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June/July 2021

**OUTDOOR
LIVING
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**COMMON WOOD
PRESERVATIVES**

**PREVENT
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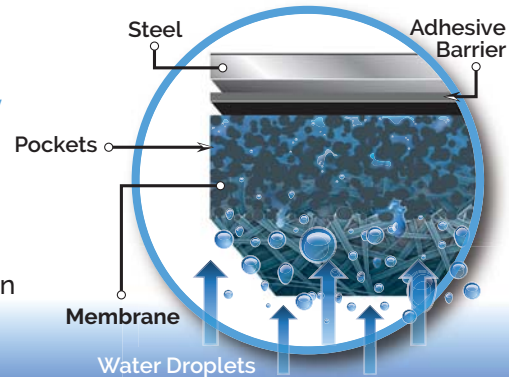
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CONTENTS



16

Features:

- 12 TAKE GREAT PHOTOS**
Never Take Another Ugly Shed Photo
- 16 MID MICHIGAN STRUCTURES**
Builder Finds His Niche Sheltering Livestock
- 20 OUTDOOR LIVING SPACES**
Is Expanding Into Decks Right For You?
- 24 SOLID FOOTING**
Prevent Failure: Deck Post Footing, Sealing Options
- 33 VERSA-TUBE**
Building With Slip-Fit Connections

EQUIPMENT MANUFACTURERS:

- 34** KNUDSEN MANUFACTURING,
- 36** FREEDOM MILL SYSTEMS
- 38 PRODUCT FEATURE**
Ventilation & Closure Strips
- 40 UNCOMMON BUILDING PRODUCTS**
A Closer Look At Cornboard & Kebony
- 43 COMPOSITE DECKING**
Manufacturer Advice On Solid-Core Composites
- 45 COMMON WOOD PRESERVATIVES**
And Their Impact On Fasteners

On The Cover: This boat house on Lake Wawasee, Indiana, features an Ambient Madera Series 273 garage door.

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Departments:

- 4** Editor's Note
- 6** Supplier News
- 11** New Products
- 30** Business Connections
- 32** Events Calendar
- 48** Finishing Points
- 49** Project of the Month
- 51** Advertiser Index

'Don't Wait — Act Now'

Let me open my message today with a request: Please pay close attention to Jeff Huxmann's "Take Great Photos" article (beginning on page 12). Jeff has a lot of professional photography experience; it's not often that you get free — yet invaluable! — advice such as this. Having photos that show how nice your sheds (carports, swingsets, playhouses, gazebos, etc.) are is important when you're dealing with print or digital media. For example, if you post a photo of one of your sheds for sale online, but it is so steeped in shadow that you can't tell what color it is, or what kind of siding is on it, odds are you won't get more than a passing glance. I'm being a little bit selfish in my request; here's why: If you build a really great project and take photos that are just as great, it may be a candidate for a

Project of the Month or even a candidate to appear on one of our covers. Of course, I can make no promises that it *will* appear on the cover, but it's definitely a step in the right direction.

As you read through this issue, you'll find quite a bit of coverage dedicated to materials and structures that are meant to help their owners enjoy the outdoors ... a celebration of outdoor living, if you will. The main feature is written by Carol J. Alexander. In it, she speaks with business owners who can help you determine whether or not extending your own building services to include decks is the right decision.

To expand on the outdoor structure theme, you'll find brief articles about solid-core composite decking and deck post options, and wood barrier products

that protect wood from the elements that cause decay (water, pests, microbes, etc.). We spoke directly with manufacturers and got their insights on specific problems and how they can be prevented.

I'll close today's message with another reminder that it won't be long before *Garage, Shed & Carport Builder* will be mailing on its own, rather than being polybagged with *Frame Building News* (like this issue) or *Rural Builder*. If you haven't completed the subscription card or gone online and signed up by the time that happens, you will no longer receive this free magazine. As they say on the infomercials: "Don't Wait! Act Now!"

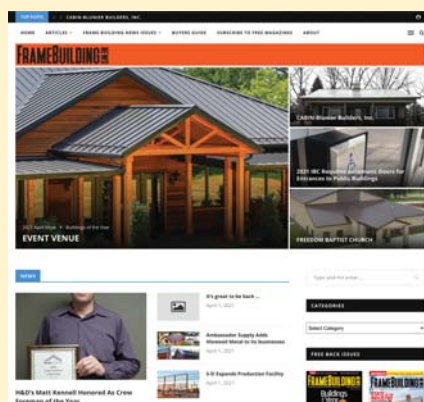
Until next time — be well.

Karen

Shield Wall Media Launches New Websites

Shield Wall Media, owner of the *Garage, Shed & Carport Builder Show* and the *Construction Rollforming Show* and publisher of *Frame Building News*; *Garage, Shed & Carport Builder*; *Rollforming Magazine*; *Metal Roofing Magazine*; *Roofing Elements*; and *Rural Builder* has announced the launch of its new website www.rollformingmagazine.com and its soon-to-be-launched *Frame Building News* website (www.framebuildingnews.com) and *Garage, Shed & Carport Builder* website (www.garageshedcarportbuilder.com). These new websites have been designed to be user-friendly in all available contemporary viewing platforms, such as smartphones and tablets, in addition to desktop computers. The *Frame Building News* website is at the beta stage of development and the *Garage, Shed & Carport Builder* website is a stone's throw away from its own launch.

Website content invites users to read about hot topics such as market trends, materials and safety. Additionally, users have



ready access to a comprehensive searchable buyers' guides. The sites all feature the benefit of direct access to their respective treasure-trove archives of back issues, which can all be downloaded for free.

"Being a top-notch communication conduit for our customers is a cornerstone in our website development," said Gary Reichert, Owner and Publisher of Shield Wall Media. "Accurate information is required for both shaping goals and overcoming the constantly evolving challenges

presented within a growth industry."

Shield Wall Media invites visitors to explore the new www.rollformingmagazine.com and www.framebuildingnews.com websites and keep an eye out for the launch of more websites. From breaking news to back issues to the searchable buyers' guides these websites truly set the standard.

About Shield Wall Media

Garage, Shed & Carport Builder and the *Garage, Shed & Carport Builder Show* are part of a growing network of magazines and trade shows owned by Shield Wall Media. Magazines also include: *Rural Builder* (business management magazine for rural contractors); *Metal Roofing Magazine* (the only publication devoted solely to metal roofing); *Frame Building News* (exclusively devoted to the post-frame market); *Rollforming Magazine*; and *Roofing Elements*, the company's newest title, dedicated to how the environment affects roofing systems.

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SmartBuild for Garages and Sheds

SmartBuild Systems, a software program for post-frame design, now fully supports Garages and Sheds:

- Shingle visuals for roofs
- Horizontal siding for walls
- Takeoffs of multiple layers for roofs and walls (sheathing, underlayment, house wrap, etc.)
- Stick frame as well as post frame framing styles
- Wood floor framed systems for portable sheds.

SmartBuild for Garages and Sheds offers the power and flexibility that the original SmartBuild provides for post frame construction. A complete inventory is supported with unlimited user options for color schemes, window, doors, and other items. SmartBuild for Garages and Sheds — a user-friendly, intuitive input system with robust support — generates 3D models, complete material lists, labor estimates, pricing, sales contracts, and a complete set of construction drawings.

According to SmartBuild Systems CEO Keith Dietzen, the new capabilities for Garages and Sheds are offered within the original SmartBuild program at no extra cost to SmartBuild licensees.

“Many of our post frame customers have been asking us to build support for Garages and Sheds for some time. We did not want to slow down our post frame progress, so we waited until we added staff to address Garages and Sheds. As a result of increasing staff from 6 to 14, we were

able to devote the necessary resources for this important project.”

Dietzen says the response to the SmartBuild Post Frame technology has been overwhelming. “Just this winter, we added several hundred new customers. It turned out to be a smart move four and a half years ago to enter the Post Frame software market. There was a real need and our growing customer base is evidence that our equation of constantly improving software is what the industry has needed. I trust we will get a similar response from the Garages and Sheds community.”

A free trial of SmartBuild for Garages and Sheds is available at smartbuildsystems.com/garages-and-sheds/

flashings, sealants, insulation tapes, safety equipment, hand tools, power tools and more. The 2021 publication includes details on the Dyna-Guard snow retention system for metal roofs. It also includes information about the company’s new rivet initiative that resulted in a stock level of 100 million rivets with 75 million pre-painted in more than 100 different colors.

Drexel Building Supply, Inc. Expands Operations

Drexel Building Supply Inc., a provider of building materials and services to contractors and homeowners, is expanding its facility in New Berlin—an \$11 million project expected to create 50 jobs over the next three years.

“In addition to the jobs created by this project, this expansion will allow Drexel Building Supply Inc. to take advantage of a growing market and increased demand for its services,” said Missy Hughes, secretary and CEO of the Wisconsin Economic Development Corporation (WEDC).

WEDC is supporting the project by authorizing up to \$250,000 in state income tax credits over the next three years. The actual amount of tax credits Drexel Building Supply will receive is contingent upon the number of jobs created during that period.

Drexel Building Supply is planning to develop a large showroom and distribution center in New Berlin to keep up with increased demand for construction and home improvement materials. The new seven-building, 128,000-square-foot complex will include a showroom, warehouse, shop/siding shed, treated shed, truss shed, header shed, and a plywood and laminated veneer lumber shed. The complex will be located on a vacant 92-acre parcel in the New Berlin Industrial Park.

The first phase of the project includes construction of two buildings that will serve as operations for cabinetry and flooring. This phase will transfer the cabinetry and flooring operations and 75

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New Tool/Fastener Guide Released

Dynamic Fastener [toll-free (800) 821-5448] has released a new version of its popular Tool and Fastener Hand Guide. The free, 140-page full-color guide provides concise answers to questions pertaining to fastener applications, engineering data, availability of types, size ranges and fastener materials specific to the metal building industry.

In addition to discussing screws and anchors, the Guide provides prices and other useful information relating to

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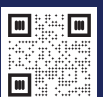
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employees from the Brookfield facility, which the company has outgrown. The second phase includes the completion of five lumberyard buildings. These developments will allow Drexel to add new employees and expand its product categories. With the new location, the company plans to deliver to a 60-mile-plus radius daily.

WEDC's assistance is also helping facilitate the company's statewide growth. Drexel expects to create 100 full-time jobs across the company's nine locations in Wisconsin. Of the 100, 50 will be created at the New Berlin facility, with the remaining 50 created at other locations. All the current Brookfield employees will be offered their same positions at the expanded New Berlin location.

In addition to the 50 jobs expected to be created by Drexel Building Supply, an economic modeling study estimates the project could indirectly generate 56 additional jobs in the region.

MFM Building Products Expanding

MFM Building Products [www.mfmbp.com], a manufacturer of a full envelope of waterproofing and weather barrier products for the building industry, has recently announced a substantial expansion project for 2021 at its Coshocton, Ohio, headquarters. This coincides with



MFM hosted a Groundbreaking Ceremony for local dignitaries and media on March 19. COURTESY OF MFM BUILDING PRODUCTS

the company's 60th anniversary being celebrated in 2021.

The thrust of the expansion project is adding close to 50,000 square feet to the production area and the acquisition of new production equipment to meet the rising demand for product. MFM has been acquiring additional raw materials to ensure product availability for their customer base and this new facility will accommodate this additional inventory. The building is planned to be completed by the fall of 2021, and the new production equipment to be installed and operational by early 2022.

Other aspects of the expansion project include razing a building on the company property, constructing new offices in the main headquarters building, and the addition of a new, state-of-the-art Research

& Development laboratory for increased quality control and new product development. In total, the company expects to hire an additional 20 full-time employees as part of the Expansion Project.

According to Tony Reis, President, "The Expansion Project is the result of continued company growth and the company's commitment to meeting the needs of our customers today and in the future. With this investment, we hope to introduce new waterproofing projects to our portfolio of existing waterproofing membranes. As an ESOP company, there is a lot of excitement among our employees as MFM continues to grow."

Olympic Announces Stain of the Year

Olympic® Stains by PPG has announced its first-ever 2021 Stain Color of the Year: Light Oak.

Light Oak is a soft, semi-transparent, versatile tan stain color that adds a refined Scandinavian-inspired look, while still allowing the wood's natural characteristics to show through. Light Oak can revive outdoor decks, patios and pergolas, blurring the lines between indoor and outdoor living.

The Light Oak stain is recommended for exterior projects, including (but not limited to) fencing, decks, and home sid-



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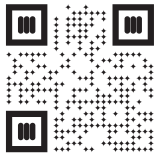


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Olympic Light Oak Stain. COURTESY OF OLYMPIC (PPG).

ing. The stain color is available in Olympic Maximum, Olympic Elite, and Olympic Wood Protector semi-transparent products by PPG [www.ppg.com].

“Light Oak is a timeless color that will keep wood looking gorgeous for years to come,” said Alison Bruce, PPG senior marketing manager, Olympic Stains by PPG.

Industry’s First Asphalt Shingles Containing Recycled Waste Shingles

GAF [www.GAF.com], a Standard Industries company, announced a new patented shingle recycling process that has successfully produced the industry’s first asphalt roofing shingles containing recycled material from post-consumer and post-manufacture waste shingles that may have otherwise been landfilled.

