad had growing pains early on. People in the industry used concrete to secure their posts. It's what they knew, what they were used to, and they were hesitant

to try something new. After all, if a new product fails, they would experience the fallout in the name of call-backs and unhappy customers. However, word got out that FootingPad worked and their sales slowly grew.

Then, in 2017, marketing efforts were increased to grow awareness of FootingPad and its benefits. Today it is sold across the U.S.A, though there is greater distribution in the Midwest to the northeast areas, where lumberyards carry them and post-frame package suppliers include them in kits.

The company was acquired by Perma-Column in December, 2022. Headquartered in Ossian, Indiana, the company will leverage its manufacturing capabilities and distribution network to further grow the category. They also plan to capitalize on FootingPad's strong presence in the deck industry and home centers to grow the post portion of its business.

Paul Kluempers, General Manager, and his partner, George, have stayed through the transition and will continue to play a central role in growing the brand.

Kluempers believes their customers are satisfied because the product is solid and the marketing messaging is accurate: Using FootingPad instead of concrete requires less labor and helps builders complete jobs faster.

"Brand awareness continues to build quickly," said Kluempers. "There are now over 1,000,000 FootingPad footings in the ground — in use across a wide range of residential and commercial buildings."

Where The Company Stands Now

The merging of FootingPad with Perma-Column is a good change for both companies; their products work well together.

As they seek to continue the growth and momentum they have built in the last few years, the major challenge is finding the right sales people to distribute their pads.

"We need people who have experience selling specialty products," Kluempers explained.

A Mission on Solid Footing

Kluempers believes that being small and nimble is helpful as you can easily adapt to changes in the marketplace. One change they are seeing is a need for increasingly larger FootingPads. They started with 10" and 12" diameter pads, expanding to 16", 20", and 24" pad diameters. Now, says Kluempers, they expect to have a 30"



Perma-Column working in conjunction with FootingPad



FootingPad size on the market in the near future.

Kluempers stated that you have to really understand your customers. George understood the post-frame aspect and Kluempers knew the retail side so they each brought some important experience to the table.

Now, as part of a larger company, Kluempers finds that the workplace culture is engaged, like the small FootingPad group, in serving the people of post frame, but with more synergy, more people working toward the same goals.

Perma-Column has long had a focus not only on product innovation, but on elevating the post-frame industry and builders as a whole.

"We set out to solve problems for our

customers by developing products that make their jobs easier," said George. "Now, as part of Perma-Column, we have more opportunities to make a positive impact."

They are working toward a very ambitious goal: They are looking to double their business in three years!

"When our customers succeed, we succeed. That's our formula for success." *FBN*



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Suburban Buildings

From Outbuildings to Barndos and Shops

■ By Courtney Glover

uburban Buildings started from scratch in San Antonio, Texas, in July of 2021. The company focuses on high-quality custom outbuildings: hobby shops, garages, horse barns, and guest houses (known in Texas as Casitas).

Barndos, short for barndominium, have also become a new fascination among clients. Josh Nowlin, the president of Suburban Buildings, specifically enjoys creating shops for consumers. People use these shops for classic cars, storage, tools, entertainment space, and more. Nowlin says they are fun to build and unique per client.

A Passion for Post Frame

Nowlin grew up in central Illinois. In his early '20s, he took a job building post-frame buildings and found his passion. Over the next decade, he learned the ins and outs on how to build. Moving on, he joined McElroy Metals' sales department. Though enjoying his time within the company, Nowlin wanted to get back into the post-frame industry. He went on to work with Quality Structures in Richmond, Kansas, as upper management for the next 10 years. There, he was voted onto the board of the National Frame Building Association.

Suburban Buildings is Born

In July of 2021, Nowlin started Suburban Buildings in San Antonio, Texas, selling and constructing buildings for clients. Nowlin believes that Suburban Buildings is set apart from its competitors due to its focus on high-end customer experiences and quality products. As its website states, "We make sure that every building meets or even exceeds local codes and only use



the best products available from our manufacturer partners." Their customer satisfaction appears evident based on their five-star reviews on the Better Business Bureau website.

The Suburban Buildings' website also offers software that lets consumers generate 3D models, save the images, and sub-

mit specifications directly to the customer support staff. Nowlin's staff will then generate a proposal for the client quickly and accurately.

After putting together a high-quality package for the consumer, the company creates their post frame building(s). Now-lin states that many issues within the field



Josh Nowlin (third from right) with the Greater Boerne Chamber of Commerce.



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BUSINESS PROFILE //

can come from miscommunication. To avoid these, and other common issues that other companies may experience, he puts high focus on this area.

Biggest Challenges

Nowlin said the company's biggest challenge was relocating to an area that was unfamiliar. Establishing relationships in a new area with new contractors can be difficult and potentially intimidating. Having come from the Midwest, the company had to learn about the different foundation systems in Texas versus what they were accustomed to. To conquer these challenges, Nowlin immersed himself in the area. He made phone calls and worked diligently to put himself out there to make connections.

Nowlin's Advice

When asked what three keys to good business are, Nowlin responded based on his experience.

