MCN Metal Construction News

February 2026
VOLUME 48 | NO. 2

2026 State of the Industry ROUNDTABLE

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- The Right Snow Retention System for Metal Roofs
- Five Underlayment Factors to Consider

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Despite challenges from tariffs and labor shortages, the metal construction industry had a busy 2025, with job sites, such as this one, seeing continuous activity.

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Melanie Kowal
EXECUTIVE PUBLISHER
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Out With The Old, In With The New Year

February often feels like a moment to take stock. Winter is still firmly in place across much of the country, but the pace of the year is already picking up. Project planning is underway, crews are navigating seasonal challenges, and conversations are shifting from *what happened* to *what's next*. That balance of reflection and momentum is very much at the heart of this issue of *Metal Construction News*.

It was great to connect with so many colleagues at the International Roofing Expo in January. IRE continues to be one of those rare events where meaningful conversations happen organically on the show floor, between meetings, and sometimes while simply catching up with people you haven't seen in a while. The takeaway this year was clear: despite ongoing pressures, there's a steady sense of optimism and a shared focus on doing things right, from design through installation.

That same tone carried into our **State of the Industry** roundtable, which we hosted in November. You'll see the highlights of this on Page 12. Bringing together leaders from across manufacturing, contracting, and metal building systems made for a thoughtful and candid discussion. The group spoke openly about challenges, as well as opportunities—particularly for companies that stay disciplined, invest in relationships, and remain adaptable. We're grateful to everyone who participated and shared their perspective.

Winter performance is a major theme throughout this issue. Snow retention systems (on Page 49) take center stage, with features that explore both the technical and practical considerations of designing for snow and ice management on metal roofs. These articles reinforce an important point: selecting the right system is rarely simple, and long-term performance depends on informed decisions, reliable data, and experienced partners.

We also look beneath the surface—literally. From underlayment and vapor barriers on Page 27 to insulation strategies on Page 30, several features focus on the components that quietly do the heavy lifting in protecting buildings, improving durability, and supporting occupant comfort. Add to that our coverage of ventilation protection on Page 41 in storm shelters and safe rooms, and the issue comes together around a common idea: performance matters most when conditions are toughest.

You'll also find our regular departments, industry news, and a diverse range of project profiles that highlight how metal construction continues to deliver across transportation and infrastructure applications.

As always, thank you for reading and for supporting *Metal Construction News*. I hope this issue proves useful, relevant, and reflective of the conversations you're having in the field and beyond. MCN

Melanie Kowal

Are you doing too much?

By George Hedley

***George Hedley**, CPBC, is a certified professional construction business coach and speaker. He helps contractors build better businesses, grow, profit, improve estimating and field production, and get their companies to work. He is the best-selling author of "Get Your Construction Business To Always Make A Profit!" available on Amazon.com. To schedule a free introductory coaching session, get his monthly Hardhat Hedlines Biz-Tips e-newsletter, download his template package, or watch his webinars and online video courses, visit www.ConstructionBusinessCoaching.com or e-mail GH@HardhatBizcoach.com.*

The construction business is a hard way to make money. There are 5,141 things that are out of your control and can go wrong on every project daily. For example, you can't control who shows up for work, if equipment will break down, whether the plans are complete and accurate, whether you will get paid or encounter unforeseen problems, whether materials will arrive when needed, or the weather. On top of this, you have a guaranteed price to perform a contract scope of work with no guarantees that anything will go as planned. This creates conflicts and challenges for contractors to overcome and handle every day. This leads to the following questions: What should be your primary focus, what should you handle, and what should you delegate to other team members?

Contractors struggle daily to handle emergencies, put out fires, and get everything done no matter how hard they try. Why? You're simultaneously juggling multiple activities and responsibilities. To manage and lead your company towards the desired results, including profitable growth, building a strong management team, implementing sound systems, performing quality workmanship, creating a safe workplace environment, and a winning team, you need four separate talents to succeed. This group has the specific abilities, strengths, and skills required to manage and lead your company. They include the visionary leader, managing manager, support team, and the player.

Without all four key positions filled with the right people and talent, your company will stay stuck and never reach its full potential. To make it worse, many business owners think they are the ones to perform all these functions. Business owners tend to be good leaders but are often poor managers and weak accountants. In fact, most people excel in one specific work talent area, such as estimating, sales, project management, or supervision. When the owner tries to handle all four areas of responsibility, they have a tough time delegating, letting go, growing their company, holding people accountable, hiring the right people, maintaining regular meeting schedules, enforcing company standards or systems, and maximizing the bottom line.

Visionary leader

The visionary leader is usually the business owner who founded the company. They have positive attitudes, which inspire people to follow their leadership and vision and are extremely passionate about the future and where the company is going. Typically, these people are dreamers and creators of business vision, mission, and focus and have lots of energy. They are the inspiring motivators and head coaches and get excited about where the company is headed and what it can become. They love new ideas, challenges, innovation, and change. The leader-coach has many new ideas, makes quick decisions, is impatient, doesn't like details or follow-up, and has trouble staying focused on organizational systems and procedures. They also have trouble holding people accountable, tend to tolerate poor performers rather than demand results, and don't like to fire or discipline employees.

Managing manager

The managing manager acts as the general operations manager who directly supervises people or oversees and manages operations, departments, or teams. They are very organized and systemized and detail-orientated team builders who hold regular

Without all four key positions filled with the right people and talent, your company will stay stuck and never reach its full potential.

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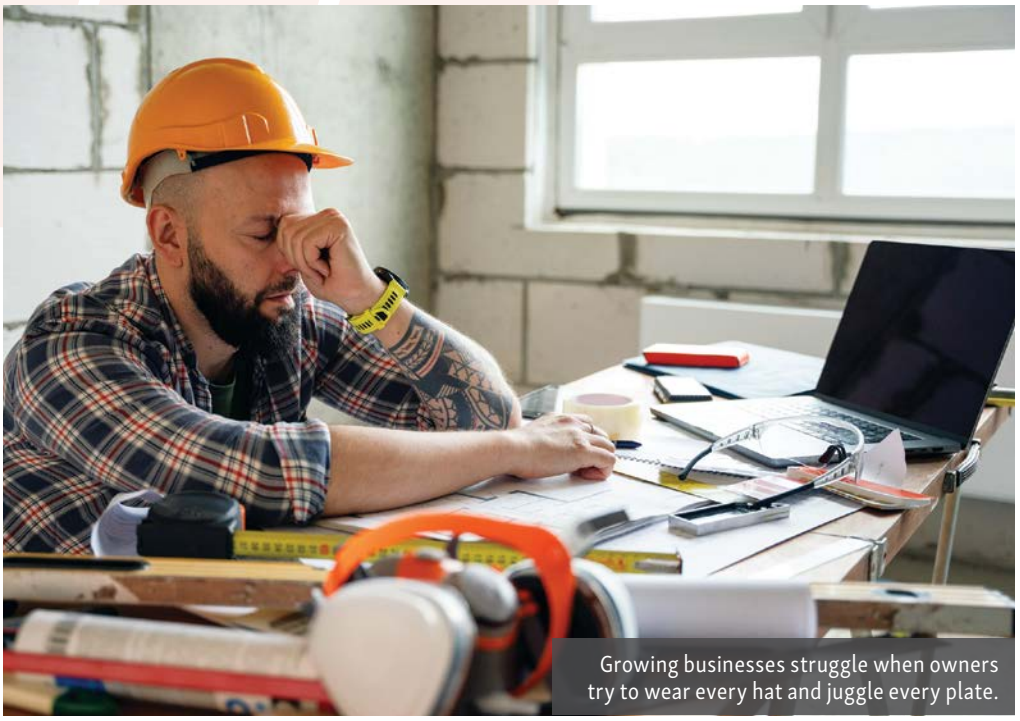


Growing businesses struggle when owners try to wear every hat and juggle every plate.

meetings, enforce company standards and systems, hold people accountable, ensure tasks are done accurately and on time, and take charge of every situation or challenge they face. They like to use checklists, scorecards, systems, and agendas. They always follow up on details and tasks required to be completed by their staff and hold people accountable and responsible for meeting timelines and deadlines. They focus on their direct reports by monitoring and reviewing the progress they perform to achieve expected results, schedules, and budgets. Their desk is organized and neat, and everything is in the right place. Managing managers also don't have difficulty mentoring, coaching, helping, and encouraging employees; delegating tasks, letting employees know how they're doing and being direct, and warning or firing poor performers.

Support team

The support team is responsible for managing company support functions, including finances, accounting, and administration. They oversee and keep track of financial matters, results, performance, accounting, payables, and receivables. Administrators manage and organize the company systems, procedures, checklists, files, paperwork, human resources, insurance, technology, and office management. They manage and handle the responsibilities and tasks required to keep the company running efficiently and smoothly. They like to present reports to the leaders of their company. They are organized, multi-taskers, and like detail, while they sweat the small stuff and are the glue that keeps the machine running.

Player

Players are the people who do the work, and every person has a unique area of talent, skill, or responsibility to perform. Most players are the best in the area in which they excel. Talented players can be good workers in sales, estimating, project management, field supervision, safety, equipment, production, customer relations, quality control, craft trades, accounting, technology, or many other work areas. Workers fail when they stray from their area of talent and handle tasks not within their strengths, gifts, or skills. For example, estimators are not usually good at sales, superintendents are not generally good at numbers or managing job costs, bookkeepers are not typically good as project administrators or office managers, and business owners are not generally good at managing people or details.

You can't play every position and win

In football, specific coaching and playing positions are required to build a winning team. You wouldn't have the head coach order supplies or manage the travel and equipment requirements. You would never put the safety in as the center or the quarterback as a kicker. In construction, you wouldn't have the owner schedule crews, hire field workers, or order materials. Everyone has specific gifts and talents they are born with. Each player should do what they do best and not take on responsibilities they aren't built for in order to grow, make a profit, and win the game.

Growing businesses struggle when owners try to wear every hat and juggle all the plates required to lead and manage their company. Sometimes, owners think they're the best at every talent and skill needed to run the entire company, from pricing, ordering, negotiating, selling, contracting, supervising, scheduling, approving invoices, hiring, managing equipment, setting salaries, or setting systems. When someone thinks they're good at everything, they don't let go of decisions or delegate, do too many tasks, and delay hiring the right players to make the company a better organization.

An owner with the role of visionary leader sees the big picture and keeps everyone focused on a better future. You're also likely the best motivator, innovator, creator, negotiator, presenter, and salesperson in the company. However, you're likely not the right person to manage and supervise people, projects, or details. As a stubborn company owner, you try to organize and hold people accountable to no avail, which escalates problems and reduces results. As things worsen, results slip below expectations, and the best people often leave for better opportunities or working environments—all because you didn't realize you shouldn't do all the work. As things deteriorate, you lose

control, frustration continues, and you aren't sure how to improve the company's condition. To survive, you continue doing too much yourself and stay stuck as the barrier to overall improvement progress.

Without the right people in the correct positions, your company will stay stuck and will continue to struggle. Stop wearing too many hats and stop doing too much yourself.

What positions do you need to fill?

When construction business owners attempt to handle activities and accountabilities they're not talented in, they fail. Suppose your talents are estimating and your weakness is managing and holding people accountable. In that case, you'll have to find a responsible manager who's better at handling the people part of your company. You need great managing managers to oversee their direct reports in estimating, project management, field supervision, finances, and administration. Decide which management position you need to fill and then promote or hire. The key is to focus on your talent and what you should do to build a great company. You must decide to be the visionary leader, selling and winning more work by finding and developing profitable customers. Let go of the areas you're not talented in or don't want to handle, and find great people to allow your business to grow. Some think they can't afford to hire top talent but will never make enough money by doing all the work they shouldn't be doing. Without the right people in the correct positions, your company will stay stuck and will continue to struggle. Stop wearing too many hats and stop doing too much yourself. MCN

David K. Leinbach

__David K. Leinbach__ is a recognized leader in the construction and metal building industry with over 35 years of experience driving growth, innovation, and operational excellence. As president of Kaiser-Martin Group, Inc., David oversees a team delivering complex construction projects. His expertise spans design-build solutions, property development, and strategic management. A respected voice in the industry, David serves as national president of the Metal Building Contractors and Erectors Association (MBCEA) and has held leadership roles with Associated Builders and Contractors (ABC), the Chamber of Commerce, and other organizations. He has been instrumental in advancing best practices, safety standards, and legislative advocacy for the construction sector.

New MBCEA President Looks Ahead to 2026

Since this is the State of the Industry edition of *Metal Construction News*, it seems appropriate to report on the state of the Metal Building Contractors and Erectors Association (MBCEA). I am David Leinbach of Kaiser-Martin Group, and I am just beginning my two-year term as president. Joining me this year are Bryan Harshbarger of Briner Building, ably serving as vice-president; Dave Tomchak of Bay Insulation Systems, as treasurer; and Steven Hudgins of Rainwater Construction, as secretary. We have a fabulous board of directors comprised of contractors, erectors, and suppliers representing all facets of the industry. We are very competently supported by our wonderful executive director, Sasha Demyan, and her team.

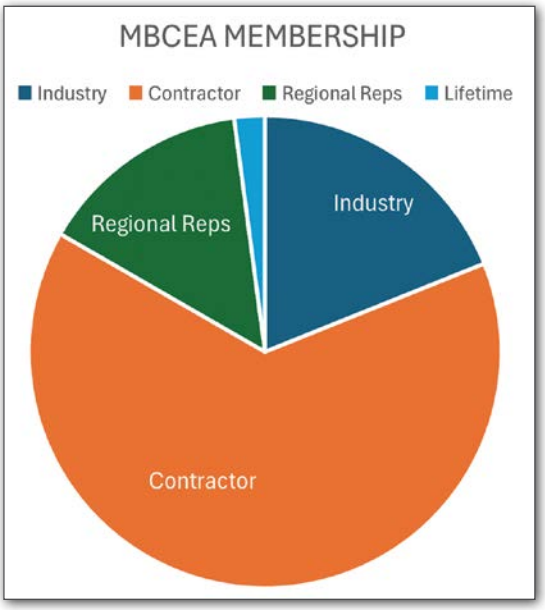
I am pleased to report that the association just completed a five-year strategic plan that will serve MBCEA well as it grows both numerically and geographically. Below are the highlights of the plan.

Organization

The association agreed to expand the board so that it has a robust representation of the members with documented processes, SOPs, and succession plans. We remained focused on driving value for members.

Finance

The association is financially sound and will continue to make strategic investments in ideas/programs that are meaningful to members. Our National Conference, MBCEA training curriculum, and AC478 accreditation are perfect examples of these investments. Behind the scenes, we are transitioning from an annual budget process to a three-year look-ahead and evaluating our vendor partners for key services, including legal counsel, insurance, and financial advisor.



Quality Initiative AC478

We continue to prioritize this program as the best way to improve our industry and trade from the ground up. The accreditation is prioritizing alliances with the American Institute of Architects (AIA) local chapters and working with manufacturers to recommend and ultimately require AC478. This is a long game, but it does begin with you. Accreditation establishes an industry standard to identify those players doing the right thing and are committed to safety, training, and quality. I challenge every contractor and erector member to consider AC478: attend a webinar or roundtable, speak with an accredited colleague, or reach out to MBCEA for more information. CHANGE begins with YOU.

Accreditation establishes an industry standard to identify those players doing the right thing and are committed to safety, training, and quality.

Membership and marketing

I am pleased to report membership is at an all-time high with 90 percent retention rates.

We continue to drill down on attracting and retaining new members, while fine-tuning the application and review process. The MBCEA National Conference continues to set the bar for what a successful conference should be. This year, we are in Colorado Springs with a focus on management. Speakers and educational tracks have been carefully curated to help members improve their businesses. Next year, we are changing it up with an exciting new format that is sure to please. Stay tuned for more information.

Training and education

MBCEA is supplying the subject matter experts and structure to a new training program that will revolutionize our industry. This MBI/NCCER initiative will deliver a new training program that is both comprehensive enough to qualify as a formal apprenticeship and robust enough to produce craftworkers skilled in the unique needs of metal buildings.

Safety and building quality will be emphasized in every module. The program will be available in Spanish and English. It will not rely on outdated textbooks and methods of learning, but will be presented in a sleek, new online format. Conference attendees will be among the first to see, and possibly test drive, this exciting new program.

Chapters

The MBCEA has always believed the true strength of our network was best demonstrated in active chapters. We continue to support and encourage chapter development, while simultaneously bolstering resources available to membership with a strong program of national webinars.

Industry partners

We prioritize our relationship with the Metal Building Manufacturers Association (MBMA) and recognize the symbiotic relationship between our contractor/erector members and the manufacturers. In addition to co-locating our National Conference with their Spring Meeting, we are actively engaged with several of their committees and projects, most notably technical.

Lastly, Accreditation establishes an industry standard to identify those players doing the right thing and are committed to safety, training, and quality.strengthened our association over the last few years. It is thanks to their leadership that the MBCEA is in such a strong position today. I look forward to this opportunity to serve as president for the next two years. I encourage all members to take full advantage of their membership. Attend our webinars, roundtables, and conferences, or join a committee, engage, and participate. If you don't know where or how to get started, contact Sasha or spend some time in the members-only area of the MBCEA website. I am available and appreciate comments and constructive criticism that will foster ideas, enhance communication, and improve the association and its members.

The MBCEA 2026 executive was announced in early January. The team is as follows:

- **David Leinbach**, president/owner of The Kaiser-Martin Group, steps into the role of president, having previously served as vice president.
- **Bryan Harshbarger**, president of Briner Building, Inc. and a board member since January 2022, will assume the role of vice president.
- **Steven Hudgins**, president of Rainwater Construction Company and a director since January 2023, has been elected secretary.
- **Dave Tomchak** , director of marketing and technical services for Bay Insulation Systems, will continue his dedicated service as treasurer.