This breakthrough represents an important milestone in delivering more sustainable, affordable roofing materials and has significant implications for improving sustainability and circularity across the roofing supply chain.

“This latest innovation from GAF represents the first major step towards a circular economy for asphalt roofing shingles,” said Jim Schnepfer, President,



GAF shingles manufactured from recycled material. COURTESY OF GAF

GAF. “We envision a future where every homeowner, when replacing their roof, can do so with high-quality, affordable shingles made with recycled asphalt.”

The new shingle recycling process reduces the amount of raw materials required to make new shingles without compromising product quality or performance. During its successful tests, GAF was able to reclaim more than 90 percent of the waste shingle material, by weight, to be reused in the manufacture of new shingles. GAF additionally demonstrated its ability to manufacture new shingles containing up to 15 percent recycled material that were UL-certified for their safety and effectiveness. The U.S. Patent and Trademark Office issued GAF three patents covering this new shingle recycling process.

Walpole Outdoors Unveils Expanded Manufacturing Facility

Walpole Outdoors (walpoleoutdoors.com), a provider of wood and AZEK solid cellular PVC outdoor structures, has announced the opening of its expanded manufacturing facility in Maine.

Located in the town of Pittsfield, the 9,000 sq. ft. space will build upon the company’s existing 90,000 sq. ft. manufacturing footprint in Maine, with the goal of increasing capacity, improving



Walpole Outdoors’ newly expanded manufacturing facility in Maine. COURTESY OF WALPOLE OUTDOORS

efficiency, and reducing cost of quality. The new space includes manufacturing areas, as well as two additional loading docks, which will allow increased freight capacity.

“This expansion is going to be critical for us,” said Robert Hayes, VP of Manufacturing. “We had begun to outgrow our existing space, so this will allow us to innovate and meet the rising demand for Walpole products in the marketplace.”

The increased space will also allow Walpole Outdoors to grow its workforce by as many as 20 positions. When asked about this, CEO Peter O’Connell cited the company’s history in the area as one of the deciding factors on making this investment.

ProVia Earns Energy Star® Partner of the Year Sustained Excellence Award

ProVia (www.provia.com) has announced it received the 2021 Energy Star Partner of the Year—Sustained Excellence Award from the U.S. Environmental Protection Agency and the U.S. Department of Energy. This is the 14th year ProVia has been recognized for protecting the environment through energy efficiency.

The Sustained Excellence award is the highest honor bestowed by the Energy Star program. Winners have made a long-term commitment to fighting climate change and protecting public health through energy efficiency. They are among the nation’s leaders in driving value for the environment, the economy, and the American people. **GSCB**



Patented Ladder Safety Rest

The Ladder Safety Rest is now in production. The patented device makes ladder use safer for residential and commercial roofers, building contractors and do-it-yourselfers. It also protects the roof from damage commonly caused by ladder use.

“The Ladder Safety Rest weighs only 11 pounds,” said Terry Brown, president of the company, “but it will save lives.” He explained that the device, which is made in America from the highest quality 300 flex steel, secures to the roof with a plate held by four screws. The ladder fits between the hand grips and is held in place with No. 1 safety chain, which has been tested for strength and durability. “This means that the ladder won’t slip from side to side, and it won’t collapse or slide down vertically,” he said.

In addition to protecting the user, Ladder Safety Rest protects the roof and prevents damage by keeping the weight of the ladder off shingles and gutters. The

angle of the base plate to the ladder can be set to fit angled or flat roofs or even to attach to a vertical wall.

Brown’s passion to create the Ladder Safety Rest was the result of seeing, as a young boy, a worker die when his ladder slipped out from under him. “Nobody should die from a ladder fall,” Brown said. Throughout his career as a building contractor, Brown consistently sought a way to prevent such falls. He experimented with different designs until he arrived at the current tested design, for which he earned a U.S. patent in 2018.

www.laddersafetyrest.com



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Wearing prescription eyewear doesn’t provide enough eye protection on the job site. Pyramex® has designed four lightweight over the spectacle protective eyewear options. The four models include OTS®, OTS XL, Cappture™ and Cappture™ Plus. All are constructed of hard-wearing materials for durability and featuring lens technology that blocks high percentages of harmful UV rays. All are ANSI rated

and impact tested.

Pyramex Safety designs and manufactures a variety of personal protective equipment from eye, head, hand, welding, cooling and hearing protection to hi-vis work wear, respirators and ergonomic gear.

www.pyramexsafety.com



Spyder Releases New Bits

Pyramex® Products has expanded its line of Stinger™ wood-boring bits to include new brad point bits, as well as additional sizes and single packs of its power, auger and spade bits.

The updated STINGER line now includes Brad Point Bits for precision wood drilling; Auger Bits available individually in diameters ranging from 3/8” to 1”; Spade Bits now available individually with diameters ranging from 1/4” to 1-1/2”, in 6” and 16” lengths; Power Bits available individually in diameters ranging from 1/2” to 1-1/4”, in 6-1/2” and 16” lengths; and Mach-Blue™ High-Speed Steel Bits (armor plated HSS drill bits)

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How To Take Great Photos

Never Again Take an Ugly Shed Photo

BY JEFF HUXMANN, SHEDHUB

There are very few ugly sheds, but there are plenty of ugly photos of sheds. I take no pride in saying that I have taken plenty of these ugly photos, but I have learned from my mistakes (most of the time) and hope that you can save some valuable time with the tips below.

I have to make a confession of sorts. For a good chunk of my twenties I was a professional documentary nature filmmaker and worked on jobs for National Geographic and Animal Planet, among others. There are some similarities between photographing nature and photographing sheds, although it may not be obvious at first. It has to do with lighting.

Low-Angle Light Is Your Friend!

What do natural landscapes and buildings have in common? They both look best shortly after sunrise or shortly before sunset on a cloudless day. The low angle of the sun illuminates objects from the side, instead of from above. The low angle light creates stunning images with dramatic shadows. (Have a look at the examples on the next page.)

If you were a shed shopper, which one would you rather buy? This same lighting works well on buildings larger than sheds. Houses, churches, skyscrapers, you name it. Buildings look great with low-angle lighting.



The shed photo taken when the sun was low (top) has more depth and character than the photo of the shed taken when the sun was overhead, casting the shed into shadows (above).

Avoid Back-Lit Sheds

I just told you that low angle light is a good thing, but there is an important caveat here. If the sun is in front of you, it will back-light your shed causing the shed to be too dark, or cause lens flare and streaks in your image. You can adjust your exposure of the image to ensure the shed is properly exposed, but ideally the low light I speak of above is coming from behind you as you take the photo and nicely lighting up your shed.



Avoid taking back-lit photos. Low-angle light is a good thing - but NOT when the light is in front of you. The shed will appear too dark and the sun will cause lens flare and streaks in your image.

Take Many, Keep Few

Memory cards are cheap. Don't be afraid to take many more photos than you will actually end up using and pick from the best of the best to share with others. I hate coming back from a photo shoot wondering if I should have gotten the building from a certain angle. Take photos at head height. Take photos from a squatting position to get a slightly more dramatic low angle of the shed. Sometimes I pull out a step ladder and snap photos of a shed from say about 9-10 feet up in the air and that creates a really nice perspective of a building that you don't see often. Get photos of the same shed from a dozen or so angles and one of the photos is bound to look nice!

Fill the Frame

I see many shed photos in which a shed is maybe taking up 1/2 of the possible space available in the photo. That is fine in certain circumstances where you want to show off the surrounding landscape. For photos in which you are trying to sell a building sitting on a gravel or paved lot, the more you can fill the frame with the shed, the better. Filling the frame means that you will have a more detailed image of the shed and it will require less cropping later on, saving you a little bit of time editing the photo.



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Photos taken off the corner of the shed give your customers much more information about the shed and are more visually appealing than those taken straight on.

Show More With Corner Shots

Taking a photo of a shed directly from the front or the side is OK. For me that sort of shot has far less depth and visual appeal as a photo taken from about 45 degrees from the corner of a building. This shot from this angle provides a good view of two sides of a shed and be sure to choose an angle that shows the main entrance to the shed, and another side with interesting features, like windows or more doors, instead of an empty wall. This type of photo make great primary photos when listing shed inventory.

The Surroundings Set the Mood

Many of us have to work with the reality that portable sheds are stored at large gravel lots with not-so-interesting surroundings. Some of the best shed shots I've seen are of sheds nestled into woodlands or placed nicely on a tidy gravel pad with manicured lawn all around. These sort of photos are catalog cover worthy. The surroundings of a shed placed at it's final destination always trumps sheds at sales lots. Your future customer seeing images of great scenery provides a sense of pride that your product will fit well on their property. Photos of sheds taken at gravel or paved lots is often where we are tasked to take

images of portable building inventory. And that is OK, but if you have opportunities to get photos of your sheds after they have been delivered to a customer's location, those can be some of the best photos because of the surroundings. Be sure to get permission with homeowners before publishing photos of sheds on customer's private property.

People Tell a Story

Award winning photos capture a split second of time, but tell an entire story in that one frame. One area that we, the shed industry, could all do more of is photographic storytelling. This storytelling can be achieved by collecting photos of people interacting with and enjoying their new shed. People buy sheds to solve problems and to create experiences for themselves. People buy sheds to store riding mowers or a new 4-wheeler, or create extra home office space. Images that capture real people enjoying having their problems solved creates an emotional response with a shed shopper that their space issues can be solved soon. Don't underestimate the emotional buying habits of people. If a shopper sees something they can relate to and create a connection with in a photo they see, they are more likely to bond with that product. Think about this: Why do cola ads show



Take photos of your customers using and enjoying their sheds. Don't forget to get signed talent waivers.

people taking a sip of a drink and then smiling for the camera? The not-so-subliminal message is cola equals happy people. Extra space solves problems for people - so make more of your photos about people being happy with your product. Be sure to get permission from all of the people in the photograph before publishing the photo. Signed talent releases from the people in your photos can help you and your company from a legal perspective when it comes to getting permission. I'm not qualified to hand out legal advice, but most lawyers should be able to dig up a template of a talent release and forward that on to you.

Don't Forget Interior shots

Sheds look nicer from the outside simply because in our industry most of what we sell is unfinished on the inside. Studs and subfloor, coupled with low lighting, doesn't make interior shots nearly as appealing as showing exterior shots. However Interior shots are important, especially if you are selling online, because a shopper wants a full picture of what they are getting. Some things I like to do when collecting interior shots is to take



Today's cell phone cameras are capable of taking high-quality photos that will help you sell your sheds ... Just make sure the settings are right for the intended use of the photos. Lower resolution is fine for online, but you need high resolution for any printed materials.

photos from all 4 corners of the interior rooms and keep the camera on the widest possible field of view. Sometimes I have to keep a door propped open to get enough light inside. You can bring a light kit with you to provide more interior lighting, but that can become time consuming.

Something I have started to dabble with is 360 degree interior photos taken with a specialized, but inexpensive 360 degree camera. It's a bit harder to share these 360 degree images on your company website - it's not a well embraced technology for web browsers, however these images can be uploaded into social sites and render nicely there, making for fun and interactive social media for your company's products.

Camera Selection

While I do carry around a nice Canon SLR for taking high quality print catalog images, most new smartphones will do just fine for shed images. Often times the best camera is the one you have on you already. If you use a flip-phone camera, those photos do tend to be a little lower quality and not work for print catalogs, but would be sufficient for posting images for online inventory.

Keep It All In Perspective

I've given several tips here on how to improve photos of your sheds, but don't think you have to employ all of these techniques to all of your images. (But if you did that would be amazing!) The more tips you can integrate, the better shed photographer you will become over time. And most of all be sure you are enjoying taking good photos! Ugly shots no more!

GSCB

Jeff Huxmann is the founder of ShedHub [<https://shedhub.com>], which provides marketing services for shed and accessory building companies and connects shed shoppers with shed sellers. Free ShedHub business listings and complimentary shed business growth assessments are available. More information: 415-915-7433.



Run-In Success

Shed Builder Caters To Needs Of Horse and Livestock Owners

BY KAREN KNAPSTEIN

Translucent polycarbonate panels are incorporated into the walls and sliding doors of this multi-purpose shed from Mid Michigan Structures. PHOTO COURTESY OF MID-MICHIGAN BARN

Reuben Schrock, founder of Mid Michigan Structures in McBain, Michigan, has found his niche. He launched what would become his business in June 2012 when he built his first portable barn.

“Back in 2012 when I started, the mini barn company down the road from me got me thinking,” Schrock said. “I was only working 4 days a week and needed something to do.” The mini barn shop, Mid Michigan Barn Co. [<https://midmichiganbarns.com/>], didn’t offer many of horse barns. He knew there were a lot of horses in the area, so he figured there had to be a demand for them.

Schrock decided to act on his theory. He first contacted Mid-Michigan Barns to make sure it was okay with them if he were to build an animal shelter or two. (He didn’t want to compete with them.)



Ideal for animal confinement, Mid Michigan Structures [(231) 825-0382] builds its shelters with kick walls built from treated 2x6 tongue and groove lumber. Buyers often use them to shelter horses, pigs and cows — even alpacas and deer. PHOTOS COURTESY OF MID-MICHIGAN BARN

They told him to go ahead; he wouldn’t be competition since they didn’t build a lot of horse barns.