1) "Nurture your relationships with product suppliers," he suggested. This is how you keep high quality parts at an affordable rate.





ue to grow the industry and believes that there is a lot of room and opportunity for post frame to grow.

Nowlin suggests that industry professionals should get

involved, attend the trade shows, and be involved in the associations within the industry.

2) "Take good care of your employees," he added, because they are working hard to keep the company standard where it is at.

3) "Be profitable, don't sell on price. There are many pole barn guys out there just putting up non-engineered buildings with inferior cheap products."

It is more important to offer affordable, high-quality parts than it is to offer the cheapest, low-quality parts.

Nowlin feels that the post-frame industry as a whole is full of great people. He believes that they should all share their knowledge and work together to contin-

Suburban Buildings Business Plan

Suburban Buildings wishes to focus on controlled organic growth. They want to continue to always focus on the customer's experience, while providing them with a great product. Nowlin states that he does not want to force the company to grow too fast and put the customer experience at risk, "If I can't do it right, I don't want to do it at all," he said.

In fact, he considers this to be one of the company's business philosophies. The other is to focus on a good quality product. If something is not right, they'll fix it and will never leave the customer with a bad product or experience.

Currently, the business focuses on a residential customer base within the South Texas region. As 2022 was the business's first year of selling and building, Nowlin feels that they did very well. Their goal is to always strive to take advantage of partnerships with suppliers and make sure to get great products at a competitive price. They are looking forward to growth within the next year and hope to expand the business to North Austin, Texas, and reach further clientele by 2025. Nowlin states that he is happy where he is and would not have done anything differently. *FBN*

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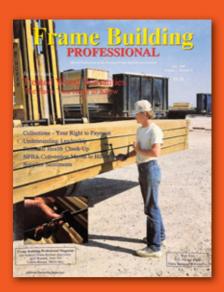
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The July 1989 issue of Frame Building Professional, which was later merged with Frame Building News, offered these fundamentally important definitions and mentioned the impact inflation has on these ratios.

FOR 30+ YEARS FRAME BUILDING NEWS has been providing the news, trends and resources builders need. This article was chosen because its financal advice is timeless, and specifically because inflation can impact your ratio numbers, important to remember if you're using them to help manage your business.

- FBN Staff

Financial Checkup

Using Financial Ratios to Monitor Business Health

inancial ratios can help you spot symptoms of trouble and diagnose problems early, in time for a cure. You can calculate the 13 ratios that follow by pulling figures from your balance sheet and profit and loss statement. The best way to use these financial ratios is to figure them annually and compare them to your own past ratios.

A dramatic change in a ratio can be a signal to examine more closely some aspect of your operation. You can also use these financial ratios when talking to your banker, as most commercial lenders use a few ratios.

Ratios can vary widely from company to company. Therefore, you can't say there's a "right" value for any ratio. You must look at the total picture. Another company may assess land and/or other tangible assets much differently than you, thus affecting any ratio that includes these assets.

Greatly depreciated fixed assets also distort ratios; as does increasing interest and inflation. With costs going up, but prices not increasing much, any ratios with net incomes and sales in them will look worse than in the past.

Financial Ratios Defined

Current Assets divided by Current Liabilities

This ratio measures liquidity, or your ability to repay obligations. The higher the number, the better you're able to repay current debt.

Gross Sales divided by Working Capital

This measures how efficiently working capital is used. Higher is better efficiency.

Fixed Assets divided by Net Worth

A lower number means a smaller in-

vestment in fixed assets relative to your equity, and a better cushion for creditors in case of liquidation.

Total Liability divided by Net Worth

A low number means lower risk and makes you more credit worthy.

Total Assets divided by Total Liabilities

Any number above 1.0 means you're solvent; you can repay all your debts.

Intermediate Assets divided by Intermediate Liabilities

This measures intermediate liquidity. Higher is more liquid.

Sales divided by Net Worth

A higher number means a more rapid turnover of your investment, which is desirable.

Sales divided by Net Income

This ratio reflects volume of sales needed per dollar of profit. A smaller number means less sales are needed to realize a profit.

Net Income divided by Total Assets

This ratio is your return on total investment. The higher the number, the greater the return.

Net Income divided by Net Worth

This is your return on equity. A low return with a low net income suggests your business has too large an investment in assets, your costs are too high, or you are selling too cheap.

Sales divided by Fixed Assets

This ratio measures the productivity of your fixed assets. The higher the number,

the better your use of fixed assets.

Sales divided by Total Assets

This ratio measures your company's ability to generate sales relative to total assets. The higher the number, the better.

Fixed Assets divided by Long-Term Liabilities

The higher the number, the greater your ability to cover long-term liabilities.

Definitions of Terms

Current Assets: Cash, savings, prepaid expenses, and other assets that can be converted to cash or that will be used up during the year, such as money others owe to you, cash value of life insurance, stocks and bonds, etc.

Current Liabilities: Debts due within the year. Include accounts for fuel, rents, taxes, interest, plus the portion of principal on intermediate and long-term debt due within the year.

