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PG. 66-69

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D•F® RIVET BOSS® PG. 92, 93

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D•F® DROP-STOP® PG. 56, 57

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By Gary Reichert, Publisher

What do you bring to the party?

My position presents several interesting and unique opportunities. One is definitely the ability to speak candidly with people in our industry. Over the last two decades, I have been fortunate to develop many relationships across our related construction industries. Being able to have open discussions with manufacturers and service providers across product groups and regions provides some unique insight, albeit anecdotal, into what is going on in our world, what the pain points are and what comes next. I firmly believe that this information is what allowed us to launch successful magazines during a patently strange series of global events.

The key to this and so much of business is relationship building and I am constantly amazed by the number of companies and individuals that seem oblivious to what it takes to build an enduring, positive relationship. We are changing vendors for some services and working with new sales people is an increasingly disappointing experience. Building relationships is the basis for human society and what would seem natural no longer even seems common.

The simple answer is something my Dad said: "Always bring more to the picnic than you plan to eat." Relationships need to be equitable and two-sided. Everyone needs to ask themselves, "What do I bring to the party?"

We strive to do that with our publications and shows. The obvious example is what we offer exhibitors that other companies charge for. Attendee lists, scannable badges, unlimited guest passes to give to attendees, and free sponsorship opportunities. Yes, these could be charged for and have monetary value. But the relationship is worth more than a few dollars of incremental revenue from nickel-and-diming for every tiny thing.

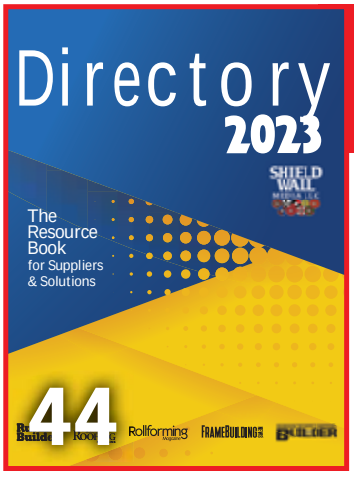
Business associates and clients can become friends, but aren't always. With uncertain times ahead, remember that relationships provide a huge value. The value may not appear as a line item on a balance sheet, but it 100% affects your bottom line. Besides, providing value to your friends, employees, customers, and world in general is simply the right thing to do.

Gary Reichert
gary@shieldwallmedia.com

CONTENTS

FEATURES

ON THE COVER:
Bruns General Contracting crew installing metal roofs in Tipp City, Ohio. Photo by Sharon Thatcher



OCTOBER PREVIEW

- METALCON Preview
- Dissimilar Metals
- Condensation Control
- Retrofit & Reroof

DEPARTMENTS

THE BUSINESS DIRECTORY IS COMING. SHOULD YOU BE IN IT?
SEE PAGES 44-45 FOR DETAILS

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E-MAIL THE EDITOR AT
karen@shieldwallmedia.com

METAL ROOFING MAGAZINE

Managing Editor
Karen Knapstein
karen@shieldwallmedia.com
715-513-6767

Editors
Linda Schmid, Anthony Brass

Circulation/Subscriptions
Barb Prill
barb@shieldwallmedia.com
920.471.4846

Digital Product and Data Engineer
For help with online Classified Ads & the Business Directory contact:
Steve Duberstein:
steve@shieldwallmedia.com

Publisher
Gary Reichert
gary@shieldwallmedia.com
715.252.6360

Director of Sales
Missy Beyer
missy@shieldwallmedia.com
920-216-3007

Executive/Advertising Assistant
Kathy Budsberg
kathy@shieldwallmedia.com

Sales Assistant
Kathy Welk
kathyw@shieldwallmedia.com

Graphic Designers
Tom Nelsen, Kevin Ulrich

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SHIELD WALL MEDIA LLC

Supplier Offers Specialized Help

Drexel Metals Helps Improve Customer Businesses

By Anthony Brass

Drexel Metals is always focused on the technical aspects of the portable on-site roll forming business and those making materials. In 1985, they started out looking for solutions for the metal builder. Dick Carrol started with a private equity business, catering to the needs of the market to supply raw materials for portable roll-forming businesses. His nephew, Brian Partyka, current vice president, joined a few years later to help drive the company forward.

Carlisle Companies acquired Drexel in 2017, and today the company is a leader in the architectural and sheet metal world. In addition to offering metal roofing systems and custom fabrication, they meet the needs of companies looking for assistance in their business.

"We're the 'back-office' support for the roofing contractor that has his own equipment," says Drexel Metals Director of Sales and Business Development, Ken McLauchlan. He says today's contractor wants specialized help in important areas. He adds their company provides the testing and weather-tightness warranties and other support for roofing contractors who can't devote as much time in these areas.

Partyka and McLauchlan understand the transition into working more on services for those who need support for materials they buy. The company not only works in standing seam; they provide solutions in the architectural sheet metal business including rated copings to meet national building codes. Partyka gathers information for clients and ensures his entire Drexel Metals team is involved.

"Brian's a visionary so he's always constantly looking for the next thing." Partyka brings valued information, and the company solves tough contractor issues as a group. "We walk into challenges and we try to figure how to get through them as a team," says McLauchlan. He adds they go over what they can and cannot do with technical sales support. Their business philosophy aligns perfectly with their machinery partners including shearers, folders, and portable roll formers.

McLauchlan works with both the contracting and manufacturing side for the business. He recalls joining Drexel in 2010 after a remote phone call, with surprisingly decent reception. "Brian called me while I was out in a Jeep in the middle of Utah." Two weeks later he was at the previous corporate office location in Louisville. McLauchlan now finds himself back in the Rockies, as a company member. They have several three-year-cycle residential projects in Colorado, where metal roofs and buildings are surging.

Drexel's diverse portfolio of projects comes from their contractor base including smaller roof accents, high-end residential projects, municipal and commercial projects including schools, hospitals,

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and military projects with high-security clearance challenges. The company is experienced in organized communication, making them the ideal choice for working in classified areas for the United States Air Force.

"Communication's key. We were always working with our partners in those specific jobs to ask, 'What's the requirement for trying to get a truck into this facility and an employee into that facility?" The company even performed inspections for warranty issues on buildings near restricted flight lines on the base.

Drexel overcomes challenges it faces, including shipping, transportation to their clients and supply chain issues. Carlisle Companies is one of the main reasons the company advances their nationwide reach in today's market. "The great thing is our alignment with Carlisle Companies. They ship more trucks in one day than Drexel used to ship in a year," McLauchlan says. He adds they don't own their own fleet, but many of the national relationships they've built are key to their success. "There's an entire logistics part of Carlisle that assists in our ability to service our customer."

Projects and Trendsetting

Many projects are architecturally driven, McLauchlan says, while observing the Frank Lloyd Wright Hotel in Mason City, Iowa. "Everybody comes to it [the hotel] because it's driven by architecture." Drexel works on new houses and older building projects, like these hotels, to change or enhance the aesthetics. "Our ability to add color or change the colors is why many people look at us." He says this adds to the exterior of a building and is cost competitive.

The company stays versatile and knowledgeable on what clients want today and the different applications. "We apply metal down to very low slope, down to half on 12; very similar to the single-ply world." McLauchlan adds the company is currently working into the "Cool Roof" mentality across the country, with low emissivity and reflectivity in paint finishes.

Drexel Mindset

The company is always proactive with forward-thinking leadership. "We're constantly looking to see where we think the trends are going, and what to do to support those," McLauchlan says. Their mentality prevents a reactionary response to business. Plus, they never forget what drives their company. "We understand where our business comes from: the architectural and design community, but a lot of it comes from the contractor base, too. To tie all those together we have to provide the support." ***MR***

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BEAT THE HEAT

Seven Safety Tips to Protect Construction Workers

By Western Specialty Contractors

Summer is a great time for construction work, but a brutal time for construction workers. Excessive heat and sun exposure pose significant dangers, such as sunburn, dehydration, heat cramps, heat exhaustion and heat stroke. Every year, construction workers become ill on the job and some even lose their lives due to heat exposure.

To protect its workers from the extreme summer heat, Western Specialty Contractors manages a heat illness training program and a safety hotline for its employees.

As part of the program, training is provided to all employees and supervisors who work in high temperatures. Training topics include: How heat can affect the body; how to identify the signs and symptoms of various heat-related illnesses; and what to do if a co-worker is experiencing symptoms of a heat-related illness. Western also regulates the hotter environment by providing water and shade to workers and by having supervisors and safety managers monitor the heat index so that the proper protective measures can be taken.

"It is important particularly during the summer months that outdoor workers drink plenty of fluids to help prevent dehydration, which is the primary cause of heat cramps and heat exhaustion," said Cameron Samuel, Assistant Safety Director at Western Specialty Contractors.

Samuel, who has training and experience managing the health and safety of outdoor workers, offers the following tips for preventing heat-related illnesses on a construction jobsite:

- Drink water frequently and drink enough water that you never become thirsty. Drink water or other non-caffeinated, electrolytic beverages and make sure that your drinks are always cool, not room temperature. Adding a lemon slice to water can make plain water more drinkable.
- Wear light-colored, loose-fitting, breathable clothing made from natural materials such as cotton. Avoid wearing non-breathing synthetic clothing. Wear safety glasses with UV protection, sunscreen and brimmed hard hats.
- Gradually build up to heavy work. If possible, do the hardest work during the coolest time of the day. Workers who are suddenly exposed to working in a hot environment face additional hazards to their health and safety. New workers and those returning from time away need to be extra careful in making sure they stay hydrated.
- Take more breaks in extreme heat and humidity. Move to the shade or a cool area such as an air-conditioned building or car when possible but try not to go in and out of air conditioning too much as it will make it harder for you to adjust to the heat. Use cooling fans whenever possible.
- Select your lunch carefully. Junk food is high in fat and preservatives and will put a high caloric load on the digestive system. Try eating a bigger breakfast, so you're not as hungry at lunch. Eat light lunches that include fruits, vegetables and salads.
- Keep an eye on your co-workers and be alert for signs of heat exhaustion. Early symptoms include lethargy, disorientation, stumbling, dropping tools, slurred speech or unresponsiveness. Heat stroke is a medical emergency requiring a 911 call and immediate cooling.
- Check your urine frequency and color throughout the day. Water intake is adequate when urine is clear or light yellow. When the desire to urinate is less than twice per day and/or you are producing a dark yellow urine, you may be dehydrated.

By training employees on the early signs of heat exhaustion, taking the proper precautions, and employing tips like the ones listed above, outdoor workers can greatly reduce the risk of heat-related dangers. ***MR***

A Western worker staying hydrated in the heat.
PHOTO COURTESY OF WESTERN SPECIALTY CONTRACTORS

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Metal Rooftop Attachments

What's the Difference Between One Branded Roof Attachment Product vs. Another?

By Rob Haddock, CEO and Founder of S-5!

Metal roofing offers a unique platform for mounting a myriad of rooftop services and accessories, such as snow retention, service walkways and solar panels as the seams or ribs of the roof act as inherent, structural (and cost-free) attachment points. Further, metal outlasts all other roof types, and any attachment component(s) should last the life of the roof!

While such simple attachments make metal roofs more user-friendly, the downside is this market space is completely unregulated. There are no industry standards or mandates for the design, manufacture, use or testing of rooftop attachments. Lack of policing by building authorities makes it a "buyer-beware" scenario and incumbent on the contractor, owner or designer to properly vet the attachment devices they choose for their projects.

Numerous vendors have appeared in the marketplace, each claiming their product is the best, ultimate or strongest. With a lack of proof or codified standards, how is one to know if such claims are true—or exaggerated? Inadequate attachments can lead to failure causing death, injury, and property or roof damage, which are real life-safety and liability issues.

Many applications are not specifically designed and engineered for the loads they will see in service, nor can they be due to insufficient testing and a lack of quality assurances in production. These are serious concerns because a failure can have grave consequences.

Builders, contractors and designers need to know what steps they can take to protect themselves from potential liability and how best to vet these products with respect to sales claims.

Liability of Installing Non-Engineered Systems

Often by default, the contractor becomes the ultimate decision-maker and may be assuming liability when it comes to the selection of poorly designed or untested attachment products. If the contractor believes the sales hype without properly vetting the system, its testing or manufacture, the pitfall may be this: Even if the product is installed according to the manufacturer's instructions, it may fail, leaving all parties arguing over resulting liability. Protection from this liability starts long before the product is on the roof.

Vet and Specify

Manufacturer transparency is at the heart of vetting a rooftop attachment system. A company that lauds the capabilities of its system but fails to provide proof of those claims may be blowing smoke. The contractor should scrutinize manufacturer qualifications and certifications to ensure a safe, engineered application and long-term service on any project. This transparency should extend from raw material certification through manufacture and product handoff.

Proof of Claims

Tensile Load Testing – To resist the in-service forces applied to any mounting system, it is crucial to know at what point the attachment fails. Then, the required population and spacing of the attachment(s) can be engineered to prevent failure. This requires an enormous amount of testing. Panel-specific results should be published and if they are not, they likely do not exist.

Long-Term Performance/Vendor Expertise – A product cannot perform better than its design. Has the vendor demonstrated sufficient experience? How long the company has been in business is irrelevant. The question is, "How long and extensively has the system been in use?" Can the vendor substantiate its track record and prove service/durability with interactive load testing information and real-time engineering calculations? Is there proof of performance?