So he bought the materials and built his first two run-in sheds. Since he wasn’t by the phone to answer customers’ calls, he thought maybe he should try to whole-

sale to Mid-Michigan Barns, who has the staff ready to answer the phones and also delivers sheds. Since the folks at the shed lot didn’t particularly like building animal shelters — they preferred to stick with backyard mini buildings — they took Schrock up on his offer to build animal

shelters for them. “They jumped on my offer and it just went from there,” he said.

Growth In A Good Partnership

It didn’t take long for the first couple run-ins to sell. Then he built another one — and it sold. Schrock’s run-in sheds sold off the lot one after another. “By the end of that first year, I built 37 sheds,” he said.

In 2013, while still building sheds part time, Schrock built a hundred. “After the second year, it just kind of took off”; in 2019, he said he built more than 200 portable barns.

Schrock started out building simple animal shelters. “I started from the get-go building horse barns,” he said. “They’re three-sided run-in sheds.” But it wasn’t very long before customers

started asking him to build bigger and more complicated structures. “Soon, someone said they wanted one with the front end enclosed and a 4-ft. sliding door. Next, somebody wanted a gate. As people started asking for more complicated sheds, I started building barns with more options.” Now, some of the most frequently requested options include sliding doors, tongue and groove floors, stall divider walls, bar gates, and enclosed tack rooms. The “standard” run-in sizes he builds are 8’ x 8’ up to 12’ x 48’, but Schrock will make the effort to quote bigger, fancier buildings.

In his experience, he has found that the most “economical” material choice isn’t always the best. For example, he used to use lighter-gauge steel gates. Although he didn’t receive any complaints

“If you make a good-looking, quality product and keep it at a fair price, people are going to appreciate it and tell their neighbors.”

— *Reuben Schrock, Mid Michigan Structures*

from his customers, the lower-quality gates just didn’t sit well with him. He switched to Diamond Bar gates, which he says have “good thickness and strength for the price.” He also uses two-way gate latches from Cashmans out of Ohio. “Using the better quality gates and latches upped the standard of our barns. People like them so much they don’t mind the added cost.”

Schrock does his best to fulfill his cus-



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tomers' needs and wants, but it's not always easy. "A customer sometimes walks in after they've seen a picture online. It might be made of materials we don't carry, or a style we don't do. Sometimes trying to match a customer's dream gets pretty challenging," he said.

Quality at a Fair Price

What Schrock strives to do is build a good, quality product and offer it at a price that is fair for both him and his customers. He gives careful consideration to determining his prices; prices are set so he can be fairly compensated for his time, Mid Michigan Barns can be compensated fairly for their service, and the customer is happy with the product they get for the money they spend. "I try to accommodate the customer and still be realistic with pricing and get a fair wage," he said.

Whether the animal shelter is small, basic run-in or a larger and more elaborate enclosure, quality is always the goal. From the runners to the rafters, all exposed wood is treated. The kick walls are built from treated tongue and groove 2x6 boards. "I use boards at the bottom [as opposed to metal] because it's safer for the horses. A horse can kick through metal and can seriously hurt itself on the sharp edges," he explained.

No nails are used in construction; the shelters are assembled entirely with screws for durability. "These barns are going to be out in the elements. Nails will let loose over time where screws will hold," he said. Since they are being used on treated lumber, which is corrosive to untreated fasteners, Schrock uses treated deck screws from National Nail.

Roof and wall panels are 29 ga. corrugated steel with a 40-year finish. Track is sourced from Graber Post and the latches are from Albany Hardware in Wisconsin.

All corners are fastened with heavy-duty, quarter-inch thick galvanized corner brackets from Middle Creek Welding (Pennsylvania). The brackets — which are a key element in the stability



Mid Michigan Structures was launched with simple portable horse barns, but has grown to offer its customers many types of portable buildings. PHOTO COURTESY OF MID-MICHIGAN BARNs



Reuben Schrock, Mid Michigan Structures, believes there may be unmet demand (and potential for business growth) for portable animal shelters that other builders may be able to capitalize on. PHOTO BY OF AMZIE TROYER.

of the structures — are fastened with hot-dipped galvanized lag screws. Roof interiors are lined with single-bubble foil to prevent condensation.

Reuben Schrock's ability to figure out how to build enclosures that solve problems for his customers has changed his life. "If you make a good-looking, quality product and keep it at a fair price, people

are going to appreciate it and tell their neighbors," he said. The word-of-mouth has really helped grow his business. "This has gone way beyond my dream when I started. I underestimated how many people actually want them or need them. There's a real demand and I feel like I'm filling a need," he said. "And there might be some potential in other states, too."

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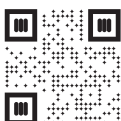
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According to the International Casual Furnishings Association's 2021 Outdoor Trend Report, 78 percent of those polled made outdoor upgrades during 2020. PHOTOS COURTESY OF PREMIER OUTDOOR LIVING, LLC.

Outdoor Living Spaces

Expert Tips to Building Your Customers a Backyard Oasis

BY CAROL J. ALEXANDER

bio•phil•ic:

relating to, showing, or being the human tendency to interact or be closely associated with other forms of life in nature.

—Merriam-Webster.com

The buzzword in home remodeling for 2021 is biophilic design—bringing occupants closer to nature. And, it's no wonder since stay-at-home measures were put into place with the onset of the Covid-19 pandemic last March. People feel cooped up, depressed, and lonely. According to the Centers for Disease Control and Prevention (CDC), last June 40 percent of adults reported struggling with mental health or addictive symptoms.

Fortunately, there's a balm in nature. In 1984, Roger S. Ul-

rich, Ph.D., professor of architecture who specializes in health-care building research, conducted a study of the effects that gazing on nature had on patients healing from surgery. His study found that patients allowed to recover in a room with a large window overlooking nature "had shorter postoperative hospital stays, received fewer negative evaluative comments in nurses' notes, and took fewer potent analgesics" than matched patients in rooms with windows facing brick walls.

But we didn't need a 37-year-old study to tell us that people want to be outdoors more than ever. We only have to look at the data. The International Casual Furnishings Association's 2021 Outdoor Trend Report shows 90 percent of those surveyed consider their outdoor living space as more valuable than before. And, that 78 percent made outdoor upgrades during 2020.

If you're considering adding outdoor living options like gazebos, pergolas, decks, or play equipment to your inventory, here are a few tips from others who have gone before.

“A tiny difference in the design can take a mediocre deck to something nice and polished.”

— Sean Collingsgru,
Premier Outdoor Living, LLC

TIP #1 **Do Your Research**

Is there a demand?

We’ve already established that outdoor living is trending. But what, exactly, does your clientele demand? If your customers are mostly families with children, they probably want decks and play equipment. Whereas, customers in an urban setting with smaller yards may look more for a patio and firepit. Collect data from manufacturers, suppliers and clients to gauge interest.

- Send surveys through your email list
- Scan social media feeds for opinions and needs
- Post polls on social media

According to Doug King, owner of Doug King Contracting, Inc. in St. Petersburg, Florida, and president of the National Association of the Remodeling Industry, in his area pool additions or modifications are his number one request. However, “adding a covered lanai on the back of the house for an outdoor kitchen, or just expanding a covered gathering area is very popular,” he says.

Do you have the skillset?

Research the product you wish to offer. “You can learn small differences and a lot of tricks by doing research,” says Sean Collingsgru, owner of Premier Outdoor Living, LLC in New Jersey. Differences in design, materials, and techniques all play a role in developing the end-product you choose to offer. You may also learn different tricks of the trade by consulting with other manufacturers.

If your company only offers one type of product, like storage sheds, there may be a learning curve to building other items like decks and pergolas. Now’s the time to take an assessment of the skill-sets you already possess with your current staff, and any new ones you’ll need training for. Such as building deck stairs and railings, laying patio block, or setting posts for pergolas.

However, he says it’s the details of the design that matter. “A tiny difference in the design can take a mediocre deck to something nice and polished.”

King suggests shed builders partner with a design/build firm. “Someone who can help them provide options and solutions to homeowners who are looking to make their backyard a private oasis.” However, if you already have design skills and the necessary software, you’re well on your way to creating your customer’s dream backyard.

Collingsgru recommends Realtime Landscaping Architect software by Idea Spectrum. “It gives a 3D rendering, which is by far the best sales tool,” he says. And, to design something your customer will love, he says to ask the customer critical questions, like:

- How they plan to use the space,
- What size capacity they’ll require,
- What features they want (grill, firepit, drink coolers, etc.), and
- Their budget.

What materials will you use?

Since lumber prices have surpassed a 200 percent increase over April 2020, according to the National Association of Homebuilders, you may struggle to keep your outdoor storage buildings at a price point your market can afford. Building outdoor living structures, using different materials, gives you additional products to offer your customers.

Even though the substructure of Collingsgru’s designs includes pressure-treated lumber, he says it’s a relatively small portion of his total cost to build. “I use Deckorators,” he says, “It’s a mineral-based composite, gives better traction and minimal expansion.” And for patios, he prefers Techo-Bloc.

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Say you saw us in the Spring Garage Carport Shed Mag.

The more you know...

BY KAREN KNAPSTEIN

The more you know about what your competitors are building (or *not* building), the better your chance of capitalizing on product and service gaps. One way to find out what's being built on private properties in your area is to search building permit data.

As you know, building permits are typically required for all accessory structures, including (but not limited to) gazebos, deck installations, garden sheds, and pergolas. (Uncle Sam has to keep track of those improvements!) Many local governments now maintain websites on which you can either access permit application information directly, or you can request the records. Another option is to visit the Building Department of your local government office. You may need to fill out a Freedom of Information Act (FOIA) request, but, whether it's through the website or in person, the clerk should be able to help you find the records you're interested in.

As a builder, you're no doubt already familiar with the permitting process. Knowing your area's permit requirements inside and out will help you spot problems that area property owners are facing. Learn your way around the records. When you find a permit that was denied — perhaps because the plans were wrong or the project didn't comply with zoning restrictions — it's a problem for the homeowner but a possible opportunity for you if you can help the homeowner find a solution. Possible solutions might be a re-design or walking the property owner through getting a zoning variance.

If nothing else, scanning public records for the types of structures your competitors are building nearby will either verify what you think you already know or give you a better understanding of what is going on so you can spot more opportunities. **GSCB**



PHOTO COURTESY OF PREMIER OUTDOOR LIVING, LLC

TIP #2 Network with Other Supporting Businesses

A complete outdoor living package could require the services of several different types of businesses. “Partnering with a concrete company, an engineer, and possibly an electrician so that all the parts and pieces can be offered as a turn-key project,” says King. “Homeowners like ‘easy,’” he continues. “They don’t want to hire multiple companies.”

Referrals come from your network, too, according to Collingsgru. When the landscaper you usually hire to work on your jobs has a customer who wants a gazebo, he knows who to recommend. Pool builders, home remodelers, design/builders, and masons are other businesses you may want to keep in your contacts.

To find others to network with, try your local Chamber of Commerce, NARI chapter, or other associated organizations. Visiting trade shows is another way to not only network but get leads. For instance, having a booth at a local pool and spa show will capture leads for you of those people who came to shop for pools

not realizing they may want a deck, patio, and pergola to surround it.

TIP #3 Advertise

Remember the couple who walked away because you didn't build gazebos? Now's the time to give them a call and let them know you have added them to your inventory. Advertising and marketing will get the word out that your business has expanded. In addition to buying advertising space in print publications or airtime on radio or TV, there are other ways to let your customers know you have something new to offer. If you don't already have a marketing team member on staff, find an agency or freelancer to help you with the following punch list.

Update your website

Before telling the world you have new products or services to offer, add them to your website. In addition to a product page with the description, specs, and options, there are a few other things to include:

A product-specific landing page—This page with a dedicated URL is a helpful

tool to measure interest. It will be the page you'll share on social media to announce the launch of your new product. Think of it as a birth announcement with pictures of your new baby, sales copy that touts the benefits of the product, and links to the separate product pages, i.e. large gazebo, medium gazebo, small gazebo.

A content download—This is content related to the product that a potential customer will want to download and save for future reference. A few examples include: "A Step-by-Step Guide to Designing Your Gazebo," "Wood or Vinyl? 5 Things to Consider When Choosing the Material for Your Pergola," or "How to Size a Patio for Your Backyard." To download the content, the customer must give you their contact information, creating a lead for your sales team.

A case study or two—If you built a few prototypes, add a few case studies, or happy customer stories, to the website that highlights the problem you solved for that customer. You could add these later, after a few sales, if you already have case studies of your existing products.

Send an email campaign

Sending an email announcement to existing and potential customers is the least you can do to promote your new product line. Better yet, make it a campaign of three to six emails. The first email could be a "We're working on something big" kind of message. Follow that with a couple of happy customer stories. Make sure these home in on a problem/solution angle. Then, reveal the product in another email. Follow up a few days later with an ask: "Wouldn't you like this in your backyard?" Spread these out over several weeks to avoid bombarding your customers —especially if you're not in the habit of sending regular email newsletters.

Social media posts and ad campaigns

Finally, following the same type of content that you use in your emails, write social media posts for each of your accounts. Always include photos with

your posts to show the reader what your product looks like. Once you've sold a few, share photos of the product in the homeowner's yard.

With 90 percent of homeowners seeing their outdoor living space with fresh eyes, there's no better time to pivot your busi-

ness by adding to your product line. The question is: What will you build next?