Working Capital: Current assets plus intermediate assets (for ratios above, usually defined as current assets minus current liabilities).

Intermediate Assets: Resources or production items with a useful life of 1-10 years. Most of these items are depreciable and support production; for example, trucks, equipment, machinery, fork lifts, construction equipment, and securities not readily marketable. Don't include assets you expect to sell within the year.

Intermediate Liabilities: Non-real-estate debt and contracts. Terms of loans are normally longer than a year but less than 10 years; for example, notes for improvements to real estate, equipment loans, operating loans, etc. Include land debt if financed for less than 10 years, and the principal and interest due within 10 years on longer-term debts.

Fixed Assets (or Long-Term Assets): Permanent assets, primarily real estate, either land or buildings, and fixed improvements.

Long-Term Liabilities: Debts with terms longer than 10 years, usually real



estate. Exclude the portion of this debt included in current or intermediate liabilities.

Total Assets: Current + intermediate + fixed assets.

Total Liabilities: Current + intermedi-

ate + fixed liabilities.

Net Worth: Total assets minus total liabilities

Net Income: Gross income minus total operating costs including depreciation. *FBN*





GRIPBlocks may be an option for walls in some situations.

NUCAP's New GRIPBlocks Allow For Near-Instant Walls

NUCAP announced the release of a wall-building product that uses the company's aluminum GRIPMetal joining technology, calling it a Lego-like process. The company said that GRIPBlocks assemble easily and can solve many construction challenges, offering a quick, simple solution for turning otherwise difficult-to-use space into a productive environment, and also calls them a sustainable solution.

GRIPBlock uses mechanical attachment technology — NRS Technology developed by NUCAP — in place of glue-based adhesives to create stronger and more lightweight building components than traditional construction materials.

Each 20"x10"x7.5" wood block is composed of layers of timber pressed into aluminum GRIPMetal strips. Thousands of hardened aluminum teeth bond the pieces, a bond which increases in strength over time. No glue or other adhesives are used in the production of the blocks, which means no toxic pollutants are produced. The materials used in the production of GRIPBlocks can range from discarded scrap pieces to young-harvested wood (a more sustainable variant), thus further emphasizing the environmentally friendly, sustainable nature of the blocks, the press release states.

The company said the product can be used to do things like turning a school gymnasium into several classrooms, thus allowing smaller class sizes without having to rebuild a school. It also mentioned outdoor dining spaces, outdoor hockey rinks, and similar spaces.

Nova USA Wood Products Named Exclusive U.S. Provider of Rhino Wood

Nova USA Wood Products, Inc., a supplier of high-quality wood products and accessories, has been named the exclusive provider of Rhino Wood in North America. Rhino Wood is a modified timber produced through a patented two-stage process that uses thermal modification and pressure to impregnate the original wood right to the core with a proprietary compound. This patented process results in a sustainable alternative to hardwoods like Ipe. Rhino Wood achieves the same high-density, low-maintenance and Class 1 durability characteristics as Ipe



Rhino Wood is a modified timber produced through a two-stage process.

hardwood, while aging beautifully into a silver-grey color over time.

"Rhino Wood is the ideal complement to our premium line of exotic hardwood decking and siding products," said Steve Getsiv, the company's CEO. "Many of the hardwoods that were previously used throughout the marketplace are now either scarce or prohibitively expensive. Rhino Wood is the latest example of our efforts to meet customer needs with high-quality woods that will stand the test of time with beauty and great structural integrity."

Rhino Wood's patented thermal heat and pressure impregnation process was specifically developed to double the hardness and density of sustainably sourced South African Pine species.

Added Steven Suntup, Rhino Wood's U.S. representative, Nova USA "has an extensive distribution network that extends from the U.S. into Mexico and Canada. Plus, they know the true value of innovation and the need to continually meet client needs with premium products that look great and perform exceptionally well no matter the climate. This includes providing a large variety of cost-effective alternatives to the hardwoods that are increasingly becoming cost-prohibitive and less available."

WORX Introduces New Compound Miter Saw

WORX announced a new Nitro 20V Power Share 7-1/4-inch sliding compound miter saw with hold-down clamp and Power Share PRO Battery that it says is ideal for cutting trim and molding, building decks, and making custom miter, bevel, and angle cuts.

The WORX Nitro benchtop miter weighs 21 lbs. (with battery) and with its aluminum base construction weighs significantly less than a conventional 10-inch sliding compound miter saw.

Most miter saws have hold down clamps, but what WORX says is

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NEW PRODUCTS //

unique about this new saw is that the hold down clamp is lever-operated and holds down the work piece on both sides of the blade.

"This maintains a stationary work piece throughout the cut," the company's press release states. "The feature offers a safer solution in keeping hands away from the blade during cutting operations. No other miter saw has this dual feature."



CAMO Code-Compliant Screws

CAMO Introduces New Code-Compliant Screws

National Nail's CAMO brand announces a new line of high-performance structural screws for deck substructure, internal framing, ledger, and general construction. They are certified IRC/IBC code compliant and third-party tested and certified by DrJ Engineering.