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Industry Experts Weigh in on the State of Metal Construction in 2026

By Dave Flaherty

In the 2026 *Metal Construction News* State of the Industry roundtable, a panel of five industry leaders discussed the landscape and trajectory of the metal construction industry. This summary provides an overview of the topics covered in the discussion, focusing on themes such as the impacts of tariffs, the role of technology and AI, and the skilled labor shortage. The full roundtable video is available on the *Metal Construction News* website.

Our Panel of Industry Leaders

Joining *MCN* executive publisher Melanie Kowal were the following professionals:

David Leinbach

David K. Leinbach is president and founder of Kaiser Construction. He acquired Martin Construction Company of Denver, Pa., a commercial contractor, in 2010. In 2017, the companies merged to form the Kaiser-Martin Group, creating a general contracting company well-suited for future growth. Leinbach also holds majority ownership of Kaiser Investment, a property management firm, and serves as the current president of the Metal Building Contractors and Erectors Association (MBCEA).

Christen Funk

Christen Funk is president of Butler Manufacturing and chair of the Metal Building Manufacturers Association (MBMA). Funk brings more than two decades of experience leading global businesses and driving growth. She has managed massive P&Ls, led teams of hundreds, and delivered strategies that transformed markets. Before joining Butler, she helped Rain Bird achieve double-digit growth and expand into new segments. Earlier in her career, she scaled Rubbermaid Commercial Products through innovation and acquisitions.

DJ van Rooyen

DJ van Rooyen has been a founding partner in Steel Worx Solutions, LLC, since 2005. In his role at the company, he has spent the last two decades building Steel Worx Solutions into a leading provider of steel and metal construction services.

Mark Bus

Mark Bus is the national sales manager for ATAS International. In addition to his position at ATAS, Bus serves on the national Metal Roofing Alliance (MRA) board and the board of St. Joseph the Worker School in Orefield, Pa.

Steven Hudgins

With more than two decades of experience in the commercial construction industry, Steven leads the Rainwater Construction team as president. Hudgins' construction industry experience includes 14 years with Butler Manufacturing.

PHOTO © MAUDIB/GETTY IMAGES

Tariffs were undoubtedly the biggest issue facing the metal construction industry in 2025 and most likely will again be in 2026.

The impact of tariffs

Uncertainty has prompted many industry questions and caused very real impacts, according to Funk. Notably, this led to price increases, which affected specific markets and countries more significantly, particularly Canadian manufacturers and contractors. Projects were delayed as owners faced uncertainty about what lies ahead.

From a manufacturing perspective, this led to supply chain disruptions and longer lead times across the industry for complete metal building systems and components.

> "I see a willingness, especially among contractors, to sit down and discuss how they are handling the labor market. Or what's your bonus program look like? Or how do you handle safety."
> **David Leinbach**

"I think one of the positive things that we've seen, despite all of this uncertainty, is that steel prices, while higher than 2024, have remained relatively constant throughout the 2025 calendar year," Funk says.

From van Rooyen's perspective, the biggest challenge was justifying the cost difference for large projects where the final build price significantly exceeded initial estimates, especially without a fixed percentage increase upfront. Due to the "design as we go" nature of projects, changes created significant differences between the quote and the final cost, leading to a snowball effect where second-phase and third-phase expansions were put on hold.

These delays were fueled by uncertainty surrounding tariffs and the failure of interest rates to decrease as anticipated, which halted speculative warehouse building.

"Everybody anticipated rates to come down earlier. That didn't really happen," he says.

However, the market saw a boost from onshoring manufacturing, as more companies expedited facilities to avoid future tariffs. He believes this created a positive driver, making the overall impact a "double-edged sword."

Bus says when it comes to ATAS, the primary impact of the tariffs was a rise in price checking,

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The metal construction industry is still facing a skilled labor shortage.

with many customers calling to request re-quotes and ask about tariff effects. Since most materials they use are domestic, the direct tariff impact was minimal for their projects.

However, they observed a significant price increase in aluminum. While customers assume this is due to tariffs, Bus notes contributing factors include the closure of domestic smelters and reduced supply from China. Overall, direct business impact was not substantial, but consumer fear remains high, with customers generally assuming all prices are rising due to tariffs.

"Consumers are still very scared. They don't know what's happening. They just assume everything is going up, and it's only because of the tariffs," he notes.

Hudgins focused on the continued rise in material costs, specifically steel, aluminum, and copper, which increased throughout the third quarter following a surge in the second quarter.

While acknowledging that rising costs can cause project delays, Hudgins explains that, conversely, it can also pressure people to move forward to avoid future increases. From his company's perspective, the markets and regions they serve have shown continued strength despite rising costs, suggesting that demand is robust enough to overcome pricing pressures.

Leinbach said the primary challenge facing the domestic steel industry was the uncertainty surrounding tariff s. Over the past year, determining which products would incur additional costs was nearly impossible until the fi nal billing arrived. Even with Canadian imports, clear pricing answers were non-existent.

This lack of transparency prevented fi rms from providing defi nitive answers to their clients, creating a volatile environment for bidding and production. Ultimately, the inability to off er a customer base clear, defi ned costs proved far more disruptive to the industry than the actual fi nancial impact of the tariff s themselves.

Confidence for 2026

Bus expressed confidence in the outlook for 2026. Despite the tariffs, 2025 was not a "bad" year for his company as metal construction benefits from the material's inherent attractiveness in the construction world,

Metal's popularity remains strong with building designers and owners.

> "We need to emphasize our relationships and partnerships, whether that's with vocational schools or young people going through an engineering program. We need to help them see the benefits that our industry offers."
> **Christen Funk**

"A lot of designers like it. It's been out there for a long time. Building owners are requesting it too," he says.

The key to his confidence lies in having a diverse product line. Bus suggests that companies relying on only one product may face difficulties, but having product diversity provides resilience against potential market squeeze.

van Rooyen said much of the previous uncertainty is now built into budgets, as clients understand current interest rates and tariffs will persist. New budgets, prepared a year in advance of construction, are much closer to the actual cost, thereby reducing the variance between estimated and actual costs.

His company projects a very positive year due to the healthy Aerospace market and the continued onshoring of manufacturing.

"I think for the foreseeable future, for the next three to five years, for us internally, our lookout is very positive," van Rooyen adds.

Leinbach says the industry lacks enough workers and companies to handle the available work, but he likes to turn that negative into a positive.

This labor market shortage means there is more work available for qualified companies than there are firms and laborers to perform it. Coupled with known economic conditions and upcoming projects, including the vast work generated by recent infrastructure bills, such as rebuilding the grid, compressor buildings, and data centers, he is very bullish on the future. The core challenge remains the continued need for more laborers to enter the market and meet demand.

Experts say to engage the younger generation of workers, companies must show metal construction has evolved into something "cool."

PHOTO © ZHENGZAISHURU/ GETTY IMAGES

Hudgins shared his confidence for 2026 based on the high level of information available to industry players.

"Everyone seems to be more informed than they've ever been," he says.

Owners, contractors, and key influencers (such as architects and engineers) are now exceptionally aware of economic conditions, interest rates, and tariffs. This heightened awareness means that the budgets being developed for future construction projects are more realistic than they have been in the past, which is the primary source of the Hudgins' confidence moving forward.

Funk's high hopes for 2026 stem from two key areas. First, she believes industry players are asking "really good questions" about how to forecast the future, integrate uncertainty into contracts, and ultimately adapt as the market and economy change.

Secondly, successful companies are diversifying their businesses to pursue segments that are trending and have fixed budgets. Funk highlights the industry's history of resilience, noting that many current companies have navigated past adversities, including the Great Recession of 2008-09 and the COVID-19 pandemic.

"I don't think our industry is immune to adversity, and we've had resilience in the past, and I think that will prove true for our future," Funk says.

The skilled labor shortage and how to attract younger workers

According to Hudgins, increased wages have proven to be a positive force in both attracting and retaining the next generation of skilled labor within the industry. This is evidenced by significant pay growth in the recent past: construction wages, on a national average, rose by a notable 20 percent between 2021 and 2023, and saw a further increase of 4.2 percent in 2024. These wage hikes substantially outpaced the national average during the corresponding periods.

"That's certainly leading the national average wage increases during that time. So, I believe that wage increases will continue to have a positive effect," Hudgins says.

Supplementing the financial incentives, the industry has also demonstrated an enhanced focus over the last several years on crucial areas such as worker safety, comprehensive training and education, and, notably, improving work-life balance.

"Our industry has done a great job over the last five years, focusing on those critical areas to engage the next generation," he says.

For Funk, the industry needs to focus on exciting young people about the work by showcasing the impact they will have on the built environment of both their communities and the country, highlighting the pride and opportunities it offers.

> "We're finally seeing that the architect firms are writing [AC478] into the specifications for the projects. "We're seeing a lot of buy-in into that program, which in turn will raise the whole industry."
> **DJ van Rooyen**

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Businesses in the metal construction sector are making adjustments to appeal to younger workers.

"We need to emphasize our relationships and partnerships, whether that's with vocational schools or young people going through an engineering program. We need to help them see the benefits that our industry offers," she notes.

This outreach must be followed up by actively providing opportunities, such as apprenticeships and internships, that genuinely welcome and engage young people. Recognizing that the construction sector is typically slow to change, Funk sees a significant opportunity for a expedited change, rather than just incremental improvement, in workforce development.

According to Bus, attracting young people is a persistent challenge, but manufacturers are adapting by showcasing a modern, technology-driven environment. A key strategy is to communicate that manufacturing is not just a blue-collar job, but a stable career path that heavily integrates automation and AI into new machinery—a reality often unknown to the younger generation.

"I don't think a lot of the younger generation understands that or knows that. So [it's about] letting them know that coming into manufacturing, it's not just a dirty job. We want to give you a career; we do want you to have that work-life balance, and we want to educate you," Bus says.

Crucially, manufacturing firms are actively modernizing their digital tools, upgrading from older software, such as AutoCAD, to advanced programs like Inventor, HiCAD, and SolidWorks. He believes this move ensures the workplace technology aligns with what college graduates are already learning, preventing a technological step backward and making the industry more attractive to the next generation of skilled workers.

Leinbach believes the industry is actively working to change the long-held negative narrative that views construction as "dirty" or undesirable work. The core message promoted by organizations like the Metal Building Erectors and Contractors Association (MBCEA) and the Metal Building Manufacturers Association (MBMA) is that construction offers viable alternative pathways to success beyond a four-year college degree.

The key strategy involves highlighting apprenticeship and technical school training, which is as good as an associate degree.

"[You can show this generation] while you're earning, you can be learning and literally come out debt-free—not only debt-free, but you actually can be saving money, and this is a great career,"

Leinbach remarked. "Project supers are making over $100,000. This is not a low-income workforce."

The ultimate goal is to redefine the educational model's definition of success from college attendance to creating successful citizens who contribute positively to their communities, a role in which this industry excels.

van Rooyen said this has not been a big challenge for his company, as they have successfully tackled the labor challenge by adopting a positive and flexible approach. He recognizes that the younger generation is "programmed differently" and rejects the rigid 6 a.m. to 5 p.m. traditional schedule. They accommodate this by allowing flexible start times—for instance, allowing some fabrication workers to start at 9 a.m.

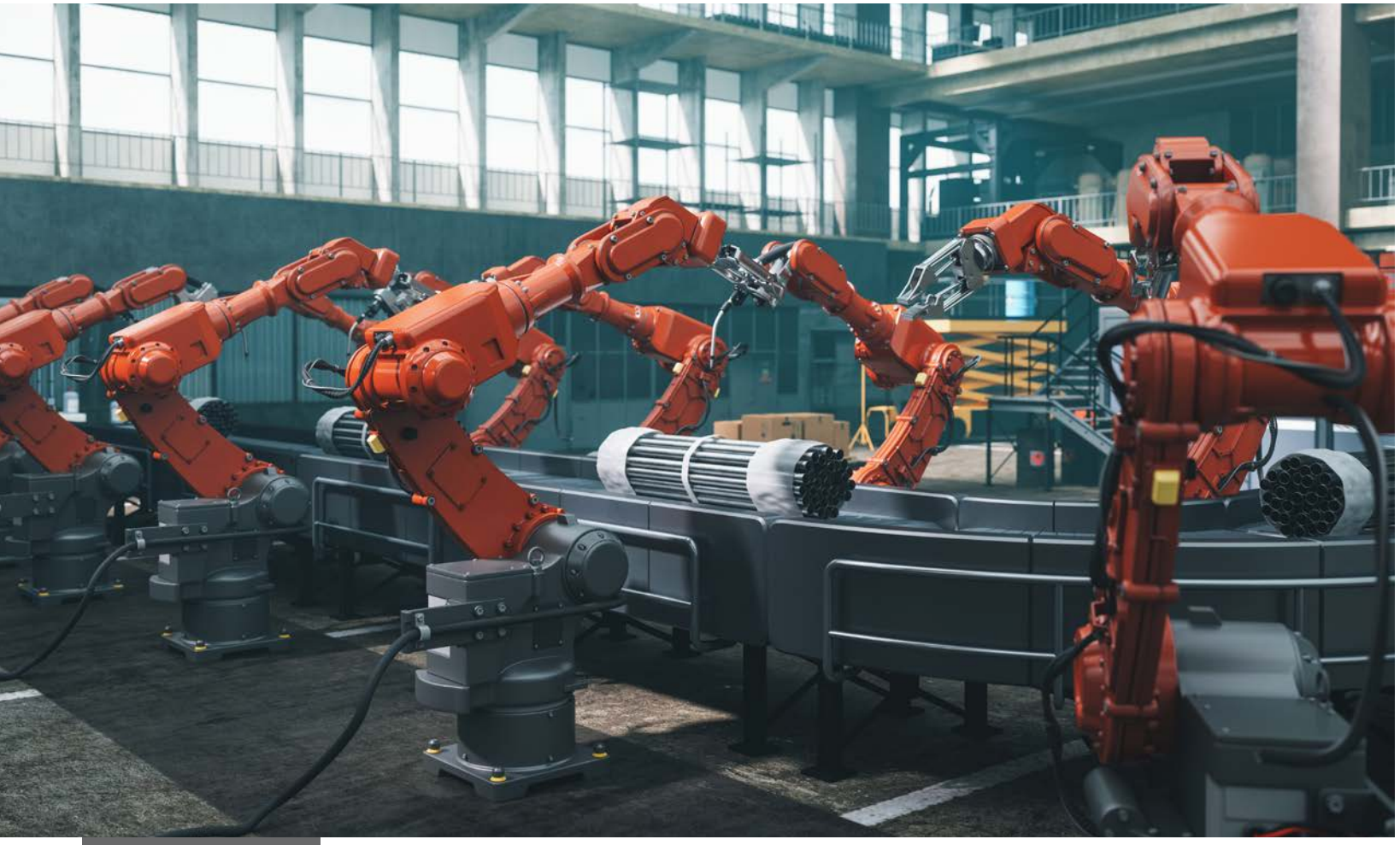
Another crucial strategy involves re-implementing an old method: bringing your kid to work. If a student works for a year with the company, both the student and the parent receive a bonus, successfully fostering second-generation workers.

"It used to be where they would go make $60,000 a year or $70,000 a year. Now, they say, I can come work for three, four, five years—my dad is a superintendent, and he's gonna coach me up to be a superintendent so I can make $100,000 in five years, which is what an engineer makes," van Rooyen says.

The company changes the narrative to appeal to younger workers by highlighting the "coolness" and purposefulness of their work, citing projects such as the Miami Dolphins training facility, Harry Potter at Universal Studios, and facilities for SpaceX and Blue Origin. He emphasized the use of modern technology, including robotics and drones, combating the perception that metal buildings are just "big barns." By demonstrating that the work generates a good income and is purposeful, and by encouraging parents to promote, rather than discourage, working with one's hands, van Rooyen views the labor shortage not as a problem, but as a solvable challenge.

"The cleanest money you can make is with your hands. So, we need to change the narrative ... it's not a problem, it's just a challenge we have to figure out," he said.

The full video of the roundtable is available **MetalConstructionNews.com**



Rapidly expanding technology, namely robotics and AI, is making a mark on the industry.

Technology and the rise of AI

van Rooyen highlighted significant technological advances that are impacting the field. Modern layout tools from major manufacturers, which utilize tablets and QR codes, are already expediting on-site layout, while automation and AI are driving faster design timeframes, particularly for anchor bolts and foundations.

"I think as bigger corporations invest more into developing that, it'll funnel down to the field where the clients will be happy to pay," van Rooyen says.

The industry is witnessing an increased adoption of Building Information Modeling (BIM), which is becoming the norm, enabling MEP (mechanical, electrical, and plumbing) contractors to integrate their models. Younger, more tech-savvy architects drive this trend, and as larger corporations invest more in development, these benefits will funnel down to the field.

He believes embracing this technology is essential for attracting the younger generation, who are not interested in "old school stuff." Implementing advanced tools will create greater appeal and drive for younger employees.

Hudgins primarily views the impact of AI through the lens of efficiencies. To him, it is already improving key operational areas, including project planning and scheduling. Specifically, it helps optimize resource allocation, particularly for labor and equipment.

Beyond direct efficiency, he has observed increased safety through the use of AI and a definite streamlining of administrative tasks.

On the design front, AI provides optimized design options that rapidly consider complex factors, such as cost, building codes, and site conditions. According to Funk, AI is a highly disruptive force across every layer of business and personal life, marking an exciting development for the future.

"It will be more integrated into safety, into quality, and really expand it in ways we probably can't imagine right now," Funk says.

