CLOSER LOOK: SMP AND PVDF COATINGS | RUNNING A HEALTHY METAL SHOP

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APRIL/MAY 2025
Vol. 8, No. 2

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Smiling Through Challenges

By Karen Knapstein

As I reviewed the pages in this magazine, I thought to myself, "This issue was really challenging." More challenging than some, but less challenging than others.

But oh, so satisfying. I hope you find reading this issue worth your time. I got to talk with a lot of great people putting it together. I don't want to list them all here because I'm afraid I would miss someone.

It feels like we've got something for everyone within these pages. You'll find guidance for running a healthy metal shop beginning on page 8. That certainly applies to everyone; I can't over-emphasize the importance of keeping everyone safe throughout the workday.

You'll find advice about preparing panels and trims for shipping beginning on page 32. After all, you can make perfect components, but what good are they if they don't reach the jobsite in the same condition.

AkzoNobel contributed an in-depth article about SMP and PVDF coatings that taught me a lot; hopefully you'll pick up a point or two, too.

You may have noticed that our cover is different than what you've come to expect. It's courtesy of New Tech Machinery ... I had to put it on the cover, because seeing the equipment specialists smiling on the job made me smile. In fact, I smile every time I look at this picture.

May we all be blessed at some point in our lives to smile on the job like these folks are. I'll share that I feel blessed; I'm even smiling as I write this.

Until next time — be well.

— Karen Knapstein

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On The Cover:
New Tech Machinery SSQ II machine specialists. *Photo courtesy of New Tech Machinery*

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Rollforming Magazine (ISSN: 2639-6742) (Volume 7, Issue 2) is published six times per year (March, May, July, September, November and December) by Shield Wall Media LLC, 150 Depot St., Iola, WI 54945. Periodical postage paid at Iola, WI, and at additional mailing offices. Canadian Agreement Number: 40665675. POSTMASTER: Send address changes to Rollforming, Barb Prill, PO BOX 255, Iola, WI 54945.

Mailed free to roll-forming professionals and their suppliers throughout North America. Others may subscribe: $19.98 for 1 year, $36.98 for 2 years, and $50.98 for 3 years.

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Steel Market Update

Courtesy of Majestic Steel USA

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Each week, Majestic Steel USA [majesticsteel.com], a steel service center that distributes prime, flat-rolled galvanized steel sheets and coils to industries across the United States, compiles the Core Report. The Report is "an in-depth look at key indicators and trends driving the steel market. Market volatility demands your attention about what's driving prices, when and why."

Majestic Steel has granted *Rollforming Magazine* permission to publish information excerpted from the Report for its readers.

SCRAP PRICING

According to Prime Scrap Price, Market Conversations for the week ending February 14: After improving in January for the first time in seven months, prime scrap pricing jumped sharply in February. Prime scrap is now up $65/gt (17%) over the past two months and is now at its highest level since February 2024.

Several factors contributed to the sharp uptick, including tight scrap supply, improved demand, rising hot rolled pricing, and uncertainty surrounding potential tariffs on Canada and Mexico.

Shredded scrap pricing increased sharply, as well, climbing $40/gt to $420/gt.

SPOT IRON ORE

The Platts, Spot Iron Ore report dated February 14 reports that pricing increased for the fifth consecutive week: Spot iron ore pricing settled at 106.77/mt, up slightly from the week prior. This is up 6% over the last five weeks to a four-month high.

Concerns around supply disruptions from Western Australia increased as Cyclone Zelia has intensified into a Category 5 system, the first Category 5 hurricane to hit the iron ore region since 2007.

DOMESTIC STEEL PRODUCTION

According to the American Iron & Steel Institute, Weekly Domestic Steel Production report dated February 14, domestic raw steel production rose sharply the week before, now up for the second consecutive week. US mills produced an estimated 1,675k tons at a 75.2% utilization rate. This was up from 1,656k tons and a 74.4% rate previously.

Production increased in four of the five regions with the largest increase (in tons) coming from the Midwest region. Production from the Midwest region climbed from 233k tons to 250k tons.

Year-to-date production is now up 2.3% compared to the same time period from 2024.

ZINC PRICE & INVENTORY

Based on the London Metal Exchange, Weekly Zinc Price and Inventory Report and the Shanghai Futures Exchange, Weekly Zinc Inventory Report, dated February 14:

Zinc pricing increased for the second consecutive week. Zinc pricing ended the week at $2,843/mt ($1.290/lb), up from $2,815.50/mt ($1.277/lb) previously.

Global zinc inventory rebounded for the second consecutive week due to a surge in Shanghai warehouse inventory. LME warehouse inventory slipped for the 10th consecutive week, dropping from 172,475 mt to 2163,425 mt. Shanghai warehouse inventory climbed sharply from 39,592 mt to 67,503 mt.

DODGE MOMENTUM INDEX

The Dodge Momentum Index (DMI) is a leading indicator for nonresidential construction spending 9-12 months into the future. According to the January 2025 Index: The January DMI came in at 225.7, up from an upwardly revised 213.6 reading in December. The index is up 23.3% from last January and is a new record high for the index.

Planning increased for both commercial and institutional projects, climbing 4.2% and 8.7%, respectively. On the commercial side, data centers, office buildings, and warehouses led the increases. Education and healthcare projects led the way for institutional projects.

The Majestic Steel USA Core Report library can be accessed at https://www.majesticsteel.com/majestic-insights/core-report/. RF

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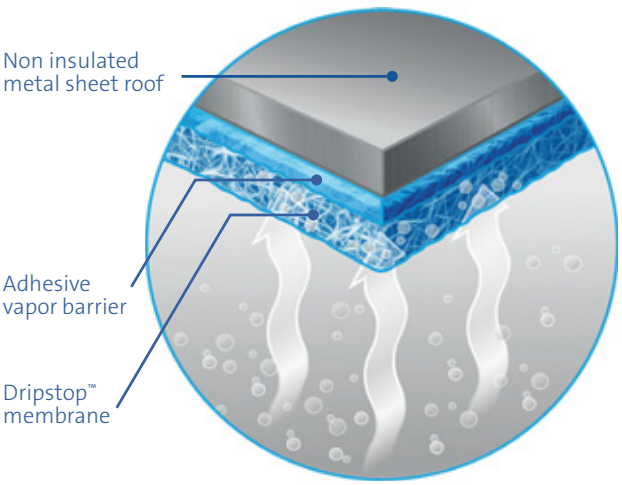

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Running a Healthy Workshop

Basic Safety Protocols Help Keep a Roll-Forming Shop Safe

■ By Courtney Glover

Safety is a vital part of running any business, especially those with high risk. When working with heavy machinery such as roll formers, there must be proper safety protocols in place. Whether a brand-new employee or a seasoned veteran, safety procedures such as lockout/tagout and regular trainings are essential for a healthy and safe metal-forming shop.

Safety guards should remain in place unless equipment is locked out and tagged out.
PHOTOS COURTESY OF MWI COMPONENTS

SAFETY PROTOCOLS

Rick Johnson, MWI Components' quality control manager, gave his input on what safety protocols should be in place to protect workers in a roll forming shop. He advised that hazards need to be guarded by hard guards, light curtains, or other sensing devices to keep people away from hazardous areas. Proper guards can avoid serious injuries, which can be as extreme as amputation and/or death.

Lockout/tagout (LOTO) protocols are also essential to protect workers when servicing or maintaining machinery. Johnson stated that MWI Components uses LOTO every day to prevent accidents. Each piece of equipment has a lockout/tagout procedure, and these procedures are used whenever an employee is servicing equipment where the employee could be exposed to hazards involving the equipment.

Another safety precaution is to utilize cut resistant gloves. Using these gloves has prevented cut-related injuries and has reduced the severity of cuts that could have been very serious down to first-aid treatable cuts.

Regular machine maintenance and inspections ensure that machines are running correctly. A maintenance schedule should be implemented to check for wear and tear, lubrication, and adjustments. Being proactive can prevent mechanical failures that may lead to accidents. Modern roll forming machines come with various safety features. These may include emergency stop buttons, guards, and sensors. If working with these machines, it's important to ensure that these features are easily accessible and functioning as they should.

TRAINING

Comprehensive training programs should cover machine operation, safety protocols, and emergency procedures. Training should ensure that all employees understand their specific safety responsibilities. Hands-on training to allow employees to familiarize themselves with machinery and safety equipment can significantly enhance the employee's confidence and competence, which will lead to safer operations.

New employees should receive safety training before they enter any production areas. At MWI Components, all employees, old and new, get annual training which includes emergency response, machine guarding, bloodborne pathogens, slips, trips, falls, and accident prevention. Reoccurring trainings help keep employees vigilant to potential workplace hazards and reduces the risk of accidents by keeping safety knowledge fresh in the employees' minds.

MOST COMMON SAFETY HAZARDS IN A METAL SHOP

Johnson explained that at MWI Components, crushing hazards on presses and brakes are safety hazards. These hazards can be avoided by two-handed controls, light curtains, and physical guarding. Roll formers additionally have pinch and crush hazards that can also be avoided by physical guarding, light curtains, and zone scanners.

Johnson believes that "good housekeeping" is the number one prevention tactic to prevent slips, trips, and falls. Any liquid spills should be identified, and "wet floor" signs should be placed

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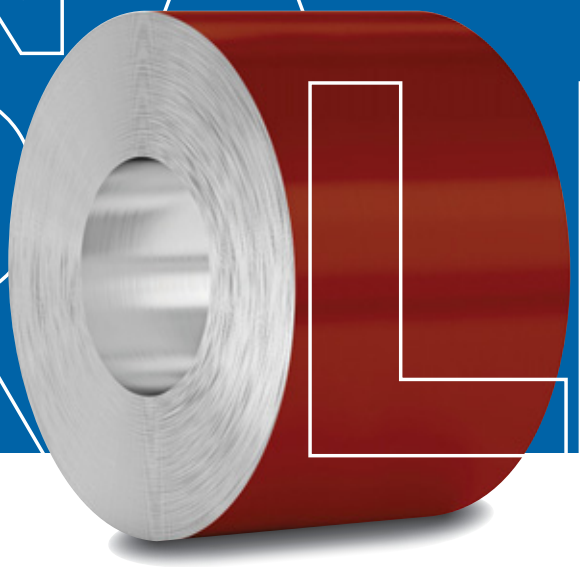

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until the spill can be cleaned up. Any scrap that misses the scrap containers should be cleaned up several times per hour to avoid any safety hazards as well. Clear signage of hazards, safety zones, and emergency exists along with clear walkways and proper material storage are important and effective ways to prevent and mitigate hazards.