Warranties – Verify that the manufacturer offers a meaningful performance (not just material) warranty. Obtain a copy before specification—and read the fine print!

Engineering Calculations – These must be provided by the vendor on a project-specific basis and should incorporate the tested allowable strength of the system with an appropriate factor of safety applied. Insist that design calculations are provided before product selection. At a minimum, contractors should require these calculations with submittals. Even better, require by specification that calculations are stamped by a registered professional engineer.

Further Vetting and Proofs Should Include:

- Use of chemically and mechanically certified material – Ask for the certifications.
- Proof of testing to ASTM E 2140 for any penetrative fastenings.
- Proof of corrosion testing to ASTM B 117.
- Mechanical load testing by a third-party ISO 17025 accredited lab – Ask for lab reports specific to the roof profile, material and manufacturer.
- Following ASTM material standards – Require a letter of compliance.
- Utilizing certified manufacturing processes and third-party audits in an ISO 9001-15 compliant facility – Ask to see the current ISO Certificate.
- For solar and snow retention applications, request a letter stating compliance to all pertinent Metal Construction Association "White Paper" documents available on the association's website.

Without proper vetting, system failure can threaten anything on the ground below and damage the roof. Protection from this liability starts long before the project is bid.

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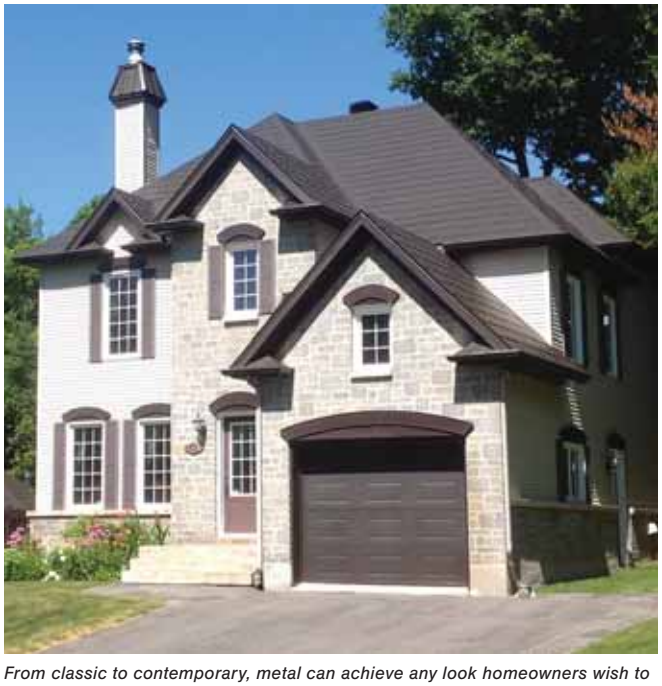
Metal Roofing Market

Residential Metal Roofing Weathers the Storm of Market Forces

Clean lines are achieved with standing seam. COURTESY OF MCELROY METAL



From classic to contemporary, metal can achieve any look homeowners wish to achieve. COURTESY OF IDEAL ROOFING

By Renee Ramey, MRA Executive Director

Despite an ongoing pandemic, recent supply chain issues and rising inflation that have and are affecting the entire building products industry, the U.S. and Canadian residential metal roofing business is going strong. And that growth is expected to continue. Metal Roofing Alliance members report they are busier than ever, with backlogs carrying them well into the rest of the year.

That's good news, but future success is dependent on a variety of factors. Let's look at what's driving the interest in residential metal roofing, as well as what obstacles may be lying in wait, should the industry not tread carefully.

Factors Driving Residential Growth

More U.S. and Canadian homeowners are choosing sustainable, resilient metal for their re-roofing projects, according to the 2020 Dodge Report that measures overall roofing demand and activity on an annual basis. The report reveals the share of metal roofing used for residential re-roofing in the U.S. rose from 12 percent in 2019, to 15 percent in 2020.

From the data, it's clear that leading sources such as the MRA are effectively driving home the message: For new construction and remodeling, durable, stronger and longer-lasting quality metal roofs are a much better investment over the long run, especially considering climate extremes.

Case in point is the rising adoption of residential metal roofing in regions that have suffered severe impacts from climate extremes in recent years, including the Mountain and Atlantic areas. Hurricanes and wildfires have intensified in these regions and affected more homeowners, causing them to gravitate toward resilient and protective products that can help better safeguard their homes. The MRA continues to beat the drum that metal roofs are simply the best choice for areas that experience hail, high winds, wildfires, snow and ice, and extreme heat.

Other benefits of metal roofing are resonating strongly, including the fact that quality metal roofs are exceptionally low maintenance and a more sustainable choice. A greater variety of style and design options also is important for homeowners who are beginning to understand that no matter what the architectural design of a home, there is a quality metal roof that will look amazing and perform better than alternative roofing materials.

The MRA is working to make sure metal roofing is an easy choice for homeowners to make. The Alliance continues to

dispel myths that remain out there about today's quality metal roofing, and arm homeowners with essential resources to help them make a wise decision. That includes MRA's *Residential Metal Roofing Buyer's Guide,* which is comprised of practical information for how homeowners can get the metal roof of their dreams.

Roofers Play an Essential Role

Professional roofers play a vital role and are essential to the growth of residential metal roofing. There's no doubt a metal roof can provide benefits above and beyond any other roofing material on the market, but only if it's installed by a knowledgeable, quality installer.

Installation details large and small have an impact on customer satisfaction — from the underlayment selected, to the components and accessories used to deliver on warranties and expectations. A quality residential roof means choosing the right metal substrate, gauge and recommending appropriate coatings designed to last and perform under severe stress tests.

MRA believes quality metal roofs should meet rigorous standards based on verifiable testing protocol, well-documented building codes, and third-party research. Forward-thinking

COURTESY OF DECRA STONE

installers also know an unhappy homeowner stuck with an inferior roof will result in expensive call-backs, bad reviews and negative word of mouth that can hurt the reputation of residential metal roofing — and even destroy a business. That's why they stake their reputations on jobs well done, understanding that delivering on the promise of quality can directly impact the bottom line.

Metal emulates the look of traditional roofing materials. COURTESY OF IDEAL ROOFING.

There are other benefits too. Customers seeking good quality are less likely to be searching for the best deal or the lowest bid possible. They prioritize performance, protection and longevity, and aren't looking to cut corners, making them the kind of customers most roofers prefer to work with. There's a reason profit margins for metal roofing are on average higher than with most other roofing options.

Ultimately, a commitment to quality impacts the reputation and future growth of the residential metal roofing industry. Installers who use materials manufactured by reputable manufacturers and are dedicated to professional excellence and ethical business practices not only help drive the entire industry forward but are able to weather the ups and downs of market fluctuations caused by inflation and shortages.

The MRA helps build its members' reputations by making sure homeowners know which manufacturers, installers and suppliers are the "best in the business" when it comes to standing behind not only quality materials, but installation as well. MRA plays an essential role as a credible, trustworthy source for homeowners looking to take advantage of the incredible value and benefits that quality metal roofing offers.

To help provide more information about how tradespeople and manufacturers can ensure quality standards, MRA will host a seminar this year during METALCON 2022 entitled: **"Residential Metal Roofing Specifications – Ensure Quality."** During this session, we will walk through the importance specifications play in ensuring a quality metal roof, including things to consider when selecting and recommending products, and installation practices that can help maximize a roof's performance for years and decades to come.

Challenges Facing the Market

Supply issues have plagued the residential roofing market across the board recently – regardless of roofing type. Many MRA members have experienced some delay in material supply but are reporting these issues are typically short-lived.

The biggest shortage impacting the metal roofing market remains the lack of installers. The shortage of installers is hindering growth, as there are simply not enough contractors to cover homeowner demand.

The MRA has participated in a number of industry-wide efforts aimed at capturing the interest and attention of laborers, encouraging them to consider a career in the metal roofing industry. One current effort we are participating in is the creation of a certification program for metal roofing that is being developed by the NRCA. This program offers individual roofers the ability to become a certified installer of various metal roofing profiles. Certification helps individuals set themselves apart from others as a validated expert within their field of expertise.

Another recent challenge is inflation, which may be with us for

Homeowner appreciation of standing seam is on the rise. COURTESY OF DREXEL METALS

some time. Manufacturers and installers can help homeowners make inflation-savvy decisions by guiding them toward home improvements designed to lower their total cost of ownership over time. That includes quality metal roofs which can allow homeowners to save on replacement costs, ongoing repair and maintenance expenses, and lower energy use.

For homeowners looking for even greater long-term relief on their energy bills, metal also is the perfect platform for residential solar systems because it reduces the risk of a roof failing before a solar panel system does. The estimated lifespan of solar panels is typically about 20 to 25 years while quality metal roofs last for 50-plus years. That means the roof will easily outlast the panels, helping protect savings that can quickly be wiped out if the roof underneath the solar system fails prematurely.

Despite a few challenges, the opportunity for the residential metal roofing industry is bright, with high demand and continued growth. Couple that with increased weather events due to climate change, the desire for more sustainable roofing options and the better long-term value that metal roofing offers, and you've got a hot market with no end in sight. ***MR***

Renee Ramey *is the Executive Director of the Metal Roofing Alliance. For more about quality residential metal roofing and for information for how to become a member, visit www.metalroofing.com.*

Attaching Roof Panels

Take care to install screws perpendicular to the substrate.

By Josh Krohn, Triangle Fastener Corporation

Modern metal roofs provide long term durability and protection from nearly anything mother nature can throw at them. They also come in a variety of materials, textures and attractive colors. The combined aesthetics and enduring functionality can easily meet a project's architectural and the structural performance requirements. Installing a metal roof is a great choice, so how does it get attached?

When talking about fastening roof panels to a structure we can divide the connection into two main types: exposed fastener systems and concealed fastener systems. As the name implies, exposed fasteners go through the roof panel and into the structure leaving the head of the fastener exposed on top of the roof panel. Concealed fasteners are typically used with a clip or installed through a slot in the panel to hold down the edge of a roof panel. Then they are concealed as the next panel is installed over the clip and fastener.

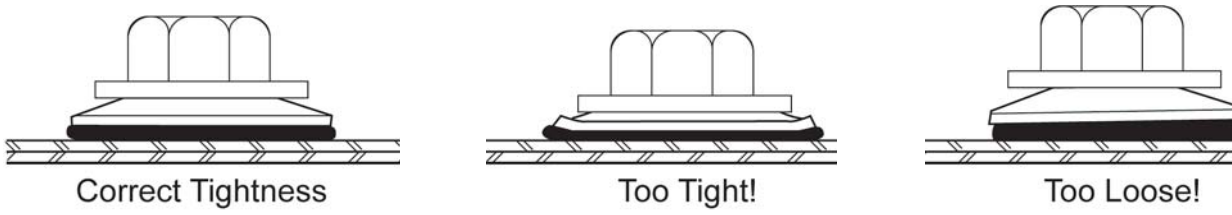
The advantages of an exposed fastener roof system are that it is less expensive, easier to install and materials are more widely available when compared to a concealed fastener roof. The challenges of the exposed fastener system are the number of roof penetrations, the risk of improper fastener installation and potential fastener back-out. Thermal expansion and contraction of the panel can be a challenge as well. Contraction can put stress on the penetration points, potentially elongating a hole in the panel. Expansion can lead to oil-canning. This movement can cause a pathway for water to get through the roof.

The advantages of a concealed fastener roof system are that there are no roof penetrations created by fasteners, the clips or pre-punched slots used for attaching the panel are designed to let the panel move without putting stress on the fasteners and reducing the risk of oil canning. The disadvantages of the concealed fastener roof are the higher cost and the lower number of qualified installers available.

Both concealed and exposed fastener panels can be installed on a number of different substrates like plywood, OSB, lumber, cold-formed steel, steel deck, hot rolled steel beams, concrete and masonry. A critical component of the design of the panel assembly is specifying the correct fasteners that hold the panel or panel clip to these substrates. There are fasteners with a variety of head styles, point styles, diameters, lengths, materials and finishes to choose from. The appropriate fastener and spacing of those fasteners for use with each panel type and substrate can normally be found in the panel manufacturer's installation guide, which can be found on the manufacturer's website. If a unique situation or a tough application comes up, you may want to contact the fastener supplier to see what other options are available.

Proper installation of fasteners is important, too — especially in through-fastened panels. Since exposed fasteners pierce the roof panel, a sealing washer is needed to keep water from following the path the screw created to the substrate. To assure a proper seal, screws should be tightened until the EPDM sealant protrudes just to the outer edge of the backing material. This also is a great way to visually inspect the screw to assure it is not over-driven. If the screw is under driven the sealant will not be compressed. If the screw is over-driven the sealant will push out well beyond the metal backing and sometimes tear. A screw gun with torque control, like a clutch, or depth sensing nose piece should always be used to prevent over-torqued and unseated screws.

Concealed fasteners do not need to seal out water, so overdriving is less of a concern but the same care should be used while installing them. Impact guns should not be used. Using impact tools to install screws can cause the head to separate from the body due to the high torque and impulse generated by the tool. Screws can also be easily overtightened, which can lead to connection failure when an impact gun is used.