The immediate impact is seen in its experimental use across scheduling and project management, fundamentally changing how projects are juggled from conception through to delivery. AI is significantly driving speed and accuracy in these processes. This gained efficiency and ability to move fast is seen as a crucial competitive advantage for the metal buildings industry, a benefit that will only grow with future support.

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The metal construction industry is seeing greater collaboration between contractors, erectors, and builders than ever before.

From Butler's perspective, the focus is on utilizing AI to empower personnel to be faster, ask better questions, and ultimately improve product delivery to the market. The ultimate goal is leveraging AI to gain a competitive edge by making all processes, from administration to field delivery, more efficient and optimized.

Leinbach firmly believes the construction industry is on the cutting edge of AI integration, with the next five to 10 years poised to bring revolutionary changes in field production and building erection methods, driven by AI and robotics.

A significant challenge is the generational divide: while younger workers are enthusiastic about and skilled with this technology, getting older project supervisors to adopt new tools (even iPads) remains difficult. Successful technology adoption is viewed as crucial for attracting and retaining the next generation of talent.

Beyond logistics and administrative efficiencies, a significant impact of AI and robotics is on product customization.

As Bus points out, historically, design was limited by machine capability; however, new robotic machinery allows for complex bends and shapes that were previously unimaginable. This capability is vital because modern architects demand custom products, which in turn push contractors to deliver what they can. The technology enables the company to offer highly bespoke, design-build products that are often not even featured on their website. This ability to deliver custom, innovative solutions, coupled with the "cool" factor of robotics, makes the industry significantly more attractive to younger workers, ensuring that technological progress directly addresses both market demand and the talent pipeline challenge.

"It's going to be very attractive and cool for the younger generation to see what can be done," Bus notes.

The standout success stories of 2025

Reflecting on 2025, Funk emphasizes the rise in collaboration and partnership across the industry, viewing these relationships as a significant source of positivity and pride.

This spirit of cooperation manifests in new and diverse ways:

- **Supplier and manufacturer integration**: Companies are forging closer agreements and integrations, such as between suppliers and manufacturers, to streamline operations and value chains.

- **Contractor joint ventures**: Contractors are increasingly partnering to jointly tackle projects that are either exceptionally large or technically challenging.

"Those partnerships across the industry, and there are lots of ways to do that, but I've seen a lot of that happen this year, and I think it's a great source of positivity and pride," Funk says.

She believes there is an enduring and vital opportunity to continue investing in and strengthening these partnerships across all facets of the industry. This increased collaboration is not just a trend but a key element for improving performance, sharing risks, and successfully taking on more ambitious work in the future.

For Bus, a key measure of success this past year has been the widespread understanding among partners and customers of how the construction world is currently operating.

The post-COVID period (2021-2023) brought significant frustrations, including uncertainty surrounding tariffs and other economic challenges. However, the industry has become accustomed to change and has demonstrated a much quicker ability to adapt to ongoing challenges. From Bus' perspective, this collective understanding and rapid adaptation among all market participants—from the industry itself to its customers—has been the defining positive factor for the year.

Hudgins said his two primary successes that defined 2025 for the industry are the embracing of technology and the profound change in the industry's narrative.

Historically, the construction sector has been a late adopter of new technologies. However, Hudgins has seen a significant shift, noting the excitement across the panel regarding the potential of AI and other technologies. The industry is now actively "leaning into" technology, recognizing the efficiencies and advancements it offers, marking this proactive approach as a critical success.

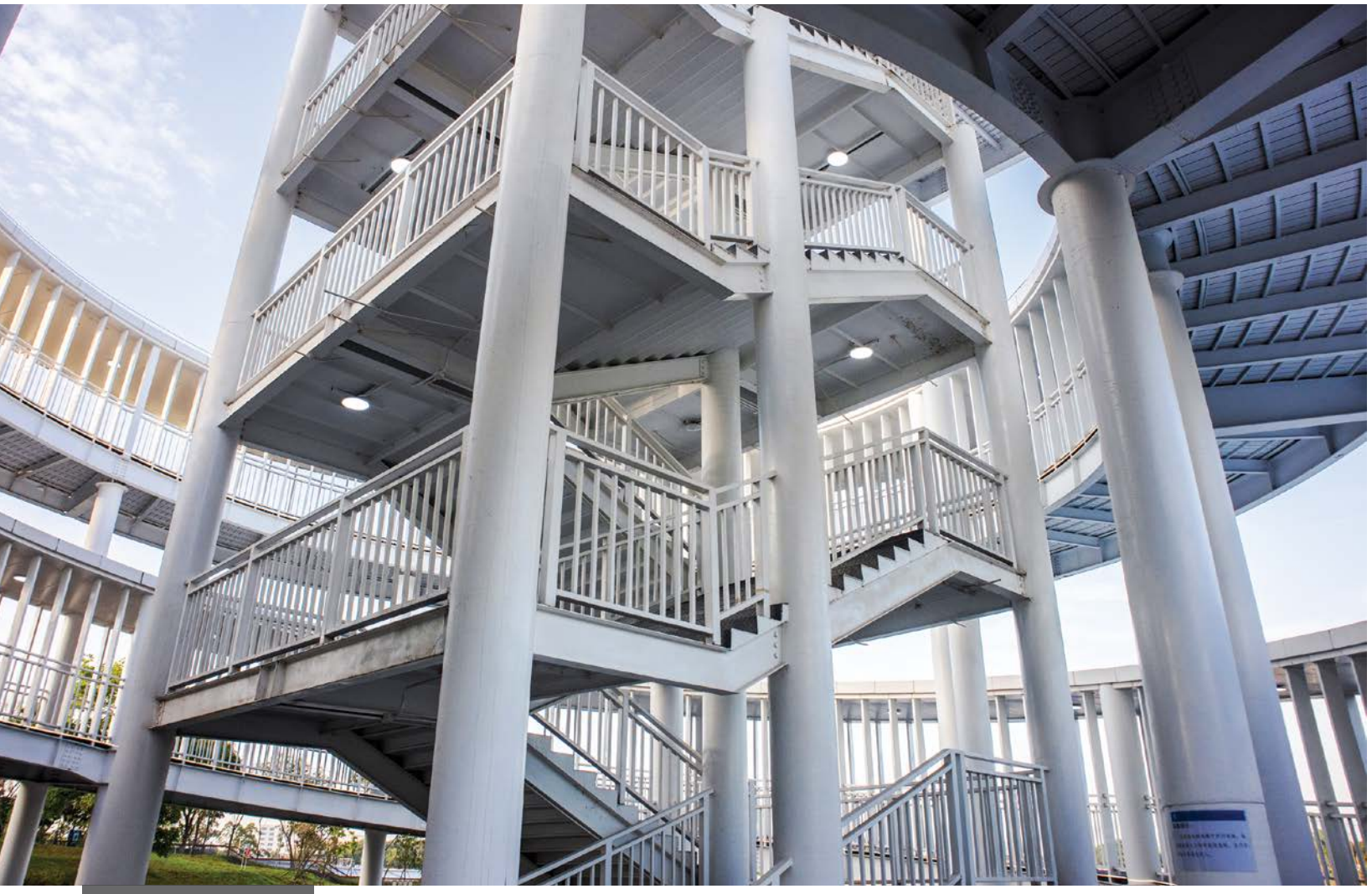
The second, and perhaps most impactful, success is the productive change of the narrative surrounding the industry. The construction field is now being recognized and proudly presented as dynamic, fascinating, and powerful. Echoing sentiments from others, Hudgins highlighted the positive impact workers make on their local communities and the "really cool stuff" the industry builds.

> "You should be proud [to be a construction worker]. I'm damn proud to be a construction worker—very proud to be,"
> **Steven Hudgins**

In his view, the long-standing stigma of 30 years ago has dissipated, and the current narrative proudly declares that construction is a viable and attractive career choice, with employees able to earn a good living and achieve an outstanding work-life balance.

"You should be proud [to be a construction worker]. I'm damn proud to be a construction worker—very proud to be," he says.

For van Rooyen, he is excited about the expansive growth currently driving the industry, particularly in key sectors. The privatization of space exploration has led to companies heavily investing in aerospace projects in Florida. Additionally, strong growth is observed in data centers and the onshoring of manufacturing facilities.



While 2025 was a challenging year for the industry, our panel of experts are optimistic for the year to come.

A significant highlight for 2025 was the increasing industry recognition of the AC 478 accreditation, which van Rooyen's company achieved this year.

"We're finally seeing that the architect firms are writing those into the specifications for the projects," he says. "We're seeing a lot of buy-in into that program, which in turn will raise the whole industry."

This movement is expected to improve the quality of installations across the entire industry, ensuring continued growth and success by elevating standards for everyone involved.

Leinbach's most tangible excitement is for the increased collaboration currently defining the construction industry. Having been in the business for nearly 40 years, he has seen a drastic and positive shift away from an old environment where contractors, manufacturers, and other professionals rarely communicated or shared information.

Today, there is a clear move towards designated design and open collaboration. The willingness to share is evident among contractors, particularly through organizations like the MBCEA and MBMA, where they openly discuss critical challenges such as the labor market, bonus programs, and safety protocols. He sees this sharing as essential for collective success.

"I see a willingness, especially among contractors, to sit down and discuss how they are handling the labor market. Or what's your bonus program look like? Or how do you handle safety?" he explains.

Further, collaboration between installers and manufacturers has improved significantly. Leinbach says that even the best product is deemed "bad" if not installed correctly, underscoring the necessity of working together. Many contractors in the group are striving to reach AC 478 accreditation, which is a unified commitment to proper installation and quality.

Manufacturers are actively seeking feedback from installers to improve their products and processes, which, in Leinbach's opinion, shows a mutual understanding that everyone needs each other to uphold the industry's reputation.

Metal Construction News thanks our five experts who participated. The full video of the discussion will be posted on *MCN*'s website.

What's Under the Metal?

Five Underlayment Questions to Consider

By Torre Palermino

PHOTOS COURTESY OWENS CORNING

What would you see if you peeked underneath a home's metal roof, similar to taking the proverbial look under the car hood? Would you see a durable, intact material capable of defending the roof deck and what lies beneath for years to come? Or would it be a compromised, torn material that permits water to infiltrate and damage materials under the metal panels? Chances are good that the view under the roof would be informed by the type of underlayment installed in the metal roof system.

Of course, even with the aid of virtual reality eyewear, it is hardly practical to raise the roof covering once it is installed to determine its condition. Material matters when it comes to protecting the long-term performance of a metal roofing system. From a home's eaves to its roof peak, underlayment delivers an essential layer of protection intended to perform for the life of the roof. While there are many underlayment materials in the market, choosing a synthetic or self-adhered underlayment is a good starting point.

Synthetic underlayments are more durable than asphalt-saturated felt underlayment materials (sometimes called organic felt) and provide enhanced protection against degradation that can occur when materials are exposed to UV rays. Similarly, synthetic underlayments are designed to help keep moisture away from the roof deck, where favorable conditions may allow mold to form.

Synthetic underlayments offer benefits that go beyond keeping nature's elements out. In addition to helping to create a water-shedding barrier, they can also help support worker safety on the rooftop.

Self-adhered underlayments have all the benefits of synthetic underlayments with the added benefit of asphalt and rubber polymer adhesives, making them a waterproof solution for the roof deck. Self-adhered underlayment is designed to protect the roof from damage in vulnerable areas where water tends to collect or where penetrations in the roof deck exist.

Given the role that the underlayment plays in supporting a roof's enduring performance from installation throughout its service life, asking the following questions can help contractors select an underlayment to protect metal roofs for the long haul.

Roofs must be able to withstand foot traffic during install and inspections. Synthetic underlayment materials are designed with durability in mind.

PHOTO © ALACATR/GETTY IMAGES

Seasons can stress roofs in different ways. Always check an underlayment material's temperature rating to make sure it can take the heat from UV rays.

Here are five questions to consider:

1 How durable is the material?

An underlayment material must be able to stand up to foot traffic on the roof during installation, maintenance, and inspections, as well as handling the load of equipment and tools that may be on the roof. The metal roof installation process typically involves moving panels about on the home's roof surface, which can create opportunities for the underlayment to tear. The integrity of the material is essential because even very small penetrations in the roof's underlayment can allow for water to enter. Moisture is not the only threat to a home's roof. UV rays can degrade materials in the wood deck, especially after sustained exposure. Selecting a material that can withstand exposure to moisture and UV rays can help support durability. For example, synthetic underlayments are manufactured to help protect against UV exposure for up to six months.[1] Additionally, these underlayments are up to 12 times stronger than #30 felt underlayment.[1]

2 How does the underlayment's walkability support the contractor's safety culture?

Steep slopes can present challenges to a roof's walkability. Worker safety should always be a priority, and the choice of underlayment can complement a holistic approach to keeping workers safe on the roof, even steep-slope roofs. Selecting an underlayment with safety features integrated into the design can contribute to contractors' safety culture. For example, the walking surface on Titanium's synthetic and self-adhered underlayments provides a slip-resistant walking experience.

3 Is the underlayment high-temperature rated?

Extreme heat seems to be occurring more frequently in many regions. NASA confirmed that 2024 was Earth's warmest year on record, and the National Oceanic and Atmospheric Administration (NOAA) reported that intense heat broke many records across the United States in 2024.[2,3]

The surface temperature on a metal roof can exceed 140°F on a summer day, and a higher heat load causes materials under the roof to break down more quickly. Checking the temperature rating of an underlayment material helps ensure it is rated to take the heat for years to come. High temperature-rated underlayments are designed to withstand temperatures up to 240°F. The underlayments are engineered to lay flat and not wrinkle when exposed to temperature fluctuations.

4 What is the span of protection?

There are multiple points of entry when it comes to moisture intrusion through the roof. Season after season, a home's roof is exposed to moisture entering through compromised flashing, damage caused by ice dams, or condensation occurring under the metal panels. At some point, water is likely to find a way into a home. While building codes in some regions require self-adhered underlayment at eaves, it may also be recommended

on rakes, valleys, penetrations, and any area where large amounts of water may collect, and some installers choose self-adhered products for the entire roof deck to prevent water intrusion. Self-adhering underlayments offer a peel-and-stick way to efficiently cover all these areas.

What is the underlayment's fire resistance?

Recent wildfires in many parts of the United States underscore the importance of fire resistance and the attention that code bodies place on selecting materials used in the Wildland Urban Interface (WUI). When it comes to testing for fire resistance, it is important to keep in mind that roofs are tested as assemblies, and the roof assembly is evaluated according to its ability to resist external fire. The three classifications described in ASTM E108-20a, *Standard Test Methods for Fire Tests of Roof Coverings,* are as follows:

- Class A tests are applicable to roof assemblies that are expected to be effective against severe fire exposure, afford a high degree of fire protection to the roof deck, not slip from position, and not present a flying brand hazard.
- Class B tests are applicable to roof assemblies that are expected to be effective against moderate fire exposure, afford a moderate degree of fire protection of the roof deck, not slip from position, and not present a flying brand hazard.
- Class C tests are applicable to roof assemblies that are effective against light exposure, afford a light degree of protection to the roof deck, do not slip from position, and do not present a flying brand hazard.

Titanium FR self-adhering underlayment, as part of the roof assembly, meets Class A fire resistance requirements and WUI standards even when installed under metal panels. The proprietary formulation helps mitigate fire spread to the roof deck.

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Torre Palermino *is the self-adhered product leader for Owens Corning, a world leader in building products. She is responsible for driving market and product development activities for residential steep slope applications in North America across all roof claddings.*

Reflective Insulation

A Smart Choice for Metal Building Systems

By Kelly Myers

PHOTOS COURTESY RFOIL INSULATION PRODUCTS

Insulating metal building systems poses several challenges. Over the years, the use of reflective insulation has continued to increase, as more people recognize and understand its value in metal building systems.

An effective insulation system must reduce heat transfer and minimize energy usage and costs. It should also prevent interior condensation and provide thermal breaks. The insulation must be durable, capable of withstanding years of exposure, and maintain its performance and physical properties over time. Finally, the insulation system must be efficient, affordable, cost-effective, and easy to install.

Metal buildings are, by nature, very thermally inefficient. A natural property of metal is its high thermal conductivity. This means that virtually all heat energy received by metal is efficiently transferred with almost no thermal resistance. As a result, maintaining desired temperatures in metal buildings is typically difficult, ongoing, and expensive.

Reducing summer interior heat gain is especially challenging. The sun's rays can bring the metal exterior to extremely high temperatures. As a result, the metal cladding essentially becomes a radiator, delivering this heat to the inside of the building. Without proper thermal insulation, a metal building's interior can easily become hotter than the outside air in the summer. Controlling heat loss in cold seasons is equally challenging.

Controlling heat gain and loss

Reflective insulation offers the best defense against the radiant heat transfer that commonly occurs in metal building systems. The key is the aluminized surfaces, which provide a thermal reflectivity of 95-96 percent. This high reflectivity (and low emissivity) results in a surface that interrupts and redirects the flow of radiating heat energy.

In metal building systems, most of the heat gain/loss is the result of radiant heat transfer. Traditional fiber/mass insulation reduces heat transfer via conduction and convection but has almost no effect on radiant transfer. Reflective insulation is, by far, the most effective defense against radiant heat gain and loss in metal buildings.

Preventing interior condensation

A secondary benefit of this thermal performance is reduced interior condensation. In metal buildings, this occurs when water vapor in the air condenses on the ceiling surface. This happens when the air temperature rises until it matches the dew point temperature of the ceiling itself. Since reflective insulation dramatically reduces interior heat gain, the conditions for condensation to form no longer exist.

Reflective insulation typically consists of highly reflective aluminized film laminated to a substrate, which provides rigidity, flexibility, strength, and an effective thermal break. Among the most common substrates are single or double layers of high-strength polyethylene bubble film. The reflective surface can be on both sides or with a white-facing material on one side.