FIRST AID AND EMERGENCY RESOURCES TO HAVE ON HAND

First aid stations should be strategically placed around the shop so travel distances are short whenever and wherever first aid supplies are needed. A first aid "go bag" for first responders to take to the accident site is supplied so that runners don't need to run back and forth to the first aid station during an emergency. Eyewash stations should also be located throughout the facility.

Emergency exits should be marked with lighted signs and emergency lights that come on if the power fails. Signs should be placed to indicate evacuation and weather shelter plans. It's important that all employees are aware of the emergency plans ahead of time to effectively react when faced with an emergency.

At MWI Components, the safety committee meets every month. Part of the meeting is spent discussing emergencies and how they will be responded to. They also hold emergency response drills several times per year.

CHALLENGES

One key challenge for safety in the roll-forming industry is identifying hazards and having stop-gates put into place to minimize or reduce those hazards. Moving parts, hot materials, emissions from furnaces, and slips and trips are all potential hazards within the roll-forming industry. Identifying all locations that display these hazards and utilizing preventative measures to avoid injury before injury occurs may be an important challenge that each day brings.

Another key challenge, Johnson explained, is the aging of the U.S. workforce. Depending on what someone's body can handle will depict how serious the result of the hazard may be. What a person's body could handle last year may vastly differ than what it can tolerate this week. Johnson suggests that stretching, good posture, proper lifting techniques, and getting the work positioned into the right spot are ways to prevent injuries, no matter the age of the worker.

Using proper methods and ensuring pathways are decluttered and well lit will prevent incidents.

NOISE AND AIR POLLUTION IN ROLL-FORMING SHOPS

To conquer loud operations, consider using roll forming machines with lower noise emissions. This may mean equipment with advanced design, quieter motors, or optimized machinery. Proper lubrication of any moving parts can also decrease noise levels due to reduced friction. Otherwise, loud operations should have sound enclosures to minimize the volume of noise that reaches employees. Using sound-absorbing materials or enclosures will further dampen the noise. Use materials such as acoustic foam, mineral wool, or other sound-absorbing materials to line walls, ceilings, and other

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Tools should be safely stored to prevent them from being a hazard.

Safety measures for MWI Components' reflective insulation machine include high-visibility caution tape on the floor, extensive machine guards, cautionary paint, and air pollution mitigation.

surfaces around the roll former. If the noise levels are still high, hearing protection such as ear plugs or other PPE should be implemented to avoid hearing damage.

Achieving optimal levels of air quality in the shop ultimately comes down to filtration, ventilation, and collection. Without proper ventilation equipment, people who work in a metal fabricating facility could be endangering their lungs over a long period of time. An air filtration device will capture fine dust and debris particles in the air. Exhaust fans that move air in cold climates should be utilized to ensure that polluted air is exchanged for fresh air from the outside.

Use caution barriers when machines are undergoing maintenance and servicing.

PROMOTING EMPLOYEE HEALTH

Encouraging employee health impacts individual wellbeing, boosts performance, and helps create a positive and productive work environment. Healthy employees are less likely to be absent from work and are more engaged while at work. Johnson explains that at MWI Components, they run a health initiative at least once per year for anyone that wants to join. These initiatives encourage exercise and healthy eating.

Employers can implement different approaches to encourage employees' physical and mental health. They may offer incentives such as gym memberships, challenges, or rewards for participation. Offering healthy snacks and meals in vending machines or catering may promote eating healthy. Providing access to health screenings such as blood pressure checks, cholesterol tests, and flu shots can help employees identify and address potential health risks. It may also be beneficial to hold workshops on topics such as stress management, healthy eating, and disease prevention. Increasing employees' awareness and knowledge promotes actively working towards a healthy lifestyle.

CONCLUSION

There are different factors to running a healthy metal-forming shop. These factors include ensuring safety within the building, offering first aid and emergency resources, effectively training employees, minimizing noise pollution, and promoting employee health. A healthy and safe workshop will encourage productively and help avoid serious injuries. A safe workplace is an enjoyable workplace. **RF**

Courtney Glover *is a freelance writer and photographer based in Milwaukee, Wisconsin. She contributes her talents to various publications.*

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Perforating Panels & Trims

The Role of Perforated Metal Panels in Modern Metal Forming

■ By Karen Knapstein

Perforated metal panels have become a staple in the metal building industry, offering both functional and aesthetic benefits that keep your customers coming back for more. As a metal forming shop, supplying perforated components alongside your solid panels and trims means you're one step closer to providing a one-stop solution—no need for your customers to shop around for additional materials. In this article, we'll explore the uses of perforated metal panels, take a look at how they're manufactured, and share insights on equipment features and maintenance that will help you stay ahead in this competitive market.

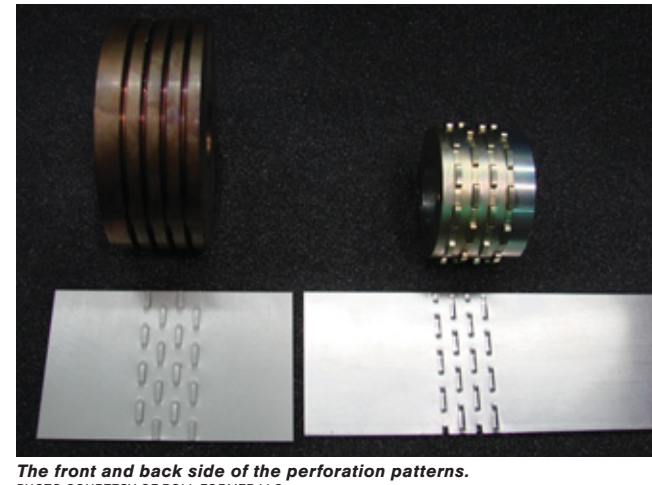
The Roll Former LLC Ag Panel Perforation Machine has been around for 15-20 years. PHOTO COURTESY OF ROLL FORMER LLC.

COMMON USES THAT DELIVER REAL BENEFITS

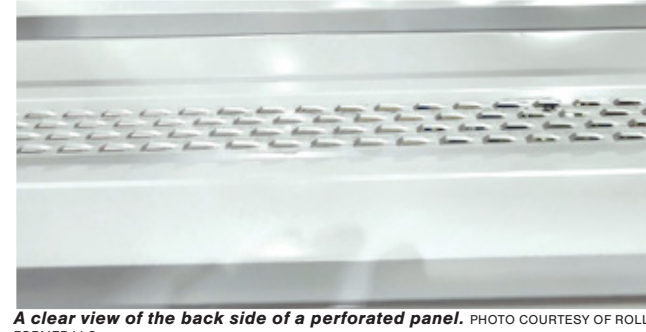
Perforated panels are versatile. One of their primary functions is facilitating ventilation. Whether it's for soffits, ridge vents, or other building components, these panels allow passive airflow, reducing the need for mechanical cooling systems. This is particularly important in structures like warehouses, agricultural buildings, and equipment sheds, where maintaining proper airflow can prevent moisture buildup and improve energy efficiency. With state codes in many regions requiring a specific net free area for air intake and exhaust, perforated panels help meet those requirements without compromising on design.

But the benefits don't stop at ventilation. Perforated panels also act as effective sunshades, filtering sunlight to reduce heat gain while still maintaining visibility and airflow. This dual functionality makes them ideal for modern metal buildings where energy efficiency and comfort are paramount.

Another effective application is their role in sound management. Metal buildings, especially large, open spaces like event barns, often suffer from excessive echo and reverb. By absorbing and diffusing sound waves, perforated metal panels minimize these issues, ensuring that speeches, music, and everyday conversations are clear and balanced. Imagine hosting a wedding in a metal barn where every vow and musical note can be clearly heard; well-designed perforated panels can help make that happen.



The front and back side of the perforation patterns. PHOTO COURTESY OF ROLL FORMER LLC.



A clear view of the back side of a perforated panel. PHOTO COURTESY OF ROLL FORMER LLC.