GSCB

Carol J. Alexander writes feature articles, website copy, case studies, and more for the home remodeling and building industry. She lives in the beautiful Shenandoah Valley of Virginia.



PHOTO COURTESY OF PREMIER OUTDOOR LIVING, LLC



Teaming up with a design/build firm can help you provide your customers with options you may not have considered on your own. PHOTO COURTESY OF PREMIER OUTDOOR LIVING, LLC

Solid Footing

Prevent Structure Failure Due to Rotting, Settling, Heaving

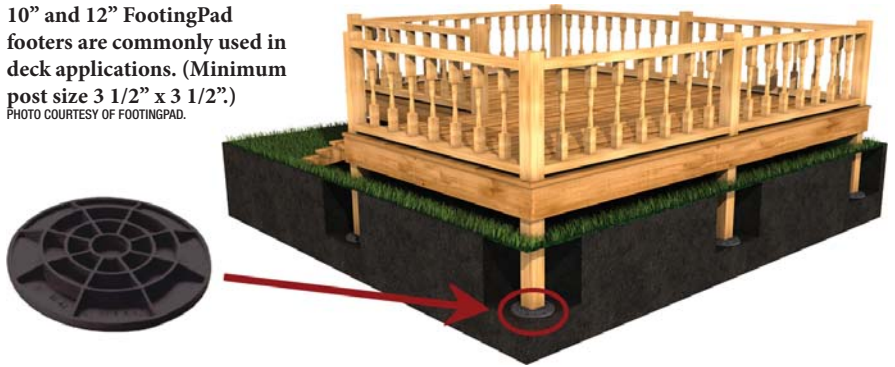
BY KAREN KNAPSTEIN

Whether you're building a deck, boardwalk, or pavilion, a structure is only as good as its foundation. When building structures with posts set in the ground, proper anchoring will prevent the settling caused by the weight of the structure on the subsoil, by footer degradation or decay, or by upheaval caused by water freezing in the ground. The last thing you need is for your customer to tell you someone tripped and was injured on the deck or boardwalk that you built – and that they think it's your fault. Or that the pavilion you built is now crooked because the posts have settled unevenly. Here we will discuss how some products are used to combat footing failures.

Stable Footing

In order to carry a load without failing, load-bearing posts must have a solid footing. FootingPad (www.footingpad.com) is a composite isolated footing system that has been designed to replace concrete footings beneath load-bearing posts. The product was developed by Glen George and Jerry Eckhoff. Through their experience in post-frame construction, they determined using concrete as an under-post pad was “overkill.”

10” and 12” FootingPad footers are commonly used in deck applications. (Minimum post size 3 1/2” x 3 1/2”.)
PHOTO COURTESY OF FOOTINGPAD.



Made from a proprietary composition of engineered polypropylene (100% recycled) and fiberglass, the footing pads are molded with a rib pattern that effectively transfers the weight carried by the post to the supporting soil beneath the pad.

Paul Kluempers, General Manager at AG-CO, the company that manufactures FootingPad footers, explained, “By expanding the surface area the pad carries more load. The effectiveness of the pad has nothing to do with the concrete or the material. The pad works because it's stronger than the soil. Concrete isn't a bad footing – it's just harder to work with.”

FootingPad footers are lightweight and strong, making them easy to work with. They also won't rot or degrade. “Our footers are made from an inert mate-



FootingPad is always placed flat side down into the hole. Shown here, uplift brackets are attached to the post.
PHOTO COURTESY FOOTINGPAD, WWW.FOOTINGPAD.COM

TABLE 1

LOAD CAPACITY PER POST AT:

IDENTIFICATION	PAD DIAMETER	1500 psf SOIL CAPACITY	2000 psf SOIL CAPACITY	2500 psf SOIL CAPACITY	3000 psf SOIL CAPACITY
FP-10	10 inch	810 lbs.	1081	1351	1622 lbs.
FP-12	12 inch	1126 lbs.	1536	1946	2356 lbs.
FP-16	16 inch	2009 lbs.	2739	3470	4200 lbs.
FP-20	20 inch	2687 lbs.	3973	5259	6545 lbs.
FP-24	24 inch	4013 lbs.	5784	7556	9327 lbs.

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TABLE 2

Minimum Post Size	FootingPad Size
3 1/2" x 3 1/2" min.	FP-10
3 1/2" x 3 1/2" min.	FP-12
4 1/2" x 5 1/2" min.	FP-16
4 1/2" x 5 1/2" min.	FP-20
4 1/2" x 5 1/2" min.	FP-24

rial. There's very little change over time with the product. In general, it's resistant to any kind of environmental impact. Microbes and moisture in the soil are not going to break it down. It will last for a very long time."

They are made in five different sizes running from 10"-24" diameter to accommodate varying loads. FootingPad footers can be used with any type of post, including pre-cast concrete. The footers with 10" and 12" diameters are most frequently used for building decks. But determining the size needed is more complicated than that. "There are three

factors that work together to determine the size of footing needed," Kluempers said. "The weight of the structure (load) [see Table 1], the soil type, and the post size. Any time you're talking about stability, these three things are important."

One caution Kluempers gave was to follow the product guide [Table 2] for the minimum size post to be used. "Too small of a post on a big FootingPad and the post can punch through the pad [if the load is heavy enough]."

A footer beneath the post expands the surface area so the post can carry more load without sinking. When the soil fails to bear the load, the post pushes through the soil and the load moves.

FootingPad has met ICC-ES standards and received certification (ICC-ESR-2147). Through third-party product testing, it was found in compliance with both the International Building Code and the International Residential Code.



Using pre-cast concrete deck posts can save an entire day during deck construction. There's no need to wait for concrete to cure. Attaching uplift brackets below the frost line assures they will stay put.

PHOTO COURTESY PERMA-COLUMN, WWW.PERMACOLUMN.COM.

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Perma-Column® (www.permacolumn.com) precast concrete deck posts eliminate the need for ready-mix concrete, plus they keep the wood out of the ground to eliminate the eventual rot that occurs when wood is buried. "Wood is elevated out of the ground via a steel

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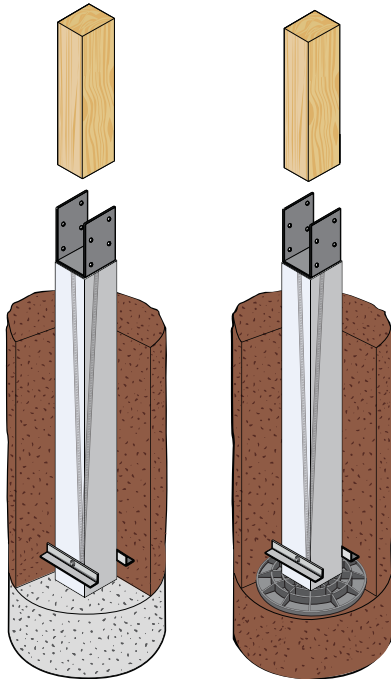
bracket atop a precast concrete foundational pier,” explained Perma-Column President Mark Stover. “The design benefits builders by eliminating the hassles of pouring concrete on the jobsite, mak-

ing deck construction quicker and more efficient. Since you don’t have to wait for concrete to cure, you can, conceivably, build a deck in a day and move on to your next job.”

The patented design combines precast concrete with 60,000 psi rebar reinforcements and a welded, powder-coated ¼” steel bracket to which the wood post attaches. Since the Perma-Columns are precast, they can bear weight immediately.

To prevent uplift, brackets are bolted near the bottom of the concrete base. The company’s uplift anchor options are 2” x 2” x 8-1/2” or 2” x 2” x 12” galvanized angles, which are attached using galvanized Grade 5 bolts, nuts, and washers.

To accommodate builds in all climate zones, Perma-Column manufactures its concrete deck posts in 30”, 40”, 48”, and 60” lengths. “Our deck posts come in various sizes; which one you should use depends on the frost line. When you’re putting in a deck, the code inspector will come out and measure the hole to make sure it’s deep enough to meet the frost line requirements,” he said.



Perma-Column Deck Post installations.
COURTESY OF PERMA-COLUMN



The PlanetSaver double-barrier seals wood treatment chemicals inside the laminated post. PHOTO COURTESY GREENPOST/PLANETSSEVER

Builders can be satisfied these concrete posts will pass muster. Like FootingPad, Perma-Column has earned an ICC-ES certification (ICC-ESR-4237). “This certification confirms our efforts to provide the highest-quality product to the deck builder,” said Stover. “Builders can work with the confidence that our deck products will meet national and international code requirements.”

GreenPost Stays Put

PlanetSaver Industries (<http://www.planetsaverind.com/>) manufactures the GreenPost, a unique product well suited to supporting outdoor structures. Posts are treated against decay and pests, and

TABLE 3

PERMA-COLUMN® DECK POSTS LOAD TABLE

Model ID	Width (in)	Depth (in)	Length (in)	LOAD AND RESISTANCE FACTOR DESIGN (LRFD)						ALLOWABLE STRENGTH DESIGN (ASD)					
				P _{LRFD} (lb)	M _{LRFD-x} (ft-lb)	M _{LRFD-z} (ft-lb)	V _{LRFD-x} (lb)	V _{LRFD-z} (lb)	T _{LRFD} (lb)	P _{ASD} (lb)	M _{ASD-x} (ft-lb)	M _{ASD-z} (ft-lb)	V _{ASD-x} (lb)	V _{ASD-z} (lb)	T _{ASD} (lb)
DP4430	3-5/8	3-1/2	30	46,076	1456	1400	952	986	956	28,798	910	875	595	616	636
DP4440	3-5/8	3-1/2	40	46,076	1456	1400	952	986	956	28,798	910	875	595	616	636
DP4448	3-5/8	3-1/2	48	46,076	1456	1400	952	986	956	28,798	910	875	595	616	636
DP4460	3-5/8	3-1/2	60	46,076	1456	1400	952	986	956	28,798	910	875	595	616	636
DP6630	5-5/8	5	30	101,268	2981	4048	2109	2900	1658	63,293	1863	2530	1318	1813	1103
DP6640	5-5/8	5	40	101,268	2981	4048	2109	2900	1658	63,293	1863	2530	1318	1813	1103
DP6648	5-5/8	5	48	101,268	2981	4048	2109	2900	1658	63,293	1863	2530	1318	1813	1103
DP6660	5-5/8	5	60	101,268	2981	4048	2109	2900	1658	63,293	1863	2530	1318	1813	1103
DP6430	6-1/8	5	30	109,556	3215	4048	2297	3388	1289	68,472	2009	2553	1436	2117	857
DP6440	6-1/8	5	40	109,556	3215	4048	2297	3388	1289	68,472	2009	2553	1436	2117	857
DP6448	6-1/8	5	48	109,556	3215	4048	2297	3388	1289	68,472	2009	2553	1436	2117	857
DP6460	6-1/8	5	60	109,556	3215	4048	2297	3388	1289	68,472	2009	2553	1436	2117	857

For SI: 1 inch = 25.4 mm, 1 pound = 4.4482

$$^1 \text{ For biaxial bending: } \frac{m_x}{M_x} + \frac{m_y}{M_y} \leq 1$$

² The tabulated values account for combined axial compression load and bending moment load. No reduction in axial compression loads and bending moment loads for combined axial compression bending moment is required.

$$^3 \text{ For combined tension loads and bending moment loads: } \frac{t}{T} + \frac{m}{M} \leq 1$$

they're specially notched to resist uplift. Then a specialty coating is applied.

PlanetSaver's Barry Hoffman explained the problems that builders have been seeing and how the GreenPost helps solve those problems: "What we're hearing from builders is after 8 or 9 years of being in the ground, treated posts are seeing some rot." Degradation of the wood is caused by microbes and moisture in the soil. Rot typically happens in the "decay zone" (2" above grade to 6"-8" below grade, depending on the soil; this is the area where microbes thrive thanks to the moisture and oxygen levels in the soil.

The GreenPost process creates an impermeable double barrier that keeps the wood treatment chemicals inside the wood and moisture and pests away from the wood. The double barrier consists of a water-based asphalt emulsion plus a layer of polyethylene, which then goes into an oven at over 600 degrees for a heat curing process. "We're retaining the treatment in the post, therefore adding more protection and the post is lasting much longer. From a preservative standpoint, that's the benefit."

PlanetSaver also manufactures a polyethylene sleeve that can be applied by builders to posts sourced elsewhere. It's as stable as the wrap that's applied to the GreenPost. You only have to apply the wrap to the area of the post that will be in the decay zone.

"It took about two years to develop the composition of polyethylene that we came up with," Hoffman said. "It's very similar to the polyethylene blend that's used in landfill liners, which last about 100 years."

If using sleeves they have the flexibility of being positioned anywhere on the post so you have between 2"-6" above ground for proper protection required for it to be effective.

"Once you put the post sleeve on, you don't have to worry about the post destabilizing because of rot. The only thing you have to worry about is what happens to your post above the ground," said Hoffman.

How deep the posts are buried (or where the wrap is applied in the case of PostSaver) depends on the location and the application. "Some areas, like in upstate New York, is 50". The majority of the country is 48". It varies by jurisdictions and geography." (Up to a 72" barrier can be applied to GreenPosts.)