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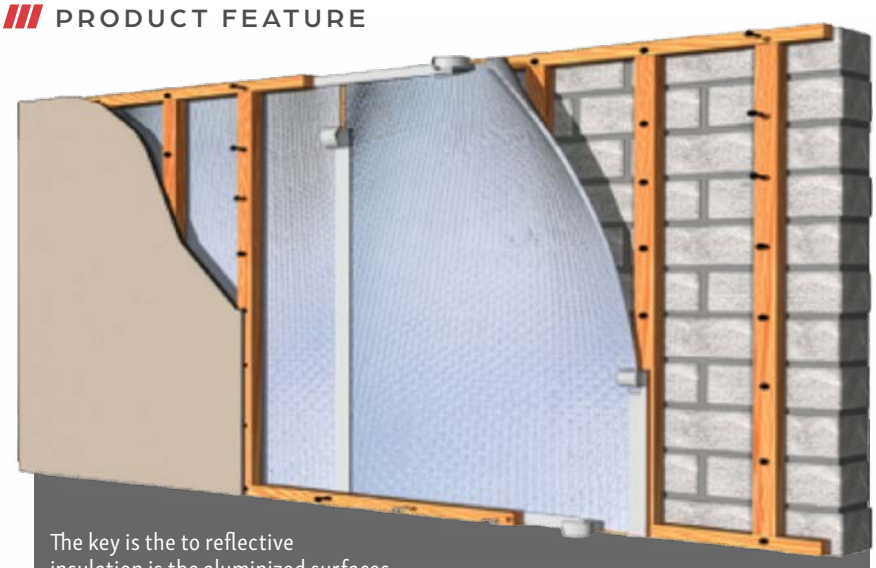


The key is the to reflective insulation is the aluminized surfaces.

Reflective insulation is the most effective defense against radiant heat gain and loss in metal buildings.

Reflective insulation can either be draped over purlins or attached to the inside.

Installation of reflective insulation systems:

- **Draped over the purlins:** When installed with an airspace between the insulation and the exterior metal, insulation with two reflective sides can achieve an R-10. Insulation with one reflective side and one white-facing side can achieve an R-value of 6.
- **Attached to the inside of the purlins:** This method provides increased thermal performance, due to the larger enclosed airspace between the reflective insulation and the metal exterior. This method also covers the purlins, further reducing the risk of interior condensation. The enclosed airspace between the purlins can also be filled with fiber/mass insulation to meet higher R-value requirements.

To achieve maximum performance, the insulation must always be properly installed according to the manufacturer's specifications.

Below is an overview of the many reasons reflective insulation is a wise choice for metal building applications:

- Superior thermal performance against radiant heat transfer, the primary mode of heat gain/loss in any metal building system.
- Reduce energy usage and lower heating/cooling costs.
- Prevents interior condensation.
- Lightweight and easy to cut and install.
- Easy to handle, no harmful fibers, and no itch.
- Will not harbor mold or mildew.
- Highly durable and tear-resistant.
- Will not lose thermal performance over time.
- It can be installed over existing fiber insulation to improve thermal performance and enhance interior appearance.
- It can easily be used to retrofit existing metal buildings.
- Bright interior surfaces can reduce lighting requirements up to 35 percent.
- Class 1/A Fire Rating (ASTM E84-09 and ASTM C2599).
- Passes National Fire Protection Association (NFPA) 286 Full Room Burn Test.
- Passes ASTM G-155 (Long-term weatherization/oxidation).

Reflective insulation materials should always be tested under the ASTM 1224, *Standard Specifications for Reflective Insulation for Building Applications.*

Kelly Myers *has 31 years of experience in the reflective insulation and radiant barrier industry, including 19 years managing sales of rFOIL Insulation Products in the United States and Central America. Kelly has vast experience and knowledge of the principles of reflective insulation/radiant barriers, and a keen ability to educate others about the technology, performance, and applications for these products. Kelly has led seminars and presentations to a wide variety of groups, including architects, municipal agencies, code officials, universities, and industry trade conventions. He has written educational materials for the American Institute of Architects (AIA) and has been a certified AIA continuing education instructor. Kelly is a member of several industry associations, including the Reflective Insulation Manufacturers Association (RIMA), where he currently serves as chairman of RIMA's Verification Committee.*

Exploring Phenolic Duct Systems for Energy Efficiency

PHOTO © KINGSPAN / ISTOCK / GETTY IMAGES

As the HVAC industry evolves to meet the demands of high-performance buildings, ductwork must evolve with it.

By Ryne R. Sullivan

PHOTOS COURTESY KINGSPAN INSULATION NORTH AMERICA

As the construction industry prioritizes energy efficiency and sustainability, HVAC systems are under increasing scrutiny for their role in building performance. While most attention is given to high-efficiency chillers, heat pumps, and controls, ductwork—the circulatory system of HVAC—often remains overlooked. That is changing with the rise of phenolic pre-insulated duct systems, which offer a transformative approach to air distribution.

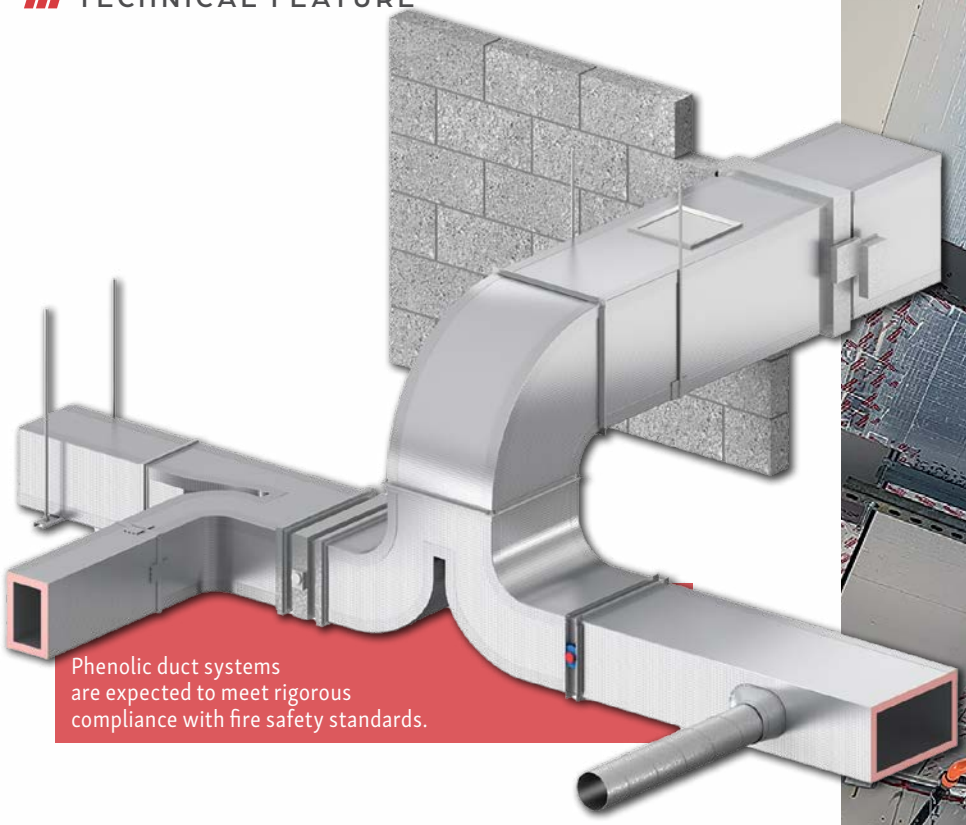
What is a phenolic duct?

Phenolic ducts are a pre-insulated ductwork system that replaces traditional sheet metal ducts wrapped in external insulation. They are constructed from rigid thermoset phenolic insulation panels faced with reinforced aluminum foil. These panels are fabricated into duct sections using Sheet Metal/Air Condition Contractors' Association (SMACNA) standard joining procedures that minimize air leakage and maximize thermal performance.

Unlike conventional systems, phenolic ducts integrate insulation directly into the duct wall, eliminating the need for secondary insulation trades and reducing the overall duct profile. The result is a lightweight, high-performance system that meets or exceeds modern energy codes.

Superior energy efficiency

One of phenolic insulation's most compelling advantages is its contribution to HVAC energy efficiency. The phenolic core has an exceptionally low thermal conductivity—0.019 W/m·K—resulting in a high R-value of over R6.8 per in., exceeding fiberglass or elastomeric insulation.



Phenolic duct systems are expected to meet rigorous compliance with fire safety standards.

The thinner profile allows the system to be routed through tighter ceiling voids and mechanical chases, freeing up valuable ceiling space for other services.

Additionally, following SMACNA industry standard joining, phenolic duct systems are designed to achieve low air leakage rates, often outperforming SMACNA Class 3 standards. Reduced leakage means less fan energy is required to maintain airflow, and conditioned air reaches its destination more efficiently. This translates to lower energy bills and improved occupant comfort.

Phenolic panels are available in a range of insulation values—R6 to R12—achieving compliance with ASHRAE 90.1, *IECC*, and other energy codes. This makes them an ideal choice for projects targeting Leadership in Energy Efficient Design (LEED) certification or net-zero energy goals.

Installation and labor savings

From a contractor's perspective, phenolic duct systems offer significant labor and equipment savings. They are up to 70 percent lighter than traditional insulated sheet metal ductwork, which simplifies handling, requires less equipment for hoisting, and speeds up installation, getting crews on and off the job site faster.

Duct sections can be prefabricated off-site or assembled and modified on-site using standard fabrication tools. This flexibility allows contractors to adapt to project schedules and site conditions while maintaining quality control. Because insulation is built-in, there is no need to coordinate with separate insulation crews, reducing trade overlap and potential checklist delays.

Design flexibility in tight spaces

Due to phenolic's high thermal performance, the insulation profile is thinner, starting at 22 mm (0.875 in.) for R6. This is a game-changer for those working in space-constrained environments. The thinner profile allows the system to be routed through tighter ceiling voids and mechanical chases, freeing up valuable ceiling space for other services. This makes it particularly well-suited for applications such as hospitals, schools, data centers, and commercial retrofits—anywhere where space, speed, and performance are at a premium.

Indoor air quality and sustainability

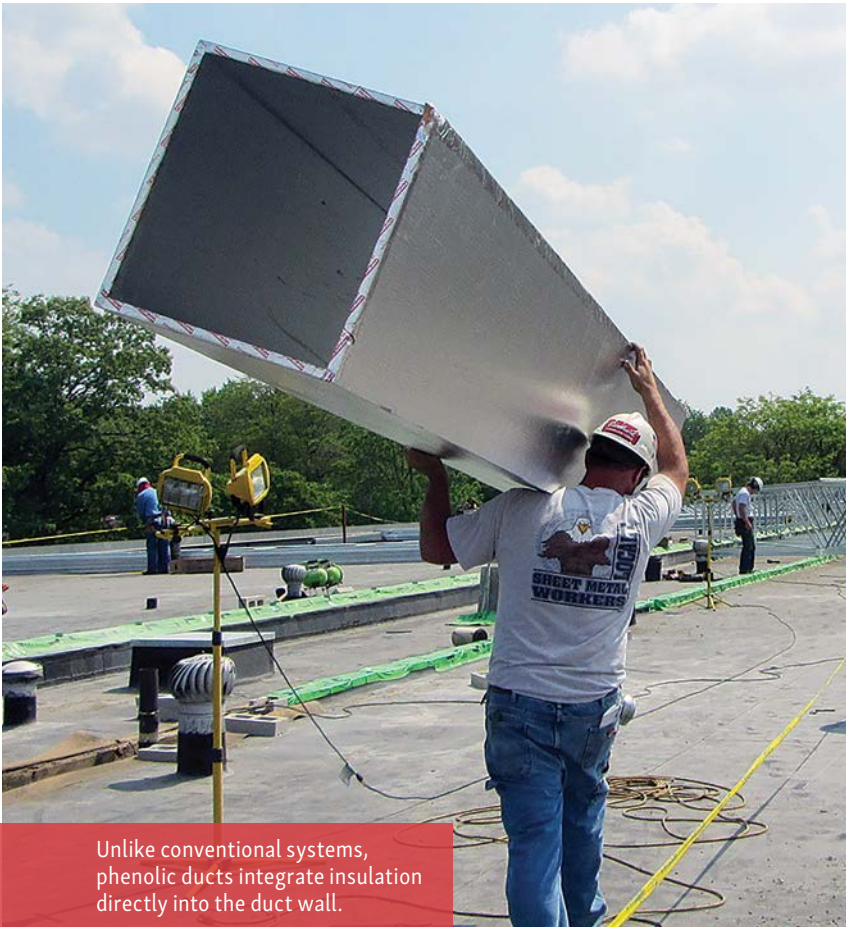
In addition to energy performance, phenolic ducts support healthy indoor environments. The phenolic insulation is non-fibrous, non-wicking, and resistant to microbial growth, contributing to better indoor air quality (IAQ) and occupant health.

From a sustainability standpoint, duct systems utilizing phenolic insulation can receive points towards achieving credits in the LEED Building rating systems developed by the United States Green Building Council (USGBC).

Code compliance and fire safety

In addition to its energy and installation benefits, phenolic board manufacturers stand out for their rigorous compliance with fire safety standards, most notably UL 181, the industry benchmark for air duct systems.

UL 181 is a safety standard developed by Underwriters Laboratories evaluating the fire resistance, smoke development, and structural integrity of air ducts and connectors. All phenolic duct systems for interior use must have a UL 181 Listed Class 1 air duct, meaning it has achieved a flame spread and smoke development of less than 25/50.



Unlike conventional systems, phenolic ducts integrate insulation directly into the duct wall.

Phenolic as an insulation liner and its acoustic benefits

Phenolic duct insulation is used as a duct liner in standard metal duct systems, offering a high-performance solution that enhances energy efficiency and occupant comfort. From an acoustic standpoint, phenolic insulation dampens sound transmission traveling down the duct, causing insertion loss and sound transmission through the duct wall, which is called “breakout noise." Utilizing phenolic duct insulation helps attenuate these sounds from the HVAC system, reducing the need for additional sound attenuators, duct silencers, and acoustic liners.

Phenolic insulation in outdoor duct systems

The benefits of phenolic insulation extend beyond interior applications. Outdoor-rated phenolic duct systems are powered by the same phenolic insulation core wrapped in an outdoor weather enclosure, delivering high-performance insulation for air distribution in exterior environments.

These systems are engineered with UV-resistant, weatherproof cladding and sealed joints to withstand harsh outdoor conditions while maintaining low thermal conductivity and high R-values to prevent condensation. Phenolic insulation’s closed-cell structure provides excellent moisture resistance, reducing the risk of degradation over time. Many of these systems carry an extended warranty of 10-plus years, a testament to the durability and performance of phenolic insulation in rugged environments.

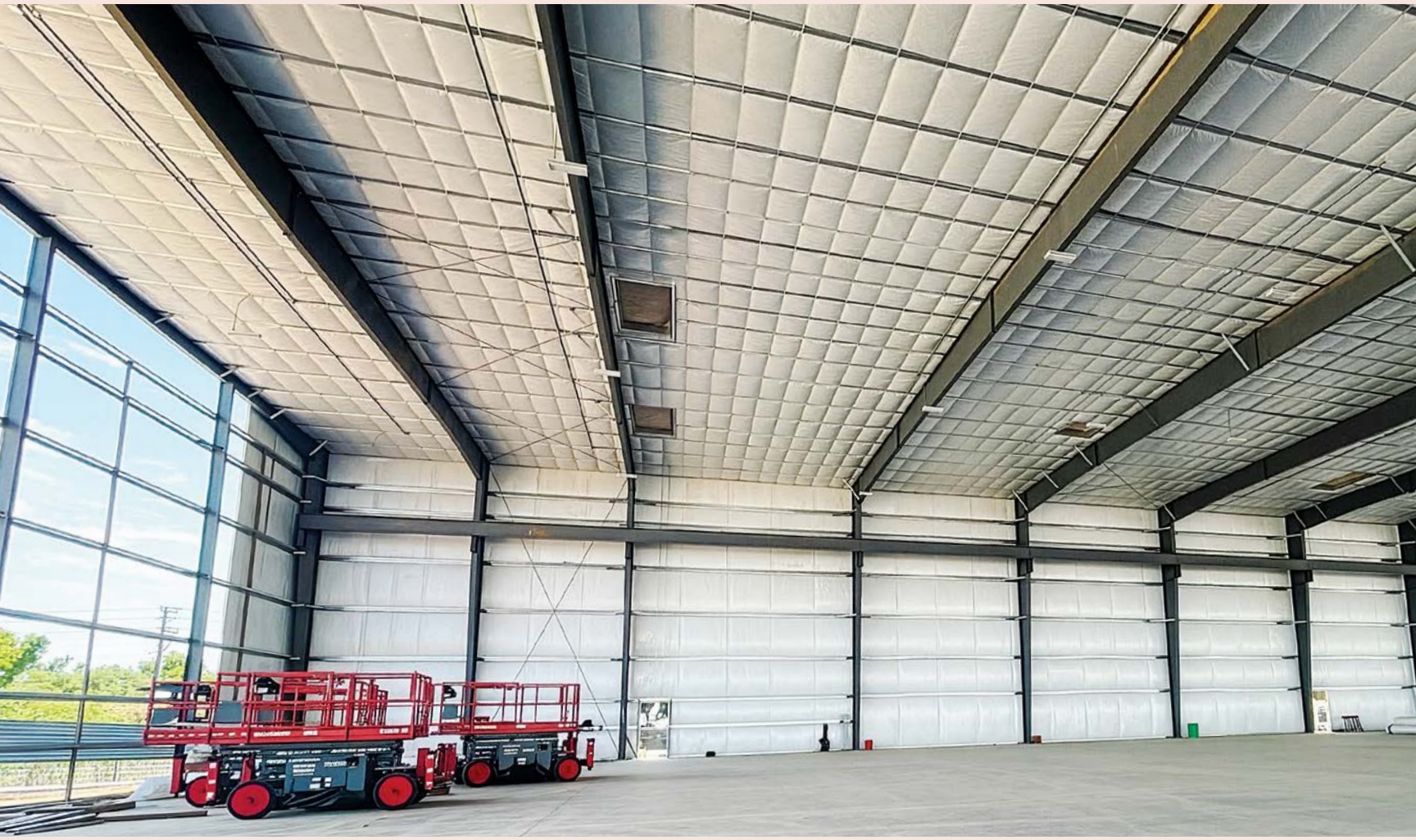
Real-world results

A detailed case study was conducted of a retrofit in a mid-sized healthcare facility. The mechanical contractor reported a 21 percent reduction in installation costs using phenolic ductwork compared to traditional ductwork. The lighter weight allowed for easier handling in tight ceiling spaces, and the integrated insulation eliminated the need for follow-up trades. Energy modeling projected a 20 percent reduction in HVAC energy consumption due to improved thermal performance and reduced leakage.