A SIMPLE YET EFFECTIVE MANUFACTURING PROCESS

You might be surprised to learn that making perforated panels is a straightforward process. Most of the time, it comes down to two basic methods. Some machines punch holes completely through the metal, while others use a lancing process. In the latter, the machine stretches out a portion of the metal to create a "bridge" on the back side of the panel with openings on either

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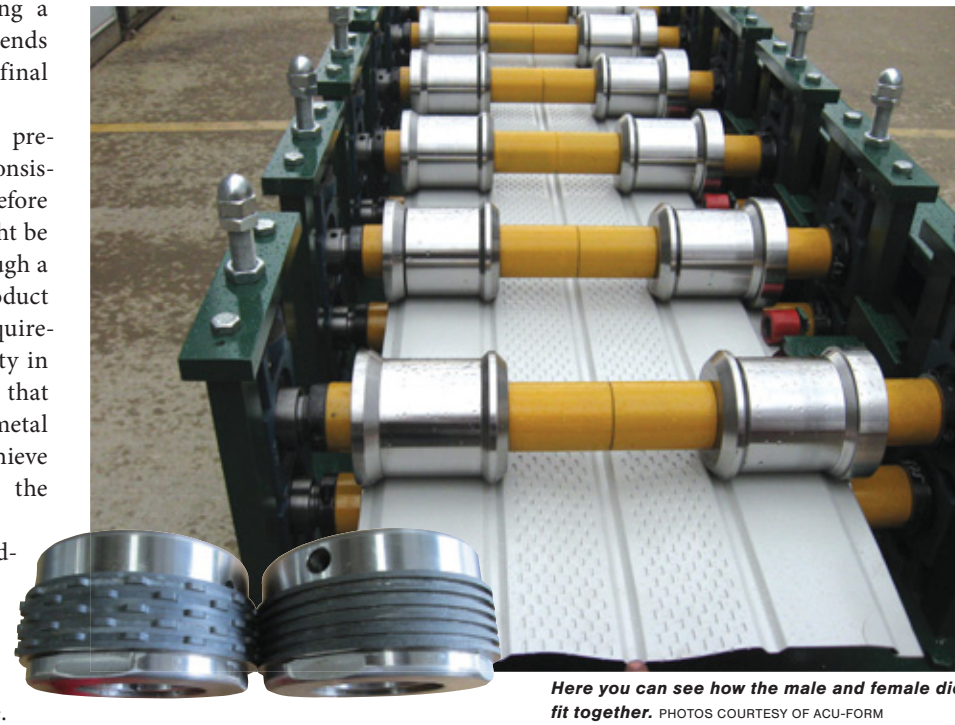
side. The choice between punching a hole or lancing the material depends largely on the intended use of the final product and the die configuration.

For example, some companies pre-punch their soffit panels with a consistent 1/8-inch perforation pattern before forming. In contrast, ag panels might be roll-formed first and then run through a perforator, ensuring the finished product meets the necessary net free area requirements for ventilation. This flexibility in the manufacturing process means that whether you're working with sheet metal or pre-formed panels, you can achieve the exact perforation needed for the application.

Metal thickness is another consideration. Typically, perforated panels are produced using materials ranging from 29 gauge to 26 gauge for most applications, though some setups can handle up to 22 gauge. (or .032" to .040" on aluminum.) The choice of gauge depends on the purpose and desired strength and flexibility of the finished panel.



Here you can see how the male and female dies fit together. PHOTOS COURTESY OF ACU-FORM

TIMING IS EVERYTHING: WHEN TO PERFORATE

One key aspect to consider in your production line is the timing of the perforation process. Depending on your equipment and the end use, you might choose to perforate the metal before, during, or after forming. In many cases—such as with soffit panels—it makes sense to perforate the metal as it's being formed. This approach ensures that the perforations remain intact and are not crushed during subsequent roll-forming processes. In other scenarios, like with ag panels, the material is first formed and then run through a perforator.

EQUIPMENT FEATURES

Modern perforating equipment offers a range of features that can be tailored to your specific requirements. Roll Former LLC offers two perforating machines: The Stand Alone Perforation Machine and the Ag Panel Perforation Machine. Both machines use dies made from heat-treated tool steel and have a history of productive service. The company has been making the Stand Alone Perforation Machine for 25 years, and the Ag Panel Perforation Machine has been around for 15-20 years.

What's more, they're simple to use. The Roll Former LLC machines often come with electric gearboxes, making them plug-and-play solutions that streamline your workflow.

Acu-Form's perforating machines are also built to last. They come equipped with D2 tool steel dies and 3-inch shafts—features that ensure precision and uniformity. Using a shaft with a bigger diameter is critical; a shaft with a smaller diameter might flex, leading to uneven perforations. With options to create custom dies in various widths—from 1/2-inch strips to 3-inch strips—you can cater to a wide array of perforation patterns and net free area requirements.

Another noteworthy feature that Acu-Form offers is the option for spiral cutting. Unlike straight-line cutters, spiral cutters maintain a continuous cutting action. This not only improves the consistency of the perforation pattern but also minimizes interruptions that can lead to an interrupted or uneven cut. For shops looking to offer a premium product with excellent performance, these customization options can be a real game-changer.

Many perforating machines today are designed for ease of integration into your existing production line. Whether you're processing flat stock or pre-formed panels, there are standalone machines available that can handle materials of varying widths.

MAINTENANCE: KEEPING YOUR EQUIPMENT IN TOP SHAPE

As any seasoned professional will tell you, proper maintenance is the key to ensuring your equipment runs efficiently for years to come. The adage "take care of your equipment and it will take care of you" couldn't be truer when it comes to perforating machines. The primary maintenance tasks involve keeping the dies clean and well-lubricated. If you're running material with a clear plastic film,

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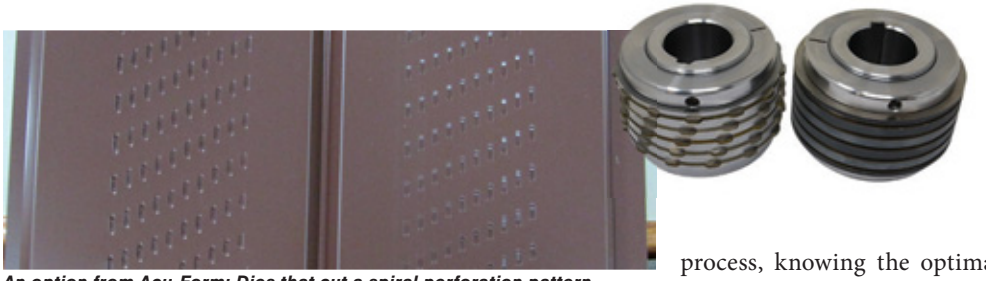
using a water-soluble oil can prevent buildup and ensure smooth operation by preventing polyfilm from building up on the forming rolls and interfering with the dies. The Roll Former machines come equipped with a gravity-fed oiler that drips oil onto perforation rolls to keep them lubricated, which helps keep the cutting edge as sharp as possible for as long as possible.

Neglecting these routine maintenance tasks can lead to uneven perforations and even cause premature wear or damage on the dies over time. Regular cleaning, proper lubrication, and timely replacement of worn components will keep perforators performing at their best. This proactive approach not only extends the life of your equipment but also ensures that every panel you produce meets the high standards your customers expect.



An option from Acu-Form: Dies that cut a spiral perforation pattern.
PHOTOS COURTESY OF ACU-FORM

MEETING DEMAND AND SECURING YOUR FUTURE

The demand for perforated metal panels shows no signs of waning. In fact, as metal buildings continue to evolve, so does the need for components that enhance both functionality and comfort. Perforated panels are essential not only for proper ventilation but also for maintaining acoustic quality and energy efficiency in a wide range of applications.

From serving as sound barriers in large event barns to acting as ventilated soffit panels that prevent condensation and mold, perforated panels play a vital role in modern construction. They even find their way into more specialized applications, such as providing ventilation and aesthetic detail in ridge cap systems (commonly known as Z-bar products) and acting as skirting around prefab homes.

For metal forming shops, expanding your product line to include perforated panels and trims can be a smart business move. Offering a complete range of products means your customers have one less supplier to worry about—and that convenience can be a significant competitive advantage in today's market.

FINAL THOUGHTS

In today's fast-paced and competitive metal building industry, perforated metal panels are far more than just a design element—they are a necessity. They enhance ventilation, improve acoustics, and contribute to the overall energy efficiency and comfort of a building. By understanding the manufacturing process, knowing the optimal points for perforation, and properly maintaining your equipment, you can ensure that your products remain in high demand.

For roll-forming shops looking to stay ahead of the curve, investing in high-quality perforating equipment is a smart decision. Not only will it expand your product offerings, but it will also help you build lasting relationships with customers who appreciate the convenience of sourcing everything from one trusted provider.

Acu-Form perforating machine.
PHOTO COURTESY OF ACU-FORM

Remember, perforated metal panels are here to stay—and with the right approach, they can be a significant driver of success for your business. So, take a close look at your current capabilities, evaluate the demand in your area, and consider how expanding your perforated product line can lead to new opportunities and greater customer satisfaction. After all, in the world of metal forming, versatility and efficiency go hand in hand.

By staying informed about the latest trends, investing in top-notch equipment, and maintaining a commitment to quality, your shop can continue to deliver the high-performance products that the market demands. **RF**

Outstanding Service that Never Skips a Beat.

Metal Roofing Magazine
METAL OF HONOR 2025

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NEW TECH: Innovation Is Their Name

Rolling You Over with Great Service Is Their Game

By Linda Schmid

Early on, Larry Coben and his wife Rhoda focused their business, Apex Metals, on architectural components and accessories. In 1991 they branched out with New Tech Machinery (NTM) and introduced the SSP roof panel machine, the first portable machine with a polyurethane drive, now standard in portable roll-forming equipment.

The company still operates in greater Denver, but in 2004, they opened a new manufacturing facility in Hermosillo, Mexico. This new plant enabled them to cut costs and increase production, and over the years it has become a state-of-the-art facility, working in tandem with the plant now located in Aurora, Colorado.

The company thrived on innovation and played a prominent role in the revolution of portable roll forming that brought panel fabrication directly to the jobsite. In 2015, the Cobens sold the company to Mazzella Companies, based in Cleveland, Ohio. NTM's plant, however, remains in Colorado. Mazzella also owns Sheffield Metals.

Teaching new users about the features on a New Tech roll former.
PHOTOS COURTESY OF NEW TECH MACHINERY.

NEW TECH TODAY

The company specializes in portable roof and wall panel machines and seamless gutter machines. The machines fabricate standing seam panels, flush wall, soffit, and board-and-batten siding. They also manufacture their WAV wall panel machine that produces wall panels for commercial and industrial applications. Their signature product is the SSQ II MultiPro roof and wall panel machine, which is capable of running 16 different profiles.

With machines on every continent, they are global, with a customer base of roofing or seamless gutter installation contractors and suppliers like Sheffield Metals, Drexel Metals, Petersen Aluminum, and in-plant panel manufacturers.

"A good percentage," Tom Laird, Senior Account Manager said, "are chop-and-drop people. They take the machines to the job site and run the panels there, so customers avoid freight costs, order errors, and panel damage."