All structural screws feature CAMO's proprietary PROTECH ULTRA 4 coating, a four-layer system for industry-leading corrosion resistance and tested 2X longer than industry standards. The Ledger, Multi-ply, and Truss screws also do double-duty, requiring fewer fasteners per job and less SKUs for dealers.

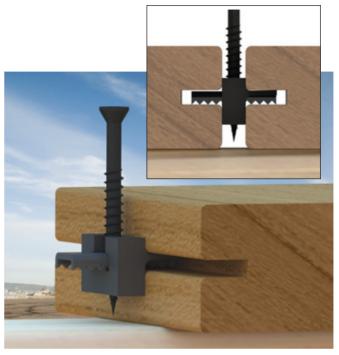
Unlike most structural screws, all CAMO structural screws can be used for interior and exterior projects. There are numerous varieties in the product line.

Grip-Rite Unveils New Hidden Deck Fastener

Grip-Rite's new Ninja Hidden Deck Fastener brings strength, stability and speed to grooved deck board installations. Grip-Rite's patent-pending design features Compression Fit levers that hold the clip in place, accelerating the installation of deck boards, while the serrated teeth hold boards in place after installation.

The universal fit of the Ninja Hidden Deck Clip means the same clip

may be used to create multiple deck patterns — straight, diagonal or herringbone — with a seamless surface finish.



Grip-Rite Hidden Deck Fastener



Bosch Cordless Rotary Hammer

Bosch: New Cordless Rotary Hammer Has Corded Power

Bosch has released a new cordless rotary hammer that it says has the power of a corded tool. The concrete rotary hammer is called the Profactor 18V SDS-max 1-5/8" Rotary Hammer (GBH18V-40C) and outperforms its corded counterpart, the Bosch 11264EVS, according to Bosch.

Features listed:

Cordless Design: Delivers corded hammer performance, with 6.7 Ft.-Lbs. of impact energy (EPTA) powered by a single 18V CORE18V 8 Ah or 12Ah battery, making concrete work easier.

KickBack Control: Reduces the risk of sudden tool reactions in binding conditions.

Soft Start and Controlled RPM: Adjusts the tool rpm and bpm for more controlled drilling and chiseling applications when working with softer materials like brick and tile.

Anti-Vibration System: Helps to reduce tool vibration due to the longer air cushion built into the hammer tube and dampeners added in the handle.

Lock-On/Lock-Off Button: Keeps the tool running when locked on (hammer mode only) and helps prevent accidental activation of the tool trigger when locked off.



Corner sheathing from Barricade.

Barricade Unveils Continuous Insulation Corner Sheathing

INDEVCO North Americ has introduced a new patent-pending Barricade Thermo-Brace Guard product, a structural continuous sheathing for building envelope corners that unitizes walls and insulates corners for higher energy efficiency, while eliminating the need for corner flashing.

This continuous corner guard solution can be applied with Barricade Thermo-Brace lightweight structural sheathing or with Barricade Thermo-Brace SIB (R3 or R5) reversible structural insulated sheathing, both of which are produced in Doswell, Virginia. Said Geoff Baldwin, Chief Innovation Officer at INDEVCO North America, "The way it wraps a corner joins two separate walls into a complete enclosure, creating continuous insulation that protects against air infiltration and prevents moisture build-up at the corner. It also eliminates the cost and installation challenges associated with corner flashing, which saves money and time for builders and contractors."

The continuous corner sheathing application has the same strength as the Thermo-Brace structural sheathing, which is rated higher than OSB bracing requirements identified by the International Building Code.

New Control-Lock Tape Measures From Stanley

Stanley has released the new Control-Lock tape measures that feature an integrated finger brake, providing users with maximum



Stanley Control-Lock Tape With Finger Brake

control and protection when extending and retracting the blade. Coming in lengths of 12, 16, 25, 26, and 30 feet, they're made to reach out to 12 feet.

Features listed:

· An integrated finger brake that provides



improved control of the blade when measuring and retracting

- Pro-grade performance 1-In. blade width and 12-Ft. max reach
 - · Protective rubber over-molded casing
- BladeArmor coating treated to the first 3 inches



RugGear New Rugged 5G Smartphone

RugGear Releases Super-Tough 5G Smartphone

RugGear is expanding its product portfo-

lio with a 5G smartphone: equipped with the powerful 8-core Qualcomm QCM6490 processor from Qualcomm Technologies, Inc. RugGear says the Android 12 device was developed by RugGear's German R&D team, which designed the RG540 with the most important components for the target customer group in mind: Usability, security, compatibility, and extreme performance.

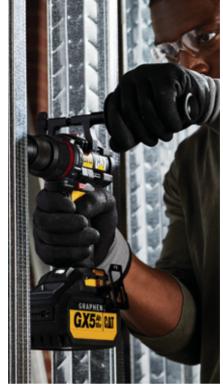
A rugged and modern mobile device, the RG540 is designed to meet the most demanding requirements in the rescue, fire, police and military, public safety, industrial, maintenance and transport sectors.