Conclusion

As the HVAC industry evolves to meet the demands of high-performance buildings, ductwork must evolve with it. Phenolic ducts offer a compelling alternative to traditional systems, combining energy efficiency, installation speed, code compliance, and design flexibility in a single solution. For mechanical engineers and HVAC contractors looking to deliver value on every project, phenolic duct is more than just a pre-insulated duct system—it is a more innovative way to build.

Ryne R. Sullivan, national sales manager – KoolDuct at Kingspan Insulation North America, is a recognized innovator and technical leader in the phenolic ducting industry, bringing nearly two decades of expertise in the design, fabrication, and installation of advanced duct systems. His work has contributed significantly to the evolution of HVAC duct technologies, including co-inventing patented solutions such as US10895399B2, which have helped drive forward innovation and performance in the sector.



Essential Insulation Systems for Metal Building Energy Code Compliance

By Bill Beals

PHOTOS COURTESY THERM-ALL

Energy performance requirements for metal buildings have increased substantially over the last 15 years, driving significant changes in insulation system design and installation. Two primary frameworks shape these requirements: the International Energy Conservation Code (*IECC*) and the ASHRAE 90.1 Standard. Both the *IECC* and ASHRAE 90.1 have tightened minimum thermal performance values over the last decade, resulting in thicker, higher-performing assemblies becoming the go-to solution for building envelope compliance. Understanding high-R insulation systems helps contractors and erectors avoid compliance issues, ensuring the metal building envelope performs as required.

R-values and U-values

IECC 2012 marked a turning point for metal building insulation because it was the first cycle to introduce significantly higher R-value requirements for both roofs and walls. All required R-values and their corresponding U-values for metal building roofs and walls are listed in ASHRAE 90.1 Tables A2.3.3 (Roofs) and A3.2.3 (Walls). These tables serve as the basis for the *IECC* and ASHRAE 90.1 compliance options used in every climate zone.

The wall tables are where many crews and designers pause because the requirements sometimes show up as combinations rather than a single number. For example, a climate zone might call for "R-13 + R-13

CI." That is not one product; it is a system. This indicates that two separate insulation materials should be used together, R-13 fiberglass paired with R-13 rigid board insulation, to meet the required U-value. However, both *IECC* and ASHRAE 90.1 do allow flexibility through the U-value compliance approach. This means any published system in ASHRAE 90.1, or any proprietary system tested through ASTM C1363 hot box procedures, may be used if its measured U-value meets or exceeds the code requirement.

How the requirements have evolved

From *IECC 2012* up to *IECC 2024*, there have been very few changes to the R-value and U-value tables. From ASHRAE 90.1 2013 up to ASHRAE 90.1 2025, the same is true. Over the years, only minor tweaks have been made to wall requirements. Instead, the major differences have centered on whole-building performance factors, including tighter air leakage

Insulation System	Rated *R-Value* of Insulation	Overall *U-Factor* for Entire Base *Roof* Assembly	Overall *U-Factor* for Assembly of Base *Roof* Plus *Continuous Insulation* (Uninterrupted by Framing)								
			Rated *R-Value* of *Continuous Insulation*								
			R-5.5	R-9.8	R-13	R-15.8	R-19	R-22.1	R-25	R-32	R-38
Standing Seam *Roofs* with Thermal Spacer Blocks[a, b]											
Single Layer	None	1.280	0.137	0.095	0.073	0.060	0.051	0.044	0.039	0.031	0.026
	R-10	0.115	0.066	0.054	0.046	0.041	0.036	0.032	0.030	0.025	0.021
	R-11	0.107	0.083	0.052	0.045	0.040	0.035	0.032	0.029	0.024	0.021
	R-13	0.101	0.061	0.051	0.044	0.039	0.035	0.031	0.029	0.024	0.021
	R-16	0.096	0.059	0.049	0.043	0.038	0.034	0.031	0.028	0.024	0.021
	R-19	0.082	0.053	0.045	0.040	0.036	0.032	0.029	0.027	0.023	0.020
Double Layer	R-10 + R-10	0.088	0.056	0.047	0.041	0.037	0.033	0.030	0.028	0.023	0.020
	R-10 + R-11	0.086	0.055	0.047	0.041	0.036	0.033	0.030	0.027	0.023	0.020
	R-11 + R-11	0.085	0.055	0.046	0.040	0.036	0.033	0.030	0.027	0.023	0.020
	R-10 + R-13	0.084	0.054	0.046	0.040	0.036	0.032	0.029	0.027	0.023	0.020
	R-11 + R-13	0.082	0.053	0.045	0.040	0.036	0.032	0.029	0.027	0.023	0.020
	R-13 + R-13	0.075	0.050	0.043	0.038	0.034	0.031	0.028	0.026	0.022	0.019
	R-10 + R-19	0.074	0.050	0.043	0.038	0.034	0.031	0.028	0.026	0.022	0.019
	R-11 + R-19	0.072	0.049	0.042	0.037	0.034	0.030	0.028	0.026	0.022	0.019
	R-13 + R-19	0.066	0.047	0.041	0.036	0.033	0.030	0.027	0.025	0.021	0.019
	R-16 + R-19	0.065	0.046	0.040	0.035	0.032	0.029	0.027	0.025	0.021	0.019
	R-19 + R-19	0.060	0.043	0.038	0.034	0.031	0.028	0.026	0.024	0.021	0.018
Liner System	R-19 + R-11	0.037									
	R-25 + R-8	0.037									
	R-25 + R-11	0.031									
	R-30 + R-11	0.029									
	R-25 + R-11 + R-11	0.026									
Filled Cavity with Thermal Spacer Blocks[c]											
	R-10 + R-19	0.041	0.032	0.029	0.027	0.025	0.023	0.022	0.020	0.018	0.016
	R-19 + R-11	0.037									
Standing Seam *Roofs* without Thermal Spacer Blocks											
Liner System	R-19 + R-11	0.040									
Through-Fastened *Roofs* without Thermal Spacer Blocks											
	R-10	0.184	0.084	0.066	0.054	0.047	0.041	0.036	0.033	0.027	0.023
	R-11	0.182	0.083	0.065	0.054	0.047	0.041	0.036	0.033	0.027	0.023
	R-13	0.174	0.082	0.064	0.053	0.045	0.040	0.036	0.033	0.026	0.023
	R-16	0.167	0.078	0.062	0.052	0.045	0.039	0.035	0.032	0.026	0.023
	R-19	0.151	0.076	0.081	0.051	0.045	0.039	0.035	0.032	0.026	0.022
Liner System	R-19–R-11	0.044									
(Multiple *R-values* are listed in order from inside to outside)											

a. A standing seam roof system that provides a minimum 1.5 in. distance between the top of the purlins and the underside of the metal roof panels is required.
b. A minimum R-3 thermal spacer block is required.
c. A minimum R-5 thermal spacer block is required.

Roof type is not only a structural decision but also a thermal performance decision made early in the design process.

control, improved mechanical efficiency, reduced thermal bridging, updated lighting requirements, and more attention to onsite renewable energy. Insulation remains a core part of compliance, but it now operates within a broader energy strategy that encompasses the entire building envelope.

Codes vary by state

Each state follows its own review and adoption cycle, resulting in code versions that can vary. Some states may be using the *IECC 2012*, while others have adopted the *IECC 2021*, and these adoptions can change over time. Many states update their codes at the start of the calendar year, but others wait until mid-year, often June or July. For a contractor working across state lines, this means confirming the active code cycle for the project location, as well as monitoring state resources, code council updates, and local regulatory communications. There are also a few states that have their own state-specific energy codes, such as California (Title 24) and Washington (WSEC).

When high–R systems are required

Today, most climate zones require high-R fiberglass systems for metal buildings to meet envelope requirements. However, there are some exceptions. Unheated buildings and low-energy buildings typically have no insulation requirements, while semi-heated buildings have relaxed requirements. Each building type, along with its unique requirements, is defined in both *IECC* and ASHRAE 90.1.

High–R systems defined

The term "high-R" stands for "high R-value." At the same time, "system" refers to the combination of materials that comprise the full assembly, such as fiberglass, a vapor retarder, support banding, and screws. There are two main types of high-R fiberglass systems defined in *IECC* and ASHRAE 90.1: liner systems (LS) and filled cavity systems (FC).

Liner systems are designed for use on both roofs and walls, making them suitable for both new construction and retrofit applications. A typical liner system roof application includes two layers of unfaced fiberglass, a low-permeance fabric that serves as the vapor retarder, and banding that runs both parallel and perpendicular to the purlins. One layer of fiberglass is installed between the

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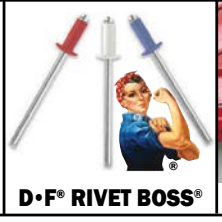

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Understanding high-R insulation systems helps contractors and erectors avoid compliance issues.

Normative Appendix A

Table A3.2.3 Assembly *U-Factors* for *Metal Building Walls*

Insulation *System*	Rated *R-Value* of Insulation	Overall *U-Factor* for Entire Base *Wall* Assembly	Overall *U-Factor* for Assembly of Base *Wall* Plus *Continuous Insulation* (Uninterrupted by Framing)								
			R-6.5	R-9.8	R-13	R-15.8	R-19	R-22.1	R-25	R-32	R-38
Continuous insulation only	R-0	1.180	0.136	0.094	0.072	0.060	0.050	0.044	0.039	0.030	0.026
Single compressed layer	R-10	0.186	0.084	0.066	0.054	0.047	0.041	0.036	0.033	0.027	0.023
	R-11	0.185	0.084	0.066	0.054	0.047	0.041	0.036	0.033	0.027	0.023
	R-13	0.162	0.079	0.063	0.052	0.046	0.040	0.035	0.032	0.026	0.023
	R-16	0.155	0.077	0.062	0.051	0.045	0.039	0.035	0.032	0.026	0.022
	R-19	0.147	0.075	0.060	0.050	0.044	0.039	0.035	0.031	0.026	0.022
Single layer in cavity	R-25[a]	0.059	0.044	0.039	0.035	0.032	0.029	0.027	0.025	0.021	0.019
	R-30[b]	0.052	0.042	0.037	0.033	0.031	0.028	0.026	0.024	0.021	0.019
Double layer	R-25 + R-10	0.047	0.038	0.034	0.031	0.028	0.026	0.024	0.023	0.020	0.018
	R-25 + R-16	0.042	0.036	0.032	0.029	0.027	0.025	0.023	0.022	0.019	0.018
	R-25 + R-10[c]	0.039	0.032	0.029	0.027	0.025	0.023	0.022	0.021	0.018	0.017
	R-30 + R-16	0.039	0.036	0.032	0.029	0.027	0.025	0.023	0.022	0.019	0.017

(Multiple *R-values* are listed in order from inside to outside.)
a. A minimum R-0.375 thermal spacer block or thermal break strip is required when installed without *continuous insulation*.
b. A minimum R-0.75 thermal spacer block or thermal break strip is required when installed without *continuous insulation*.
c. A minimum R-3 thermal spacer block is required.

purlins, and the second layer is installed over and perpendicular to the purlins. The fabric vapor retarder is attached to and completely covers the bottom of the purlins. Liner systems are usually private-label products, and some variations offer leading-edge fall protection.

Filled cavity systems, which are also referred to as Long Tab Banded systems or High-R Banding systems, are designed for use in metal building roofs only. They are comprised of two layers of fiberglass, one laminated with a vapor retarder and one unfaced, plus banding which runs perpendicular to the purlins. The laminated layer of insulation is installed between and parallel to the purlins, while the unfaced layer of fiberglass is installed on top of and perpendicular to the purlins. Long Tab Banded systems are usually non-proprietary, and the purlins are left exposed.

High-R wall systems may be single-layer or double-layer, depending on the climate zone. Whether in walls or roofs, what ultimately matters is the tested performance of the full assembly. Metal framing and installation details affect heat flow, so tested U-values are used to judge assemblies. For example, a standard R-30 roof liner system yields an in-place U-value of 0.037, corresponding to an overall R-value of approximately R-27.

The type of roof matters

Roof selection also impacts a project's insulation path. For example, standing seam roofs offer the most options for in-place U-value, whereas screw-down roofs have only one tested U-value (U-0.044), which sometimes does not meet code requirements. This is why roof type is not only a structural decision but also a thermal performance decision made early in the design process.

Beyond fiberglass: Other high–R options

Fiberglass systems are common, but they are not the only route. Insulated metal panels (IMPs) and rigid board insulation are also widely used in metal building applications. Board insulation qualifies as continuous insulation (c.i.) under code definitions, and because it maintains a uniform thickness across framing members, its labeled R-value tracks closely with the in-place performance.

IMPs are a bit more complex. Their seams create small thermal bridges; therefore, IMP assemblies must be tested using ASTM C1363 to confirm their performance. Even with those seams, IMPs generally retain most of their rated thermal value once installed.

Looking ahead

The days of defaulting to 152.4 mm (6 in.) R-19 roof insulation and 101.6 mm (4 in.) of R-13 wall insulation are no longer in place. Today, high-R systems have become the standard in metal building construction, prompting pre-engineered metal building (PEMB) manufacturers to refine components such as flange bracing and eave adaptors to support thicker assemblies. As data centers and other high-demand project types continue to surge, the use of reliable, well-engineered high-R systems will only intensify.

Bill Beals, *district manager of Therm-All, is a 40-year veteran of the metal building industry and a contributing member of several committees, including the Metal Building Manufacturers Association (MBMA) Energy Committee and the National Insulation Association (NIA) Laminators Committee. Bill also belongs to the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and the International Code Council (ICC). Bill has contributed to over 100 articles and reference guides on commercial energy codes and has instructed AIA-accredited courses for more than eight years. He was inducted into the Metal Construction News Hall of Fame in 2024.*

Protecting Ventilation Openings in Storm Shelters and Tornado Safe Rooms

PHOTO © TJP INSPIRED PHOTOGRAPHY/GETTY IMAGES

By Anthony Jackson, CSI

Storm shelters and safe rooms are essential for safeguarding residents in regions vulnerable to severe weather events like tornadoes and hurricanes. The design and construction of shelters for use during significant high-wind weather events must follow standards and guidelines set by the United States government and third-party associations. This includes products used in the construction of the shelter, including louvers.

The two main entities involved are the Federal Emergency Management Administration (FEMA) and the International Code Council (ICC).

FEMA provides guidelines for both community and residential safe rooms. FEMA Publication P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms*, provides important information about safe room design and construction, including best practices. These best practices include consideration for ventilation requirements, emergency management, and risk assessment information.

ICC 500, *Standard for the Design and Construction of Storm Shelters*, is another essential resource, as this document systematically arranges FEMA P-361 and provides the building codes and standards for storm shelter design and construction. Any safe rooms constructed using FEMA funds must comply with ICC 500 and FEMA P-361 requirements.

Figure 1, the wind zone risk level map, helps identify when a tornado safe room or storm shelter using FEMA 361 louvers is recommended.

Design considerations

An important aspect of storm shelter design is protecting openings, including the ventilation openings, against extreme wind and wind-borne debris while still providing adequate airflow to the shelter occupants. Wind speeds up to 402 km/h (250 mph) must be considered when designing these storm shelters for tornado regions. Proper product selection and application are critical to maintaining building envelope ratings.