Care should be taken to ensure fasteners are installed perpendicular to the work surface. Installers should let the drill point of the screw and the screw gun do the work. Excessive pressure or stabbing the fastener into the surface are not needed and could damage the screw.

After installation is complete it's a good idea to perform routine inspections seasonally and after significant weather events. Well designed and properly installed metal roofs look great and perform well for decades and an inspection plan will help mitigate any potential issues and ensure the roof will last many more years. ***MR***

Josh Krohn *is the Engineering Services Manager at Triangle Fastener Corporation.*

To avoid the risk of the head separating from the body of the screw, impact guns should not be used. Images courtesy of Triangle Fastener Corp.

Metal Roofing Magazine was born as a supplement to Rural Builder magazine in 1999. A few more supplements were published in 2000. In 2001 it was elevated to a stand-alone magazine, and today it is over 20 years old.

Reprinted here, in this edition's "Flashback" feature, is a look at the roofing tradition in Florida, from a 2001 perspective. It's written by Ryan Reed, a former associate editor of *Metal Roofing Magazine.*

Our page space is limited, so the article is published here without all of the photos that were published originally. Visit readmetalroofing.com to see more of the residences and businesses that made the upgrade to metal more than 20 years ago.

Florida: The Rebirth Of A Metal Tradition

From Old Florida-style cottages to luxury beach estates, from banks to resorts, metal roofing is cropping up everywhere — for some very good reasons

By Ryan Reed

When metal roofers sleep, they dream of a place where metal sells itself. Where metal is both hip and traditional, cutting-edge and nostalgic. Where metal's advantages stand out in high relief, and home owners don't wonder what the neighbors will think. Where metal has a long history and a brighter future. Whether they know it or not, they are dreaming about Florida.

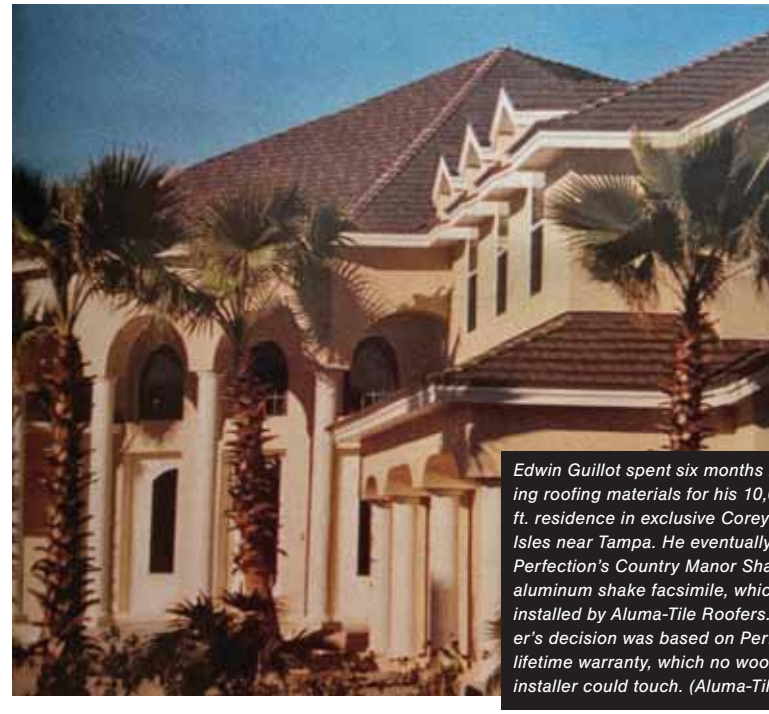
It's not that every roof in the Sunshine State glistens metal. Asphalt shingles cover most homes, and tile is the most common alternative. Flat membrane roofs dominate the commercial market. But nowhere, with the possible exception of ski resorts, is residential and commercial metal roofing more prominent. And nowhere do so many architectural traditions and environmental factors converge to make metal a popular choice and appropriate regional choice.

Elsewhere in the country, its promoters trumpet that metal roofing is "gaining acceptance." Florida is way past that. The boom has been growing for decades, and gets a bump every time a hurricane rips through the state. Twenty years ago, Gulfside Supply's Del Jackson sold one metal roof a month from his Panhandle office. Now he's selling three to five — per *day.* "Based on my company's figures," he says, "I'd put the market share of metal in Florida at 35 percent." Okay, maybe that's a bit high for the state, but not for some locations. It's not just

Many of WaterColor's multi-family units were roofed by SRD, Inc. of Birmingham, Ala., with Merchant & Evans' Zip-Rib in a mill-finish .032 aluminum.

a few home owners going for facsimile shingles, or shopping centers sporting green mansards. It's entire housing developments specifying 5-v crimp or standing seam in their architectural codes. It's businesses that make metal a signature style. It's new high-end homes gleaming in Galvalume, older homes restored with tin shingles or corrugated panels. Heck, metal's practically the law in historic Key West. And since tile, asphalt shingles, and wood shakes are popular here despite climatic handicaps, manufacturers of facsimile products are selling metal versions like hotcakes.

The reasons are many. Metal's reflectance can shave energy bills in Florida's endless summer more than any other roofing material, as several new studies have shown. With wildfires an increasing problem, metal's typical Class A ratings and resistance to windblown



Edwin Guillot spent six months researching roofing materials for his 10,000 sq. ft. residence in exclusive Corey Lake Isles near Tampa. He eventually chose Perfection's Country Manor Shake, an aluminum shake facsimile, which was then installed by Aluma-Tile Roofers. The owner's decision was based on Perfection's lifetime warranty, which no wood shake installer could touch. (Aluma-Tile photo)

embers rank high and nothing beats a metal roof for rainwater collection, a practice recently revived in drought-stricken Florida.

Another big factor is algae and mold in Florida's soggy climate. "Wood shakes are a 10- to 12-year proposition in Florida," says Aluma-Tile's Tom McGarr, who installs Classic/Perfections aluminum shakes. "After that, they deteriorate, blow off, or leak." Asphalt shingles also discolor quickly and need constant cleaning, he says.

Dan John of Scandinavian Profiling, based in Mangonia Park, says his Nordman Tile steel panels sell in large part because, unlike concrete tiles, they won't grow algae and require minimal maintenance. "Tile isn't really a wet weather roof," he adds. "It's all aesthetics. The only thing keeping a tile roof waterproof is the underlayment." Asphalt shingles, he says, routinely last half their warranted life in the heat and humidity.

As for hurricanes and other windstorms, metal has earned a reputation for staying put. Everyone in the business has a story about what the last hurricane in their area did to roofs other than metal, and what it did for their business. Beth Folta of Seaside said her all-metal roof community had "a couple corners" turned up by 1995's Hurricane Opal, while nearby tile and comp roofs were blown off completely. Down in the keys, says Brad Farinelli, it was 1998's Hurricane Georges that bumped up the metal side of the Bob Hilson & Co.'s business.

Metal, metal, everywhere. A crew from the Bob Hilson Co., based in Key Largo and Broward, carries a Berridge S-tile panel onto the roof of the historic Clinton Square Market in Key West. Under guidance from the city's Historic Architectural Review Commission, the company replaced the hundred-year-old galvanized tiles with Berridge's product, a 24-ga. G90 S-tile painted with a Kynar 500/Hylar 5000 coating in a "Preweathered Galvalume" color. The building in the background is the Key West Hilton, roofed in 5-v crimp.

Some metal partisans are more emphatic. "Andrew changed everything," says Consolidated Metal's Lodell Davison of the 1992 storm that devastated South Florida. "The only thing that stayed on was metal. Asphalt blew off, and tiles became missiles. After that, everyone wanted metal."

The truth is that manufacturers of most roofing materials have come up with beefed-up versions or fastening systems to hold the roofs down, even to the strict Miami-Dade wind uplift standards. But for decades, according to engineer and insurance industry consultant Do Kim, asphalt shingle manufacturers clung to the assumption that several extra nails would hold their product down in high-wind areas, despite evidence that tab uplift was the weak point. Not until last summer did the Florida code-writing body finally bury attempts to exempt shingles from the same standards as other roofing materials.

In the meantime, tens of thousands of asphalt comp roofs have gone on in Florida that did not meet the higher

uplift standards. Which means that, next hurricane, more than fur will be flying — and asphalt shingle's reputation isn't likely to improve.

But the biggest force behind metal these days is aesthetics. "People want the metal look," says Ralph Davis of Tallahassee-based WINCO, who's roofed hundreds of buildings near the coast. "A lot of folks don't care about the cost, and they don't care about longevity either."

The "metal look" is mostly unpainted or light-colored vertical panels, which have typically accompanied several traditional regional styles: the so-called Cracker style, the fishing village style, the beach style, the Anglo-Caribbean island style. (The bare-metal roof look is in fact popular throughout the coastal South, with several architectural styles.) Galvanized S-tiles and Victorian stamped shingles have also been used for more than a century, particularly in Key West — where many homes still have their original roofs.

The style is nostalgic, but still very much a living tradition. Architect Ron Hasse designs homes in careful updates of the so-called Cracker style (the name comes from the whips Florida cowboys used), using all 5-v crimp. Developer Dean Fowler uses 5-v to recreate Florida of the 1890s at his Steinhatchee Landing Resort. A restaurant at WaterColor uses a corrugated roof to evoke a Florida "bayou fish camp" look.

But in the blender of Florida's come-from-everywhere culture, a hybrid architectural style has emerged that is often simply called "Old Florida": wood siding, wrap-around porches, high ceilings, and overhanging roofs — always with unpainted or light-colored metal on top.

This is, by and large, metal that's unafraid to look like metal. In the right place, differentially weathered and even rusty metal can be cool. Jay Maust of Southeastern Metals recently tried to sell a Kynar-coated panel warranted for 30 years, to a project near Ponte Vedra. But the builders wanted one that would weather and rust, just like some of the 20-year-old roofs at the famous Seaside community — and so bought galvanized.

Many Floridians are only dimly of the homegrown metal tradition. Its popularity is seen as something that's "trickled down" from hotels to shopping centers to residences, or part of a style borrowed from another state. They imagine that tile is the traditional material and metal the newcomer. They've got it backwards.

When Americans first moved into Florida in the early 19th century, most homes were topped with cypress shakes; few buildings could support the heavy tiles favored by the Spanish. When galvanized metal sheets became available in the late 19th century, they quickly found their way to the tops of Florida residences. They were easily transported, reflected heat, reliably shed water before there were underlayments, and their light weight allowed for airy, open construction.

Hasse, a professor of architecture at University of Florida, has helped to revive this traditional building style with his 1992 book *Classic Cracker: Florida's Wood-Frame Vernacular Architecture.* He calls the Cracker-style home and admirable adaptation to Florida's climate. Metal roofs were a late but very popular addition.

As the state of Florida's *Historic Property Design Guidelines* state, "Metal roofs serve the climate and architecture of Florida well. They eased the weight load on the lightweight, wood frame buildings common to the state and proved durable and comfortable in the harsh climate characterized by copious rainfall, strong

winds, and intense sunlight. Relatively cheap and easy to apply, metal roofs appealed to building owners in a state that enjoyed neither great wealth nor large numbers of skilled artisans."

For decades, metal was traditional and appropriate. The stucco-and-tile pseudo-Mediterranean look gathered strength in Florida only in the 1920s, courtesy of an extravagant self-taught resort builder named Addison Mizner. This Boca Raton/Palm Beach style spread throughout South Florida, and became the state's "upscale" look thereafter. Eventually many Floridians assumed it to be historically authentic as well.

Seasiders don't insist on unblemished metal. The 5-v crimp roof on this Caribbean cottage, designed by Cooper Johnson Smith Architects, characterizes the casual, real-metal look preferred by many Floridians. But some newer Seaside homes are upgrading to more durable and corrosion-proof panels.
(Photo: George Cott/Chroma)

After World War II millions of immigrants from northern states brought their preferences for ranch-style homes roofed with asphalt or shakes. Metal roofing and the wood-frame vernacular style became an outmoded look, relegated to downscale parts of town. It didn't help that a lot of cheaply galvanized steel rusted through.

But metal has been coming back for decades. With rising real estate values and a taste for regional style, galvanized roofing is replacing tile as the hip look for many Florida homes. Money is a huge factor. "The market has been growing fast for several years," says Classic Product's Todd Miller. "It used to be a really cheap market, but people are building much nicer homes now."

Environmental sensitivity is playing a role, too, as Floridians look for materials that suit their climate. Haase views his use of metal roofing in this context. "I advocate a home that's designed as close as possible to nature," he says. "In Florida, the house shape would induce air movement, and that means cupolas, fans, and porches. You can't do that with heavy roofs." Indeed, metal roofs are showcased as an environmentally appropriate material for Florida on several "green" demonstration buildings, including the Florida House Learning Center and the Nature Conservancy's Disney Wilderness Preserve Center.

It's not just about reflectivity, lightweight construction, and water collection. "Mold is a huge problem in Florida," says the Florida House's Betty Alpaugh. "Everyone has to wash their roofs with chlorine washes. It's not only time-consuming, it's another toxic substance that leaches into the water table." The zinc in their 5-v crimp roof naturally prevents such growths before they can discolor or damage the roof.