"Although used mainly on the ground," Laird continued, "the roll formers can be elevated to roof level so that panels run out onto the roof's surface. When you are doing 60- or 80-foot panels or more this is a huge advantage because you can avoid flexing, bending, and hauling. Some customers use these machines in-shop, too."

For years, customers had asked about notching the panels within the machine, and NTM developed a built-in notcher on the SSQ II. The snap-lock style can have problems with water or insects getting in the eave end where the panels lock together, but now they can notch them and make a fold-over tab instead of caulking or using foam closures. The machines also have been modified for easy profile changeovers.

Listening to customers led to the tilt screen to reduce glare and the move to a powder-coated cover to help keep the machine cooler and eliminate sun reflection. These improvements all come from

learning about customer challenges.

CHALLENGES

Sometimes challenges can spur a company on to do great things. The recession of 2007 and 2008 brought the growth the company was experiencing to a halt, as happened with many manufacturing companies. Company leadership decided they had to remain aggressive, so they continued to advertise and innovate.

"If you continue to innovate and don't pull back on marketing and advertising during slower times, you will come out of those times as a frontrunner in the market," Laird said, adding that that was the viewpoint of the COO at the time. And it worked.

Rick Zand, Content Specialist, added that the company has had a lot of great leadership throughout the years. Many employees have been there for over a decade, bringing great drive and a vision of what New Tech could be.

Roll forming rain gutters with a New Tech machine.

"But," Laird said, "even if you have the best product on earth, if you don't have good people to market, advertise, and sell it, it will not be successful."

BE COMPETITIVE WITH EMPLOYEES, TOO

The company sees competitive salaries and benefits as a must to attract and retain quality workers. Further, the company provides a stable, collaborative

work environment where leadership sets the tone and parameters, then steps out of the way and lets people do their jobs. They also encourage employees to speak up; they want to hear their ideas and their questions. They listen to feedback about work processes and nurture team spirit.

In 2015 when Mazzella Companies acquired New Tech, they had the same mindset, encouraging their companies to find better ways to do things, to think outside the box, and they always welcome the thoughts and ideas of new people, who haven't been immersed in the culture for years.

SPECIALIZED PACKAGES

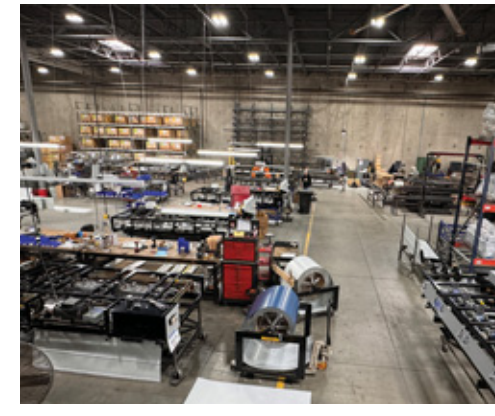
While maintaining many returning customers, the sales team has also been working with those new to portable roll forming. They provide guides, articles, and videos, but they found that customers became overwhelmed with all the information, so they developed machine packages based on the customer's focus. There are different packages for residential and commercial portable roll forming, and in-shop roll forming. This approach has made it easier for customers to understand what they need and how much it will cost, thereby aiding the New Tech team in selling their machines without overloading customers with too much information.

COMPETITIVE SERVICE

The service department has continued to expand. Machine technicians take calls to walk customers through a solution to any machine problem they may be having. They also conduct training for all their roll-forming customers, and travel to work with customers on-location.

"Our service people are very good," Zand said. "They know the machines inside and out, and they will fly out to your site to provide service and training on your machine, wherever you are in the world."

The company's Learning Center, found on its website, offers service videos and articles. Their website also features a Support portal where machine owners can get many of their questions answered.



Views of the New Tech Machinery production facilities.

HOW CAN YOU MAKE YOUR BUSINESS MORE COMPETITIVE?

Laird has some advice for success in the roll-forming industry:

1. Know your market. Understand what drives the market. Is it a certain profile? Who are your competitors? What do customers in this market expect? For example, it's hard to sell anything but metal panels in the Florida Keys due to storms they experience.

2. Have a strong plan. A business plan helps keep a company moving forward, moving toward a goal. Know where you want to be in 1, 5, 10, and 20 years. Then develop plans for how to get there from where you are. There may be times when the plan has to be adjusted, and that's okay. But developing long-term goals and short-term goals are important; they are like a map or GPS that helps you find your destination instead of wandering around lost.

3. Stay ahead of the technology. When you are slow to adopt newer, more efficient ways of doing things, you will not be an industry leader. If you completely refuse to at least keep up with technology, you set yourself up to watch all the competition leave you behind.

4. Try to keep lead times down, but watch that quality doesn't go down.

ROLLING INTO THE FUTURE

The company's board and batten profile came out last year, and New Tech continues to innovate. New and exciting things are on the horizon. The future will be driven by what customers are doing, what they want to be doing, and the feedback they provide.

New Tech Machinery is founded on the promise of better technology for a competitive price. They have lived up to this promise for 30 years, and they intend to keep on rolling into the future with that promise intact. **RF**

Hydraulic Coil Handler

Safely Moves & Stores 5-Ton Coils

By Karen Knapstein

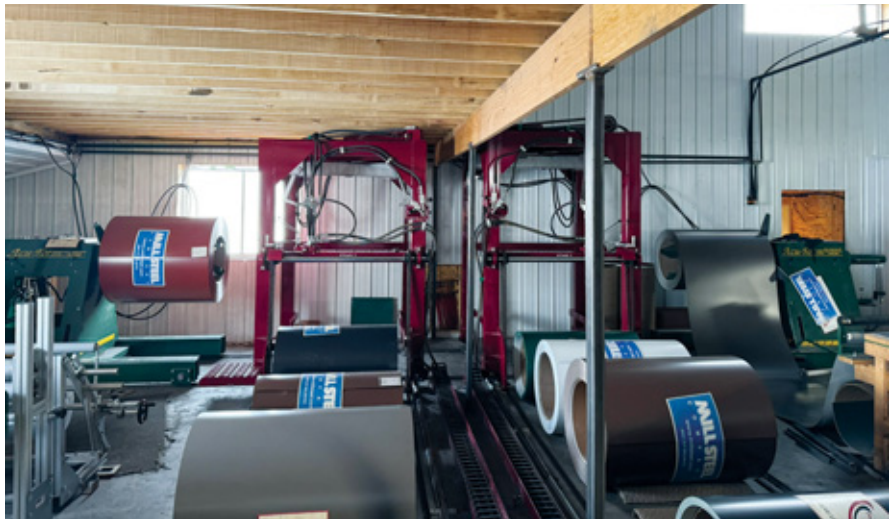
At Star 1 Products, innovation often starts with a simple customer request. The Coil Handler machine — one of the company's newest developments — is a perfect example of how the company listens, solves problems, and creates solutions tailored to the unique challenges of roll forming shops. When the first customer approached them about designing a machine that could efficiently store and handle coils within their limited space, they saw an opportunity to build something truly useful.

THE BIRTH OF THE COIL HANDLER

Star 1 Products' Nelson Miller said the first Coil Handler was designed to fit a shop with low ceilings and limited space. The customer needed a way to store coils in a shop with low ceiling space while still being able to access them efficiently. They had seen a single-row coil handler in use and wanted something similar but larger. So Star 1 built its first unit from the ground up, figuring out the design as they went. The first unit was configured to six coils wide and thirteen coils long, so it could accommodate 78 coils. From there, the company refined the system and developed additional single-row models inspired by the original concept.

Ray Wagler once again played a key role in the foundation of this design. Many of the products built at Star 1—

Coils are safely stored out of the way, yet can be accessed easily and efficiently.
PHOTOS COURTESY OF STAR 1 PRODUCTS.



such as wide forks, the film applicator, and the long folder—have roots in Ray's original shop projects at Elite Metal. He wasn't interested in manufacturing at scale, but his ideas set the stage for innovations that the team at Star 1 could refine and bring to the market.

REFINEMENTS AND ENHANCEMENTS

The first large-scale Coil Handler, with space for 78 coils, was completed in May 2020. It featured an operator riding along for easy maneuverability. After two years of real-world use, they went back in 2022 to upgrade the design, replacing the original I-beams with stronger ones to improve durability. The machine has proven itself to be a reliable, efficient solution for their customers.

Today, the company continues to push the limits. They've built single-row systems as long as 200 feet—allowing shops to maximize their storage capacity. Most of their standard units are around 100 feet long, which works well for a variety of coil types, including textured and printed colors. With the increasing variety of coil finishes available—camo, wood, crinkle colors—shops need more storage than ever. Nelson says some now stock 60+ different coil options, making efficient, organized storage solutions essential.

SOLVING KEY CHALLENGES

Before the Coil Handler, many roll forming shops relied on forklifts for coil handling. While functional, this approach had its downsides:

- **Availability Issues:** Forklifts are often in use elsewhere, causing delays in coil changes.
- **Coil Damage:** Forklifts increase the risk of damaging coil edges.
- **Inefficiency:** Changing coils with a forklift takes longer, slowing down production.

With the Coil Handler, these issues are eliminated. The dedicated machine ensures coils are always ready for quick changes, reducing downtime and increasing efficiency. Since operators ride along with the coil, they have better visibility, reducing the risk of damage. Customers who have adopted this system in Michigan have reported significant improvements in speed and organization, making it easier to keep track of inventory and access the right coils when needed.

THE COIL HANDLING PROCESS

In most cases, coils move from the Coil Handler to a decoiler and then into a roll former. They've designed the system to work seamlessly with mobile decoilers, allowing for a smooth transition:

1. The Coil Handler grabs a coil and moves it to the decoiler.
2. The decoiler, mounted on wheels, moves into position.
3. The coil is secured, and the decoiler moves back in line for the next step in processing.