One of the main design criteria relative to the building envelope is missile impact resistance. Missile impact criteria for

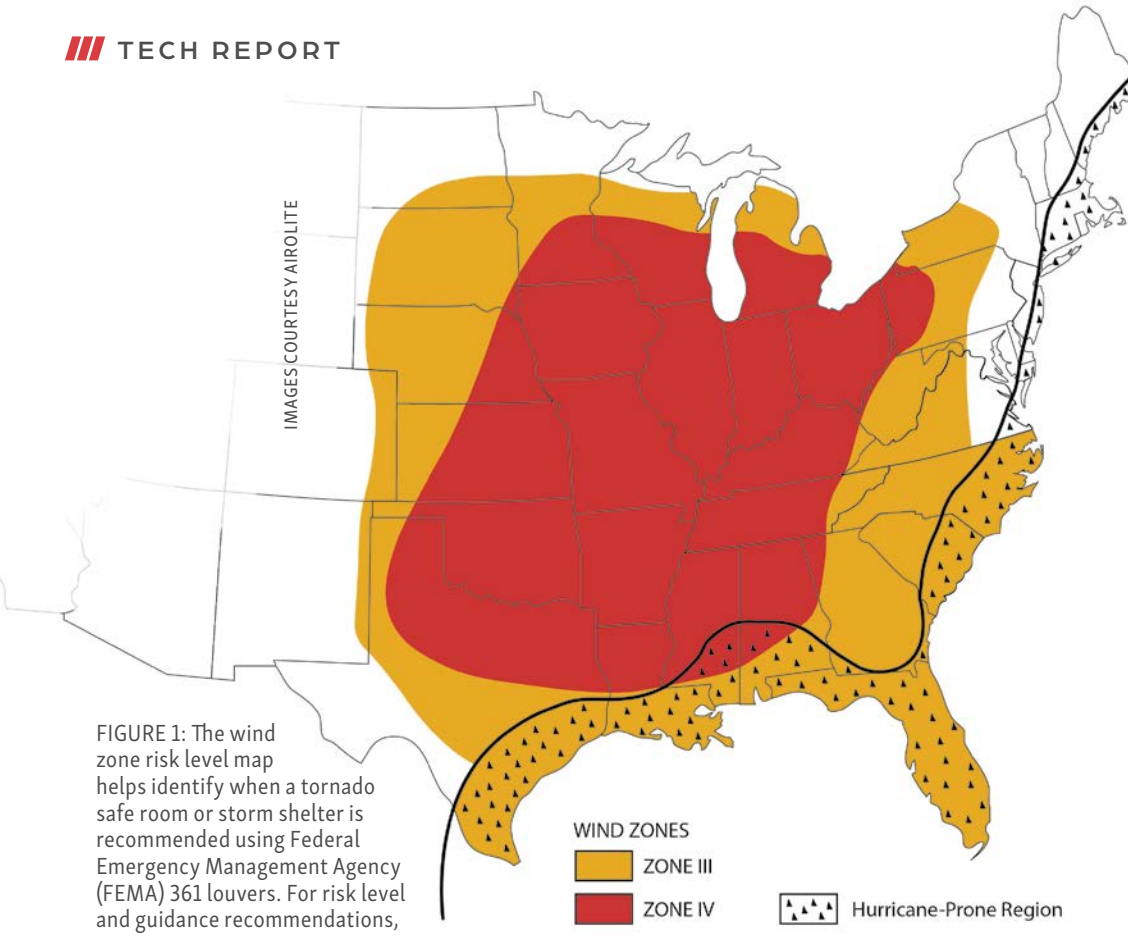

FIGURE 1: The wind zone risk level map helps identify when a tornado safe room or storm shelter is recommended using Federal Emergency Management Agency (FEMA) 361 louvers. For risk level and guidance recommendations, see FIGURE 2 on page 43.

impact-protective systems, including louvers, are identified in ICC 500, Chapter 8. The missile used in testing is a No. 2 or better grade soft lumber 2x4 weighing 6.8 kg (15 lb) with a length of 4 m (13.5 ft). For a safe room designed to withstand a 402-km/h (250-mph) wind speed, the missile speed will be 161 km/h (100 mph) for vertical surfaces and 108 km/h (67 mph) for horizontal surfaces.

Chapter 8 of the ICC 500 publication also includes pressure-testing procedures for impact protective systems, including positive and negative cyclic design pressures. This procedure subjects the test specimen to very high positive and negative wind loads. It is designed to ensure the impact-protective system can withstand the wind-induced pressure experienced during a significant weather event.

The ICC 500 publication also clearly identifies ventilation requirements, which vary based on the storm shelter application and occupancy. Residential shelters (maximum occupancy is 16 people) require 1,290 mm^2 (2 $in.^2$) of venting area per occupant. Community shelters with occupancy of 50 or fewer require 3,226 mm^2 (5 $in.^2$) of venting area per occupant, and occupancy of 50 or greater requires 3,871 mm^2 (6 $in.^2$) of ventilation per occupant. This section also provides specific information for the proper location and placement of natural ventilation openings within the structure. The location of the ventilation openings is critical to providing adequate cross ventilation for the shelter.

Section 112 of the ICC 500 publication addresses labeling. This section explains the requirements for labeling of impact protective systems, including louvers, to show compliance with the ICC 500 standard. An approved agency, such as Underwriters Laboratories (UL), labels these products when required by the applicable code or jurisdiction.

FEMA louver requirements

Louvers meeting FEMA requirements are a common selection when it comes to protecting ventilation openings in the structure's envelope. When using louvers in FEMA shelter applications, verifying that the selected louvers have the ICC 500 impact qualification, meet the cyclic wind load and high wind load ratings, and have a third-party

verification listing is important. UL is one example of a third-party verifier. The manufacturer may also choose to test the louver to the Air Movement and Control Association International, Inc. (AMCA) Standard 500-L for *Air and Water Performance*. This testing is conducted to validate a manufacturer's published performance of the louver regarding air and water penetration performance and to allow it to be applied with confidence that it will perform as specified.

Protecting ventilation openings is essential to maintaining structural integrity and occupant safety in the design of storm shelters and tornado safe rooms. With a wide variety of installation and configuration options available, louvers meeting FEMA requirements can be configured for nearly every safe room and storm shelter application. This installation flexibility, combined with the stringent testing qualifications and third-party listing, makes these louvers ideal for tornado safe rooms, storm shelters, and applications in the hurricane-prone region or any location where maximum protection against wind-driven rain is necessary.

Wind Zone: III and IV	
Risk	High
Guidance	Safe room is the preferred method of protection from extreme winds.
Wind Zone: Hurricane-Prone Region	
Risk	High
Guidance	Safe room is the preferred method of protection from extreme winds. FEMA recommends that all potential safe room occupants comply with local jurisdiction directions and evacuation orders during an emergency event, even if they have constructed a safe room.

FIGURE 2: The risk levels and guidance recommendations for the wind zone risk level map.

PHOTOS COURTESY AIROLITE

Airolite's AFG601 louver is one of the first wind-driven rain models to be listed for Air Movement and Control Association (AMCA) 550 High-Velocity Wind-Driven Rain by the Federal Emergency Management Agency (FEMA).

Anthony Jackson, *CSI, CDT, LEED Green Associate, is Airolite's product manager. For more than 100 years, Airolite has been helping construction professionals around the world design, select, and specify architectural louvers, grilles, equipment screens, sun controls, and canopies. For more information, visit airolite.com*

PHOTOS © JAMES BRITTAIN AND PORT OF MONTREAL/COURTESY ALUMICOR

Port of Montreal Tower, Montreal, Que., Canada

The 65–m–high (213–ft–high) Port of Montreal Tower adds an architectural exclamation point to the multi-phased construction completion of Montreal's 38,090-m^2 (410,000-sf) Grand Quai. Designed by Provencher Roy, the tower invites the public to ascend above the busy port and enjoy a 360-degree vertical visual experience of the St. Lawrence River, Mount Royal, and the Montreal cityscape. Alumicor ThermaWall curtainwall frames the clear, panoramic vistas from the 1,022 m^2 (11,000-sf) glass observation tower and its transparent, cantilevered "cage," as well as views from the expansive, two-level surrounding structure.

The tower was designed to intentionally present a cohesive appearance with the other port structures and renovated cruise ship terminal, while serving as a new, unique landmark in its own right. Provencher Roy specified "high-quality materials" for the high-profile, high-performance building envelope, including the Alumicor curtainwall.

The Alumicor ThermaWall 2600 curtain wall was also customized to meet the tower's performance and installation requirements.

As standard, the Alumicor ThermaWall 2600 curtain wall offers thermally broken aluminum framing to meet the challenges of harsh climates. The polyamide thermal break and proprietary gasket provide improved U-values contributing to the building's energy efficiency and condensation resistance.

Among the project's challenges, Provencher Roy listed were "construction on a pier with limited access and on backfilled soil with deep bedrock, conservation of the space for tourists, arrival of cruise ships, accommodating events, and minimal disruption of port operations." A wind tunnel study was conducted, and in situ tests were performed throughout the sequenced phases of curtainwall installation.

Vitreco-Flynn installed the Alumicor ThermaWall 2600 system on the Tower's walls and on the protruding "cage" view box, featuring its glass floor and ceiling. The curtainwall's aluminum framing was finished by Linetec in a clear anodize, meeting the guidelines and performance standards of AAMA 611 Class I specification. The metallic appearance emphasizes a modern aesthetic with an industrial heritage.

Provencher Roy described its mission to transform the Old Port of Montreal by "breathing new life into an outdated port installation. ... It is the Tower's duty to pay homage to the site, as keeper of the traces of a rich industrial past. This duty is manifest in the rigorous, concrete, and steel structure, and compact, pragmatic volumetry of the Tower."

"Like a lighthouse, the Tower acts as a beacon attracting tourists, guiding them, and bringing them to unprecedented heights above the waterway," elaborated Provencher Roy. "A cantilevered volume housing an observatory in the sky constitutes the culminating point of the experience. A new perspective for discovering the city is unveiled."

In total, 30 specialty contractors and more than 1,000 people worked on this flagship project. MCNY

Owner: Montreal Port Authority (MPA), Montreal, Que., Canada, **port-montreal.com**
Architects: Provencher Roy, Montreal, **provencherroy.ca**
Curtainwall – engineers and installers: Vitreco-Flynn Canada, Laval, Que., Canada, **vitreco.ca**
Curtainwall – framing systems, manufacturer: Alumicor; Toronto, Ont., Canada, **alumicor.com**
Curtainwall – framing systems, finishing service provider: Linetec; Wausau, Wisc., **linetec.com**

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Frontier Airpark, Lake Stevens, Wash.

Flight always enthralled Lawrence Pavlinovic. His grandfather was a merchant mariner, and his father worked for Pan American Airways (Pan Am), passing along a love of adventure.

"Flying clipper jets around the world is kind of that seafaring adventure transferred over to aviation," Pavlinovic says.

Today, Pavlinovic is a captain with Alaska Airlines, flying 737s across the United States, Canada, and Central America. Even on his off hours, Pavlinovic lives and breathes aviation. He owns a Republic Seabee and a Globe Swift. For the last few years, he's called an airpark in northwest Washington state his home. In this unique residential development, homes share space with a small airport. Residents and their guests can taxi planes directly to the runway from their homes.

"It was always a dream to live in an airpark," Pavlinovic says. "It is a wonderful community."

Pavlinovic and his wife fell in love with the airpark lifestyle. They eventually purchased a parcel at Frontier Airpark, but the property was missing one very important feature—a hangar. Pavlinovic initiated the process of rectifying the issue, walking the length and breadth of the park, speaking with residents about their hangars, and gathering advice and ideas.

"I wanted the biggest possible hangar I could build and afford," he says.

To design the hangar, Pavlinovic hired Thomas Bormann, principal of Bormann International Inc. in Seattle. An architect with more than 35 years of experience in both Germany and the United States, Bormann has undertaken a variety of projects, designing buildings that include high-end residences, multi-family homes, and commercial buildings, as well as several specialty projects such as retail, equestrian, and security facilities. Pavlinovic offered a new opportunity.

"This was my first hangar," Bormann says. "Number one."

Pavlinovic and Bormann collaborated closely to design the hangar, utilizing the feedback Pavlinovic gathered during his conversations with fellow aviators at the airpark. When it came to choosing the hangar door, one name was repeatedly mentioned: Schweiss Doors. As a pilot, Pavlinovic had come across Schweiss Doors many times and learned even more during his own hangar project.

"Walking around, talking to neighbors; that was what cemented it," Pavlinovic says of specifying Schweiss Doors for his hangar.

Pavlinovic and Bormann selected a Schweiss Doors liftstrap bifold door. The door measures 16.76 m (55 ft) wide by 6.40 m (21 ft) tall, clad in dark gray metal siding with seven windows. The door features the Schweiss automatic strap latch system, along with an emergency backup hand crank. The metal crank can be attached to the top of the electric door motor, allowing the door to be manually opened or closed in the event of a power outage. A disconnect device prevents the motor from operating when the hand crank is being used.

"The door is everything I had hoped for," Pavlinovic says. "It works beautifully. I absolutely love it, and the features are great."

Bormann says some people involved in the hangar project were surprised by the appearance of the Schweiss bifold door because it uses liftstraps instead of steel cables to operate the door. Bormann was somewhat familiar with such technology, as it is more common in Europe to use straps rather than cables.

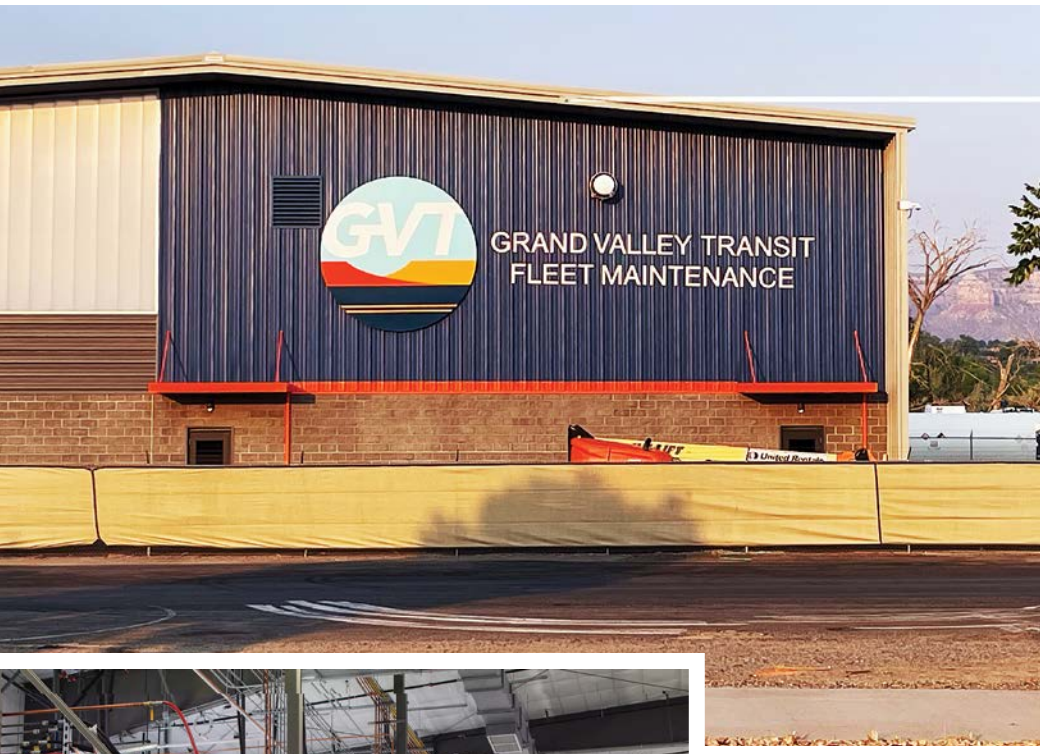
"They are amazed that you just have fabric, the liftstraps," Bormann says. "Straps are lighter, don't rust, and are very, very strong."

HBHansen of Lynden, Wash., served as the general contractor for the project and installed the Schweiss Doors bifold.

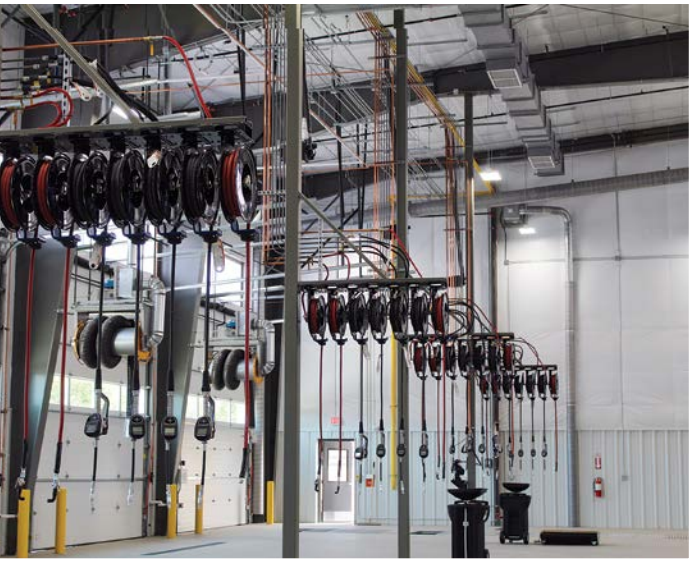
Both Bormann and Pavlinovic recommend Schweiss Doors to anyone seeking a high-quality bifold door. For Bormann, this may be his first airplane hangar project, but it won't be his last. He is already working on another project at the same airpark, and the hangar will have a door from Schweiss.

Pavlinovic has already been sharing his hangar building experience with others going through the process.

Owner: Lawrence Pavlinovic
Metal doors: Schweiss Doors, Hector, Minn., **bifold.com**
General contractor: HBHansen, Lynden, Wash., **hbhansen.com**



PHOTOS © JEFF PERRY/ROCKY MOUNTAIN PHOTOGRAPHY



Grand Valley Transit facility, Grand Junction, Colo.

This 1,455 m² (15,661–sf) industrial facility in Grand Junction, designed with a strong focus on strength, adaptability, and high performance, uses pre-engineered metal construction.

The Grand Junction facility was engineered to handle heavy industrial operations in a demanding environment. Key to this design was the integration of several high-performance systems. The structure features a 3.9 t (5-ton) underhung bridge crane supplied by American Equipment, necessitating a robust metal framing system with exceptional structural capacity.

To optimize the working environment, the building incorporates translucent wall panel systems from Chief Buildings, which significantly enhance daylighting and reduce reliance on artificial lighting during the day. This natural light integration contributes to a more efficient and pleasant workspace.

The longevity and performance of the envelope were prioritized with the use of a high-quality, machine-seamed trapezoidal seam roof system. This roofing, coupled with a liner-type insulation system from Bay Insulation, ensures superior thermal efficiency and long-term weather protection against Grand Junction's climate extremes.

Metal was the material of choice for this project due to its inherent structural capacity, durability, and design flexibility, which were non-negotiable requirements for the facility's intended use.

Trapezoidal seam panels were selected for their proven longevity and superior weather protection and were installed using a machine-seamed technique to ensure a high-performance, watertight seal.