Metal's history in Florida not only creates the foundations of a regional style, it can also sell the product on its merits. "People tell me that their grandmother had a metal roof, and she was poor," says Jim Beckman of Home Depot Installed, who's selling Fabwel's panels. "I tell them their grandmothers were smart to spend extra on a good roof. That grandma's house often still has the same roof, and that fact can close a sale."

Metal got a big boost in the early 1980s from Seaside, a world-famous community that specifies unpainted metal on all its buildings. While the innovative, neotraditional planning was done by the firm of Duany-Plater-Zyberk, the metal roofs and frame vernacular style were inspired by developer Robert Davis' memories of Panhandle beach shacks. Although some Seasiders have gone with more expensive standing seam systems, others take pride in the rustic look of the exposed-fastener systems.

These days the galvanized look is best done with acrylic-coated Galvalume, which has shown greater durability, especially in marine atmospheres. Roofing within a quarter mile of the coast, however, often voids Galvalume's corrosion warranty. Pre-painted steel adds another barrier to the system — you can even get the metal look with a Kynar/Hylar paint color called "Preweathered Galvalume."

Some roofers turn to aluminum or stainless steel near the water. Ralph Davis of WENCO rolls a lot of stainless steel, aluminum, and even copper on the coast near Tallahassee. ATAS' Laf Ried says he sells almost nothing but aluminum for waterfront projects. And corrosion resistance is one of the main selling points for Perfection's all-aluminum Country Manor Shake, says Aluma-Tile's Tom McGarr.

At WaterColor, the Arvida development company decided to skip the hip rust look and went with Merchant & Evans' Zip-Rib in a mill-finished .032 aluminum. The Morin Corporation and Englert also contributed standing-seam panels in aluminum for the project. Even some of the 5-v crimp panels on the cottages are aluminum.

But these are mere details. The point is, metal roofing has achieved a critical mass in Florida: it's appropriate, it's accepted, it's practical, and it's chic. Whether it's mill-finished Galvalume panels or metal disguised as tile, wood shakes, shingles, or slate, metal that rusts or metal that doesn't, it all sells here — and for a long list of reasons.

And it gets better: as Stephanie Smith of Bradco, a major coil and panel distributor based in Tampa, puts it: "The market for metal here is huge, and Florida sets the trends. Then the trends move up the coast."

But is Boston's ready for the Key West look? ***MR***

AUGUST

Aug. 16-20
National Association of Women in Construction's (NAWIC) Annual Meeting and Educational Conference; www.nawic.org

SEPTEMBER

Sep. 24-26
Western Roofing Expo (WSRCA), Paris, Las Vegas, Nevada; westernroofingexpo.com

Sep. 27-29
RCAT / MRCA Roofing Conference, Fort Worth Convention Center, Fort Worth, Texas; www.roofingcontractors-texas.com

OCTOBER

Oct. 12-14
METALCON, Indiana Convention Center, Indianapolis, Indiana; www.metalcon.com

Oct. 26-27
Construction Rollforming Show, Ernest N. Morial Convention Center, New Orleans, Louisiana; www.constructionrollformingshow.com

NOVEMBER

Nov. 6-8
RoofCON Roofing & Solar Conference, Orange County Convention Center, Orlando, Florida; roofcon.com

Nov. 8-10
FABTECH, Georgia World Congress Center, Atlanta; www.fabtechexpo.com

2023

JANUARY

Jan. 18-19
Garage, Shed & Carport Builder Show, Greenville Convention Center, Greenville, South Carolina. garageshed-carportbuilder.com/show-registration/

Jan. 23-25
MCA Winter Meeting, Hyatt Regency in Clearwater Beach Resort & Spa, Clearwater, Fla.; metalconstruction.org

MARCH

March 7-9
International Roofing Expo, Kay Bailey Hutchison Convention Center, Dallas, Texas; www.theroofingexpo.com ***MR***

Before making travel arrangements, check with the show producer to confirm there have been no changes to event dates, venue, or show hours. To have events included here, contact Karen Knapstein, 715.513.6767, karen@shieldwallmedia.com.

CMG's new facility has space to stock more coil, sheets, and metal roofing accessories.
PHOTO COURTESY OF CMG.

Coated Metals Group Expands, Opens New Facility in NC

Coated Metals Group (CMG, www.cmgmetals.com) has announced the recent expansion of its Charlotte, North Carolina, facility. The larger facility positions company to meet the ever-growing demand within the Charlotte and Eastern market.

CMG's expansion will help reduce lead times for customers since it can keep additional material on the floor. Paired with increased production levels, the company expects the new facility to help minimize obstacles presented by industry-wide supply chain constraints.

In line with its other locations, the new Charlotte facility will keep a diverse line of stocked products on the floor at exceptionally high levels, regular inbound material to maintain stock, and an efficient floor plan with the ability to expand and adjust quickly.

Brogan Baker, the local VP-Sales, said, "We're very excited about our new building! Our new facility has a lot more room to stock more quantities of coils, sheets, and metal roofing accessories. With this added space, it will allow us to service our customers quickly and help keep project schedules moving. We are extremely eager for the opportunity to better serve our customers!"

Coated Metals Group is now located at 1814 Westinghouse Blvd., Unit U, Charlotte, NC 28273.

AkzoNobel Industrial Coatings Launches Campaign to Support PVDF Partners

In the face of ongoing uncertainty in global PVDF (or polyvinylidene difluoride) supply chains, coatings and paint manufacturer AkzoNobel has launched a campaign to help its partners navigate the changing PVDF landscape.

Changes in global market dynamics, including increased demand from markets such as electric vehicle batteries and solar panels, have led to interruptions in the supply of PVDF resin commonly used in coil coatings. This, in turn, has affected the availability of some PVDF-containing products.

AkzoNobel has produced a suite of tools and information to help its partners and end-users respond to these challenges. The aim is to help partners gain a full understanding of the PVDF situation and enable them to make more informed decisions about the best solutions for their specific circumstances.

Spearheading the campaign is a series of informative Q&A videos with in-house specialists. The series kicks off with a video featuring Tamara Toth, Regional Product Marketing Manager for Coil & Extrusion Coatings North America, and Bo Matzner, Global Product Marketing Director for Coil & Extrusion Coatings, talking about PVDF technology, the changing market in 2022, and how AkzoNobel can help its customers.

More videos will be released exploring a range of PVDF-related topics, including the importance of PVDF in applications and testing, and alternative products on the market. The videos can be found on the coil and extrusion website [https://bit.ly/AkzoNobelPVDF], YouTube channel, and Canopy app.

"The robust versatility of PVDF means it is in high demand. This has squeezed supplies to the metal coatings industry, as well as pushed up prices. We want to support our customers in responding to these challenges by helping them understand the context and, where necessary, find new solutions," explains Bo Matzner, Global Product Marketing Director, Coil and Extrusion Coatings at AkzoNobel.

In many cases, Matzner says, AkzoNobel offers a non-PVDF equivalent or similar product delivering the same quality required. At the same time, its research and development team, with decades of experience in the Coil and Extrusion coatings industry, is working to develop new offerings.

Galvan Ind. Recognized for Hot Dip Galvanizing Excellence in Greenhouses Expansion

Galvan Industries, Inc. has won the American Galvanizing Association (AGA) 2022 "Excellence in Hot Dip Galvanizing" Award in the Food & Agriculture category for its work on a 40-acre expansion at Metrolina Greenhouses. Now covering more than 200 acres, Metrolina's Huntersville, North Carolina, facility is the largest single-story structure in the United States.

The award was announced at the American Galvanizers Association's (AGA) 2022 Annual Conference in St. Pete Beach, Florida. The AGA has presented the Excellence Awards each year since 1995. This year's award is Galvan's 12th in total and third for Metrolina.

Galvan Industries has rust-proofed the steel used at Metrolina Greenhouses since 1972, when Metrolina was founded. The companies worked together on this latest expansion for three years, beginning in 2018. Materials were staged at the galvanizing facility and delivered to the project by Galvan as needed.

Metrolina has always used hot-dip galvanized steel in their greenhouse structures because of its long rust-free service life in warm, wet conditions and because galvanizing is more environmentally friendly than painting for corrosion prevention.

BlueScope Steel to Acquire Coil Coatings Business From Cornerstone Building Brands

BlueScope Steel Limited has entered into a binding agreement to acquire the Coil Coatings business from Cornerstone Building Brands Inc (NYSE:CNR) for

US$500 million, a bourse filing noted.

Coil Coatings is the second largest metal painter in the US, with a total capacity of around 900,000 tons per annum across seven facilities, predominantly serving commercial and industrial construction applications.

BlueScope Managing Director and CEO Mark Vassella said the acquisition of Coil Coatings almost triples BlueScope's "US metallic coating and painting capacity to over 1.3 million metric tons per annum, from around 475,000 tons per annum at present, and gives us immediate and direct access to the large and growing Eastern US region."

"Following the completion of the acquisition of Coil Coatings, the US$770 million investment in the expansion of North Star, the US$220 million establishment of BlueScope Recycling and the continued investment in the BlueScope Properties Group, the Company's investment in North America now totals over A$4.5 billion, employing more than 4,000 employees."

The purchase price of US$500 million represents approximately 8.9 times CY2021 pro-forma EBITDA of US$56 million, including year three synergies. Following completion, Cornerstone Building Brands will remain a key customer of the business.

The acquisition will be fully funded from cash on the balance sheet and will be immediately accretive to earnings per share. BlueScope remains in a strong position to continue to execute on its previously announced projects and on-market buy-back.

The transaction is targeted for completion in calendar year 2022, subject to regulatory approval and other customary closing conditions.

Ambassador Supply Acquires Orgain Building Supply, Astro Buildings

Ambassador Supply has acquired Orgain Building Supply, which is based in Clarksville, Tennessee. A company news release stated the new partnership will help Orgain Building Supply continue in its mission and promise to its customers to provide quality products in a responsive manner.

Ambassador has also acquired Omaha-based Astro Buildings, which specializes in post-frame building construction.

With Astro Buildings, Ambassador expands its Midwest footprint in seven states — Kansas, Iowa, Nebraska, Missouri, South Dakota, Minnesota and Colorado — for the construction of post-frame buildings.

Astro Buildings retains its name and its 15 employees in Omaha. The only

changes for the company are new access to capital, a robust supply chain, additional resources and the experience of all the Ambassador properties that will position Astro Buildings for future growth.

"Our goal at Ambassador Supply is to transform the building industry and help established companies build a better future for their organization," said Brad Crawford, President and CEO of Ambassador Supply. "We look for opportunities with the best companies in the industry, and Astro Buildings is a perfect fit for our culture."

Homes For Our Troops Raises Over $2 Million for Severely Injured Post-9/11 Veterans

ABC Supply Co. Inc., the nation's largest wholesale distributor of roofing, siding and other select exterior and interior building products, has announced a final donation total of over $2 million as part of its sponsorship of Homes for Our Troops (HFOT, www.hfotusa.org). The company pledged to match every donation up to $1 million total for the nonprofit organization as part of a 10-day fundraising effort that took place May 21-30 — coinciding with the 106th Running of the Indianapolis 500 presented by Gainbridge.

In addition to the donation match, ABC Supply also volunteered the design of their No. 11 AJ Foyt Racing Chevrolet to HFOT, an organization that builds and donates specially adapted custom homes across the United States for severely injured post-9/11 Veterans. As the nonprofit invests nearly 90% of donations directly back into its mission and depends on word-of-mouth marketing, ABC Supply's goal was to shine a national spotlight on HFOT and its work to change the lives of the more than 1,000 military Veterans who have severe physical and traumatic brain injuries.

Founded in 2004, HFOT seeks to build homes and in turn, rebuild the lives of these Veterans, restoring some of the freedom and independence they've sacrificed in defending our country. To date, HFOT has built and donated over 330 homes for severely injured post-9/11 Veterans. After the homes are built, the relationships between HFOT and their Veterans continue — the organization provides a pro-bono financial planner to assist with budgeting, homeownership education, a peer mentoring program and more.

ABC Supply has been a multimillion-dollar supporter of HFOT since 2020.

Steel Dynamics Plans Acquisition of Mexican Metals Recycling Company

Steel Dynamics, Inc. has announced that as part of its North American raw material procurement strategy, the company has entered into a definitive agreement to acquire the equity interest of ROCA ACERO S.A. de C.V. ("ROCA") to be funded with available cash. ROCA is headquartered in Monterrey, Mexico and operates a ferrous and nonferrous scrap metals recycling business. ROCA's primary operations are comprised of four scrap processing facilities, strategically positioned near high-volume industrial scrap sources located throughout Central and Northern Mexico. These combined facilities currently ship approximately 575,000 gross tons of scrap annually and have an estimated annual processing capability of approximately 850,000 gross tons.

"We look forward to adding ROCA to the Steel Dynamics family to further solidify our Southwest U.S. and Mexico growth strategy," said Mark D. Millett, Chairman, President and Chief Executive Officer. "Combined with our existing North American metals recycling facilities, the addition of ROCA significantly strengthens our raw material procurement strategy in the region. After closing the ROCA transaction and fully integrating our Mexican metals recycling operations, we believe our Mexican scrap facilities will provide an even more meaningful competitive advantage to our U.S. electric-arc-furnace steel operations, while also providing a high-quality, customer centered option for our outside scrap customers. We are very excited to welcome and learn from the entire ROCA team."

This transaction is subject to customary closing conditions and receipt of required regulatory approvals.