BUILT TO LAST

The Coil Handler is constructed with a heavy-duty tube-frame design. It features a hydraulic cylinder with a five-ton lifting capacity, making it capable of handling 10,000-pound coils. Powered by hydraulics, the system is designed for longevity and durability.

INSTALLATION AND FOUNDATION REQUIREMENTS

They've installed Coil Handlers on 6" concrete slabs, but they also adapt

to custom requirements. In one case, a customer wanted the ability to drive a forklift across the tracks. Since their building was still under construction, they built a recessed trench in the concrete to house the Coil Handler tracks, ensuring smooth forklift access without interference.

A NICHE SOLUTION FOR A GROWING MARKET

At Star 1, they develop solutions that meet the specific needs of roll forming shops. While electronic and computerized options are available in the market, the Coil Handler is designed to provide hands-on control—making it an excellent fit for Plain Communities and other businesses that prioritize safety, accuracy, and efficiency without the need for more complex technology.

They follow a simple but effective approach: Build a prototype, test it in real-world conditions, refine the design, and then expand production. This process has served the manufacturer and the roll-forming industry well, not just with the Coil Handler, but also with other products like the Felt Applicator.

LOOKING AHEAD

The demand for efficient coil storage and handling solutions continues to grow. With lead times currently at six to eight months, the team is staying busy fulfilling orders. As metal roofing and siding products evolve, they expect even greater interest in solutions that streamline workflow and maximize shop space.

With the Coil Handler, Star 1 has created a tool that doesn't just store coils—it transforms the way roll forming shops operate. They look forward to helping more customers improve their efficiency, organization, and productivity. **RF**

The position of the operator gives them a better view throughout the coil picking and moving process. PHOTOS COURTESY OF STAR 1 PRODUCTS.

Temporary Protective Film

Usage, Storage, and Removal of Temporary Protective Film

■ By Rick Zand, New Tech Machinery

Temporary protective film (TPF) protects metal roofing panels during handling, transportation, and installation. It helps prevent scratches, scuffs, and other damage before the panels are fixed in place.

However, not all films have the same characteristics. Understanding how substrates affect adhesion and how to properly apply, store, and remove protective films can mean the difference between a smooth metal roof installation and a major headache.

While it may seem like a simple job of stick-on and peel-off, there's more to using TPF than you might think. From selecting the correct tackiness level and thickness for the coil coating to proper storage and removal, understanding how to best handle protective film can save you time, money, and frustration.

Whether you purchase metal coil pre-treated with TPF or are applying it yourself, you should know something about treating and handling panels with protective film.

In this article, industry experts explain the dos and don'ts of using TPF. Their insights highlight the importance of careful handling and storage, how TPF adhesives work with different types of paint systems, and why it's critical to get it right.

Protective film applied. PHOTO COURTESY OF GLOBAL FILM SOURCE.

WHAT IS TEMPORARY PROTECTIVE FILM?

First, it's important not to confuse the protective film with the roof's permanent PVDF (polyvinylidene fluoride) coating. PVDF is a paint system applied to metal coils to provide durability and corrosion resistance. In contrast, protective film is purely temporary—its only job is to protect the coil's finish during handling and fabrication.

Temporary protective films cover a substrate surface, held on by an adhesive that will provide a protective layer to the panels until installation. TPF can be pre-applied to the coil or applied during the rollforming process with a laminator. The film is then removed prior to usage.

As Tom Southerland, National Account Manager at Sheffield Metals International (SMI), explains, "The film is just there to protect the coating in the rolling process and during handling. You tear it off before the panel goes up, or immediately after installation."

Also, while it's still sometimes referred to as PVC film, PVC (polyvinyl chloride) hasn't been used in years as the industry evolved into more advanced protective film solutions. If a contractor or manufacturer refers to it as PVC, they probably mean another type of protective film and may not even realize PVC is no longer used.

Pregis® Protective Films & Coatings, Sheffield Metals International's (SMI) partner for TPF metal coil applications, manufactures a PolyMask™ protective film. As Pregis Sales and Product Manager Bryan McMichael explains, "We supply Sheffield with a co-extruded product—a blend of LDPE and HDPE." This composition improves performance and reduces costs.

HOW IS TEMPORARY PROTECTIVE FILM USED?

The film is a thin, flexible sheet that covers a material to protect it from scratching or other types of damage. Sometimes called PVC, strippable vinyl, peel coat, protective film, mylar, paper, strippable tape, masking, or paint guard film, it's used for various purposes, such as:

- **Protective covering** on metal coils or sheets to prevent scratches and scuffs during handling or transportation.
- **Packaging material for consumer goods**, like new appliances.
- **Products that need temporary protection,** including glass, carpets, solid surfaces like countertops, etc.

In metal roofing and other fabrication processes, TPF is adhered to a panel and then peeled away once installation or transport is complete.

CHOOSING THE RIGHT TACKINESS AND FILM

Not all TPFs adhere to metal finishes the same. Gloss levels, paint finishes, and metallic or matte surfaces affect how well the film adheres and how easily it can be removed later. A smoother surface will need less adhesive, whereas a textured metal, because it has fewer points of contact, will require a stronger adhesive.

SMI's Director of Operations Eric Simonsen emphasizes the importance of tackiness: "When testing the proper tackiness level of the adhesive, different coatings need different recommendations. A metallic paint system, a matte paint system, or a textured paint system each requires a unique level of tack."

In other words, carefully selecting the TPF that matches the substrate surface ensures you won't end up with overly aggressive adhesion that makes removal a nightmare, or with an adhesive so weak that peels off under a ceiling fan.

- **Textured or Matte Finishes:** Often need higher adhesion and tackiness to hold because of the uneven surfaces of the materials.
- **Metallic or Smooth Finishes:** Typically work well with medium or slightly lower tackiness since the smooth surface is easier for the film to adhere to uniformly.

Manufacturers and distributors provide instructions on which level of adhesive to use for a given metal finish based on rigorous testing. Roll-forming machine operators who administer the protective film with an applicator should follow manufacturer guidelines to ensure they use the level of tackiness recommended for a specific metal finish.

THICKNESS AND ELASTICITY

Film thickness and elasticity also play a role in performance. Thicker films may provide more durability but can be harder to remove and less stretchy, which can complicate forming panels. Sheffield Metals, for instance, is moving towards a more uniform thickness across its products. According to Simonsen, "In 2025, we're going with all 1.6 mil thickness product that has really good tensile strength and elongation."

This shift aims to improve handling while maintaining adequate protection—ensuring the TPF can stretch, conform, and still peel away without leaving residue behind. If you're applying the film using an applicator, you'll need to pay particular attention to what type of adhesive you're using. The wrong level of tackiness can render the peeling-off process a night-

mare and leave a residue on each one of your panels.

HOW TPF ADHESIVE STRENGTH IS MEASURED AND RATED

As mentioned, TPF used on metal panels is applied with different tackiness or adhesive strength levels, and manufacturers typically assign numbers or codes to indicate these levels. While there isn't a single universal system across all suppliers, here are the common ways adhesive strength is measured:

1. Peel Strength or Tackiness (Numeric Codes):

- Many suppliers use numeric designations to differentiate films. For instance, you might see a product labeled "2020" or "1666."
- These numbers can relate to both film thickness (in mils or microns) and relative adhesive coverage or intensity (how "sticky" the film is).
- In some cases, a higher second number indicates stronger adhesion, whereas the first number might signify film thickness. Other times, the numeric system is proprietary to the supplier. Pregis uses a code that includes the film thickness, type, color, and adhesive type.

2. Ounces per Inch or Grams per Centimeter (Peel Test Values):

- Adhesive films are also measured by peel strength, often reported in oz/in (ounces per inch) or g/cm (grams per centimeter).
- This testing involves applying the film to a standardized test surface, then measuring the force needed to peel it back at a consistent angle (often 180°) and speed.

3. Thickness vs. Adhesive Composition:

- A thicker temporary protective film doesn't always mean higher adhesive strength; film thickness primarily affects puncture resistance and stretch.
- Adhesion and tackiness (the type of glue and its coverage level) determines how well it bonds to metal or other surfaces.

KEY BEST PRACTICES

One of the biggest pitfalls is leaving TPF panels or coils exposed to the elements. Heat, moisture, and especially UV rays can degrade the film and its adhesive. Southerland warns, "If it gets in the sun, that sun will bake that film on that panel, and you cannot get it off."

In extremely hot climates, just a day or two of exposure can cause this problem.

Time is also a factor. Even if kept indoors, the longer TPF film remains on the panel, the harder it can be to remove. "If it sits on there for more than six months,

even indoors or in a plant, the harder it is to get the protective film off—and after a year, you might not be able to remove it at all," says Southerland.

Simonsen echoes these concerns: "It needs to only be on the coil or in flat sheet form for six months, and it needs to be kept in a certain temperature and humidity range," he affirms.

It's not only the temperature and conditions but the pressure of the coil itself that can chemically break down the PVC film and adhesive if the coil isn't used within that six-month timeline.

Takeaways:

- **Recommended Timeline:**
  - Apply the TPF within six months of receiving it. If it has already been applied to the coil by the supplier, use it within six months.
  - Keep the material in a controlled environment away from heat and moisture.
- **Avoid Outdoor Storage:** Leaving coated panels or coils in direct sunlight or rain for prolonged periods can cause the adhesive to break down and the TPF to become brittle. "If it's exposed to too much UV, the plastics will actually start to degrade," Simonsen points out.
- **Pressure Matters:** The weight of stacked panels or tightly wound coils can increase the bond strength over time, making the film harder to remove.

Storage recommendations (Pregis):

- Store protective film products in original packaging/ shipping cartons until needed.
- Do not store substrates for longer than 6 months with protective masking films applied.
- Maintain a storage temperature range of 50˚ F-60˚ F.
- Store TPF-treated substrates in the relative humidity (Rh) range of 40% – 60%.
- Keep away from exposure to temperature extremes, direct sunlight, water, solvent, and other contaminants.
- Rotate protective film inventory on a first-in, first-out (FIFO) basis, ensuring usage within the warranty period.