The exterior features R-panel wall panels paired with interior metal liner panels, creating a robust, durable envelope with a clean, functional interior finish. The translucency of the specialty panels was seamlessly incorporated into this metal wall system.

The structural steel frame was essential for supporting the heavy 3.9 t (5-ton) underhung bridge crane. Essential roof components, such as the roof curbs, were directly tied into the steel framing, ensuring proper load distribution and stability.

The inherent durability of metal construction provides excellent resistance to local weather conditions. For winter conditions, a Colorgard snow retention system utilizing S-5! clamps were applied to the metal roof, enhancing safety and reducing maintenance risk associated with snow load and sliding.

Architect: D2C Architects, Inc., Denver,
General contractor: Buildings By Design, Brush, Colo.
Metal installer: Buildings By Design, Firestone, Colo.
Owner: Grand Valley Metropolitan Planning Organization

On Guard

Choose the Right Snow Retention System for Metal Roofing

By Jerod Webber

PHOTOS COURTESY DYNAMIC FASTENER

Snow retention is a critical component to consider when installing a metal roof.

But what is the best type of snow guard to keep snow from falling off the roof and wreaking havoc? This decision will be based on the type of roof panel or, perhaps, the desired aesthetic look. There are many configurations of snow guards on the market, but individual pad-style snow guards and continuous rail-type snow guards are the most used in the United States. Both can be installed through fastened panels and standing seam panels.

Individual snow guards

Individual snow guards connect to the roof panel using an adhesive or sealant, or fasteners that penetrate through the roof panel into the structural substrate. However, these pad-style snow guards are typically manufactured from polycarbonate and do not usually offer the same strength characteristics as a continuous rail system.

Continuous rail-type snow guards

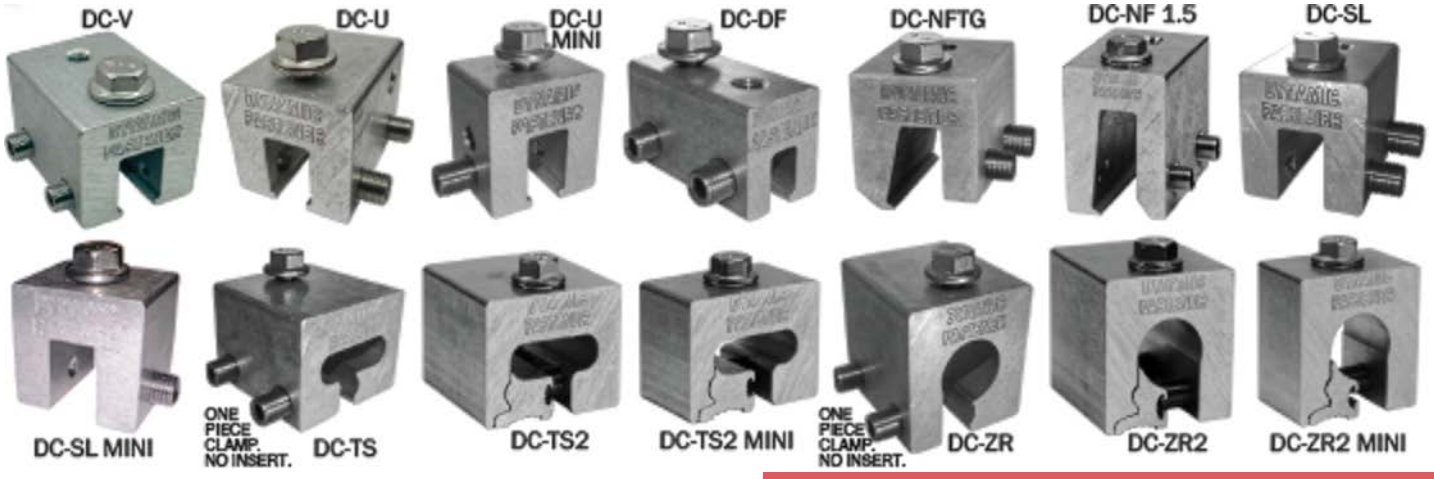
Continuous rail-type snow guards will attach either by a mount that is through-fastened into a structural member, corrugated or through-fastened panels, or by clamps that attach to the seam of a standing seam panel using non-penetrating set screws. Both of those methods will then use a continuous rail or extrusion that attaches to either the mount or the clamps. It will also have a flag that hangs down and rests in the center of the flat panel; this will prevent snow and ice from sliding under the snow guards.

The importance of these systems

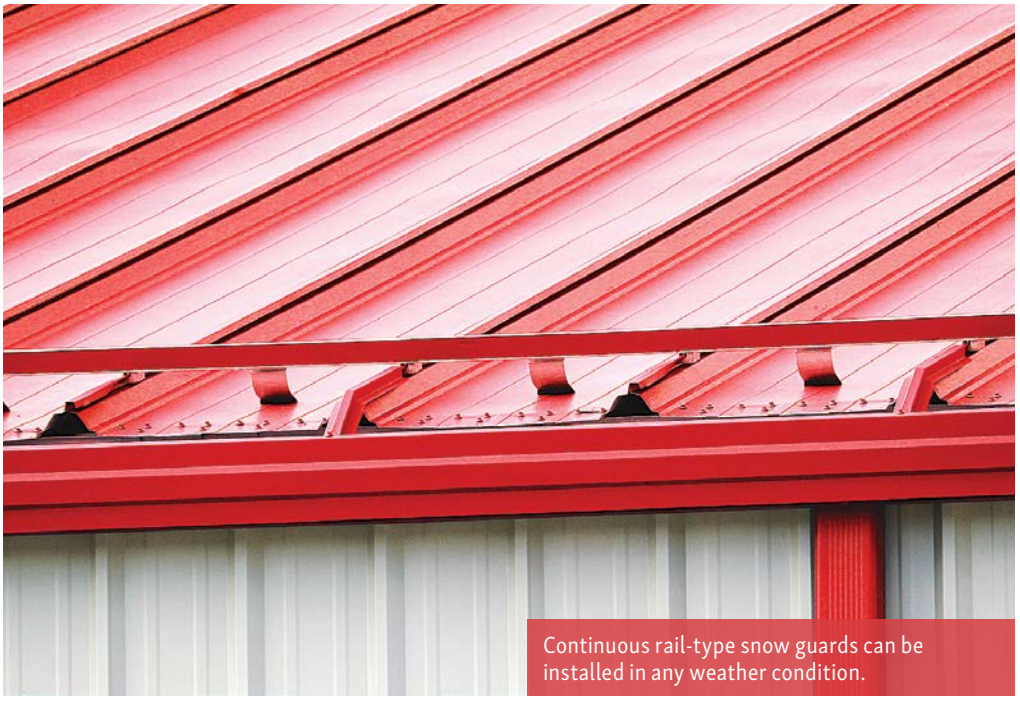
Snow retention may not seem important at first. Still, without a system in place, sliding snow and ice on unprotected metal roofs could avalanche onto unsuspecting people below, which could result in property damages, lawsuits or, worse, fatalities. Using a properly engineered and tested snow retention system can alleviate these dangers.

Rail-type snow guards are commonly manufactured from aircraft-quality, high-tensile aluminum and use stainless steel setscrews and hex bolts for attachment.

Both pad-style and rail-type snow guards offer the option to match the color of the roof panels. Preferred systems will use flat stock panels that are cut to fit the face of the rail or extrusion. This will ensure roofline aesthetics for many years, as the color of the snow guards will not fade at a different rate than the panels.



A variety of attachment clamps can be used with snow retention systems.



Continuous rail-type snow guards can be installed in any weather condition.

The right system for the right roof

One issue to consider with snow guards is whether the system has been independently tested and whether it can be designed and engineered for the specific roof. Most continuous rail-type snow retention systems are installed in a single row, typically within a few feet of the eave line. Individual pad-style snow guards are installed in a grid or staggered pattern. In certain circumstances, multiple rows may be required to properly retain the accumulating snow, regardless of the system used. Rail-type systems are more likely to use a single row due to their greater holding power compared to the glue-down pad style.

Panel length and roof slope are two key factors that determine whether multiple rows are required. Other factors to consider include the design roof snow loads and the roof panel base material, width, and configuration. Always consult with the snow guard manufacturer for engineering and calculations for each roof.

Weather conditions and installation

Further, a clean roof panel surface and proper installation of any style of snow retention system are imperative. Individual pad-style snow guards rely on an adhesive or sealant for attachment in optimum weather conditions. These adhesives or sealants are recommended for installation at temperatures above 40°F (4.5°C) for application and require seven to 14 days to cure fully.

Continuous rail-type snow guards can be installed in virtually any weather conditions. However, selecting the correct clamp for the roof panel configuration is essential, and the torque of the clamp set screw is a critical component in determining the system's strength. Using a calibrated torque wrench to tension the set screws properly is necessary, as is alternately tightening the set screws repeatedly until they all hold the required tension during installation. Manufacturers should be able to provide clamp- and panel-specific torque values. Consult with the manufacturer before installation to ensure the recommended materials, tools, and procedures are being used. No matter how much is designed into a system, Mother Nature will throw more at us than we have considered, such as drifting, ice, unusual amounts of snowfall, etc. Owners must be aware of these conditions and when these extremes are reached, snow and ice should be physically removed from the roof. Any snow retention system will not prevent possible wind-blown overhangs or cornices. The owner must be aware of these situations and remove them as they occur. MCN

Jerod Webber *is a sales manager at Dynamic Fastener. He has been in the metal building industry for 20 years and is one of the snow retention experts at Dynamic Fastener.*

How Snow Retention Systems Enhance Metal Roof Performance

As winter weather becomes increasingly severe and unpredictable across many parts of the United States, the role of contractors extends beyond installing durable roofing materials.

By Mike Weis

PHOTOS COURTESY DREXEL METALS

An article in *Live Science* reports that winter weather in many parts of the country, especially across the Midwest and Northeast, has become more variable in recent years[1], with high-impact storms bringing peak winds and precipitation rates that can cause significant stress to roof systems. Even Gulf Coast states made headlines in 2025 for historic and record-breaking snowfalls.

Today's weather events should serve as a critical reminder to contractors to carefully consider how a roof will withstand inclement winter conditions, particularly during periods of heavy snowfall. After all, accumulated snow is extremely heavy, and if not properly managed, can cause ice dams, roof leaks, interior water damage, gutter and fascia damage, and in extreme cases, structural stress or collapse. Even the most durable roofing systems can face these potential problems. This is why integrating a snow retention system into markets with heavy snow loads is critical.

When contractors treat the roof as a complete building system and prioritize snow management solutions, they help their clients prepare for today's extreme weather challenges.

Winter weather tested

Among the various roofing options on the market, standing seam metal roofs are exceptionally resilient in winter conditions that challenge traditional roofing materials. For example, unlike asphalt shingles, roof panels made from a high-quality metal substrate resist cracking, splitting, or deterioration during repeated freeze-thaw cycles. An ideal solution for markets with high winds, select standing seam metal roofing systems are certified to wind-resistance testing standards, such as Underwriters Laboratories (UL) 580, *Wind Uplift*; Testing Application Standard (TAS) 125, *Wind Uplift*; UL 1897, *Extended Phase Wind Uplift*; ASTM E1592, *Uniform Static Pressure Uplift*; and ASTM E1680, *Air Infiltration*. Additionally, a standing seam metal roof provides reliable wet-weather performance due to its inherently durable

substrate that is impervious to moisture. Select systems are certified to ASTM 1646, *Water Infiltration* standards and can achieve the TAS 100, *Wind-Driven Rain* designation. A standing seam metal roof's weathertight performance can be enhanced with a proper underlayment and an advanced coating or paint finish. Further, metal panels rank highest with a Class 4 rating when certified to UL 2218, which tests their impact resistance. This ensures the maximum protection from the damaging effects associated with heavy snow, falling branches, and hail.

The dual nature of metal roof snow performance

Adding to its list of winter-ready qualities, a standing seam metal roof also sheds snow quickly thanks to its smooth, low-friction surface. This inherent quality ultimately helps reduce excessive snow accumulation and the numerous associated risks. However, that same benefit can also create hazards. For example, large sheets of snow and ice can slide off the roof all at once and without warning. This can cause significant and costly property damage or, more seriously, injure a person walking underneath the roofline. These potential scenarios introduce liabilities for both roofing contractors and homeowners.

Modern snow retention solutions are also engineered to be easily installed.

To help manage accumulated snowfall and reduce liability, contractors can install a snow retention system. On metal roofs, snow retention systems increase friction between the roof surface and the accumulated snow, helping to keep it in place. The snow guards then regulate the rate at which snow and ice shed from the roof, allowing it to be evacuated in a gradual manner rather than all at once. This controlled release is not only safer, but it also reduces peak loads on the roof and prevents concentrated pressure on gutters, roof edges, and other vulnerable areas. These types of stressors can contribute to long-term issues that shorten the lifespan of the roof system. Ultimately, properly installed snow retention systems provide a proactive solution to manage winter snow loads efficiently and keep property and people safe.

Key considerations when selecting snow retention systems

While the benefits of snow retention systems are crucial, it is essential to note that not all products deliver the same results. When choosing a snow retention solution, opt for a system that operates continuously across the roof, allowing for thermal expansion and contraction, a common occurrence in cold climates. This built-in flexibility prevents warping, detachment, or undue stress on roof panels, ensuring the snow retention system works in concert with the roof system rather than against it.

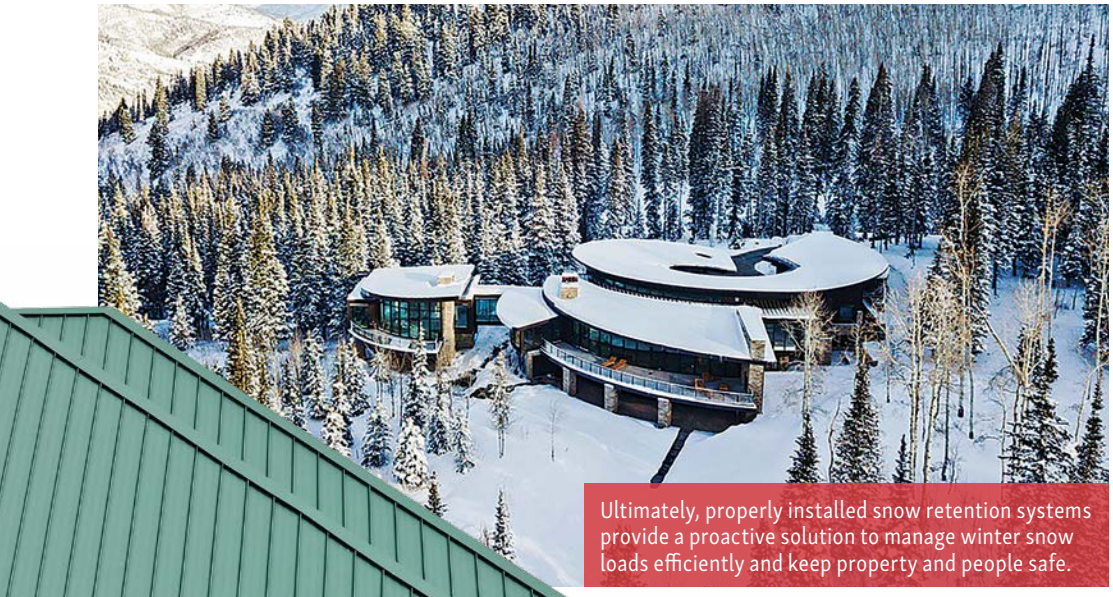
Modern snow retention solutions are also engineered to be easily installed. For example, select snow retention systems eliminate unnecessary in-field cutting, allowing contractors to install components directly over panel splices, reducing labor time and minimizing the risk of errors. When trimming is required, it is limited to the ends of the assembly, streamlining the process while maintaining system integrity. These advances allow contractors to complete projects more efficiently without sacrificing safety or performance.

Aesthetics may also play a role in a contractor's decision when choosing a snow retention system. Next-generation systems are designed to integrate seamlessly with the roof, providing color- and finish-matched options that preserve the clean, modern lines of the standing seam metal roof. This offers a solution that protects property and people from injury without compromising visual appeal, meeting client expectations in form and function.

Approaching the roof as a complete system for ice dam prevention

Cold, snow-heavy markets can experience an additional winter weather challenge: ice dams. Ice dams form when heat escapes the home and warms the roof surface, causing snow to melt. As temperatures drop overnight, the melted snow refreezes, typically at the eaves.

On metal roofs, snow retention systems increase friction between the roof surface and the accumulated snow, helping to keep it in place.



Ultimately, properly installed snow retention systems provide a proactive solution to manage winter snow loads efficiently and keep property and people safe.

Today's weather events should serve as a critical reminder to contractors to carefully consider how a roof will withstand inclement winter conditions.

Over time, repeated melting and refreezing cycles cause ice to build up along the roof edge, gradually working its way up the slope. This accumulation creates a barrier, or "dam," which traps melted water behind it. With nowhere to drain, the trapped water seeps its way underneath the roofing material and leaks into the home's crawl spaces, attic, and walls, causing costly water damage. In severe cases, prolonged ice buildup can contribute to long-term issues that will shorten the lifespan of the roof system.

A roofing contractor can reduce the likelihood of ice dams forming by installing a ventilated insulation product during a roof replacement, which will promote cross-directional airflow beneath the roof. Building science shows that allowing air to flow under the finished roof assembly helps maintain a more consistent roof temperature. This minimizes hot and cold spots on a roof where ice dams can form, ensuring the roof performs reliably under harsh winter conditions.