Englert Announces 40-Year Finish Warranty On Its Ultra-Cool Low-Gloss Coatings

Englert Inc., a manufacturer of standing seam metal roofing, single-skin wall panel systems, seamless gutters and downspouts, and LeafGuard gutter systems has increased its 35-year finish warranty on Englert ULTRA-Cool Low-Gloss coatings to 40-years.

A 40-year finish warranty means a building or homeowner will enjoy a longer period of confidence in the performance of their metal roofing or metal

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siding purchase.

Englert's metal roofing, wall panel, and accessories are painted with Low-Gloss/ULTRA-Cool paint finish and come in a wide array of colors. The company is so confident of the performance of the finish that it now offers a 40-year limited warranty against chipping, cracking, and peeling. The finish also helps minimize "oil-canning" while being environmentally friendly.

Triangle Fastener Launches Panel-Tite Burr Buster with ZAC Zinc Cast Head

Triangle Fastener Corporation [www.trianglefastener.com] has announced the availability of the ZAC® Zinc Alloy Cast Head on its patented Panel-Tite® Burr Buster® Metal-to-Wood screw.

The ZAC® zinc alloy cast head is the most recognized long-life head available in the industry and provides superior corrosion protection in the harshest environments.

These screws are compatible with Aluminum/Zinc coated steel like Galvalume® and Zincalume® and can also be used with aluminum panels and trim. The ZAC head will never red rust!

Coupled with the high-performance Panel-Tite Burr Buster, this screw is the most advanced fastener in the industry

The ZAC head eliminates galvanic corrosion between the head of the screw and the panel. The screw provides fast penetration, minimizes burrs, and increases resistance to screw back-out.

The shank is protected with Tri-Seal® 1,000 hrs. salt spray coating that provides over 13-times more corrosion protection than ordinary metal-to-wood screws. ***MR***

Oil Canning in Metal Roof and Wall Systems

By the Metal Construction Association

What is oil canning?

Oil Canning can be defined as visible waviness in the flat areas of metal roofing and metal wall panels. In technical terms, oil canning is referred to as elastic buckling (more commonly known as "stress wrinkling"). Oil canning can occur in any type of metal panels: steel, aluminum, zinc, or copper. For purposes here, all four terms shall be considered synonymous: Waviness, elastic buckling, stress wrinkling and oil canning. The degree of waviness can be difficult to measure, but may be visually apparent, especially under specific lighting conditions.

Generally, the period and amplitude of the wave will become more pronounced as the panel width increases (flat portion of the panel) and/or the panel thickness decreases. Reflected light may make the oil canning more prominent at certain times of day.

Conditions such as the time of year, the viewing angle, and the angle at which sunlight strikes the panel may also have an impact on the ability to discern oil canning. The eye perceives the reflection of light. When the reflective surface is irregular the reflected light is also irregular making oil canning more perceptible. If oil canning is present, it is usually apparent at the time of construction.

However, oil canning may become more (or less) apparent over an extended period of time for a variety of reasons. Oil

The only difference is an hour in time and the changing the angle of the sun.
All photos and graphics courtesy of the Metal Roof Advisory Group, Ltd; Colorado Springs

These photos are minutes apart. The only difference is camera angle.

canning can be an unintentional byproduct of the fabrication process and mill producers' tolerances. Panels with oil canning differ from panels intentionally formed with a corrugated, ribbed, or fluted design and narrower flat sections intended to provide greater bending strength.

What causes oil canning?

Oil canning is caused by differential stresses within the metal itself. As the metal tries to relieve these stresses in panels with high width to thickness ratios, the material buckles out of plane producing the characteristic waviness of oil canning. The stresses may be introduced at a number of stages in panel manufacturing.

1. Metal Coil Production

All fabricated metal roof and wall products begin in a "coil" form. Coil is produced in a rolling process under pressure to create very thin strips which are then "coiled" for ease in handling. Stresses induced during coil production may contribute to oil canning. Examples of these types of stresses are:

Full Center - Coil is longer in the middle of the strip which creates ripples or buckles near the mid-coil area.

Wavy Edge - Coil is longer along the edge of the strip.

Camber - Coil deviation of a side edge from a straight line.

These conditions exist to some extent in all light gauge flat rolled metal coil and tend to become more exaggerated as the material tensile strength increases. Thinner material and dimensionally wider coil is also more prone to oil canning than thicker, narrower coil.

2. Coil Processing and Panel Fabrication

Slitting — Generally several narrower coils are cut by slitting from a single (wider) master coil. The economies of producing wider coils makes this secondary process a common practice. Slitting of a master coil can release and redistribute residual forces. This redistribution of stresses can increase the occurrence of oil canning within the final product.

Forming — Stresses are introduced during forming of either roof or wall panels. Architectural panel profiles typically require more forming along the edges than in the middle of the sheet. This often necessitates more forming and bending along one side than the other and the stresses produced are not symmetrical within the sheet. Formed panel profiles require "working" (bending) of the sheet. Bending occurs along the edges and there is a tendency to "trap" uneven stresses within the center portion of the finished profile, producing oil canning. In contrast to flat, architectural profiles, corrugated ribbed profiles are most often roll formed from the center and moving outward, thereby "pushing" the differential stresses to the edges of the sheet.

Forming sheet metal inherently introduces stresses to the material. Equipment tooling, setup and operation can minimize these stresses. Proper feed rates, tooling maintenance, proper tooling design, and proper adjustment of the equipment will minimize the differential stresses that cause oil canning.

3. Support Systems and Substrate Suitability

Misalignment of the Support System — If the structural supports or perimeter framing system of a roof or wall panel system are not flat, "non-planar" or contoured, additional stresses can be induced into the sheet as the panels are forced to conform to this uneven surface. This can be the case even when the support structure is produced, fabricated, and installed within allowable industry tolerances.

Movement of the Primary Structure — If the primary structure moves due to differential deflection, racking, drift, settlement or other causes oil canning can occur as the panels are forced to conform to this movement. This oil canning is sometimes temporary as the support system continues to move, but could be permanent depending on the root cause of the movement.

Camber — Commercial support structural elements such as roof rafters and trusses are often designed with an intentional bow or camber, anticipating deflection under load. If the rafter,

truss, or joist is fabricated with camber (crowning at mid-span) it produces a contoured substrate that can induce oil canning of the finished surface at installation or after a load is imposed.

4. Panel Installation

Over-Engagement of Panels (Roof Panels) — Roof panels are designed to a specific coverage dimension and accommodate transverse thermal expansion by flexing the rib and seam areas of side joints. When panels are not installed true to the intended coverage dimensions, these stress relief features can be minimized or eliminated altogether. In the extreme case, the over engagement process itself can generate oil canning within the flat areas of the panel.

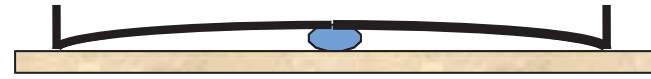
Improper Installation (Wall Panels) — Wall panels are generally designed to a specific coverage dimension and to accommodate thermal expansion. Panels often do this by expanding/contracting at the joints located between the panels. Panels can be designed with slotted connections or extrusions that slide across each other to accommodate this movement. When panel joints are not designed or located properly, stress relief cannot take place and oil canning can be the result.

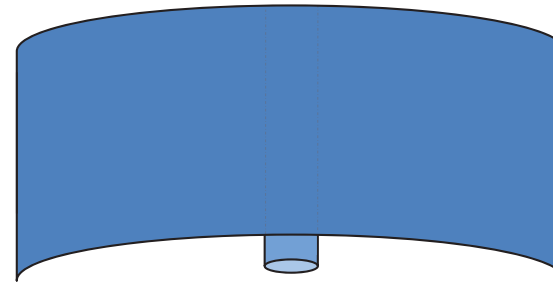
Often wide, concealed fastened, flat-faced panels are desired for use in wall applications. These panels are often direct-attached to the structure (in contrast with clip-attached). This installation method does not allow for panel thermal movement. In such cases, designers should minimize the panel length or look to other means of thermal relief to minimize the effects of oil canning. Contractors should ensure the panels do not flex or bow panels outward during the installation process because this also exaggerates the visual appearance of panel bow. Finally, panels should normally be fastened in a sequential manner (i.e.; top to bottom, middle outward or left to right) to push potential panel bow in one direction so the panel is not locked in place with a built in bow.

Over Driving of Fasteners — This installation error can create stresses in the panel and can cause visible oil canning along fastener lines. Use of impact driver is not recommended. Reference the MCA Technical Bulletin on Proper Tools for Fastening Metal Panels.

Thermal Expansion — Due to the profile of panels, longitudinal expansion is generally the primary concern. Any expansion across the width of the panel is generally taken up at the raised portion of each profile. The surface temperature of exposed panels cycles throughout the year and even fluctuates daily. The range and cycle depend on many variables (e.g., project location and building orientation, cloud cover, surface finish or color, solar absorption characteristics, etc.).

As the panel surface temperature fluctuates, panels expand or contract. Surface temperature may be more than 100 degrees higher than ambient air temperature. Fasteners, clips and perimeter connections should be designed and installed to accommodate the anticipated thermal movement of the panel.





If panel expansion/contraction is inhibited by perimeter flashing conditions or inadvertent "dual pinning" at other details, the result can be seen as oil canning. Waviness caused by thermal forces differs from the other forms of oil canning in that waves can appear and disappear daily as the panel temperature varies due to solar absorption or radiation. Often over a period

of time if clips and perimeter connections allow movement, the panels will find a thermodynamic equilibrium and the oil canning may be diminished.

Improper Storage & Handling — For certain types of metal panels, storing or carrying panels in a flat orientation, twisting, or buckling panels can induce a wavy appearance to a previously flat panel. Twisting can occur if one corner of a panel is used to lift a panel or to remove the panel from a bundle or pallet. Manufacturer's recommendations should be followed.

How can oil canning be minimized?

Certain designers regard oil canning as inherent to the material and treat it as a desired effect accentuating the material's natural characteristic, while others do not. Coil producers and panel manufacturers generally attempt to minimize unintentional non-flat conditions. Research continues on improved production and fabrication methods. While a number of factors are involved in panel design, there are steps that the project designer, panel manufacturer, panel fabricator and installer can take to reduce the probability, severity and visual impact of oil canning.

Coil — Tension ("stretch" or in line) precision leveling is a process that stretches the metal beyond the yield point while the metal is in coil form. Once stretched to this point, the metal will not creep back to its previous, non-level state. This provides a flatter surface less prone to oil canning and may correct inconsistencies of coil production and secondary coil operations. For this reason, tension leveling should be done after secondary operations such as slitting. The effect of oil canning can be reduced by ordering tension leveled material.

Gauge — In general, the thicker the metal (the smaller the gauge number) the less likely a panel is to oil can.

Panel Design — In general, the use of attachment systems that allow panels to move without inducing thermal stresses is another means of controlling oil canning. The addition of stiffening ribs in the panel profile "break-up" the flat surface and may make oil canning less apparent, but may also add minor shadow lines.

Panel Finish — The eye perceives reflection of light, which is why oil canning on a lower gloss surface is less perceptible than a high gloss surface. Low gloss finish systems or embossed surfaces, which are less reflective, may reduce the visual perception of oil canning seen in the metal.

There is less difference in the appearance of reflected light from a lighter color panel with oil canning than reflected light from a darker color panel, which makes oil canning more noticeable on darker colored panels.

Installation Issues — Stringent specifications regarding the alignment of the supporting structure or the deck would focus attention on this critical aspect. Normal trade practices and tolerances concerning the substrate may not be adequate to minimize oil canning of the finished surface. Manufacturer recommendations regarding proper handling, spacing, and fastening of panels should be part of the manufacturer's installation recommendations.

Forming Equipment — Deal with reputable experienced suppliers who utilize appropriate, well-tuned forming equipment.

Uses of Backer Rod or Other Similar Shimming Materials — Some designers specify the use of "backer rod" or other similar types of shimming materials on the panel underside when installation is over a solid substrate. Backer rod is a compressible foam strip normally used in the concrete and masonry trades in joints to serve as a backing for a caulk joint. For certain types of metal panel systems it causes the center of the panel to "pillow" uniformly, relieving stress and reducing the visual effects of oil canning.

Concluding remarks

Many uncontrollable factors contribute to oil-canning and no panel manufacturer, fabricator, or installer can assure the total prevention of oil canning on any given project. With careful attention to the production, material selection, panel design, and installation practice, the tendency for oil canning can be minimized.

If oil canning is caused by external factors, such as detailed in "Support Systems" and "Substrate Suitability", even replacing panels may be ineffective if the root cause is not addressed.

Oil canning is generally an aesthetic issue. Structural integrity is typically not affected. In the absence of specific contract requirements, oil canning should not be the sole grounds for panel rejection. ***MR***

Editor's Note: This article is a Technical Bulletin written by the Metal Construction Association. It is published here with permission. All photos and graphics courtesy of the Metal Roof Advisory Group, Ltd., Colorado Springs.

References

1. ASTM E 1514 – 98 Standard Specification for Structural Standing Seam Steel Roof Panel Systems

As Suppliers See It...