The offset notch system seen on the GreenPost is patented. "We had to do testing to see how good it was," Hoffman said. "With uplift notches you can just put the post in the ground and pour 16" of concrete and it's much stronger than the alternatives. Builders would either nail blocks at the end of the post to prevent uplift or drill holes into the post at offsetting degrees and put 1/2" rebar in the holes to prevent uplift. We found our uplift notches were almost twice as strong as either of those other two alternatives," he said. "Nails would pull out



Notches in the buried ends of GreenPosts prevent wind from pulling the posts out of the ground. Up to a 72" barrier can be applied to GreenPosts.

PHOTO COURTESY GREENPOST/PLANETSAVER

of blocks or rebar would bend. With the notches, the concrete has to fail in order for the post to uplift." **GSCB**



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Protect Against Water —



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PHOTOS COURTESY OF MFM BUILDING PRODUCTS



The ledger board and top of the deck joist are sealed, which will help prevent water from causing rot and decay.

If the wood structure of a deck fails, the deck will collapse and may cause serious injuries or, depending on the circumstances, even death. “The ledger board and typically the entire support system for the deck is basically pressure treated lumber,” said David Delcoma, Product Marketing Manager MFM Building Products (www.mfmbp.com). “Treated lumber certainly resists rotting, but it doesn’t last forever. At some point it will start to rot if water continues to get down into it.”

DeckWrap PowerBond® is an MFM product that creates a barrier meant to preserve the wood. “The DeckWrap product was developed to protect the structure. It doesn’t matter what kind of decking material — composite, wood, or anything else. If you don’t protect the support system, that’s where you can get

into some trouble,” he said.

“It comes with a special adhesive that’s very aggressive. It adheres to the wood surface and doesn’t let go. It maintains its shape. If a screw goes through it, it seals around the screw to prevent water infiltration. It’s easy to use and install; you just need a utility knife,” he continued.

Delcoma advised that with anything that is self-adhering, the more pressure you can put on it the better it sticks to the surface. He recommends a hand roller to smooth the membrane out to achieve that optimal adhesion. “If you need to overlap the membrane, ensure that the overlap is a minimum of 6” and roll firmly,” he added.

“The ledger board is really critical because it’s connected to the home. If you don’t waterproof it, water will get behind the board and work its way down,”



Here, you can see how the joists were rotting away beneath the composite decking, which had no indication the deck was rotting away.



DeckWrap PowerBond® is a peel-and-stick application. The harder you press, the better the bond and the better the protection.

Protect Against Failure

he cautioned. “You might have water damage, you could have mold growth underneath that.”

Ledger board failure is catastrophic to a deck; it can cause the entire deck to fall away from the structure. If occupied by people, it can cause serious injury and even death.

MFM recommends applying a water barrier to the ledger when anchoring the deck to a structure. They also recommend wrapping ACQ-treated lumber to prevent corrosion of untreated metal components, as well as wrapping posts submerged in the ground to prevent decay.

“People use metal hangers to hang joists. Sometimes the pressure treated lumber chemicals will prematurely corrode metal components holding the deck together,” he explained. The wrap separates the two so they don’t come in contact with one another.

“Over the years we’ve seen stories on the news where the deck has collapsed because the support system wasn’t protected,” he continued. “The support system was built from pressure treated lumber, but even so, it corrodes after so long.”

Installing a water barrier extends the life of the deck. “If you’re putting a post in the ground, you wrap the post and it extends the life of the post. Whether you

backfill with soil or cement, both items have a lot of water in them,” he said.

The company manufactures 12” material recommend for wrapping posts. Only the first 12” into the ground needs to be treated. “In that first 12” of ground — that’s where the most corrosion oc-

curs. Not at the bottom of the post.”

While it’s the homeowner’s responsibility to maintain the wood that is exposed (deck and railing), it’s up to you to protect the wood that’s not exposed so there is less chance for structure failure.

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www.floridarooft.com

Aug 10-12

International Roofing Expo (IRE), Mandalay Bay Convention Center, Las Vegas, Nevada. www.theroofingexpo.com

Sep 21-23

Western Roofing Expo, The Mirage, Las Vegas, Nevada.
www.westernroofingexpo.com

Sep 29-30

Shed Builder Expo, DeVos Place, Grand Rapids, Michigan.
<https://shedbuilderexpo.com>

Oct 6-8

METALCON, Tampa Convention Center, Tampa, Florida.
www.metalcon.com

Nov 4-5

Garage, Shed & Carport Builder Show, Century Center, South Bend, Indiana. 715-252-6360; <https://www.constructionmagnet.com/garage-carport-shed-builder-show-home-page>

Nov 16-18

DeckExpo, Kay Bailey Hutchison – Dallas Convention Center, Dallas, Texas.
<https://www.poolspapatio.com/en/deckexpo.html>

Nov 16-18

International Pool / Spa / Patio Expo 2021, Kay Bailey Hutchison-Dallas Convention Center, Dallas, Texas.
www.poolspapatio.com/en/home.html

2022

Jan 18-20

Frame Building Expo, Gaylord Opryland Resort & Convention Center, Nashville, Tennessee. nfba.org

Feb 1-3

International Roofing Expo, New Orleans, Louisiana. theroofingexpo.com

Feb 8-10

National Association of Home Builders (NAHB) International Builders' Show (IBS), Orange County Convention Center, Orlando, Florida.
<https://www.buildersshow.com/>

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Slip-Fit Kits

Builders May View DIY Kits As An Added Opportunity

BY KAREN KNAPSTEIN

The tube steel carport industry has been booming. There has been so much demand that VersaTube Building Systems opened a new plant in Elkhart, Indiana, in early May 2020 to help meet that demand. “Establishing our roots in Elkhart was an easy decision for us to make. Not only is it a thriving manufacturing hub and the RV Capital of the World, but Elkhart offers an experienced workforce pool and puts us in closer proximity to the four major Menards Distribution Centers, giving us the opportunity to reduce lead and delivery times,” said company co-owner and vice president Bruce Ostrander. “We are proud of our new facility and look forward to building a strong, lasting presence within the community of Elkhart.”

VersaTube manufactures tube steel framed building kits that are assembled with a patented slip-fit connection system. The company sells directly to the consumer through its website, it

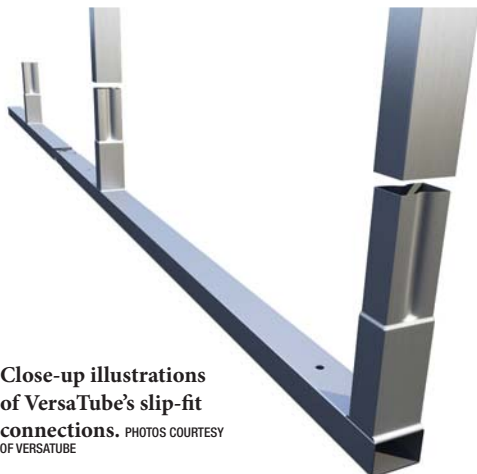
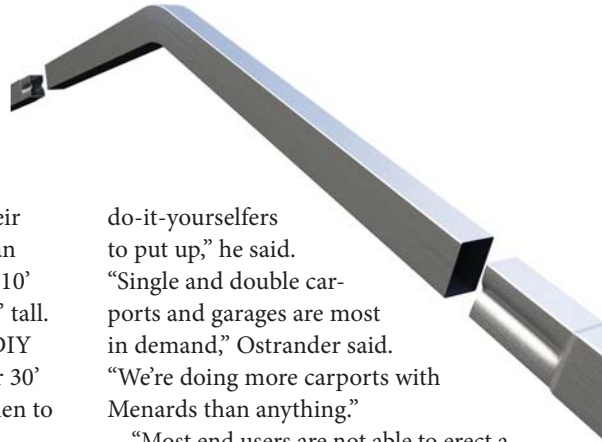
sells limited product offerings through mass merchants like Lowes, Home Depot and Menards; it also sells through a network of dealer/distributors. Their product offering includes clear-span building kits measuring as little as 10’ wide by 7’ tall up to 60’ wide by 16’ tall. The length is unlimited. The true DIY kits are 10’-30’ wide; anything over 30’ wide becomes too heavy for two men to handle without lifting equipment.

Menards is one of the company’s biggest mass merchant customers. The retailer sells carport and building kits to its customers, sourcing the framing system from VersaTube, and coupling it with their sheet metal and trim, which Menards roll forms internally.

Throughout the pandemic, VersaTube has done well. Ostrander said with more people being at home with more time for DIY projects, there has been a lot of demand. “People are finding carports are what they want to put up. They’re a little less expensive, and they are easy for

do-it-yourselfers to put up,” he said. “Single and double carports and garages are most in demand,” Ostrander said. “We’re doing more carports with Menards than anything.”

“Most end users are not able to erect a traditional post-frame or red iron building,” said Peyton Cascio, National Sales Manager for VersaTube. “But they are able to put up a VersaTube building due to its componentized design and interactive user guide that we provide with each building kit design,” he said. “It’s an instructional guide of how to erect it, identifying every component, and placement of that component within in the building kit. As well, any local contractor without prior experience with our product is qualified if the end user prefers to have someone else put it up.” **GSCB**



Close-up illustrations of VersaTube’s slip-fit connections. PHOTOS COURTESY OF VERSATUBE



This four-bay VersaTube storage shed has enough room to store RVs, boats, and the trucks to haul them. Buildings over 30’ wide are too heavy to handle without lifting equipment.

‘Best In Class’

Knudson Mfg. Aids Builders In Pursuit of Excellence

BY KAREN KNAPSTEIN

If you build steel-framed sheds and garages, delays in sourcing cold-formed steel (CFS) components can cause significant building delays. If you can get higher quality components – and get them faster than your competitors – it gives you a competitive edge. “One of the biggest solutions is getting into the business of fabricating your own components,” said Patrick Flood, Vice President at Knudson Manufacturing of Broomfield, Colorado.

Knudson has a long history of innovating when it comes to metal-working machinery. The company began manufacturing the first portable roll forming machines for making gutters on jobsites way back in 1957. Within a few years, the company had developed machines that formed roof panel, fascia, soffit, and valley panel. Knudson has since transitioned out of nearly everything except cold-formed steel framing components in the North American market.

“We actually had a very strong presence in roofing for a long time,” Flood said. “In the early 1990s we got involved in metal framing equipment, and we’ve almost completely evolved into framing now.”

Building with light gauge steel framing is a growing industry. “One of the biggest things about forming your own components,” he explained, “is there are significant improvements in quality. The quality of the components you produce yourself is much better than what you can get from a supply house.” When you source your components from a supply house, your only option is to buy stock pieces and modify them to fit your needs. When you make your own components, you can



KFS-1622E Structural Stud and Track Forming Machine from Knudson Mfg.

make them in the lengths you need and incorporate the service holes and features in the positions you want them.

Incorporating computer-aided design (CAD) in the roll forming line results in less waste – of both time and materials. “As you evolve from the idea of preparing components for stick framing or prefabrication eventually you get to the point where you’re working with a CAD system of some kind to design products,” Flood explained. “With CAD you can get to the point where you can move your fabrication instructions from your software to your equipment electronically. If you’re doing it manually it can be very challenging. Transferring the instructions electronically is much more accurate.”

Knudson has been incorporating CAD in its systems for over 15 years. “We got into CAD systems around 2004-2005, and have been evolving in that direction since,” he said. “We now have a fairly sophisticated CAD-to-component system.”

All of the component details, including quantity and length, dimples, web notching, and flange removal, are defined in the system. That information is fed into the equipment, and the machines do the rest. Controlled by Beck Automation or AMS Controls, in goes the raw steel, out comes ready-to-assemble components.

To make assembly more efficient, individual parts can be labeled. “The system can print with inkjet so it can print labels for parts as they are made,” Flood said. “Essentially, anything that appears as a data field [in the system] can be printed to label your part. It adds intelligence to your components as they’re being made, making it easier to put together and less chance of error.”

Exciting Developments

Due to the expense, space, and labor required, it’s understandable that relative few builders will have the wherewithal to set up a full-blown roll forming sys-



Knudson Mfg. KFS-1420E Structural Stud and Track Forming Line.

tem. However, Knudson is developing a tool system that will certainly be of interest to builders and contractors who work with stud and track. It's a bench-mounted tool system that will allow builders to alter stud and track components quickly and accurately.

"It's a series of standalone hydraulic tools, including a shear and a group of punch presses that can be used to process preformed components," explained Flood. A supply house has only a limited number of components available; those components have to be cut and punched

to work for any particular build. "The system will have a hydraulic power unit that will give you the ability to cut parts to length and to add holes to preform components. And guys can trim parts to length quickly and accurately with the standalone shear. We're also developing a measuring system to go with it to do repetitive cut length and accurate hole positioning."

Whereas a full stud and track roll-forming line may cost \$200,000, the basic bench-mounted tool system will come to market at a small fraction of that. **GSCB**



KFD-2025E Non-Structural Stud and Track Machine. PHOTOS COURTESY OF KNUDSON MFG.

Keys to Good Business

1 "We pursue what we call a best in class approach to the roll forming world," said Flood. "In saying best in class, I mean we really specialize in mechanical design. We work with Beck Automation to provide control systems. They've been in the roll forming game for 25-30 years – they're a top quality provider. We also work closely with Strucsoft Solutions (a software company based in Montreal). When people buy one of our roll-forming systems, we don't try to put everything under a single umbrella. We work intentionally with people we believe are the most effective providers in the different facets of systems we deliver ... For us, we really pursue a 'best in class' philosophy rather than a 'do everything yourself' philosophy."