Features include a programmable red SOS button for lone-worker protection, a powerful 103 dB front speaker for loud scenarios, and a replaceable 4000 mAh lithium battery.

Cat Launches New Hammer Drill With Graphene Battery

The New Cat 18V ½-inch DX13 Brushless Hammer Drill claims the distinction of being the first portable power tool to feature a graphene battery. This state-of-the-art 18V, 5.0Ah graphene battery delivers twice the power, charges three times faster, and provides four times longer life cycles than conventional lithium-ion batteries.

"Imagine the ability to fully re-charge a 5Ah battery in 20 minutes and have twice the amount of power to tackle some of the toughest applications on the jobsite without being connected to a cord," stated the press release. The company said the graphene bat-



Cat Hammer Drill with Graphene Battery

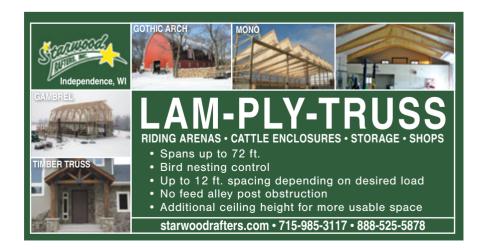
tery provides four times the amount of life cycles, which translates to 1200 charges on a single battery. The batteries come with a 5-year warranty.

All cordless tools on the Cat 18-volt platform are compatible with the 18V, 5.0Ah graphene battery. Cat also said the Hammer Drill features 25 percent more power, provides 50 percent longer runtime, and adds 10 percent longer life compared to traditional brushed motors.

FastenMaster Introduces New Brace Installation System

FastenMaster, a division of OMG, Inc., has introduced TrussBRACE, what it calls a faster and safer alternative to temporary woodbased supports used to install roof trusses.

FastenMaster said the TrussBRACE "is an innovative steel roof truss support that provides both lateral and diagonal restraint in one brace. This system allows framers to set, space and brace roof trusses in one easy





contractors. Its products are engineered for structural, decking, and trim applications in residential construction, and its product line includes the LOK Line of structural wood screws, Tiger Claw Hidden Deck Clip System, TrussBRACE roof truss support system, as well as Cortex Hidden Fastening Systems for deck and trim applications.

FastenMaster's new TrussBRACE installation product helps set trusses from the bottom.

step."

TrussBRACE was engineered by Steve Szymanski, a former truss plant owner with over 30 years of experience in the industry. The product is said to increase jobsite safety since it is easily installed from the bottom

chord. "Productivity is enhanced and waste is minimized by eliminating temporary top chord bracing that must be removed prior to sheathing the roof," the press release stated.

Established in 1981, FastenMaster is a brand of fastening solutions for professional

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EasyFrame has an automated marking system.

Simpson Strong-Tie Acquires EstiFrame Technologies

Simpson Strong-Tie, which offers engineered structural connectors and building solutions, announced it has acquired Elk Grove, California-based EstiFrame Technologies, Inc.

Founded in 2017 by Coby Gifford and Aaron Love, EstiFrame provides component manufacturing and framing technologies to the construction industry, including the EasyFrame automated marking system that matches saws with digital printers to label 2x frame members for fast and accurate assembly.

Designed to reduce construction timelines and address skilled labor shortages in framing and construction, the Easy-Frame system prints framing blueprints for a structure directly onto the framing members themselves. Paired with either a manual or automated saw, the system provides wall panels that are pre-marked for easy assembly, driving construction efficiency and accuracy.

"EstiFrame has established a strong reputation for providing easy-to-adopt, scalable solutions to LBM dealers and framing shops looking to gain critical efficiencies in component manufacturing," said Simpson Strong-Tie Vice President of Customer Facing Technology April Burt. "The EasyFrame system is a logical and complementary addition to the Building Technology solutions already provided by Simpson Strong-Tie, and expands our offerings for customers who continue to seek more efficient ways to convert the

digital frame into strong, safe physical structures."

EasyFrame software is designed to save the greatest amount of wood possible by managing cut completion activity and constantly re-optimizing on the fly. Gifford and Love will remain with the Esti-Frame team.

In other Simpson Strong-Tie news, the company was named as one of the winners of the Building Talent Foundation (BTF) 2022 Industry Champions, which honors companies that are committed to building a workforce in residential construction. BTF, a national nonprofit organization established in 2019 to address the talent shortage across the building trades, said the winners have an "above-and-beyond commitment, contribution, and collaboration in building a sustainable workforce in residential construction."

BTF connects youth and people from underrepresented groups with internship and employment opportunities. They have coached over 1,400 people into jobs and, in 2022, BTF engaged more than 23,000 people across the U.S. in exploring careers in construction.

A few of the other winners included Carrier, Daikin, Kohler, Sherwin-Williams, and Builders FirstSource. For more information on BTF, visit the website at www.buildingtf.org.

Nation's Best Acquires Forslund Building Supply

Independent home improvement company Nation's Best has announced the ad-

dition of Forslund Building Supply, which serves the Upper Peninsula of Michigan and northern Wisconsin.