We asked suppliers and manufacturers about their take on the current construction business climate. Here's what a few of them had to say:

"Our clients tell us that professional metal roofing takeoff software has been a critical tool in helping them manage their material costs effectively. By reducing wastage and allocating labor efficiently, they have been able to keep their margins up and avoid shortages. We're proud to help our clients stay ahead of the curve and continue providing great quality products and services."

Ray Smith, Managing Director
AppliCad Software

"In general, commercial construction remains busy and has shown some incredible resilience to the dynamics of the market of the past two years. We have witnessed some of the most challenging times our industry has faced and we expect many of those challenges to continue, including first and foremost finding and recruiting great people into all of our businesses and preparing ourselves for future expected growth. The pendulum will swing back and forth, and we will continue to be challenged to respond to changes in the marketplace."

Mike Weis, Vice President Sales & Marketing
PAC-CLAD | Petersen

"S-5! distributor orders are up significantly over 2021. However, shipments are flat due to backlogs caused by supply chain issues and raw material availability. Our advantage is our distribution model. S-5! products are on shelves nationwide—always.
Labor shortage is rarely a problem. We have a reputation in the industry for doing things The Right Way™. We are a privately held company with a comfortable working environment, and values that attract great talent and retention."

Rob Haddock, Founder and CEO
S-5!

"The climate of the Construction Industry has seen unprecedented growth despite the supply issues that dealers, distributors, and manufacturers have had to overcome. The import supply chain has been greatly affected by the rising costs of containers, delays in deliveries and even partial shipments, which has left the domestic manufacturers to fill the needs of the increased growth despite dealing with the rising costs of raw materials, transportation, and labor during this unique period. The consensus in many sectors is: How long can we sustain this unparalleled growth before the shortages in the supply chain impact the Construction Industry as a whole?"

Mike Green, Western Canadian Sales Manager
Leland Industries

"Finding and retaining employees is key to success in any climate, especially now.
We here at Levi's Building Components believe company culture matters, and it is proving to be a valuable part of our formula for success.
We are living our core values of Integrity, Quality, Service, Collaboration, and Growth.
To our employees and customers, it's known as the Levi's Experience."

Mike O'Hara, National Sales Manager
Levi's Building Components

"The construction and renovation markets are growing and changing at a pace we have rarely seen before. Factors such as inflation, rising gas prices, and labor issues normally lead to a cool down within the industry. We are experiencing quite the opposite however, with an increase in demand and a strong desire for innovation within our markets despite the somewhat unstable economic environment."

Scott Lowe, Sales Manager
ProVia

"What a year so far! The word which comes to mind is "Adaption." While supply chain and upward cost pressures continue, we as an industry have learned to adapt. This has served us well and will continue to serve us as we move forward. It is a testament to the quality people in our industry. Generally I am seeing business remain strong. Some slow down may be occurring but this can be expected after the unprecedented past couple of years. What we may see as a slow down can to some degree be attributed to a normalization of an unsustainable growth pattern.
I remain very positive about the metal roofing and post-frame building industry where I live."

Randy L. Chaffee
Source One Marketing, LLC

"The metal roof industry is going to thrive through a recession. Homeowners will continue to invest their money in a product that's going to take them to the grave.
The labor shortage isn't getting any better. We're addressing the increasing backlog and labor shortage with labor-saving technology and devices. There's a big learning curve coming because new workers don't know anything, but they have to be efficient on day one. They need safety equipment that thinks for them. That's why we developed the Ridgeline Safety System — to keep workers safe so they can do the job from the start."

Todd Meinhold
Ridgeline Safety System

Construction Business Climate

Shield Wall Media recently closed its mid-year Construction Business Climate Survey. Despite all the doom and gloom we hear from news outlets, the results are surprisingly good.

We divided respondents into three categories: Building Contractors, Roofing Contractors, and Building Material Dealers or Manufacturers.

We believe you'll find the results of interest.

HOW DOES YOUR UNITS SOLD YEAR OVER YEAR, INCLUDING BACKLOG (Q1) COMPARE TO 2021?

63% **of roofers report unit sales being the same or better than Q1 of last year.**

76% are the same or better across all business types, while 24% are down slightly across all business types.

HOW WILL YOUR Q2 YEAR OVER YEAR GROSS SALES, INCLUDING BACKLOG, COMPARE TO 2021? (BEST GUESS)

75% **of Roofing Contractors estimate Q2 sales will be the same or better than 2021.**

81% across all sectors report gross sales will be the same or better.

HOW DOES YOUR YEAR OVER YEAR GROSS SALES, INCLUDING BACKLOG (Q1) COMPARE TO 2021?

50% **of Roofers report results that are up compared to Q1 2021.**

67% of respondents are up across all business types.

HOW WILL YOUR OVERALL PROFITABILITY IN Q2 COMPARE TO 2021? (BEST GUESS)

75% **of roofers estimate profitability will be the same or better.**

90% of respondents (across all categories) are the same or more profitable than they were in Q2 2021.

2022 GENERAL OUTLOOK

38% **of roofing contractors estimate 2022 will close better than 2021.**

57% of respondents across all categories believe 2022 will be better than 2021.

HOW DOES YOUR OVERALL Q1 PROFITABILITY COMPARE TO 2021?

75% **of roofers report profitability to be the same or better when compared to Q1 2021.**

86% across all business types report profitability to be the same or better. (2021 was a record year for many!)

WHAT CHALLENGE IS EXERTING THE GREATEST IMPACT ON YOUR BUSINESS?

#1 **Challenge: Shortage of workers is the #1 challenge for Building Contractors and Dealers/ Distributors/Manufacturers.**

The #1 challenge for Roofing Contractors: It was a tie between material shortages and material costs.

+ **Comparing the numbers for Q1, Q2 and 2022 as a whole (best guess) sentiment drops slightly for Q2 and slightly more for the year as a whole.**

Sentiment seems to be declining, but is still generally positive.

Gutter Size & Flow

Improving gutter efficiency to preserve roofs and structures

By Anthony Brass

Many roofing package installations include new gutters. These are usually the last components added, after the metal roof. The amount of rainwater flowing into the gutters is relentless. Maximizing efficient water flow from the gutters to the bottom of the downspouts can prevent future damage. Improper flow may lead to water weakening the roof's surface and underlining, seeping or leaking into the structure's walls, pooling on the ground and destabilizing the foundation, or compromising landscaping with excessive amounts of water.

When the correct gutter size is installed, the force of the elements is not as much of a factor. The gutter allows the free flow of water. In addition, necessary adjustments based on roof pitch and other factors, and adding accessories, will increase efficient flow. Exhaust all opportunities to prevent problems that overshadow the results.

Water Flow on Metal Roofing

There is less surface tension on smooth metal roof panels, so water rushes down faster into the gutters, potentially shooting out far from the eaves. Some metal roofs will have an aggregate in the paint coating to give a rougher surface to reduce flow, but the rate of the water is still elevated. Gutters have to be able to accommodate the increased rate of flow.

Gutter Size Choice and Type, Downspouts, Pitch, Other Factors

Many factors dictate the size of gutters to complement a metal roof. The pitch affects how fast rainwater flows off the metal panels. The faster the water is flowing downward, the larger the gutters that are needed. Residential metal roofs have varying roof pitches, but many include a lower pitch. "Typically, you are going to be looking at a 4/12 or lower (pitch) and you can get away with a 5" gutter without any problems," says Aaron Bukolt of Gutter Supply. "Anything over a 4/12, you'll want to go with a 6" or possibly 7" gutter, depending on the pitch." Bukolt adds you should measure the pitch yourself to make the determination on gutter size. He also says there's a bit of a variable to follow in your pitch adjustment for smooth metal roofing: the 4/12 pitch is going to be the max-out for a 5", the maximum for a 6" is 8/12, and steeper roofs require a 7" or 8" gutter, depending on the application.

Number of Downspouts and Size

The number of downspouts and their dimensions affect gutter size choice. "The volume of water that any size gutter can effectively drain is dictated by the size of the outlet and downspout that you put on that gutter," Bukolt says. He adds, "As you increase the downspout size, you increase the overall water-flow capacity of the gutter system."

The addition of outlets and downspouts may be necessary to evacuate the water. Bukolt says every 40-foot stretch or more of gutter will require at least a second outlet.

Choice of Shape

You present different types of gutters and downspouts to customers; they expect to hear the benefits and drawbacks for each. Whether they opt to only have new gutters installed or as a roofing package, they want flawless results with the components working together to protect their roof and house.

Many request the classic K-style shape for strength and

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proper channeling of rainfall, but again, size is determined by the generated speed of water. Even with the most efficient gutter shape, increased rates of water down the panels means a 6" or even 7" gutter will be required to ensure proper channeling from the roof to the ground. The 5" gutter is common, but once again, the size and pitch of the roof influence the size of the gutter system.

You pay attention to all areas during a metal roof build, and how these will affect flow and distribution of water. Bukolt says to primarily look for the overall span of your rafters, pay attention to hips and valleys, and what is on the grade, i.e., if you're working on a structure that's on a parking lot or turf. "That will ultimately affect where the water is going to be dispersed once it gets off the roof," cautions Bukolt.

Gutter Positioning and Effective Flow

Studies and analyses of gutters and water flow go back to the '30s, and before. Research papers from the Bureau of Standards Journal break down the technical numbers behind effective and ineffective gutter size and positioning based on different measurements of flow. These principals are still applied today. When installing a metal roof over an existing one – shingles or metal – the gutters may need to be repositioned to ensure proper water flow.

"If you install a metal roof over another roof, the gutters aren't always changed," says Alex O'Hanley, business development manager, for GutterBrush. The metal roof may be in a different position when sitting over an older roof. "The water comes off faster and at a higher vantage point." He adds the gutters left on may be positioned too low after panels are installed and fast water rushes down, shooting past the gutters. "If the gutter's sloped, the low end of the gutter may be an inch lower than it should be, and water completely misses the gutter." In these scenarios, he says you will likely have to take the gutters off and install new ones that are higher and wider. Or you'll need the time-consuming task of completely repositioning the existing gutters to a higher level against the drip edge to ensure water flows in. There are other options to avoid replacement, which includes gutter accessories.

Accessories Improving Flow

One accessory to suggest, to avoid repositioning or adding new gutters, are brush gutter guard inserts. These are long, circular-shaped black brushes that fit inside gutters. The brushes are lined up from end to end and prevent the buildup of leaves and other debris. When installed, the tops of the bristles sit above the gutters. The water comes down, hits the raised high-profile bristles, and is drawn into the gutter. This ensures proper directional flow into the gutters and not over the side. O'Hanley says these types of guards are ideal for metal roofing contractors because they emphasize the acceptance of water into the gutters.

Brush-type gutter guard from GutterBrush.

Brush guards also keep leaves from entering the gutter, which prevents future clogging, ensuring effective flow and drainage. Leaves fall on the curved bristles and do not stay there, as they fall off or are blown down below.

Standard gutter guards and covers are designed to keep leaves and debris from collecting in gutters and elbows of downspouts. These lay on top and have holes to channel water inside. When water rushes down a metal roof at higher speeds, and the right components or accessories aren't installed, not all liquid enters these holes and bypasses the gutters.

The aluminum K-style guards are shaped to help slow down the flow and have grooves to bring water in. These also have serrated tops to slow the water, to allow for surface adhesion, so it channels into gutters. The combination of grooved design and shape helps water enter the gutter and not bypass the guards and fall below. If guards aren't grooved or designed to handle higher volumes of water, larger 6" or 7" gutters are needed to prevent water from flowing over the side.

There are other, smaller accessories to create proper flow and direction of rainwater and melt-off. Gutter splash guards prevent water from spilling over onto the ground. These are installed on the edges of gutters so rushing water splashes back into the gutters, not over the sides. These are ideal in corners, areas where gutters meet.

Gutter guard accessories prevent leaves and other debris from collecting and clogging the system. Leaves restrict rainfall from properly flowing through gutters and prevent proper drainage, leading to gutter, fascia or other structural damage. Gutter guards and accessories lessen or prevent clogging, which is essential for proper flow and water distribution. Maximize flow with consistent results by using the proper products for the situation.

Effective flow in gutters is important for any season. Ice can build up inside gutters in the winter, restricting flow when melting begins. To prevent ice buildup, Bukolt recommends installing heat cables in the gutters. This accessory generates heat, promotes a slow, even distribution of water from melt-off, and allows water to channel through the gutters.