2 "We shop locally. We do all of our own in-house design work and assembly," he continued. "All fabrication is done locally in Colorado. We work with local vendors with welding, frame building, powder coating, painting, milling — pretty much all the processes involved in making the parts and components. We believe very strongly in shopping locally first. We'll always buy across the street first – in our vicinity. We'll always shop U.S. before we go out of the country. It's amazing how many people ask us if our equipment is made in China – absolutely not. It's made in Broomfield, Colorado. We've found favor with our audience because everything we do is American made."

3 "We work very hard to provide clients with what they need. When you begin looking at all of the different facets of light gauge steel framing, there are complexities involved. We work hard to identify and understand our clients' needs so we're providing them with what they need. Along with that, we sell to a lot of people who don't come from roll forming. We sell a lot to people who come from construction who don't have a lot of experience. We work hard to educate our customers about the entire process – everything from making parts to buying steel to contending with CAD systems and electronic information. We work hard to make sure they're as educated as they can be and making educated buying decisions."

Working Metal

Making Your Own Components May Be Within Your Reach

BY KAREN KNAPSTEIN

Many areas of the country have experienced construction material shortages accompanied by rising prices. Freedom Mill Systems of Grand Rapids, Ohio, helps businesses overcome supply chain and quality issues by sourcing metal-forming equipment from all over the world. The lower price point of their equipment allows small- to medium-sized builders to roll their own steel so they don't have to rely on suppliers who cater more to larger clients.

David Ruth, President of Freedom Mill Systems, said, "Demand for light-duty steel buildings has skyrocketed." He said it's a much, much larger business than it was 20 years ago. Back then there were a handful of guys building them; now there are far more people building light-duty metal sheds and carports.

Light-duty steel buildings (sometimes called white metal buildings, as opposed to much heavier red iron) are framed with galvanized steel components, which has been coated with zinc oxide, an anti-corrosion coating.

"One reason [it's much more competitive] is you have more than one supplier ... you have a whole lot of suppliers." But if you can't get what you need, it puts you in a hard spot.

"It can be brutal on a small business if they have orders but can't get their hands on the materials they need." A supplier might be down or busy, "or maybe their volume isn't high enough. The guy who pays cash and buys large quantities gets first priority with suppliers. A small building company is lower on the list of



priorities," he explained. Price, quality and delivery are what get a customer to buy from one building company before another, he said. A building business can't succeed if quality or delivery isn't there, he continued.

"These builders have found a niche. Usually when they buy a machine it's because they're tired of standing in line waiting for a product. Every day they go without product is a day of lost profit," he explained.

That's where Freedom comes in. Most of the machines that Freedom sells are for manufacturing steel tubing and pipe. Those machines include, but are not limited to, uncoilers, shear and end welders, welders, tube benders, accumulators and saws.

They also deal in machines that produce steel siding, roofing, and decking, including roll-forming machines, slitters, decoilers, and other equipment.

By sourcing less expensive machines from Eastern Europe, China and Taiwan, Freedom can supply smaller builders with equipment they can afford for making the components they need.

There's a laundry list of requirements that need to be met before someone can



Freedom Machinery Company, Inc. sources good used tube and pipe machinery for customers that require immediate delivery or have a limited budget, while Freedom Mill Systems, a subsidiary of Freedom Machinery, supplies new custom engineered tube, pipe and roll-forming machinery for customers that wish to purchase new machinery built for the buyer's specific requirements.

COURTESY OF FREEDOM MILL SYSTEMS

begin manufacturing their own panels and structural components. Some of what's needed:

- A building that is big enough to house a production line that may be 100-150' long. It also has to be big enough to store product
- A source for steel
- Credit or cash to pay for the steel
- Hire someone to train employees on the new equipment
- A place to store the manufactured components.

In the end, Ruth said, "The whole white metal building industry is just getting started. This is just the tip of the iceberg." The question is, will you scale that iceberg or be buried under it? **GSCOB**

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JAMAICACOTTAGESHOP.COM



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Closure Strips & Shed Ventilation

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Venting Tips:

Venting is very important in order to get the “bad” air out and to have proper air circulation. This will keep the building from having condensation problems. You also want to make sure your ventilation system has a filter to keep out bugs and small birds.

- When installing ridge and soffit vents, make sure that only vented closures are used at the ridge, no regular closures. Saving a little money up front could cost you a lot in the future if the building isn't properly vented.

- You always want to install wall and gable vents according to the manufacturer's instructions. Don't use gable vents if you are installing ridge vents. [Gable vents can change the air flow around the ridge vent. If the wind is parallel to the ridge (at right angles to the gable), it can actually reverse the air flow through the ridge vent, and pull precipitation into the structure — the exact opposite of what a ridge vent is supposed to do.]

- With a lot of vented closures it's usually not necessary to use sealants, but there are some customers that do

use sealants on occasion. A good quality tube sealant is the most versatile and make sure it is rated for temperatures in your area.

Closure Strip Tips:

- Align the screw pattern with the closure strips so the screw helps hold the closure in place.

- Some people install closure strips at the very edge of the flashing. It is better for the strips to be an inch or two inside the edge of the flashing or ridge.

- Closure strips should be installed after the metal panels are installed. If closure strips were mistakenly omitted in the metal roofing process, inside closures can be installed after the fact by sliding them in. (It's easier without adhesive.) You can also back out the screws in the flashing where the closure is to be installed, install the closure, and then put the screws back in.



www.mwicomponents.com

Venting Tips:

When planning a ventilation system for a shed, the following points should be

considered?

- In the event the intake and exhaust are not equivalent, a slightly larger intake than exhaust is preferred.

- When it comes to ventilation, customization is the name of the game. You won't find one ridge vent that's perfect for each and every building; nor will you find a universal soffit profile. Obtaining ideal ventilation is a fine balance between ridge vents, soffit, and louvers.

When installing vents, soffits, and louvers, remember:

- Systems using natural ventilation should be designed for effective ventilation regardless of wind direction.

- Inlet openings should not be obstructed by buildings, trees, signboards, or indoor partitions.

- The greatest flow per unit area of total opening is obtained by using inlet and outlet openings of nearly equal areas. If there is a difference in size, the lower opening should be slightly larger.

- Two openings on opposite sides of a space will tend to increase the ventilation flow. If the openings are at the same level and near the ceiling, much of the flow may bypass the occupied level and be ineffective in diluting contaminants at the occupied level.

- There must be vertical distance between openings for the temperature difference to produce natural ventilation; the greater the vertical distance, the greater the ventilation.

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Proper roof ventilation will extend the life of a roof; prevent condensation, mold and rot; reduce energy costs; and reduce indoor temperature extremes, so finding the right ventilation product is important to the long-term success of any project.

A ventilation system works at optimum performance when installed with equal amount of soffit ventilation. In other words, the space where air enters should match the space where air exits.

The ventilation system allows for the flow of fresh air flow into and throughout the building, while allowing excess heat, moisture and fumes an opportunity to escape. As fresh air comes in, warmer air will rise toward the roof and exit through the ridge vent.

Ridge vents have gained in popularity because they are easy to install and to meet the desire for clean aesthetics. Installing a ridge vent leaves the building with an even roofline – no roof penetrations from turbines or box vents. When your customer invests in a building, they want it to look as good as it can.

The best ridge ventilation product will be cut to match the profile of the adjacent metal roofing panel to ensure a long-lasting fit. Make sure there is a 2” opening where the roofing panels meet at the ridge for ventilation. During installation, place the ventilation product 1/2” to 1” up-slope from the edge of the ridge

cap, securing its placement with the positioning adhesive. When fastening the ridge cap, screw through the ridge cap and top of each anchor clip.



www.royalcrowne.com

Things to remember when installing a functional cupola for ventilation:

Adding a cupola to the roof allows the trapped heat to escape by providing a natural flow of warm, moist air in an upward direction through the sides of the cupola. This movement of air prevents mold, mildew, wood rot and musty odors. Other benefits include overall airflow and light to be filtered to the inside.

Moisture-laden, stale air escapes through the cupola, but the structure also needs air inlets, which could include soffit, eave, or wall vents.

The number of louvers will determine how well the cupola ventilates; the greater the number of louvers, the better the air flow.

Screens are required on functional cupolas to keep bugs out.

When installing a cupola for roof ventilation, a hole must be cut in the roof. It is recommended the hole be 12” less than the outer base of the cupola. (For example: a 36” square cupola would

require a hole no larger than 24” square.) Using a cupola for ventilation requires metal flashing applied around the base.



www.standingseamroofvent.com

Important factors to note when choosing and installing roofing ventilation products:

- Always remember that proper ventilation is essential in any climate—warm, cold, or mixed. It is needed to remove warm air from the attic, reduce ice dams on the roof, and remove moisture from the space.

- When selecting a ventilation product, consider how each piece and component will be exposed and/or affected by the elements. Ventilation with hidden fasteners not only creates a clean look on the roof, but also protects the fasteners from the elements. Exposed foam or other components can also be an open invitation to birds and rodents, offering an clear path into the roofing assembly. Any selected ridge caps must be water-resistant at all times, even in driven wind and rain or snow.

- In ventilation, the net-free area is the number that really counts. A higher number is ideal, which is typically associated with compression-free products.

- Products that are easy to install save the contractor both time and money. Any time spent trying to make a ventilation product work is costing precious dollars.

- Our top five key points for ventilating any roof properly are as follows:

1. Completely seal the attic floor.
2. Maximize insulation above the roof's top plate.
3. Continuously vent the soffit.
4. Have adequate space in the roof.
5. Slightly pressurize the attic. **GSCB**

Calculating Ventilation

To calculate the optimal amount of ventilation needed, follow the US Federal Housing Authority 1:150 rule: One inch of ventilation for every 150 square feet of floor space. So a 12'x12', 240 sq. ft. shed would need 70 sq. in. intake and 70 sq. in. exhaust. Product descriptions will list the amount of space available for air to freely flow as the net free area. If there is a slight difference in net free area between intake and exhaust, the larger opening should be at the lower position (wall or eave vents) which will create a positive airflow from the eaves and out through the ridge.

Developing Markets

CornBoard, Kebony Processes Create Unique Products

BY KAREN KNAPSTEIN

The current wood market has many of us thinking outside the box when it comes to framing, decking and cladding materials. In recent research, I came across a couple products that you may not be familiar with. CornBoard™ is an emerging product, while Kebony® has been around a while. Kebony is so high-end, you may not have given it much of a glance. Knowing more about these products will allow you to be able to honestly say, “Hey, have you heard about ... ?”

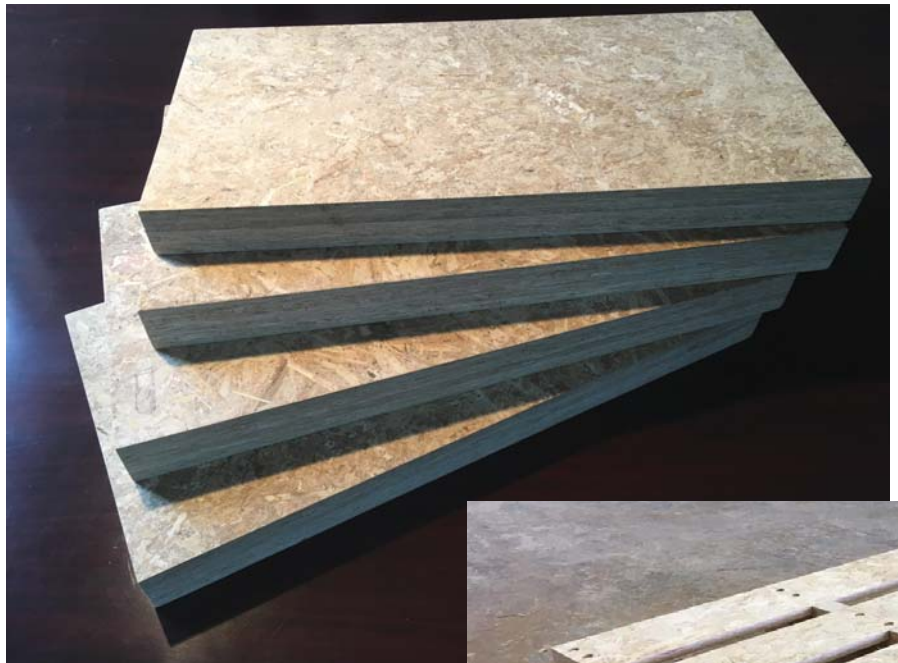
CornBoard

The CornBoard product first came to my attention late last year when a news release crossed my desk announcing the building of a new manufacturing plant in rural Sac County, Iowa. (See *Garage, Shed & Carport Builder*, January 2021, p. 12.) Although there have been setbacks in building the 50,000 sq. ft. Northwest Iowa manufacturing facility due to delays in getting construction materials, progress is still being made. The new plant will employ 30 people and will be dedicated to manufacturing pallets.

As a reminder: CornBoard, made by Corn Board Manufacturing, Inc., is a pressed wood alternative that is made from corn leaves and husks and resin, and is bonded under heat and pressure into a corn-based composite board material similar to OSB.