"As a dominant player in a rural market, Forslund couldn't be a better fit for the Nation's Best family," said Chris Miller, President and CEO of Nation's Best. "As we continue to expand our presence across the country, the UP is an appealing area with tremendous growth opportunities. Through three generations, Forslund Building Supply has established a strong brand and an even stronger reputation for serving their communities in Michigan and Wisconsin."

Forslund Building Supply was founded in 1950. It will maintain operations, keep its name, and continue with its key leadership team. "There's a tremendous potential for us to expand the Forslund brand in our market and I'm proud to be able to be a part of this next step in our company's history," said Owner Gus Forsland.

Nation's Best Holdings, which was founded in 2019, now owns and operates 43 locations in 12 states.

AkzoNobel Brings Coatings to HVAC Segment

Specifiers, distributors, and coaters in the HVAC sector have another option for coatings in HVAC equipment. AkzoNobel announced it has brought its POLYDURE portfolio of coil coatings to HVAC. It contains a proprietary resin technology specifically tailored to the needs of the HVAC segment, including commercial, industrial, and residential applications.

The company said the system will create a trouble-free application combined with a consistent, smooth film. "It contains excellent forming properties and provides batch consistency, along with a broad range of color, gloss, and texture options."

"Specifically designed for HVAC applications, our POLYDURE coatings protect against abrasion and corrosion, while their durability means they look as good many years down the road as the day they left the factory," said Manoel Rodrigues, Regional Business Director, Americas.

Maze Nails Celebrates 175th Anniversary

Just 30 years after Illinois became a state, Samuel Maze started his lumber company along the Illinois River. It eventually grew to include making the nation's largest selection of Specialty Nails.

To this day, Maze's company is still going strong. Maze Lumber is the state's oldest lumberyard, Samuel's great-great-grandson,

Roelif Loveland, is president of Maze Nails, and Maze Company proudly celebrates its 175th anniversary this year.

"We have been blessed with many generations of great associates — both non-family and family employees," Loveland said. "A huge part of longevity is having quality people ... and the other part is having quality products that are continually demanded in the marketplace.



Samuel Nesbitt Maze

"As my brother, Jim, said on the anniversary of his 150-year-old home in Spring Valley, Illinois, we are all simply caretakers of old businesses and old houses. It is our job to nurture them and make certain that they survive for the next generation. I am very proud to be spending my years doing exactly that."

He also said he is impressed by his ancestors' ingenuity, which set up Maze Nails for longevity.

"It seems like entrepreneurship was the rule rather than the exception back in those days," Loveland said. "Family owned and



operated store fronts and small businesses sprang up everywhere. The Maze boys were pretty clever fellows and built a very strong business for future generations."

Over the years, Loveland said there have been steady changes to the family business. For example, Loveland said nails were once made entirely of zinc purchased from Illinois Zinc and M & H Zinc, but in 1916 nails started to be made of steel and dipped in zinc.

That was done by hand at first, but in 1955, Loveland said brothers, James and Hamilton Maze, designed a dipping machine to do the work.

"The only thing that has stayed the same is that both types of nails were highly dependable and became demanded by contractors nationwide," Loveland said.

And with 175 years in the rearview, Loveland said things will continue to evolve. "We continue to change with the times, including updating the products we handle at Maze Lumber and

developing new nails that we manufacture and sell at the Maze Nail factory," he said. "We're now looking forward to our bicentennial year!"

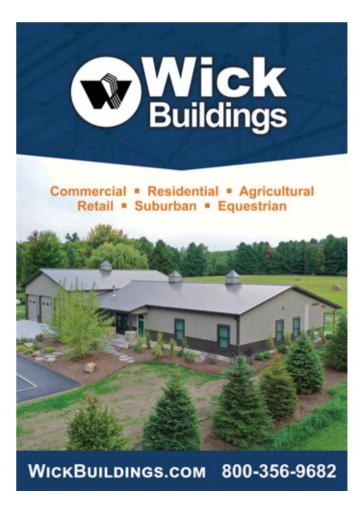
ABC Supply to Acquire Standalone Wallboard Divisions of US LBM

ABC Supply Co., Inc. has entered into a definitive agreement to acquire the standalone wallboard divisions of US LBM, including Feldman Lumber, Richardson Gypsum, Rosen Materials, Wallboard Supply Company, and Coastal Roofing Supply.

ABC Supply is a distributor of exterior building products, and its subsidiary L&W Supply distributes interior building products used by residential and commercial specialty contractors. ABC Supply said it is the largest wholesale distributor of roofing and other select exterior and interior building products in North America.

Nonprofit Creates Guide to Solar Grant Program

National nonprofit Solar United Neighbors (SUN) has released a new guide to help farmers and rural small business owners apply for a key federal grant and loan. This will make it easier for



INDUSTRY NEWS //

solar installers to guide them through the process of installing solar energy at their property. The comprehensive guide takes applicants step-by-step through the Rural Energy for America Program (REAP) application process.