Conclusion

Metal roofs are made to last. Make sure the other components, especially gutters, are working in unison with the entire roof system and are maintaining proper flow. Take the steps to promote long-term function and preservation of all parts of the roof for a successful project. ***MR***

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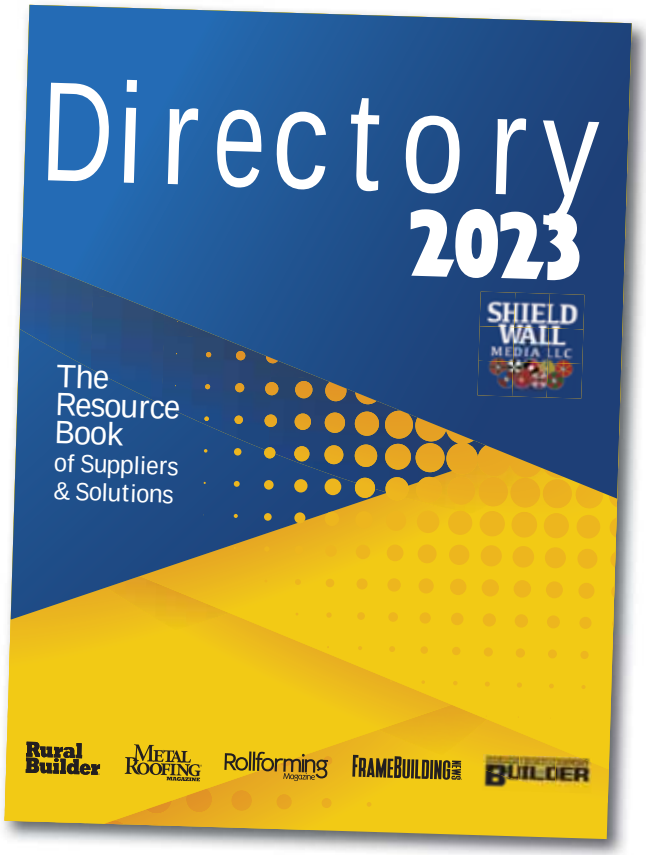

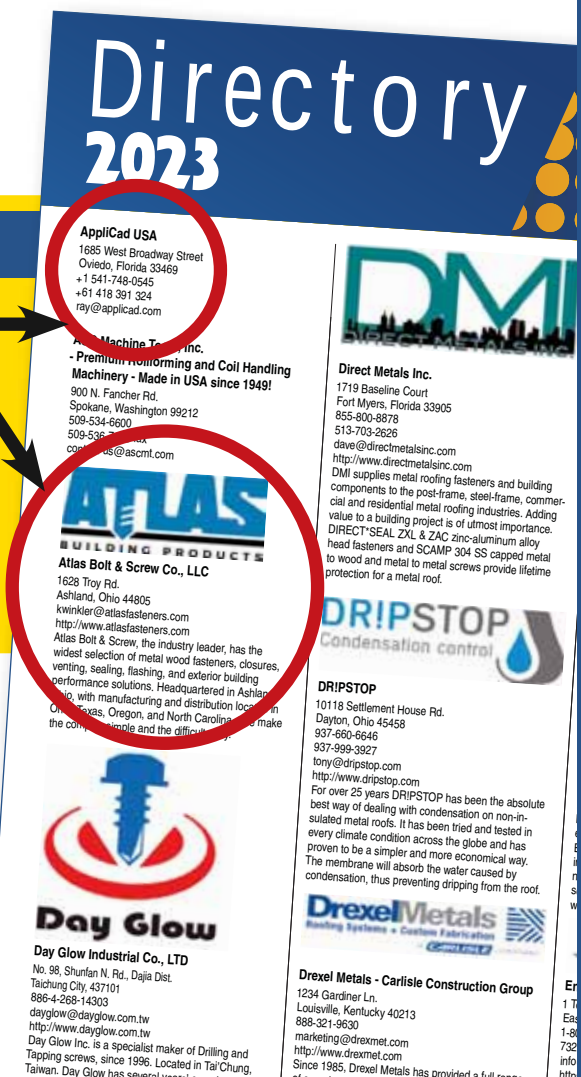

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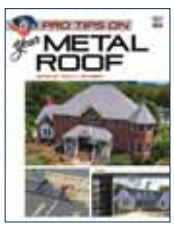

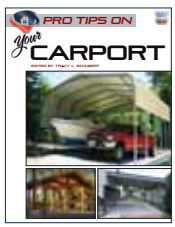

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Keep 'em Clear

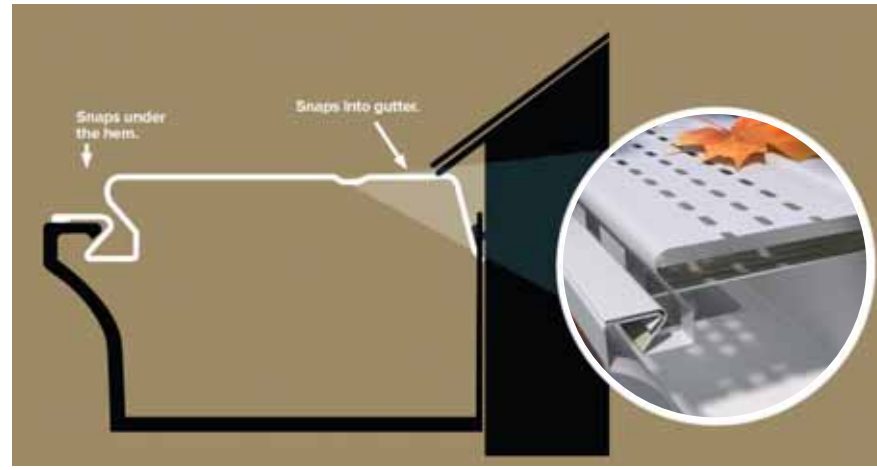
Tips For Effective Gutter Guard Installation

By Karen Knapstein

A well-functioning gutter system improves the integrity of a building. While gutter guards are considered an add-on, rather than a necessity, the benefits of a gutter guard system are undeniable.

The gutter system prevents damage caused by roof runoff such as foundation damage, settling, basement flooding, and other damage caused by water. Clogged gutters are one of the most common problems that building owners experience — yet it's preventable. Gutter guards, which keep gutters flowing freely, attach to (or are installed in) rain gutters to filter and block leaves, debris, and animals from entering the system.

Several types of guards are available, including (but not limited to) basic screens that have a structure incorporated to hold it up; perforated covers with holes or louvers; stainless steel filters; and guards with a nose-forward curve design. They have varying degrees of effectiveness, depending on the situation.



Water flows faster off a metal roof than an asphalt shingle roof. Choose a gutter guard that is designed to handle the quicker runoff. Shown is the E-Z Hydroplane high capacity gutter guard.
COURTESY OF MIDWEST ENTERPRISES (E-Z GUTTER GUARDS).

Volume

One of the top considerations when determining which gutter guards will work the best are the roof load and type of debris that will be challenging the gutters. Since water flows faster off metal roofs than asphalt or other roof types, gutter systems must be able to accommodate the speed and volume.

When a lot of rain is flowing down the roof, either because it's raining heavily or the roof is large and sheds a lot of water, the water may come off the metal so fast that a nose-forward design can fail. The water overshoots the entry point into the gutter at the front of the nose. However, if a nose-forward gutter guard has holes in the top of the guard, it accepts some of the water into the gutter, which slows down the rest of the water so it can go around the nose into the gutter.

Debris

If broad leaf trees are in the vicinity, any of the guard types mentioned above will be a suitable choice. Even if the leaves aren't deflected immediately, they will dry up and blow off.

Pine needles present a much bigger challenge. The needles are so thin they work themselves into just about everything. A solid guard in which the water flows over the forward edge (nose forward design) into the gutter is recommended. It deflects the needles since there are no holes in which to get caught up, while allowing the water entry into the gutter.

Debris that accumulates in gutters encourages standing water, which can cause rust or leaks through the roof and walls into the building. And during freezing weather, the standing water can cause ice dams.

Pests

Birds, rats, and other critters may use accumulated debris to nest in the gutter

ON A METAL ROOF, it's important to not hang the gutter too high. When the roof is almost inside the gutter, there's no room left to put in gutter protection. If the gutter is installed too high, the water will bounce out of the gutter. Gutters should be hung a little lower than if the roof were covered with shingles.

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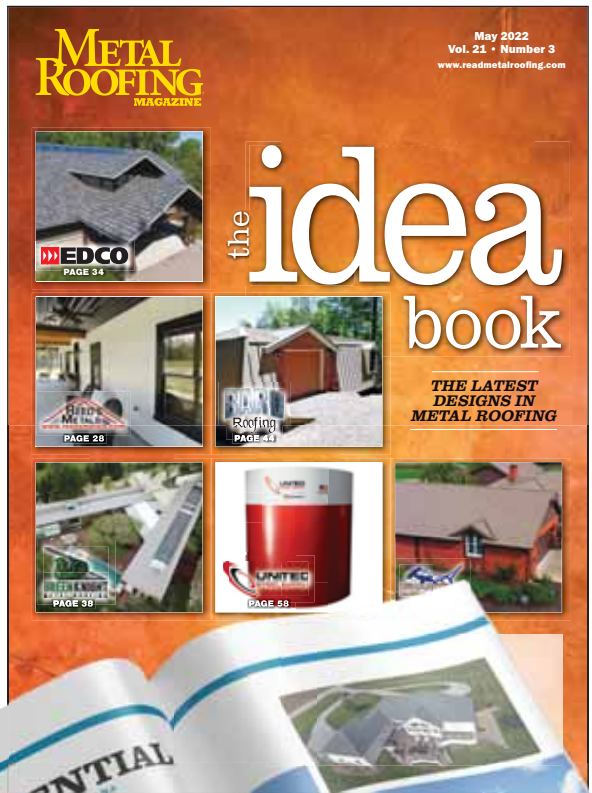

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system. Guards help, but they must be installed correctly to deter nesting. Most guards are installed flush with the gutter, so if there are no gaps at the front and back, critters really can't get in.

However, because certain types of gutter guards/covers create dry shelter, which makes it an even more attractive location for stinging insects, birds, and squirrels to nest and become a major nuisance, it's important to secure the ends of the guards. To do this, extend the gutter screen/guards by about 1"-2" beyond the end cap and fold/bend the end down into the gutter, behind the end cap.

Other gutter guard options are products such as foam inserts or brushes. Used alone or in conjunction with gutter covers, they can be inserted into the gutters to fill the space and keep out debris and pests.

Brush-style gutter guards are comprised of polypropylene bristles that extend from a metal wire core. The bristles prevent debris from settling in the gutters, which allows water to flow through the gutter system without creating a shelter space for pests. Brush-type guards also prevent snow compaction so snow will melt and exit the gutter faster. They don't need fasteners; they need only be sized correctly and placed in the gutter channel to work.

The perforations on the high-capacity gutter guard from E-Z Gutter Guards (Midwest Manufacturing) slows the water flow so it effectively captures the water flowing off a metal roof. Photo courtesy of E-Z Gutter Guards

Safer & Easier Installation

These days, many companies use only safety harnesses for fall protection. While the employee is safe from a fall to the ground, they don't always have adequately installed scaffolding or planks for sure footing or to reach the work, so they can't work confidently or effectively.

Decades ago, rather than safety harnesses, companies invested in scaffolding to assure the entire job was set up so workers could easily access all areas of the roof and gutter and maintain sure footing. Setting up proper scaffolding costs money, but employees do a better job when they have sure footing. The cost of the scaffolding is usually paid back — and then some — by improved productivity, morale, employee retention, profits, and an overall safer and more enjoyable workday. ***MR***

TO PROTECT GUTTERS installed below metal roofs, it's important that an engineered snow retention system (or perhaps an edge melt system) be installed to prevent massive slide-offs. Avalanches of ice and snow can destroy a gutter system and cause other significant damage. In areas prone to heavy snow, hangers should be installed every 16".

How Digital Documentation Prevents Construction Disputes

By Raken, www.rakenapp.com

Resolving disputes is a time-consuming, costly process that can significantly affect the profitability of a job or, in extreme cases, even put a construction company out of business. It's important to invest in tools that help prevent disputes and reduce miscommunication.

Digital construction management software allows field crews to efficiently document progress and monitor compliance on the jobsite. Better documentation leads to better visibility, helping project stakeholders catch potential issues early to avoid disputes or resolve them quickly and fairly when they happen. [https://bit.ly/RakenMR]

How to Improve Documentation with Digital Reporting

Focus on the Field

Transitioning to a digital daily reporting solution is the first step toward improving documentation and ultimately preventing disputes, but if the software you choose isn't easy for the field to use, the positive effects are minimal. Encourage high adoption rates by implementing a solution that makes reporting easier than pen and paper, not more difficult.

Field contractors work hard each day completing project-related tasks, and they don't want to slow down or extend their workdays with a complicated daily reporting process. Software should be intuitive, with a simple interface, so workers can collect consistent, accurate data and share it without hassle.

Make reporting the easiest task of the day, and you'll see an improvement in report quality.

Efficient Data Capture

When contractors can capture information using a mobile device, especially with voice-to-text capabilities, they can

complete daily reports in greater detail and more quickly than with pen and paper.

Daily reporting software also may offer pre-built reports, checklists, and other templates, so workers can track time and progress consistently with less room for information gaps or communication errors. And, when stakeholders review the documentation, they'll know exactly where to find the information they need to accurately assess project status without chasing it down.

Photos & Videos

Photos and videos add enhanced visibility to documentation. Digital solutions may include the ability to quickly capture visual data and add it to daily reports, which allows workers to avoid having to explain through text what can easily be demonstrated with a clear picture.

Project managers and other stakeholders can compare photos to design documents to catch potential issues early or, with automatic time and date stamping, can prove exactly what work was done at a specific time.

Implement Automation

With digital documentation, construction companies have the ability to automate time-consuming manual processes. Reports can be automatically published into an easy-to-understand standard format and distributed to stakeholders instantly.

With less manual data entry, there are less miscommunications. You'll also be able to more easily engage customers by setting expectations and providing consistent updates.

Store Data on the Cloud

Pen and paper reporting takes up space, and in the event of a dispute, it can be difficult to search historical data for vital information. Digital documentation can be stored on the cloud, easily accessible—and searchable—to all stakeholders when needed, as soon as it's uploaded by the field team.