Don't Say 'It's OSB'

The corn stover composite material is fire resistant, mold resistant, and water



CornBoard - made from corn husks and leaves and formaldehyde-free resin.
PHOTO COURTESY OF CORN BOARD MANUFACTURING, INC.

(RIGHT) Pallets made from corn stover and resin weigh less than conventional wood pallets but have the same structural integrity.
COURTESY OF CORN BOARD MANUFACTURING, INC.; WWW.CORNBOARD.COM.

resistant. Lane Segerstrom, CornBoard CEO, made it clear that while CornBoard looks like OSB, it doesn't have the same properties. “We engineer the board based on the application,” he explained. “We ask, ‘What is this board going to be used for? What does it need to have in it so it functions at its maximum capability?’ For example, the composition created for cabinetry will hold up to a screw pull, while the composition for flooring will be something different.”



Developing Uses

Manufacturing for use in recreational products over the last several years out of its Stratford, Texas, research and development lab/prototype facility has allowed the company to fine-tune its process and formulas. Segerstrom explained, “We've



The composition of the CornBoard material depends on the board's intended use. It has a "natural, really cool look."
COURTESY OF CORN BOARD MANUFACTURING, INC.; WWW.CORNBOARD.COM.



been making CornBoard on a small scale for almost 10 years. We started with skateboard decks and long boards. It was a great way to test the material and introduce it. Then we went to cores of skis and snowboards; we've been doing that for six years now."



This 8' x 8' test shelter was built for the Telluride Institute Ideas Festival.
COURTESY OF CORN BOARD MANUFACTURING, INC.; WWW.CORNBOARD.COM.

The company is currently manufacturing pallets as it develops formulas and compositions for more uses, including structural building materials. The CornBoard pallets weigh less than those made of wood but have the same structural integrity. Strength tests indicate the material can hold its own. Segerstrom said their regular 3-stringer pallet achieved just under a 6,000-pound rating; it broke at 11,942 pounds. "Its

potential as a building material and furniture is great. If you can make a pallet that strong, you can probably make a wall," he said.

His crew built an 8' x 8' test shelter for the Telluride Institute Ideas Festival. "We asked ourselves, 'How do you create a small little shelter ... a cabin in the woods sort of thing?' We built a test shed. It had two bunk beds, a little table down below, windows and a door. It was all about

how do we make something 8 x 8 feet where you can get out of the weather.” The framing, sheathing, flooring, and bunk beds were all made from the corn stover composite material. “It was the first example of CornBoard being used as a building material in a structural sort of thing,” he said.

“We were excited about the shed project. Once fully developed, CornBoard will be used as sheathing,” he continued. “As a finished wall panel it will need the right coating. That’s going to take some time with research and development, but it has potential. It has a natural, really cool look to it.”

Segerstrom said he has taken other products to market, but “this one is the most exciting. It ticks a lot of boxes: We can help the farmer with a consistent check. We can go into a small town and put up a facility, creating an opportunity for jobs, and we’re taking strain off the environment by utilizing material that is environmentally friendly.”

“We’re seeing opportunities to have big impacts in small towns in rural America. Bringing manufacturing back to America is really, really good for the American people; innovating, making, and using things that we create is really important. To be a layer in that is really exciting.”

Kebony

Kebony is a high-end modified wood that was originally developed in Norway. It has been available on the US market since 2014. Kebony US Director Andy Hehl explained modified wood is created by “permanently altering wood’s behavior with a scientific process.”

To create the modified wood, the company uses a patented and proprietary modification process called furfurylation. During the process, furfuryl alcohol, which is derived from agricultural plant waste, is injected into sapwood cells. Heat is then added; that initializes the polymerization action, which solidi-

fies the chemicals inside the wood fibers and yields a stable, hard, and durable wood material that is resistant to decay, fungi, insects, and other microorganisms.

Pine only takes 30 years to mature. “It is very porous because it grows very fast. By modifying the pine you give it the same attributes as slow-growing hardwoods – hardness, density, and stability,” Hehl explained. “You can use the Kebony product anywhere you can use outdoor wood and it’s not going to rot like typical, untreated pine.”



Kebony® uses a process that gives soft radiata pine the hardness, density, and stability of slower-growing hardwoods. The modified wood comes out looking like tropical hardwood. Photo courtesy of Kebony, www.kebony.us.

After modification, the wood looks like tropical hardwood and, when left unfinished, it fades to a silver-gray color. The speed of the graying process depends on exposure, conditions, and type of application. For example, a deck installation will fade more quickly than a siding installation.

The modified wood is also more stable than natural woods. Hehl said, “It does everything natural woods do” [i.e. warping, twisting; swelling and shrinkage due to changes in relative humidity], “but to a

lesser degree. It still has those characteristics, but they’re not so dramatic.”

High-End ‘Pine’

Kebony is a premium product and is expensive. The company uses Radiata or Southern yellow pine for its premium Kebony Clear product, and Scots pine for its Kebony Character product. Although Kebony is made from pine — traditionally one of the less costly woods — the pine for these products is sourced from New Zealand and Scandinavia. “It’s for high-end use,” said Hehl.

If your client has the budget for it, there are a lot of uses for modified wood. However, because it’s so expensive, it’s not used in situations where it’s “hidden away,” such as framing. “You can use it in decking, cladding, furnishings, cabins, sheds ... you can use it anywhere you would use an outdoor wood where you want low maintenance and outdoor wood beauty,” he said.

It can also be used indoors, like in laminated timbers. “You can laminate it, but it’s very expensive so most people don’t do it,” he said. “Most people will take a less expensive wood and wrap it to look like a solid timber.”

“Kebony is about as hard as domestic hard maple,” he said. “It’s hard, but not so hard that it’s difficult to work with. You want to predrill and use stainless steel fasteners. Anything other than stainless steel will get a dark discoloration in the fastener area [due to the metal reacting to the furfuryl alcohol].”

Stainless steel fasteners also last longer, so they will keep pace with the modified wood. “Kebony is such a long-lasting product, with a lifespan of 50-75 years (or 75-100 years as cladding), builders should use fasteners that are expected to last at least as long,” he advised.

Keep your eyes peeled for new and emerging product developments as the availability and prices of “common” building materials fluctuate. **GSCB**

Solid Competition

A Closer Look at Solid-Core Composite Decking

BY KAREN KNAPSTEIN

One of the things you can do to make each of your jobs more profitable is maximize the profit per jobsite. Maximizing the profitability means you can minimize the wasted time and expense of traveling between jobsites. For example, if you're putting up a poolhouse or pub shed on a property, adding on a deck is one way to make the job more profitable.

As you well know, lumber prices continue to skyrocket, so here are some insights on solid-core composite deck materials from the experts at Fortress Building Products and MoistureShield.

Composite deck materials have gained in popularity with consumers because of improvements in performance and

appearance. "Thanks to the latest innovations in manufacturing processes, composite building products like decking are now able to successfully emulate the warmth and richness of wood, but aren't prone to warping, cracking, fading or deteriorating over time like traditional wood board counterparts," said Toby Bostwick, Vice President of Product & Brand at Fortress Building Products. "Because composite deck boards are engineered to exhibit incredible resiliency and moisture-resistance, they'll typically last 25 years or more, whereas wood boards will show signs of weathering and deterioration after about 10 years.

"Since composite deck boards offer premium performance and require minimal upkeep to maintain their beautiful

aesthetic, they shine in an array of applications that inevitably experience heavy wear and tear," Bostwick continued. "For example, a wraparound composite deck in the rainy Pacific Northwest or snow-shrouded Northeast will sideline issues commonly associated with moisture absorption, like rotting. And similarly, because composites offer first-rate slip-resistance, little feet won't slip if the product is installed as a pool surround in a backyard. Because composite deck boards won't fade over the years, a rooftop deck over a garage in sunny coastal regions will maintain its vibrant aesthetic for years—no staining needed. What's more, composite deck boards won't warp or twist in locations that experience extreme temperatures, so the detached deck adjacent to the new 'office' shed will remain constant and smooth underfoot all year long."

Molly Werner, Senior Brand Manager, MoistureShield, echoes the sentiment that longevity is appealing to customers. "Homeowners today are looking for decking materials that resist warping and splintering and offer the longest lifespan with minimal maintenance. Since the expected life span of a deck made with pressure-treated lumber is typically nine years, homeowners are open to upgrading to the low maintenance and significantly longer lifespan offered by composite decking.

"Composite decking stands up to high-moisture environments and the elements with minimal upkeep and a splinter-free surface," Werner continued. "There is a price level for every homeowner: markets will vary but generally, entry-level series tend to level the playing field with pressure-treated wood, creating an opportu-



Homeowners may prefer composite decking for its performance, longevity, and lack of the need for maintenance. COURTESY OF MOISTURESHIELD.



Because contemporary solid-core composite decking can be expected to last for decades, more homeowners are requesting decks built with steel framing. COURTESY OF FORTRESS BUILDING PRODUCTS

nities for contractors and homeowners to step-up to the low-maintenance benefits of composite decking.”

Installation Advice

Installing most composite decking requires the same tools — saws, hammers or mallets, hand drills, specialty deck drivers — as when working with real wood. “Installing composite decking is quite simple with regular deck and wood-working tools,” said Werner. “It has both square edge boards, fastened with traditional face-screws, and grooved boards, which can be fastened with any popular hidden clip system on the market. There is high demand for hidden clips to give deck surfaces a smooth, fastener-free look that keeps feet safe from popped screws that can also get hot in direct sun.”

Bostwick said fastening with a hidden-clip system has more benefits than fastening through the face of the decking. “Surface fastening (we recommend using composite and stainless-steel screws) is one of the most common ways to anchor composite boards to the deck’s sub-structure. But if not done well — maybe a screw is driven in too far or not far



Composite deck boards, shown here, are best suited for applications that inevitably experience heavy wear and tear. COURTESY OF FORTRESS BUILDING PRODUCTS

enough — builders risk the integrity of the board,” he cautioned. “Even though composite decking is engineered to sideline issues associated with water absorption, the screw penetrating the cap might open a potential path for moisture to seep through.

“However, even when screws have been installed perfectly, the customers’ deck won’t have that clean feel,” he said. “Homeowners will still be able to see the screw heads, and over time, they might pop up above the deck surface (this is especially common in lower quality composite offerings). Not only does this look unattractive, but it also makes for an unsafe surface for bare feet.

“This is exactly why we recommend installing surface boards using a hidden fastener system. These fasteners hold boards securely to the deck without requiring hardware to actually enter the board. For this to work, composite deck boards will typically come with a groove along the side. Into this groove, builders will slide a clip, and the clip is then screwed to the deck joist. The next board in the series slides onto that same clip, and then another set of clips go on the other side of the board. This pattern is

repeated until the deck is fully covered. The result is a smooth deck surface.”

Bostwick continued: “The sole disadvantage of hidden fastener systems is that if a board is damaged, replacing it usually requires cutting out the board or removing the entire sequence of boards. To address this issue, Fortress Building Products offers a specialized fastener system. It’s designed around a hidden clip that can be extracted through the space between the installed boards, making replacing a single damaged board both quick and easy.”

If you build an outdoor living structure for your customer, being able to provide them with a deck that looks great and will hold up through the decades is an upsell that makes sense. **GSCB**

PS: With lumber in short supply, inexperienced builders may be tempted to turn to composites for structural uses. Don’t do it. While many composite building materials are heavier and more dense than real wood lumber, it doesn’t have the structural integrity of wood. It’s typically used only for surface decking (or possibly cladding, depending on the product) or visible railing parts.

Wood Preservatives

Water-based Preservatives: What They Are, How They're Used

THE FOREST PRODUCTS LABORATORY

Since many portable buildings are built on pressure-treated timbers, it's a good idea to know what you're handling on a day-to-day basis. This article explains three of the preservative treatments for making what's commonly known as "pressure treated wood." It's excerpted from the document, *Preservative-Treated Wood and Alternative Products in the Forest Service*, authored by James "Scott" Groenier and Stan Lebow. The 44-page guide was published by the U.S. Department of Agriculture's Forest Products Laboratory. [Full document available: <http://bit.ly/WoodPres>].

Included here are profiles of water-based wood preservatives commonly used in the construction trade.

Ammoniacal Copper Zinc Arsenate (ACZA)

Ammoniacal copper zinc arsenate (ACZA) contains copper oxide (50 percent), zinc oxide (25 percent), and arsenic pentoxide (25 percent). ACZA is a refinement of an earlier formulation, ACA, which is no longer available in the United States. The color of the treated wood varies from olive to bluish green. The wood may have a slight ammonia odor until it has dried thoroughly. ACZA is an established preservative that is used to protect wood from decay and insect attack in a wide range of exposures and applications. Exposure tests showed that it protected stakes and posts that contacted the ground.

ACZA is listed in the AWPA standards for treatment of a range of softwood and hardwood species and wood products. The minimum ACZA retention is 0.25 pounds per cubic foot (4 kilograms per cubic meter) for aboveground applications and 0.4 pounds per cubic foot (6.4 kilograms per cubic meter) for wood that contacts the ground. A slightly higher retention, 0.6 pounds per cubic foot (9.6 kilograms per cubic meter), is required for wood used in highway construction and for critical structural components that are exposed to high decay hazard. The ammonia in the treating solution, in combination with processing techniques such as steaming and extended pressure periods at elevated temperatures, allow ACZA do a better job of penetrating difficult-to-treat species of wood than many other water-based wood preservatives.