"It's a great time for farms or rural small businesses to go solar," said Anya Schoolman, Solar United Neighbors Executive Director. "We're excited to offer this firstof-its-kind guide to help installers guide customers through the process."

REAP started in 2002 as part of the federal Farm Bill. The USDA Office of Rural Development administers this grant and loan program. The program is designed to help farmers and rural small businesses access renewable energy and energy efficiency technologies.

The REAP program has been so popular that funding for the grants has not been able to meet the demand. The Inflation Reduction Act, passed last year, addresses this challenge. It quadruples REAP funding over the next 10 years.

"Going solar eight years ago is one of the best decisions I have made since I started farming," said Art Thicke of Enchanted Meadows dairy farm in LaCrescent, Minnesota. "We have enough solar panels to produce the electricity we use so our energy costs are fixed. When energy prices go up, we don't notice."

Farmers and rural small business owners can receive loan guarantees of up to 75% of total eligible project costs through REAP. They can receive grants for up to 40% of the total project cost. The USDA accepts applications twice a year. Visit www.solarunitedneighbors.org.

CertainTeed Debuts New Branding

CertainTeed unveiled its new brand identity at the IBS show earlier this year. The company said this milestone represents a major paradigm shift for the manufacturer, reinforcing its "customerfocused, comprehensive offering of light and sustainable building solutions and systems."

Elements created for the rebranding to date include a new logo and visual identity, and a new market mission that it calls "Futurebuilt"" – expressing the company's

resolve to building a more sustainable, comfortable and safer future.

ICC Changing Code-Development Process for 2027 Version

The International Code Council is revising its rigorous code development process. The changes will take effect in 2024-2026 for the development of the 2027 International Codes (I-Codes) and will move the development process to an integrated and continuous three-year cycle.

In the new timeline, year one will include two Committee Action Hearings for Group A Codes; year two will include two Committee Action Hearings for Group B Codes; and year three will be the joint Public Comment Hearings and Online Governmental Consensus Vote for both Group A and B Codes.

The addition of the second Committee Actions Hearings in year one and two will foster a more in-depth vetting of code change proposals, allowing an opportunity for the committee members to review and evaluate the original proposals and consider the submitted responses. This also provides more opportunity for proponents to build consensus for their code change proposal and ensure the best version of their intended improvement to the existing codes.

Additionally, with combined Public Comment Hearings in the third year, voting members are able to vote on all suggested changes to the next edition of the I-Codes at one time. The updated process also provides more opportunity for proposed new referenced standards to be developed and finalized on a consistent timeline regardless of the group (Group A or B) with which they are associated.

As part of the new process, volunteers on code development committees will now preside over the two Committee Action Hearings, one in the spring and one in the fall.

FGIA Updates Guidance on Fenestration Products

The Fenestration and Glazing Industry Alliance (FGIA) has updated a document providing specific information to assist industry professionals in selecting the



appropriate adaptations to the existing testing standards for application to field investigations of fenestration products.

AAMA 511-22, the "Voluntary Guide for the Forensic Evaluation of Water Intrusion at Fenestration Products," is now available for purchase. This document was last updated in 2008. It may be purchased from the online store at the discounted member rate of \$20 (non-member price \$60). For more information about FGIA and its activities, visit FGIAonline.org.

ASTM E2128 provides the foundation for field investigations of water leakage in building walls. This document is designed to provide supplemental guidance and highlight required information and actions regarding fenestration product investigations. ASTM E2128 identifies seven steps of forensic investigations, and this document provides additional information regarding each step, grouped into two categories: four steps prior to testing and three steps during and after testing.

Ambassador Supply, Hitek Truss, Neal Communities Form Partnership

Ambassador Supply, a leading supplier of building materials, announced a strategic partnership with Hitek Truss, a leading provider of engineered wood products.

Also, the Neal family, known for real estate development with its company Neal Communities, will be joining Ambassador Supply and Hitek Truss as a minority partner. Pat Neal, owner of Neal Communities, brings more than 50 years of experience in the industry and a deep understanding of the market to the partnership.

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Why to Know Your Reps

encourage success-minded builder/ contractors to develop strong relationships with product representatives as this can be a key factor in achieving success in the industry.

These professionals can offer valuable support, insight, and expertise that can help builders optimize their business operations and drive growth. In this article, we will explore how builders can benefit from forming relationships with product representatives and why these relationships are essential for long-term success.

Access to Product Knowledge

Product reps are experts in their respective fields and have extensive knowledge about the products they represent. By building relationships with these professionals, builders can gain access to their wealth of knowledge and expertise, which can be invaluable in making informed decisions about the products and materials they use. This can help builders make more informed choices when it comes to selecting products for specific projects, ensuring that they are choosing the best products to meet their customers' needs.

Support for Business Growth

Fostering relationships with product reps can also provide builders with valuable support for business growth. Representatives are familiar with the evolution of the industry and can provide valuable insights into how builders can expand their business. This can include tips on marketing and pricing strategies and other tactics that can help builders attract new customers and increase the bottom line.