Review Historical Data

Not only does good documentation help construction companies avoid disputes while working through current, ongoing projects, it can also prevent disputes during future projects as well.

Digital documentation allows project managers to review historical data all in one place to gain highly accurate productivity insights and better plan future budgets and schedules. This means better bids and less potential scope changes.

Integrate Your Tech Stack

Integrating your digital reporting software with your existing technology for project management, accounting, or more can further help prevent disputes because you'll instantly share information without duplicate data entry.

For example, field crews can track time to cost codes and share it directly with accounting, who can quickly catch errors or assess when projects are over budget. Or, a project manager can review daily reports as they come in and see how progress stacks up to projections in real time.

Protect Your Business Against Disputes

Detailed documentation is key to preventing disputes and resolving them fairly. Not only will clear, consistent jobsite data help both field and office teams monitor progress and prevent disputes, it also provides proof of progress in the event a disagreement or delay does happen.

The best way to improve documentation is to implement a digital project management tool that is easy-to-use, streamlines reporting, and automates communication. You'll gain better insights from the jobsite that will help the field stay on task, adjust expectations as needed, and clearly communicate with stakeholders before a dispute develops. ***MR***

Hail, Hurricanes & Tornados ... Oh My!

Guarding homes against the worst of spring weather threats starts right at the top

As witnessed by recent events, the instability of spring weather can wreak havoc on a home. In many areas, tornadoes suddenly strike. In others, hailstorms cause costly damage. And in hurricane prone areas, it marks the beginning of the official season (the hurricane season began on June 1 and ends Nov. 30, 2022) with tropical storms already threatening.

While these monster weather events seem vastly different, they have plenty of commonalities. Each can bring powerfully strong winds, strong enough to rip a roof off a home. They also can result in severe damage, either by flying airborne debris or large objects striking and potentially penetrating a home, and intense, sudden downpours. In all cases, it's the roof of a home that often bears the worst of these extreme conditions and must be relied upon to protect a home from even more costly and serious damage.

"Spring brings a trifecta of threats, depending on the region where you live. Climate instability means it's more important than ever to evaluate the resiliency of your home and make improvements with the potential of these damaging forces in mind," said Renee Ramey, Metal Roofing Alliance (MRA) executive director.

Many roofers believe metal is the gold standard when it comes to roofing material to guard against severe weather events. That's because when installed properly, quality metal roofs are rated to stand up to F2 tornado wind speeds (F-scale stands for the Fujita Scale of Tornado Intensity, with F2 equaling wind speeds of 113-157 mph), resist leaks and are much less likely to puncture, tear or crack due to flying debris or massive hailstones.

More roof slopes can reduce the pressure on a roof caused by high winds. PHOTO COURTESY OF EDCO

Aside from choosing better performing and longer lasting materials, inform homeowners that their decisions about installers and materials can have an impact on how their roof performs in extreme weather events:

Pay Close Attention to Installation Practices

Install to protect against the worst of potential regional threats. That includes using quality weatherproof underlayment to further guard against water penetration and recommending the proper use of hurricane clips and interlocking systems that will help the home literally "batten down the hatches" in the event of an extreme storm. If the roof decking or sheathing isn't structurally sound, the roofing materials or upgrades won't matter; it must be stable from the start.

Use Slope Design to An Advantage

More and varied roof slopes can improve the aerodynamics of a structure and reduce the pressure on a roof caused by high winds. For new construction or major remodeling projects, work with an architect and engineer on ways to better control and reduce the effects of strong wind force.

Make the Connection

Securing a roof to the walls decreases the potential of the roof flying off when it's under intense pressure from high speed winds and severe air pressure fluctuations. During a tornado or hurricane, massive changes in air pressure caused by a penetration such as a broken window can blow a roof off. Securely attaching a roof to the walls helps prevent this phenomenon from occurring. Additionally, talk to the owner about whether to consider installing a movable flap next to the seam of the roof, which also can help stabilize air pressure.

Consider Style Practicality

In areas where hail damage is common, a textured metal roof design may help disguise potential dings that can result from heavy hail and flying debris. While a quality metal roof is designed to withstand blows and remain intact and impenetrable even when subjected to the heaviest of hailstorms, minor cosmetic imperfections resulting from impacts can be better disguised with textured vs. smooth styles. When it comes to impact damage, metal vastly outperforms traditional asphalt roofs, which can crack, dislodge and break, resulting in the need for premature replacement and increasing the risk of leaks and interior damage. ***MR***

CanDuit™ Conduit Clamp

S-5! introduces its new electrical conduit clamp for metal roofs.

The new CanDuit™ clamp secures and supports chases and raceways, cable trays, gas piping, condensate lines and other round-shaped objects to metal roofs, in combination with any S-5! clamp or bracket, including the GripperFix® utility mounting system.

Made from electro-zinc coated steel, the CanDuit clamp features two halves that clamp around the pipe or conduit with an EPDM liner pad that protects against abrasion and a threaded M8 stud that allows for attachment to S-5! products—providing easy, organized securement without scratching, corrosion or other damage to the roof.

The new clamp can be used in both residential and commercial settings for a range of applications including electrical, solar, plumbing for gas or water and condensate drainage.

It is available in 14 sizes with outer pipe diameters ranging from .79" (20 mm) to 4.6" (117 mm), adjustability enables minor size adjustment to secure most conduit and other piping, and the M8 threaded shaft mounts directly to S-5!'s non-penetrating clamps for standing seam roofs and factory weatherproofed brackets for exposed-fastened roofs.

Benefits include easy installation, prevention of scratches and corrosion, and a 10-year warranty against manufactured defect.

www.S-5.com

Pro-Grade Driver Bits

Building on its expertise in drilling, boring and cutting tools, Spyder® has unveiled its latest product: impact-rated driver bits featuring Mach-Blue™ Tough Tip™ technology.

Mach-Blue driver bits are designed to last significantly longer and resist breakage better than typical impact-rated driver bits. The new bits have been third-party tested to American Society of Mechanical Engineers (ASME) standards and shown to last up to 70 times longer than standard impact-rated driver bits.

They also feature 33% stronger tip profiles compared to standard bits driven by the company's proprietary Tough Tip technology. This technology incorporates the company's Mach-Blue plating, which strengthens the drive surface, provides extreme corrosion protection, and gives the tools an eye-catching, iridescent blue finish.

Its proprietary IMPACTive™ alloy tool steel and optimized torsion zones actively flex to dissipate peak impact forces. Each drive tip is precision machined for superior strength and fit, resisting cam-out, twisting and breakage.

The bits' impact-rated, 1/4" speed hex allows them to be used in high-torque impacting drivers and conventional rotary drills with three-jaw chucks.

www.spyderproducts.com

Aluminum Camlock Truck Tool Boxes

Buyers Products, a manufacturer of work truck equipment, unveiled its new line of Camlock Underbody Truck Tool Boxes at the 2022 Work Truck Show. Buyers manufactures the aluminum boxes in its manufacturing plant in Northeast Ohio.

The boxes are built with heavy-duty, 0.125"-thick, smooth aluminum, and come equipped with either smooth aluminum or polished stainless-steel doors. A multi-position hasp allows the boxes to be installed on either the driver or passenger side of the trailer, which can help reduce upfitter inventory requirements.

"We decided to add the camlock option to our underbody line-up for applications that need that added layer of security," says Jennifer Pusateri, Truck Tool Box product manager

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Portable First-Aid Station

Regardless of the injury, big or small, it is vital to have first-aid supplies accessible on demand. OSHA requires all businesses to have medical equipment on-site to operate. Major injuries can turn into a tragedy quickly without the proper medical supplies nearby. When not treated promptly, even minor injuries can cause infection, and irreversible long-term damage. Regrettably, not everyone prepares for unexpected accidents until it’s too late, either due to lack of knowledge, to save money, or more often forgetting to have the proper first-aid equipment available. Portable sanitation company Callahead Corporation has designed the first ever Callahead’s First Aid Station: a portable, private heated room filled with emergency medical supplies for the injured and caregivers to ensure injuries can be attended to anywhere safely, and instantly.

The First Aid Station is designed by company President and CEO Charles W. Howard. It was created to deliver quick and easy access to first-aid and trauma supplies within a private, comfortable room to any location when accidents occur. It’s a perfect rental for construction job sites and businesses to help treat injuries before emergency medical treatment arrives. Mr. Howard designed the First Aid Station to ensure everyone is properly prepared for accidents with access to medical supplies within a safe enclosed setting, even in remote locations.

The First Aid Station is an eye-catching red, so it stands out. Its first-aid signage was designed to ensure no doubt where to attend to injuries in an emergency. Constructed of durable, high-density polyethylene to handle any construction site or high traffic location, the interior has two wall-mounted cabinets filled with first aid and trauma kit supplies. In addition, bench seating, shelving, LED lighting, thermostat heat, and wall-mounted mirrors provide a comfortable and convenient area to attend to the injured until professional medical care can be attained.

www.callahead.com

CargoGlide Sliding Truck Bed Platform

DECKED reveals CargoGlide, a heavy-duty sliding bed platform that makes loading, unloading, organizing, and accessing gear more efficient. Available for most full-size and mid-size trucks and cargo vans, the sliding platform allows workers to store and easily retrieve heavy and bulky items without crawling into the back of the truck.

With the pull of a lever, the platform rolls forward out of the truck bed from its locked position. Extending past the end of the bed by as much as 100%, it puts gear that would be otherwise out of reach at chest level.

More than a standalone storage solution, the sliding tray is designed to complement the DECKED Drawer System. Installing CargoGlide, which comes pre-assembled, atop the DECKED Drawer System optimizes truck-bed utility. Owners can store heavy equipment on the platform. Beneath it, they can secure tools and smaller gear inside the drawer system.

It’s compatible with trucks that have a cap installed over the truck bed; it allows users access to every inch of the bed with the accessible sliding tray — eliminating the need to climb into, and around, a height-restricted bed to find the right tool.

It comes in 1,000-, 1,500-, and 2,200-pound payload options, with either 75% or 100% extension of the tray available.

The 1,000-lb, 75% extension option is compatible with the manufacturer’s drawer system.

https://decked.com *MR*

project of the month

Long-Lasting Metal Chosen For Ohio Community's Sports Complex

Donations Make 'Regal' Metal Roof Possible

The Tippecanoe High School stadium located in Kyle Park and owned by the City of Tipp City underwent a new look last year. All of the construction costs were raised by private and corporate donors through the Tipp Pride Association.

The metal roof, which was chosen for its durability and need for little maintenance, is comprised of 24-gauge Regal Red SL150 Panels from Union Corrugating. The most difficult part of the installation was the flashing and making the section where the rotunda and slope meet align. Union Corrugating sent a field tech out to go over how to properly install the flashing. The field tech from Union Corrugating even got up in the lift, and helped Bruns General Contracting's crew install the section to ensure proper installation.

Plans for other buildings, including home and visitor locker rooms, two ticket booths, and a visitor concession stand and will be completed as funding becomes available. ***MR***

Bruns General Contracting

brunsgc.com

Project Overview
Location: Tipp City Stadium, Tipp City, Ohio
Roofing Contractor: Bruns General Contracting
Architect: Alliance Engineering
Roof Measurement: Just over 5,000 sq. ft.
Panels: Union Corrugating SL150, 24 ga.
Underlayment: Mid States 60 mil HT
Coating: PVDF Fluoropolymer Coating with Kynar 500 Resin, Nominal 1.0 mil
Fasteners: Mostly concealed
Rain Handling: Gutters and downspouts

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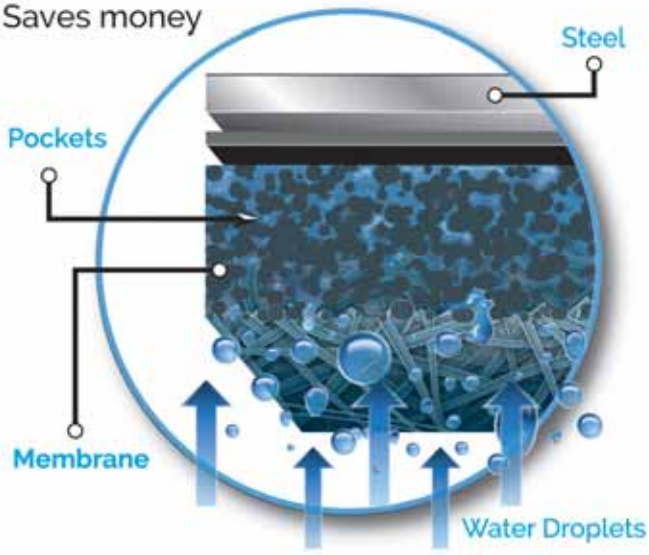
- Workshops/unattached garages
- Open-walled structures
- Carports, truck ports & RV storage

Stop the Dripping from Condensation

DripStop is applied at the time of roll forming

- Arrives on-site already on roof panels
- Helps fight corrosion
- Significantly reduces construction time
- Saves money



When condensation occurs, moisture gets stored in the specially designed pockets of the DripStop membrane.

DR!PSTOP
Condensation control

Ask for it from your preferred steel panel supplier

www.dripstop.com or call us at: **1-(937) 660-6646**