Failing to follow these recommendations may degrade the protective film.

JUST-IN-TIME APPLICATION AND REMOVAL

Because prolonged storage, exposure to sunlight, and outdoor conditions all pose risks, it's best to apply TPF as close to the installation date as possible—and remove it promptly once the panels are put into place. "You need to strip it off as you go when you're installing it," advises Southerland. Delaying removal can cause

the adhesive to age and bond more tightly with the paint surface.

Also, you don't want workers stepping on the TPF-treated panels too much, as it can further bond it to the substrate. "Some installers leave the film on after they've installed the panels, allowing their guys to run up and down on it," says Simonsen. "That's a bad practice."

If you're purchasing coil already treated with TPF, Simonsen stresses ordering the necessary amount of material so you don't end up with coils stored for more than six months. "Absolutely, order according to the job rather than having it just to have in stock," he suggests.

If there's a run on a certain type of coil, it may be worth keeping in stock if you know it will sell fast. Otherwise, you're gambling on having a job that might not come through in time.

Dangers of leaving the film on for too long, or under hot conditions, include:

- **Spotting**—where rings or spots appear on the substrate after the TPF is removed.
- **Ghosting**—a light haze that occurs when looking at a panel in a certain angle of light. This occurs when there is outgassing (a chemical reaction coming from the substrate) and the film adhesive is applied too soon after manufacturing.
- **Adhesive residue**—The adhesive left behind after the TPF layer is removed.

TPF application guidelines (Pregis):

- Ambient and substrate temperature should be within 60˚ F-90˚ F for best results. Colder temperatures than listed will lessen the initial bond to the substrate.
- Surfaces should be dry and clear of any lubricants, solvents, or other contaminants.
- Application pressure should not vary from initial, approved trials.

WHAT IF IT'S TOO LATE?

Extreme conditions will produce a range of variables when it comes to storing and applying temporary protective film. Heat, cold, and moisture are all enemies of TPF adhesives. Check below for what to do, depending on the situation.

Hot Temperatures

If the temporary protective film on the panels has been stored or applied in temperatures above 90˚ F, the adhesive bonding will have increased. Remove the film by pulling slowly from a 90˚ angle. That should result in less ghosting or spotting.

Cold Temperatures

If the TPF is applied in temperatures below 60˚ F, the adhesive may not stick properly to the substrate. Before applying, make sure that both the film and substrate are at a recommended temperature. For removal, the film and substrate should be above 45˚ F.

Moisture

If the TPF has been applied to the substrate and encounters moisture, whether from rain, morning dew, or humidity, allow it to dry completely before attempting removal. The film will take on a bluish-white casting (known as "blushing"), signaling that it is too wet for removal. It will turn water-clear when it has dried.

Excessive Sunlight

Some films may be UV-rated, which can help mitigate damage from overexposure to sunlight. The amount of time a non-UV-protected TPF can be left out in the sun may vary, depending on the manufacturer. Refer to the manufacturer guidelines to determine the maximum UV exposure allowed under their warranty.

If you have concerns about the adhesive used on your TPF-treated coil, contact the manufacturer.

If you're applying the TPF with an applicator, the film should match the brand recommendation. Using another brand that hasn't been tested with the paint system could lead to problems. For example, Sheffield Metals tested and validated the Pregis materials for all of their paint types. Therefore, only Pregis TPF should be applied to SMI products.

Removing Residue

Say you've left panels out in the sun or rain for an extended period. While you may be able to tear off the temporary film, the adhesive residue can remain on the panels. In order to remove the adhesive, you can use a liquid cleaner such as Cleansweep® by Watts® Removal Products, a Sherwin-Williams® approved solution. Be sure that whatever product you use is approved by the paint manufacturer so as not to void the paint warranty.

Also, as the remover is a chemical, make sure to use the proper PPE when administering it. To learn more about the product and its application, watch the Metal Roofing Channel video "How to Remove PVC Strippable Film Stuck to Painted Metal Panels."

RUNNING TPF THROUGH YOUR ROLL-FORMING MACHINE

Testing and Guidelines

For those applying film themselves, it's important to follow recommended guidelines for the adhesive and film type to match the metal's surface characteristics. Deviating from tested combinations can result in poor adhesive performance.

Understanding the compatibility between protective films and metal panel coatings is essential for roll-forming machine users. When buying Sheffield's metal coil with Pregis TPF, customers benefit from rigorous testing. "We gathered a variety of different paints and surface samples from Sheffield, and sent them to our lab in North Carolina, where we measured the gloss levels of them all," explains McMichael. "We tested 10 to 15 different material combinations on each. We had our team visually inspect for ghosting or adhesion residue. And then once we had our recommendations, Sheffield applied those to their coils for real-world production trials."

These tests simulate various environmental conditions to ensure the film performs as intended without causing damage or leaving residue.

Rollforming TPF Coil

The thing to keep in mind is that if

TPF lifts during forming, it can jam up in your machine's rollers and dies. However, with proper machine operation, running TPF-treated coil through your roll former shouldn't be a problem. You may have to adjust for thicker films.

Application during the roll-forming process is an option, as with a TPF film laminator. Again, make sure to use the correct adhesive strength to match the substrate.

However, some machine users prefer to have the TPF already applied to the coil. Just make sure to keep an eye on it as it's forming through the rollers.

"The coil running through the rollers on your machine can cause some issues if too much pressure is applied," says Simonsen. "Especially if the protective film doesn't have enough elasticity."

TPF should cover the whole painted side of the sheet. However, in some instances, if you're using nail punching, be aware that it may come up during the punching process. The Pregis TPF used by SMI is puncture and abrasion-resistant, making it suitable for roll forming.

Check with the manufacturer regarding the durability of the protective film for roll forming.

Lastly, machines running TPF-treated coils should be cleaned and maintained more often to avoid buildup in the roll-former's mechanics. Make sure the forming rollers stay clean and in proper working order.

Is Temporary Protective Film Worth the Trouble?

Temporary protective film is designed to protect your panels until installation; it is not a long-term barrier against the elements. By understanding which tackiness level matches your panel's finish, storing materials correctly, avoiding prolonged exposure to heat and sun, and removing the film in a timely manner, you'll prevent problems it can create.

Southerland says, "The biggest issue is just not leaving it on." Likewise, Simonsen underscores the importance of careful planning and proper usage, noting that TPF "works correctly if we store it and use it correctly."

All said, it's better to avoid the pitfalls of using TPF than end up with scratched or damaged panels. So, whether you're purchasing the coil with the TPF applied or applying it yourself, protecting the panels can save you time and money. **RF**

Shipping Metal Components

Best Practices for Protecting Building Supplies

■ By Karen Knapstein

When metal trims and panels are not roll-formed on the jobsite, careful consideration must be given to their safe transportation. Ensuring that these components arrive at their destination without damage is imperative to maintaining quality and cost-effectiveness. Customers expect and deserve their orders to arrive intact and complete, without missing pieces. Proper packaging and handling techniques can make all the difference.

PHOTOS COURTESY OF ROB BOWLIN, AMERIPAK INC., WWW.AMERIPAK.NET

UNDERSTANDING THE IMPORTANCE OF PROPER PACKAGING

Metal panels, trims, and accessories are susceptible to damage during shipping. Scratches, dents, and other flaws can compromise their structural integrity and aesthetic appeal. To avoid these issues, it's important to use appropriate packaging materials and methods tailored to the unique needs of the metal building components.

PROTECTIVE MATERIALS

Using the right materials for packaging metal components is crucial. Some of the most effective materials include:

- **Stretch Wrap:** A preferred choice for securing panels and trims, as it prevents movement and minimizes vibrations that could cause surface damage.
- **Foam Rolls and Bubble Wrap:** Used for added cushioning, particularly for fragile trim pieces and fasteners.
- **Corner Protectors:** For preventing edge damage during handling and transport.
- **Adhesive Protective Film:** Helps prevent scratches and surface wear on painted metal panels.
- **Corrugated Products:** Provide additional support for certain panel types that do not stack neatly.

Full encapsulation means full protection from the elements and more secure shipping.

HELPFUL EQUIPMENT

Ameripak Inc., a leader in packaging solutions for the metal building industry, offers specialized equipment designed to streamline the packaging process. Their machinery ensures that metal components are efficiently wrapped and secured for shipping, reducing downtime and increasing production output.

Rob Bowlin, Special Project Manager with Ameripak, explains the company's high-speed packaging machines work in tandem with modern roll formers. These machines allow for rapid stacking and packaging of metal panels; reduced

downtime by eliminating manual wrapping delays; the ability to process and stretch-wrap panels more efficiently than conventional metal banding and paper wrapping; and improved workflow, enabling continuous production without interruptions.

Trim pieces require extra care to prevent scratches and dents. Trim wrappers can securely bundle trim pieces to prevent rubbing during transit and make it easy to identify and separate job-specific components.

Automatic and semi-automatic models are available to suit different budgets and needs. Ameripak equipment provides a durable, heavy-duty design built for the rigorous metal building industry.

CHALLENGES OF STANDING SEAM PANELS

Unlike through-fastened panels, standing seam panels are more difficult to stack and secure due to their lack of structural stability between ribs, which presents a unique packaging challenge. Advice for preparing SSMR panels includes:

- **Using Wooden Crates:** Provides structural support and a secure strapping point for transport.
- **Adding Styrofoam Inserts:** Helps separate and protect panels, though disposal can be a concern.
- **Stretch Wrapping When Feasible:** While effective for most metal components, standing seam panels often require additional support.