There are many times a simple discussion about a project between the builder and the representative can head off costly errors as the job progresses. Many times the representative has seen the exact same situation before. A short conversation can

go along way with helping avoid costly mistakes already made by others.

A great example of this in my career was working together with a contractor and distributor on a large horse stall barn project. By teaming up early we were able to present a coordinated team effort. The customer was put in a comfort zone knowing that the distributor and the product representative were working side by side with the contractor. We were able to manage expectations right from the project's infancy.

Quicker Solutions to Problems

Factory representatives can provide valuable support when issues arise with the materials builders use. When a strong relationships is built with product representatives, builders will have a direct line of communication to the manufacturers of the products they use. This can help them quickly resolve any issues that arise, ensuring that projects are completed on time and within budget. This can also help builders maintain strong relationships with their customers by handling any issues promptly and effectively.

Opportunities for Collaboration

By fostering relationships with product representatives, builders can open up opportunities for innovations by being part of the collaboration process between the representatives and the manufactures. Most product representatives are eager to work with builder/contractor to develop new products and solutions that can meet the evolving needs of the industry. By working closely with these professionals, builders can help influence the direction of the industry and develop new approaches to products and services. This can help builders stay at the forefront of the industry and maintain a competitive edge in the marketplace.

Visibility=Opportunities

Ultimately, building relationships with product representatives can help builders increase their visibility in the industry. Representatives typically attend industry trade shows and conferences, where they can introduce builders to industry leaders and partners. By building relationships with representatives, builders can tap into these networks and expand their reach in the industry. This can lead to new business opportunities, which can help builders grow their business and achieve long-term success.

In conclusion, it is indispensable for the builder to develop and foster these relationships with product representatives. It is equally essential for the product representatives to seek out these relationships. This partnership is vital for those looking to succeed in the industry.

By gaining access to product knowledge and expertise, support for business growth, special promotions, faster resolution of issues, opportunities for collaboration and innovation, and increased industry visibility, contractors can optimize their operations and drive growth. These strong relationships with product representatives will help builders develop a strong foundation for success in the industry as well as position themselves for long-term growth and profitability.

Let's Build Wins together! **FBN**

Randy Chaffee brings four-plus decades of experience to the post-frame and metal roofing industries. A board member for the Buckeye Frame Builders Association and



the National Frame Builders Association, follow his podcast at facebook.com/Building-Wins. No web access? Call (814) 906-0001 at 1 p.m. Eastern on Mondays to listen.



CSI: What Are Post-Frame Contractors Planning for Expansion?

Post-frame contractors and Frame Building News subscribers are expanding on pace with the other industries we cover. The difference is many of the other segments appear to be expanding into roll forming or other market areas. Based on the areas of expansion, post frame and FN subscribers appear to be growing their core business. Primary post frame is highest in adding construction personnel, job site equipment, and trucks, all of which fit the needs of additional work crews. In support staff, metal forming equipment and manufacturing equipment, primary post frame is the lowest. This seems to indicate no expansion in office work and no increase to manufacturing. FBN

If you like the CSI columns or find the information useful, help us help you. Shield Wall media sends a State of the Industry Survey in fall, and a mid-year State of the Industry Survey in Spring. Please visit our website and sign up for our emails to complete the survey and share it with your colleagues. A larger survey sample generates more reliable information.

What and where are post-frame contractors and Frame Building News subscribers planning for expansions in 2023?

| Percentage of Respondents Planning Expansions | In 2023 | In Future |
|--|---------|-----------|
| All Respondents | 19% | 50% |
| Primary Metal Roofing | 21% | 59% |
| Primary Metal Building | 21% | 59% |
| Primary Post Frame | 21% | 39% |
| Participate in Metal Building | 24% | 53% |
| Participate in Post Frame | 21% | 46% |
| Frame Building News Subscribers | 23% | 47% |

| Percentage of Respondents Planning Expansions By Market Segments | In 2023 | In Future | |
|---|---------|-----------|--|
| Residential, Single Family as Primary | 20% | 47% | |
| Residential, Multi-Family as Primary | 0% | 83% | |
| Agricultural as Primary | 30% | 33% | |
| Commercial as Primary | 15% | 56% | |
| Participate in Residential-Single Family | 22% 53% | | |
| Participate in Residential-Multi-Family | 17% 68% | | |
| Participate in agricultural | 24% | 49% | |
| Participate in commercial | 23% | 54% | |

| Planned Areas of Expansion | Subscribers | Primary Post Frame | Participate Metal Roofing | Participate Post Frame |
|--------------------------------|-------------|--------------------------|---------------------------------|------------------------------|
| Employees - Construction | 32% | 45% | 29% | 36% |
| Employees - Support | 51% | 34% | 48% | 45% |
| New Products or Building types | 34% | 28% | 38% | 31% |
| Jobsite Equipment | 23% | 31% | 23% | 28% |
| Metal Forming Equipment | 30% | 24% | 38% | 26% |
| Other Manufacturing Equipment | 38% | 21% | 36% | 28 |
| Trucks | 32% | 38% | 25% | 36% |
| Material Handling Equipment | 26% | 14% | 22% | 19% |



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