ACZA is used frequently in the Western United States to treat Douglas-fir lumber and timbers used to construct second-

ary highway bridges, trail bridges, and boardwalks. The ACZA treatment can accelerate corrosion in comparison to untreated wood, requiring the use of hot-dipped galvanized or stainless steel fasteners. Treatment facilities using ACZA are located in Western States, where many native tree species are difficult to treat with CCA.

ACZA contains inorganic arsenic and is classified as an RUP by the EPA. Producers of treated wood, in cooperation with the EPA, have created consumer information sheets that suggest appropriate handling precautions and precautions at sites where wood treated with inorganic arsenic (appendix B) will be used. These sheets should be available to all personnel who handle wood treated with ACZA.

Alkaline Copper Quaternary (ACQ) Compounds

Alkaline copper quat (ACQ) is one of several wood preservatives that have been developed in recent years to meet market demands for alternatives to CCA. The fungicides and insecticides in ACQ are copper oxide (67 percent) and a quaternary ammonium compound (quat).

Many variations of ACQ have been standardized or are being standardized. ACQ type B (ACQ-B) is an ammoniacal copper formulation, ACQ type D (ACQ-D) is an amine copper formulation, and ACQ type C (ACQ-C) is a combined ammoniacal-amine formulation with a slightly different quat compound.

Wood treated with ACQ-B is dark greenish brown and fades to a lighter brown. It may have a slight ammonia odor until the wood dries. Wood treated with ACQ-D has a lighter greenish-brown color and has little noticeable odor; wood treated with ACQ-C varies between the color of ACQ-B and that of ACQ-D, depending on the formulation. Stakes treated with these three formulations have demonstrated their effectiveness against decay fungi and insects when the stakes contacted the ground.

The ACQ formulations are listed in the AWPA standards for a range of applications and many softwood species.

The listings for ACQ-C are limited because it is the most recently standardized. The minimum ACQ retentions are 0.25 pounds per cubic foot (4 kilograms per cubic meter) for above ground applications, 0.4 pounds per cubic foot (6.4 kilograms

per cubic meter) for applications involving ground contact, and 0.6 pounds per cubic foot (9.6 kilograms per cubic meter) for highway construction. The different formulations of ACQ allow some flexibility in achieving compatibility with a specific wood species and application. An ammonia carrier improves the ability of ACQ to penetrate into wood that is difficult to treat. For wood species that are easier to treat, such as southern pine, an amine carrier will provide a more uniform surface appearance.

All ACQ treatments accelerate corrosion of metal fasteners relative to untreated wood. Hot-dipped galvanized copper or stainless steel fasteners must be used. The number of pressure-treatment facilities using ACQ is increasing.

In the Western United States, the ACQ-B formulation is used because it will penetrate difficult-to-treat Western species better than other waterborne preservatives.

Treatment plants elsewhere generally use the ACQ-D formulation. Researchers at the USDA Forest Service's Forest Products Laboratory in Madison, WI, are evaluating the performance of a secondary highway bridge constructed using Southern pine lumber treated with ACQ-D (Ritter and Duwadi 1998).

Copper Azoles (CBA-A and CA-B)

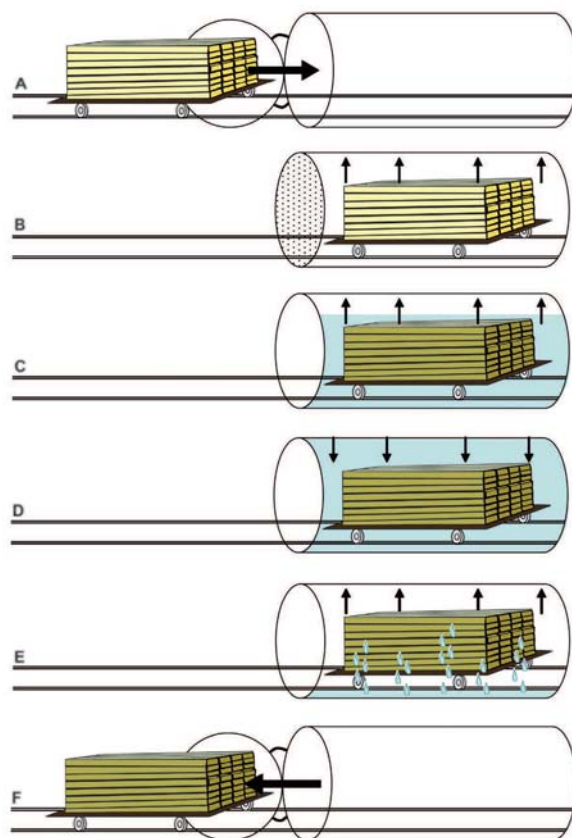
Copper azole is another recently developed preservative formulation that relies primarily on amine copper, but with additional biocides, to protect wood from decay and insect attack. The first copper azole formulation developed was the copper azole type A (CBA-A), which contains 49-percent copper, 49-percent boric acid, and 2-percent tebuconazole. Type A is no longer used in the United States. The copper azole type B (CA-B) formulation was standardized recently. CA-B does not contain

boric acid. It is comprised of 96-percent copper and 4-percent tebuconazole. Wood treated with either copper azole formulation has a greenish-brown color and little or no odor.

Tests showed that the copper azole formulations protected stakes in the ground from attack by decay fungi and insects. The formulations are listed in the AWPA standards for treatment of a range of softwood species.

Minimum CA-B retentions in the wood are 0.10, 0.21, or 0.31 pounds per cubic foot (1.6, 3.4, or 5 kilograms per cubic meter) for wood used aboveground, contacting the ground, or in critical structural components, respectively.

Copper azole is an amine formulation. Ammonia may be added at the treating plant when the copper azole is used on Western species that are difficult to treat. This formulation is often used to treat Douglas-fir. Formulations with ammonia slightly darken the surface appearance and initially affect the odor of the treated wood.



Typical steps in pressure treating process: A, untreated wood is placed in cylinder; B, a vacuum is applied to pull air out of the wood; C, the wood is immersed in solution while still under vacuum; D, pressure is applied to force the preservative into the wood; E, preservative is pumped out, and a final vacuum is pulled to remove excess preservative; F, excess preservative is pumped away, and the wood is removed from the cylinder.

COURTESY USDA FOREST SERVICE, FOREST PRODUCTS LABORATORY.

Copper azole treatments increase the rate of corrosion of metal fasteners relative to untreated wood. Appropriate hot-dipped galvanized steel, copper or stainless steel fasteners, connectors, and flashing are recommended.

Although copper azole was introduced to North America recently, almost 100 treating facilities now use this preservative.

GSCB

Groenier, James Scott; LeBow, Stan. 2006. *Preservative-Treated Wood and Alternative Products in the Forest Service*. 0677 2809P. Missoula, MT: U.S. Department of Agriculture, Forest Service, National Technology and Development Program. <http://bit.ly/WoodPres>

Properties and uses of common wood preservatives

Table 1—The properties and uses of common preservatives.

Standardized use	Preservative	Solvent characteristics	Surface/handling restrictions	Color	Odor	Fastener corrosion
All uses	Creosote	Oil-type	Oily, not for frequent human contact	Dark brown	Strong, lasting	No worse than untreated
All uses	Ammoniacal copper zinc arsenate	Water	Dry, but contains arsenic	Brown, possible blue areas	Mild, short term	Worse than untreated wood
All uses	Chromated copper arsenate	Water	Dry, but uses are restricted by the EPA*	Greenish brown, weathers to gray	None	Similar to untreated wood
All uses (except in seawater)	Pentachlorophenol in heavy oil	No. 2 fuel oil	Oily, not for frequent human contact	Dark brown	Strong, lasting	No worse than untreated wood
All uses (except in seawater)	Copper naphthenate	No. 2 fuel oil	Oily, not for frequent human contact	Green, weathers to brownish gray	Strong, lasting	No worse than untreated wood
All uses (except in seawater)	Alkaline copper quat	Water	Dry, okay for human contact	Greenish brown, weathers to gray	Mild, short term	Worse than untreated wood
All uses (except in seawater)	Copper azole	Water	Dry, okay for human contact	Greenish brown, weathers to gray	Mild, short term	Worse than untreated wood
Aboveground, fully exposed	Pentachlorophenol in light oil	Mineral spirits	Dry, okay for human contact if coated	Light brown, weathers to gray	Mild, short term	No worse than untreated wood
Aboveground, fully exposed	Oxine copper	Mineral spirits	Dry, okay for human contact	Greenish brown, weathers to gray	Mild, short term	No worse than untreated wood
Aboveground, partially protected (such as millwork)	IPBC + permethrin	Mineral spirits	Dry, okay for human contact	Colorless	Mild, short term	No worse than untreated wood
Indoors (usually for insect protection)	Borates	Water	Dry, okay for human contact	Colorless, blue dye often added	None	No worse than untreated wood

*A few uses of chromated copper arsenate are still allowed for treatment of sawn products less than 5 inches thick (12.7 centimeters, such as dimension lumber). Pilings, poles, large timbers, and plywood are still allowed for highway construction.—*Courtesy of USDA Forest Service, Forest Products Laboratory*

Mix, Mix, Mix

The Simple Process To Ensure Coating Consistency

BY JAMIE WHITE, PPG SEGMENT SPECIALIST

Does the consistency of your coating vary from bucket to bucket? Does your color vary from building to building or bucket to bucket? Are you having touch-up issues?

If you are answering “yes” to these questions, then there is one more question for you. Are you adequately mixing the coating before you apply it? And if so, how are you mixing it?

Shed coatings are a mixture of resin, binders and pigments. During the manufacturing process, they are heavily blended to ensure consistency. Over time, while sitting at a store or at your shop, the ingredients in the coatings can begin to settle and separate. This is completely natural and not a concern if the coating is mixed before use.

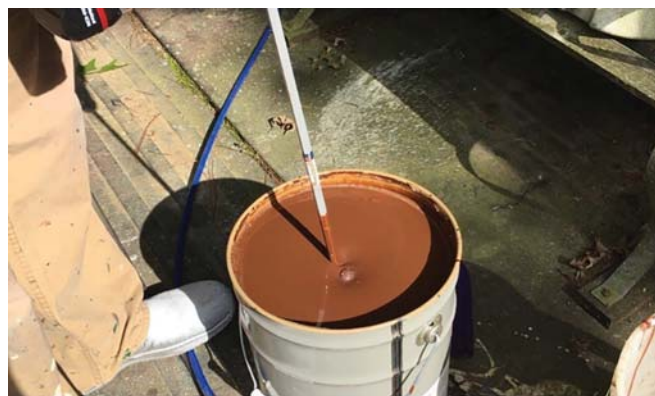
If you have been to a paint store, you have seen them put a 5-gallon pail into a high speed shake to mix. This is a fast and effective process for a store; however, it is not necessarily practical for you to do at a shop. The cost of a good 5-gallon paint shaker is approximately \$5,000. You can effectively mix your shed coatings with a piece of equipment that costs around \$10.

A simple, cost-effective method of mixing your paint is to use a 5-gallon drill mixer. These consist of a spiral mixing paddle that fits on a cordless drill.

Following the process below will ensure that your coatings are properly mixed and that your color is consistent from pail to pail.

- 1** Attach the paddle to the drill. Place the paddle into the coating and mix for 2 minutes. Raise the paddle up and down, but be careful not to raise it too high or you will splatter everything within a few feet of you!
- 2** After mixing the paint, remove the paddle from the paint and stick into a pail of water. Mix the water for 30 seconds or so, remove the paddle, and wipe off any excess residue.
- 3** Point the paddle into the air and mix air for a few seconds to dry it off. Then lay the paddle off to the side for the next use.

This process should be used any time you are preparing to paint using a new or partial pail. By mixing before you spray



your shed or before you touch up, you will see significant improvement in your shed’s appearance. **GSCB**

Jamie White (jamiwhite@ppg.com), PPG Segment Specialist, can help you better understand how to get the best coatings system.



Reed's Metals

www.reedsmetals.com

PROJECT DETAILS:

LOCATION: Cross City, Florida

INSTALLER:

Southeast Custom Buildings, Live Oak, Florida

SIZE: 30' x 60' x 14'

FRAME: Reed's LX Tubing, 14-ga. galvanized rectangular 2" x 3" tubing manufactured by Allied Tube and Conduit, Harvey, Illinois. 4' OC

ROOF PITCH: 4:12

ROOF: Reed's Metals 26ga. AkzoNobel Painted (Arctic White) Residential Metal Roofing Panel, vertical (45-year warranty)

SIDING: Reed's Metals 26ga. AkzoNobel Painted (Light Stone) Residential Metal Siding Panel, vertical (45-year warranty)

TRIM: AkzoNobel Painted (Arctic White)

DOOR: Plastpro

ADDITIONAL DETAILS: 10" overhang all around with boxed soffit; (4) 9' x 10' framed openings in "C" eave walls; (1) 10' x 12' framed opening in "C" eave wall; wedge anchors



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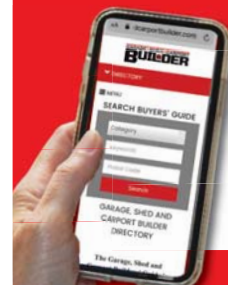
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