BEST PRACTICES FOR SHIPPING ACCESSORIES

To prevent loss or damage of smaller components such as closure strips, fasteners and trim, consider the following:

- **Use Protective Foam and Bubble Wrap:** Adds cushioning to prevent impact damage.
- **Corner and Edge Protectors:** Helps keep delicate edges intact.
- **Proper Labeling:** Clearly mark packages to ensure easy identification and sorting at the job site.
- **Job-Packaging Method:** Bundle components together according to the job site for streamlined unloading and installation.

DO'S AND DON'TS WHEN PREPARING METAL COMPONENTS FOR SHIPPING

Do's:

- **Stack Components Securely:** Nest panels together and wrap them immediately after forming.
- **Use Stretch Wrap for Protection:** Helps minimize vibration and friction

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damage.

• **Clearly Label Packages:** Use markers or labels to identify job-specific components.

• **Minimize Handling:** The fewer times metal is handled before being wrapped, the lower the risk of damage.

Don'ts:

• **Don't Allow Painted Surfaces to Rub Together:** This can lead to scratches and premature wear.

• **Don't Over-Tighten Straps:** Excessive pressure can deform panels.

• **Don't Overlook Unpackaging Considerations:** Inform end-users about best practices for safely opening and handling materials. Proper unpacking is just as important as packaging. Strategies to ensure materials remain in pristine condition could include use of high-visibility labels with clear warnings to prevent improper handling. Some manufacturers use a permanent marker to write identifying information and cautions directly on the stretch wrap.

EFFICIENT AND SUSTAINABLE PACKAGING SOLUTIONS

Stretch wrapping is a highly effective method for packaging metal construction components, offering:

• A smaller resource footprint compared to traditional crating methods.

• Reduced waste and easier job-site cleanup.

• Versatility, allowing it to be used for trims, panels, and palletized materials.

This manufacturer writes order information in permanent marker directly on shrink wrap.
PHOTO COURTESY OF AMERIPAK, INC.

CONCLUSION

Ameripak remains committed to delivering innovative packaging solutions for the metal building industry. Their durable and efficient wrapping systems not only protect metal components but also enhance production efficiency and reduce costs. By implementing these best practices, manufacturers and suppliers can ensure that components reach their destinations safely and in perfect condition. **RF**

Coating Close-Up

SMP vs. PVDF coatings for use on metal roof systems

■ By Amanda Paterline, AkzoNobel

Understanding the materials best suited for metal roofing projects involves considering critical elements of the coating's performance and warranty. This article delves into the differences between SMP and PVDF coatings, providing insights to aid in making informed decisions when selecting materials.

SMP BASED COATINGS

SMP is a silicone-modified or siliconized polyester coating system for application in metal building products. SMP resin systems are typically blended with high quality pigments, and UV additives, to achieve excellent color and gloss retention, as well as excellent weather resistance. Higher silicone levels can improve the gloss retention characteristics of these coating systems. With extensive research and performance testing, SMP based coatings have been formulated and improved over decades and today's SMP coatings are much closer to the durability of PVDF. SMP offers more gloss options and textured finishes compared with PVDF coating systems and differs slightly when comparing color fade in medium and dark colors. The coating can begin to chalk and fade slightly quicker than PVDF coatings, especially when bright or dark colors are used in extreme conditions. However, lighter colors are inherently better at deflecting UV rays and SMP is a viable option. SMP, once cured, is tougher than PVDF and has excellent scratch resistance, which can support reduced corrosion of exposed metal during the life of the building.

PVDF BASED COATINGS

PVDF is a very stable fluoropolymer used in high-performance, highly durable exterior paint finishes. It was discovered over 60 years ago as DuPont scientists created Teflon, most commonly used in non-stick cookware. Fluoropolymers are the most chemically inert of all polymers. PVDF's strength comes at the molecular level. Its carbon-fluorine bonds produce one of the strongest chemical bonds in polymers and the molecule's spiral shape is structurally very stable. These thermoplastic polymers soften upon heating and are rigid again when cooled. This process is repeatable and therefore makes them flexible during the coil and extrusion manufacturing process. The unique molecular structure of these polymers provides its well-known performance. PVDF remains stable in most chemical environments at high temperatures and is highly durable in extreme weather conditions.

AAMA SPECIFICATIONS IN EXTRUSION COATINGS

To help decide which coating is suitable in any given environment, it is worth looking at the performance rating of the Fenestration and Glazing Industry Alliance (FGIA), which uses three AAMA specification codes, These specifications (AAMA 2603, 2604, and 2605) use a mix of accelerated and real-world testing in the harsh South Florida environment to evaluate coatings. While there are other local Standards across the world, the AAMA specifications remain the leading one even outside of the US.

AAMA 2603 is mainly used for interior façades, retail points of sale, or commercial storefronts in shopping malls. Typically, high solid polyester and acrylic coatings will meet the needs of AAMA 2603 specifications. They are not exposed to harsh weather conditions, so the need for exceptional performance in outdoor weather is unnecessary. The AAMA 2604 performance specification aligns well with systems designed with SMP resins. These coatings can cost more than standard polyesters yet are five times more protective. Their weathering performance over five years is equal to one year for ordinary polyesters. SMP coatings are often applied to storefronts, windows, doors, and low-rise curtain walls. Although the ratings are for five years, they are usually supplied with a 10-year guarantee. The toughest specification (AAMA 2605) requires 10-Year South Florida testing for color retention, chalk resistance, and gloss retention. AAMA 2605 is most commonly associated with the performance properties achieved with 70% PVDF coatings. This makes PVDF coatings ideal for use in any type of environmental conditions to protect exterior curtain walls, façades, windows and doors of buildings, stadiums, and high-value residences. These polymers provide long-lasting protection for buildings' structural and aesthetic qualities with warranties of 20 years for color and gloss on aluminum.

SELECTING THE RIGHT COATING SYSTEM FOR THE APPLICATION

PVDF is particularly good for long-lasting protection of vivid and dark colors. A choice of bright colors is restricted though, if a two-coat rather than a three-coat system is used. The PVDF coating's flexibility supports the manufacture of metal building components. However, this flexible coating can be relatively soft and more susceptible to scratching and marring than other systems. With white coatings, more metal marking occurs than with other, tougher coating systems. Careful handling in production helps avoid these issues. PVDFs are particularly suited for severe weather environments such as industrial sites with higher concentrations of acid rain and chemical pollutants; coastal areas with saltwater spray from the ocean; desert climates with the risk of wind and sand erosion; or climates with extreme heat, UV sunlight, and moisture or humidity (e.g. South Florida).

Coating selection can vary by project. From our experience, SMPs are a good substitute in more environments than you would think. Central and Northern U.S., and Canada are all examples of areas where PVDF may not be needed. With recent advancements in SMP coatings technology, SMP coatings will perform well in these areas and other extreme areas including those in coastal areas or mountainous regions with swings in temperature, heavy rainfall, hail and snow. Although these environments might be considered extreme, SMP's toughness will weather these conditions well.

Both PVDF and SMP coatings are well suited for metal roofing and metal sidewall applications given exposure conditions in the United States. Because of more competitive prices and a harder final finish, SMP coatings are often the preferred alternative for warehouses, industrial storage, agricultural structures, and other non-monumental commercial buildings. SMP coatings work well in all but the most extreme environments. PVDF coatings are often still primarily selected when sourcing materials for coastal environments and areas with intense sunlight such as deserts, or heavy industrial areas with chemical pollutants.

WARRANTY COVERAGE

A good warranty will cover the following areas:

Film integrity: A quality coating system will maintain film integrity over the life of the structure. The film integrity aspect of a paint warranty ensures paint will maintain adhesion to substrate. The coating will not peel, flake or otherwise lose adhesion. Reported in time (years)

Color retention: A quality coating system will retain its original color over the life of the structure. Color fade results from chemical breakdown of a coating's base resins and pigments, which appear as a visible loss of color. Reported as a Delta E in Hunter units, color retention signifies the maximum change in color (fade) over a specified number of years. In this case, a lower number is best.

Washed vs. Unwashed Panels: Apparent discoloration of the coating may occur when it has been exposed in dirt-laden atmospheres for long periods of time. A good cleaning will generally restore the appearance of these coatings.

Chalk resistance: A quality coating system will maintain chalk resistance over the life of the structure. Decomposition of the coating film caused by ultraviolet rays, moisture or heat (or any combination of the three) results in chalk-like residue on the surface of the building. The residue is transferred to a soft fabric by rubbing the coated surface and assessed visually against photographic standards, in accordance to ASTM D4214.

WHAT'S NOT COVERED

It's important to understand what is outside the scope of common coating warranties. Some common non-warrantable situations include but may not be limited to breaches in the coating film caused by installation scratches, abrasions, or hard impact. Damage caused by moisture entrapment (between bundles or during transit). Other situations include substrate corrosion, including failure or damage from under-film or edge corrosion. Coatings not applied per application and film thickness requirements, and mixing of different coating systems are also not typically covered under coating warranties. Due to boundaries around coating warranties, it is critical to understand and select appropriate substrates, and ensure coaters are following best practices for surface preparation, pretreatment, and application of coatings. **RF**

Amanda Paterline *is the Commercial Marketing Manager, Coil and Extrusion Coatings, Americas, AkzoNobel.*

CONSTRUCTION SURVEY INSIGHTS

2025 CSI Survey Results Are In

The survey for the *2025 CSI-Annual & Market Report* is closed and we are coming through the results.

The first statement is that we are making progress. This year, we have over 500 respondents, which is approximately a 40% increase over last year. More respondents equals better and more usable data, so PLEASE SHARE OUR SURVEYS! The data is all available free to subscribers, so help us help you be successful.

GENERAL BUSINESS SENTIMENT IS UP COMPARED TO 2024

32% of respondents thought 2024 would be better than 2023. For 2025, that number increased to 38.8%. Fewer people predict a decline for 2025, and fewer people also stated they are "Unsure." So sentiment is positive, and there is less uncertainty about 2025.

THERE WERE MARKED DIFFERENCES BASED ON THE PRIMARY AREA OF CONSTRUCTION

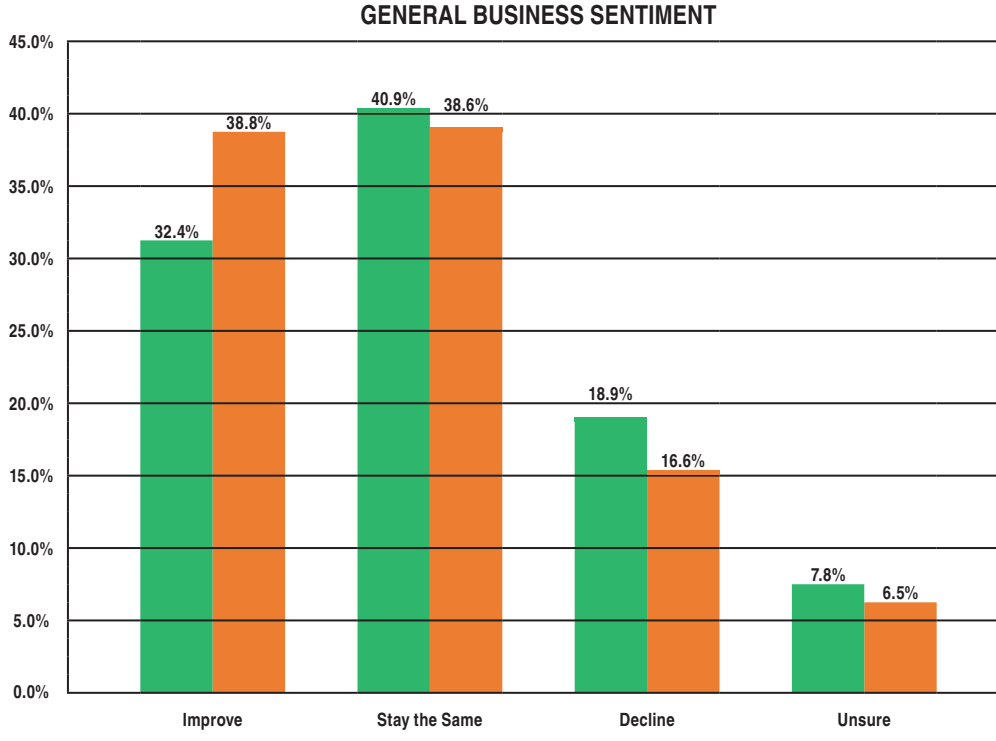
Roll formers had the most positive outlook. 50% of roll formers believed business in 2025 would improve. This was followed closely by metal roofing (43.2%), sheds and portable buildings (42.9%), and general roofing (41%).

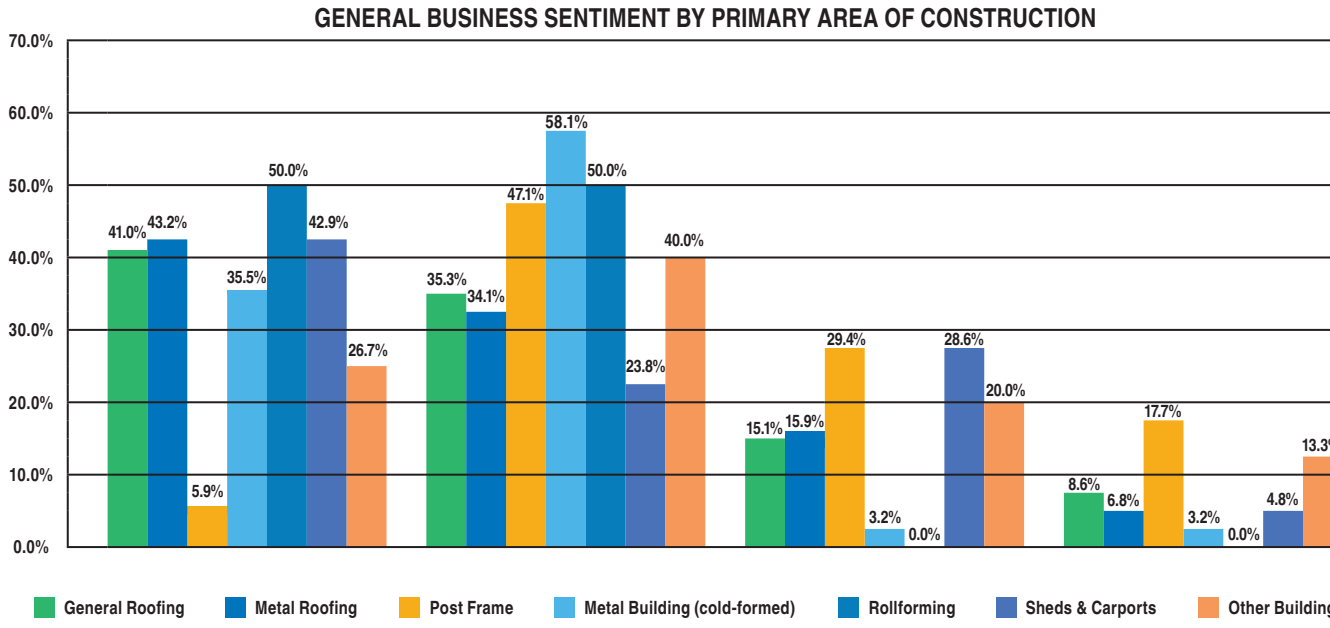
Interestingly, roll formers were the only category with 0 respondents saying they were uncertain or there would be a decline.

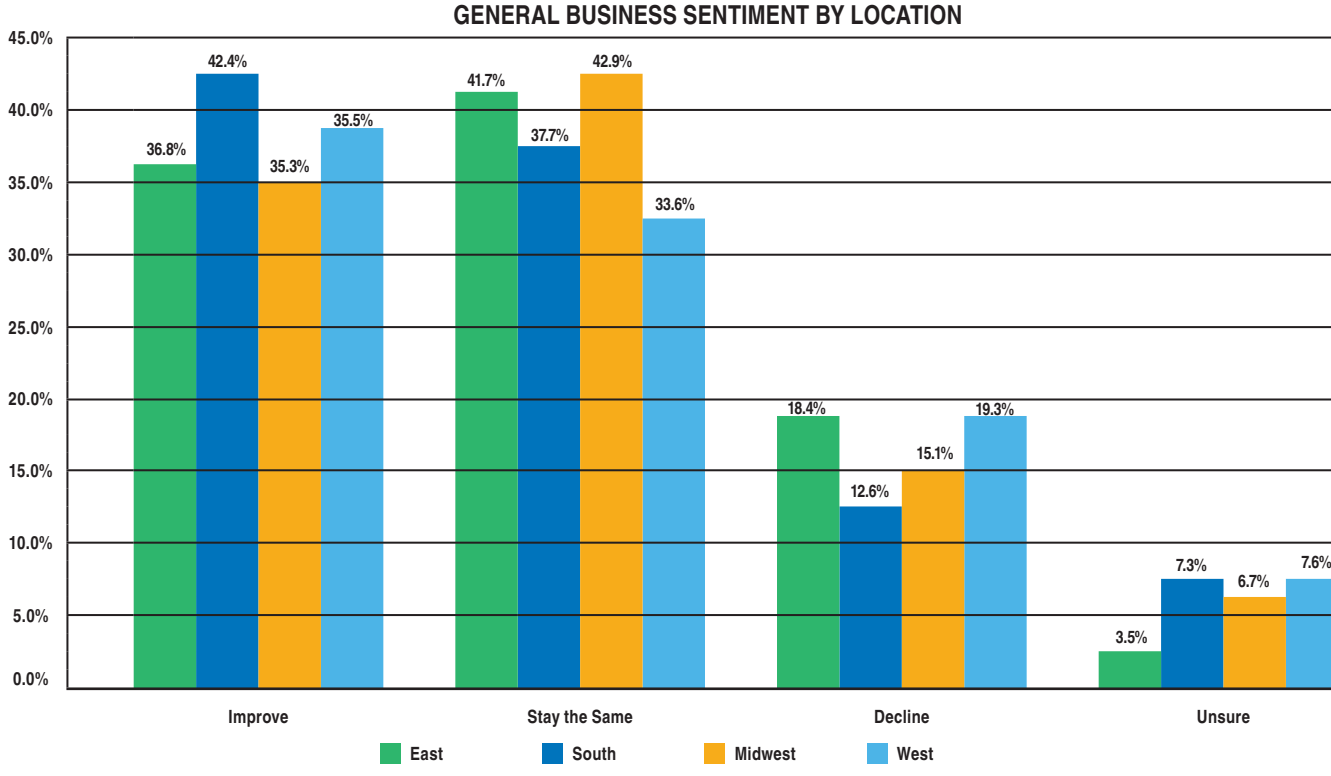
Cold-formed metal buildings are anticipating a generally good year. 58.1% said 2025 would be like 2024. Combining this with 35.5% looking for an increase, that makes 93.6% who say 2025 will be the same or better than 2024.

GEOGRAPHIC LOCATION HAD MINIMAL IMPACT ON OUTLOOK

All regions had similar opinions about 2025. 35-42% are predicting an increase. 33-42% are predicting the same.







12-20% are predicting a decrease. In all cases, the spread is less than 10%.

THE POSITIVE OUTLOOK FOR 2025 IS COMING OFF A REASONABLY GOOD YEAR

45% reported increased gross sales and number of units sold for 2024 vs 2023. 40% reported an increase in profitability vs. 2023.

THE BIGGEST CHALLENGE OF 2025

The number one concern by a fair margin was cost of materials (51.4%), followed by inflation (33.9%), and taxes (27.0%).

2025 is looking like it might be a good year. More detailed information will be available when the 2025 CSI – Annual & Market Report is released in the spring. Please share the information, share the surveys, consider sponsoring a section, and help us get you the information you need to make good business decisions.If you are interested in sponsoring a section, email gary@shieldwallmedia.com. **RF**