Enhancing metal roof performance

As winter weather becomes increasingly severe and unpredictable across many parts of the United States, the role of contractors extends beyond installing durable roofing materials. Today, they are also responsible for anticipating how snow and ice will interact with every roof they install. Forward-thinking contractors recognize that integrating next-generation snow retention systems is not just a technical consideration; it is an investment in risk management, client trust, and the longevity and performance of a roof system. MCN

REFERENCES

[1] "Strongest nor'easters along US East Coast are becoming more intense as the world warms, study suggests," Live Science

Mike Weis *serves as vice president of sales across Carlisle Architectural Metals' (CAM) portfolio, which includes some of the industry's most recognized brands, like Drexel Metals. He began his career at Reynolds Metals Company in 1995, then joined Petersen Aluminum in 1999 as Southeast sales manager, later advancing to vice president of sales and marketing. With more than 30 years of experience in the architectural metals industry, Mike has established himself as a respected leader in architectural metal envelope solutions.*

PHOTO COURTESY MBMA

Metal Building Manufacturers Association (MBMA) Announces 2026 Board

The Metal Building Manufacturers Association (MBMA) held its annual meeting, December 8 to 10, in Tucson, Ariz.

During the event, MBMA elected the members of the 2026 board of directors. Christen Funk will continue in her second year as board chair, marking the second year of her two-year term.

The full 2026 board includes:
Chair: Christen Funk – Butler Manufacturing
Vice Chair: Rob Mutersbaugh – Associated Steel Group
Tom Boal – Behlen Building Systems
Steve Browning – Vulcan Steel Structures
Joe Campos – Pacific Building Systems
Austin Hess – Cornerstone Building Brands
David Koubek – Chief Buildings
Darren McGonigle – Konecranes
Frank Rosales – Schulte Building Systems
David Tomchak – Bay Insulation Systems
Mark Van Dyken – Nucor Building Systems

"It's been a great first year leading the MBMA," says Funk, "As I move into year two, I'm excited to continue to grow the association and the industry. I look forward to working with the new board and promoting the leadership, educational opportunities, and technical research MBMA provides while helping us flourish in the years to come."

"Congratulations to the new board, and welcome back to Christen Funk for another year as chair," adds Tony Bouquot, MBMA general manager. "Christen has done an amazing job in her first year, and we anticipate 2026 will be a successful year with her at the helm. MBMA has an array of projects and initiatives that are driving the metal building systems industry forward, and these will continue to be front and center in the coming year under the direction of the board."

FGIA Announces Dates for 2026 Event Schedule

The Fenestration and Glazing Industry Alliance (FGIA) has formalized its 2026 conference and regional events schedule, beginning with the FGIA 2026 Annual Conference, scheduled to take place from March 2 to 5 in Huntington Beach, Calif. Registration for this event is now open.

"As we close the book on 2025, we would like to extend our sincere thanks to everyone who joined us at our events," says Florica Vlad, FGIA events manager. "Together, we delivered a fulfilling year of outstanding events complete with valuable content, meaningful conversations, and strong networking connections. I personally am grateful for the engagement and energy our community brought to each gathering. I look forward to carrying the momentum in 2026 with another exciting series of impactful events and experiences."

2026 FGIA Events

- **Annual Conference**, March 2-5 – Hyatt Regency, Huntington Beach, Calif.
- **Southeast Region Meeting**, May 5-6 – Hilton Tampa Downtown, Tampa, Fla.
- **Virtual Summer Summit**, June 23-24
- **Fall Conference**, August 31-September 3 – Hyatt Regency, Calgary, Alta., Canada

"Because the Summer Summit is a virtual event, it will provide a unique opportunity for companies to allow new participants to experience an FGIA conference at a smaller cost," said Vlad. "Reach out to the FGIA events team with any questions about this event or any of our other plans for 2026."

FGIA encourages those in the industry to take advantage of the association's at-a-glance industry events calendar for 2026 and beyond.

For more information about FGIA and its activities, visit FGIAonline.org.

Lee Ann Slattery Elected As First Female Chair of MCA

PHOTO COURTESY MCA

The Metal Construction Association (MCA) has announced its new officers for 2026. Elected by MCA members, the board will be led by **Lee Ann Slattery** of ATAS International, the organization's first female chair.

Slattery joins executive committee members:

- Vice chair: **Bill Hartford**, Sherwin-Williams
- Treasurer: **David Stermer**, Metal Sales
- Secretary: **Chandler Barden**, CIDAN Machinery
- Past chair: **Brian Partyka**, Carlisle Companies Inc
- Market development chair: **Jules Dekovics**, OMG
- Metal Roofing Alliance (MRA) president: **Todd Miller**, Isaiah Industries, Inc.

Slattery joined the MCA board in 2020 and quickly became an officer, serving as chair of the market development committee. In 2023, she received MCA's Patrick R. Bush Service Award. She serves on the education committee for the National Women in Roofing (NWIR) and is also a founder and a director of the Let's Build Construction Camp for Girls. In 2020, she was inducted as a Fellow of the Construction Specifications Institute (CSI), where she served on its national board for four years.

"I am excited about the upcoming growth and innovation for MCA, and I believe we will reach new milestones with such a talented team of industry leaders on the board and staff," said Slattery.

Slattery will succeed Chandler Barden, who most recently served as chair. Barden will continue serving as the association's secretary. The organization extends special thanks to him for his ongoing dedication to the industry.

The executive committee works alongside MCA directors, which include:

- **RC Antal,** ATAS International
- **Michael Beck**, Accurate Perforating
- **Mark Carlisle**, US Steel
- **Dustin Haddock**, S-5!
- **Jessica Haddock**, S-5!
- **DJ Highnote**, RoofHugger
- **Jeff Hock**, Sheffield Metals
- **Sean McCue**, Precoat Metals
- **Ken McLauchlan**, Carlisle Building Products
- **Karan Patel**, Applied Fabricators
- **John Trifonoff**, East Coast Metals
- **Jodi Wagoner**, Steel Dynamics
- **Mike Weis,** Petersen Aluminum Corp.

The board members are elected by the MCA members from the slate recommended by the nominating committee, with each serving a three-year term. MCN

Armstrong World Industries Acquires Parallel Architectural Products

Armstrong World Industries, Inc., a designer and manufacturer of interior and exterior architectural applications, including ceilings, specialty walls, and exterior metal solutions, has acquired Parallel Architectural Products (Parallel). Based in Englewood, Co., Parallel is a manufacturer of extruded aluminum products primarily used in exterior architectural applications.

"We are happy to welcome Parallel to the Armstrong family and further expand our exterior metal portfolio," said Mark Hershey, COO and senior vice president of Armstrong World Industries. "In a short amount of time, the team at Parallel has built an innovative portfolio of easily specified, extruded metal solutions for cladding, soffits, battens, and more. Adding these products and capabilities to our portfolio allows us to offer a more complete range of exterior metal solutions, complementing the design-centric, custom solutions offered by our Zahner and BŌK Modern brands."

Under the management of a team with decades of experience in extruded metal for exterior applications, Parallel has developed a portfolio of aluminum architectural products for both custom structural elements and standard building applications.

"Joining the Armstrong family of architectural specialties brands provides us a unique opportunity to accelerate our growth with a company offering the industry's most comprehensive portfolio of innovative standard and custom architectural solutions in North America," said K'leb Shivvers, co-founder and president of Parallel. MCN

Hoover Treated Wood Products Acquires Arconic Architectural Products

Hoover™

Arconic Architectural Products

ARCONIC

PHOTOS COURTESY HOOVER TREATED WOOD PRODUCTS/ARCONIC ARCHITECTURAL PRODUCTS

Hoover Treated Wood Products, Inc. (Hoover) has acquired Arconic Architectural Products, LLC—a manufacturer of aluminum cladding products based in Eastman, Ga. The acquisition marks Hoover's entry into the exterior aluminum cladding market and the launch of a new product division: Hoover Architectural Solutions, LLC.

For more than 70 years, Hoover has provided fire-retardant-treated wood (FRTW). With Hoover Architectural Solutions, the company is expanding its reach to exterior cladding and signage using aluminum composite material (ACM) panels.

"As the leader in FRTW, Hoover has always put life safety, innovation, and customer trust at the center of what we do," says David Gillrie, CEO of Hoover Treated Wood Products. "This acquisition is an exciting next step. Hoover Architectural Solutions gives us the opportunity to deliver that same standard of safety and quality to a broader set of building materials, making the construction process simpler, more efficient, and more reliable for our customers."

The Eastman, Ga., facility will now operate under the Hoover brand, focusing exclusively on producing exterior aluminum cladding and signage for building professionals across North America.

"This is a proud moment for the Eastman team," said Sebastien Jacob, general manager of Hoover Architectural Solutions. "Becoming part of an industry leader with a long legacy of safety and innovation is a tremendous opportunity for our team. Hoover is committed to continued investment that will expand our capabilities and support long-term growth."

Hoover Treated Wood Products, Inc. and Hoover Architectural Solutions, LLC will continue to operate independently. MCN

Knauf Insulation Going Formaldehyde–Free in 2026

Knauf Insulation, Inc. (Knauf), the North American division of Knauf Group, a family-owned global manufacturer of fiberglass insulation, has positioned itself as the first company to have an entirely formaldehyde-free product portfolio by the end of this year.

The final stages of the transition began on January 1, 2026, when all remaining manufacturing equipment that uses formaldehyde to manufacture fiberglass insulation was removed from the plants. According to a news release, this milestone reflects "Knauf's long-term commitment to high-performing, sustainable insulation products through its ECOSE Technology, a plant-based binder that replaces traditional formaldehyde-based ingredients."

"Achieving completely formaldehyde-free product lines is a momentous achievement for Knauf and our industry," said Matt Parrish, CEO of Knauf Insulation North America. "We've been on this journey for more than a decade, continually innovating to make the highest quality products for the people who make them, the contractors who install them, and the homeowners and building occupants who live with them every day."

Knauf introduced the bio-based binder, ECOSE Technology, to the market in 2009, offering an alternative to the phenol-formaldehyde binders traditionally used in fiberglass insulation products. That innovation is the foundation for the company's entire fiberglass portfolio.

In addition to a formaldehyde-free product portfolio, Knauf offers a comprehensive range of commercial, industrial, and residential products that are Asthma & Allergy Friendly Certified and Verified Healthier Air.

PHOTO COURTESY KNAUF INSULATION

"Our focus has always been on continuous improvement and setting a higher standard," Parrish added. "Reaching this point reflects the dedication of our teams, our investment in innovation, and our commitment to healthier, high-performing spaces." MCN

Introducing the 2026 MBCEA Board of Directors and Officers

The Metal Building Contractors and Erectors Association (MBCEA) has announced the results of the recent elections for its 2026 board of directors and officers. As elected by the membership and the board, respectively, the new leadership team will be officially inducted during the upcoming Annual Conference in April 2026.

This year marks a leadership milestone with the appointment of a new MBCEA president:

- **David Leinbach**, president/owner of The Kaiser-Martin Group, steps into the role of president, having previously served as vice president.
- **Bryan Harshbarger**, president of Briner Building, Inc. and a board member since January 2022, will assume the role of vice president.
- **Steven Hudgins**, president of Rainwater Construction Company and a director since January 2023, has been elected secretary.
- **Dave Tomchak**, director of marketing and technical services for Bay Insulation Systems, will continue his service as treasurer.

They join the existing directors, Tucker Cope of C. Tucker Cope & Associates, who is serving his third term, and Jarrod Turner of TBT Construction, who is serving his second term.

Further strengthening the board, five new directors were chosen by the membership to fill open seats, bringing fresh perspectives and extensive industry expertise to the board:

- **Maggie Christiansen**, VP of sales at Brucha, has more than 23 years of experience in insulated metal panels and metal building systems.
- **Shannon Fowler**, private wealth advisor at Ironbridge Wealth Counsel, with a lifelong connection to the metal building industry through family and extensive MBCEA involvement.
- **Dylan Seyler**, vice president at S&S Structures and a second-generation metal building assembler with a strong history in MBCEA chapter leadership.
- **Jeff Wolgamott**, co-founder and vice president of Ironhide Construction, with 36 years of construction experience and active involvement in industry education and certifications.
- **Mitch Rohlfing**, COO at APX Construction Group, brings decades of hands-on and leadership experience in metal building and construction.

Rounding out the board with vital insight and regional leadership are the chapter presidents from all active MBCEA chapters. Their ongoing support ensures that the voices of the association's diverse membership are heard and integrated into MBCEA's strategic direction.

"We are proud to welcome this talented group of officers and directors," said outgoing MBCEA president Robert Tiffin. "Their dedication and vision continue to advance our mission of education, image enhancement, and grassroots support for our members across North America."

ClarkDietrich Launches Embodied Carbon Calculator

IMAGE COURTESY CLARKDIETRICH

ClarkDietrich, a manufacturer of cold-formed steel framing and accessories, has launched a new digital tool to quickly estimate the embodied carbon of structural steel-framed walls. The Embodied Carbon Calculator (ECC), available for free on ClarkDietrich's website, helps architects, specifiers, and contractors understand the carbon impact of their steel framing choices and evaluate options, such as standard versus low embodied carbon (LEC) steel, to support lower-impact building designs.

"When we launched our line of LEC steel framing last year, we heard from building teams across the country who were excited to be able to better meet their projects' carbon reduction goals. With this calculator, it's now easier and more accessible than ever for sustainability-focused teams to quickly evaluate those reduction goals against the types of framing available (LEC vs. standard), and make purchasing decisions based on third-party certified EPD data," said Adam Shoemaker, business development director for ClarkDietrich.

Users enter wall dimensions and framing details (stud spacing, size, bracing, track, etc.) to calculate total steel weight, and the calculator instantly converts the weight into embodied carbon (Global Warming Potential, GWP) and shows the embodied carbon reductions between standard framing and LEC framing, measured in kilograms CO_2e per metric ton of steel and in percent savings.

The tool also provides comparative facts to help contextualize the carbon savings. For instance, 100,000 kg of CO_2 is equivalent to more than 11,000 gallons of gasoline. These equivalency statistics, based on data from the U.S. Environmental Protection Agency (EPA), help architects and building owners communicate the impact of their green building solutions in terms that relate to everyday life.

The Embodied Carbon Calculator is part of ClarkDietrich's iTools program. Coming soon, ClarkDietrich will also be adding an Embodied Carbon Calculator for non-structural steel framing to the site.

Construction Industry Needs 349K Workers To Meet Demand: ABC

The construction industry needs to attract an estimated 349,000 new workers in 2026 to meet demand for construction services, according to a proprietary model developed and released by Associated Builders and Contractors (ABC).

Additionally, in 2027, the industry will need to bring in 456,000 new workers to meet demand as construction spending growth is poised to resume for the first time in years.

ABC's proprietary model uses the historical relationship between inflation-adjusted construction spending growth, sourced from the U.S. Census Bureau's Construction Put in Place survey, and payroll construction employment, sourced from the U.S. Bureau of Labor Statistics (BLS), to convert anticipated increases in construction outlays into additional demand for construction workers at a rate of approximately 3,450 jobs per $1 billion in additional construction spending. This model also incorporates current levels of job openings, industry unemployment, and projected industry retirements in its computations.

"If current consensus forecasts hold true, the construction industry will need to bring in 349,000 new workers in 2026 just to keep the supply and demand for labor in equilibrium," said ABC chief economist Anirban Basu. "Failing to do so will worsen labor shortages, especially in certain occupations and regions, placing further upward pressure on labor costs."

Bringing Warmth and Color to Collegetown

Cornell University is a place that fosters the minds of upcoming generations—the next generation of creative, bold, and visionary minds. Catherine Commons stands as a project that embodies these attributes, utilizing a variety of sustainable and environmentally conscious metal walls and roof panels in vibrant, imaginative colors to shelter students and create a space where they can thrive. The project consists of several multi-story buildings cladded in four unique colors, creating an exciting communal atmosphere that brings students together in places where they and their studies will thrive.

The plan of Catherine Commons was not just to build more housing; it was to reimagine a city block as its own ecosystem, conveniently located near Cornell. It boasts a community focus, concerned not only with the structures but also with the space it deliberately left open to establish outdoor communal areas. The residential complex's website lists the modern amenities that Catherine Commons offers, including an exclusive, state-of-the-art fitness center, study lounges that exude comfort to optimize study quality and efficiency, and an on-site café to keep everything residents may need in one convenient location.

The project's architectural design and building shapes were carefully curated, cognizant of the existing neighborhood's shape. The architects of the project, ikon.5 architects, meticulously considered how to develop Catherine Commons as part of a larger picture. "Residential in form and scale, it is set back from the street to align with neighboring houses. Its pitched roof, projected front porch, metal shingles, and residentially scaled windows and dormers complement the Collegetown vernacular," the ikon.5 architect team said regarding Building 4, one of the onsite structures.

Featured across the Catherine Commons buildings are ATAS' Versa-Line panels in 0.032-inch aluminum, which are installed vertically throughout this project with distinct seams of varying widths to enhance the building façades. The application of the Versa-Line panel in this project is dynamic, including rectangular sections of panel being split by floor-to-ceiling windows, while other walls of the buildings are made entirely of the metal panel with slots of different panel colors breaking up monotony and providing contrast from other elements like colored brick, keeping the design interesting. Versa-Line is featured in several colors: Charcoal Grey, Hemlock Green, Patina Green, and Gold, which are featured across the buildings, creating a cohesive color story that connects the separate buildings into a community through architectural design.

One of the Catherine Commons buildings, Building 4, is clad in and features ATAS' CastleTop panel in 0.032 aluminum, finished in the shade of Hemlock Green. The Hemlock Green CastleTop's richness contrasts with the Versa-Line panels on adjacent walls, making the building lush with texture and visual appeal. The color and panel choices feel deliberate—simultaneously constructing buildings that stand out along a Collegetown street and are inspired by the surrounding trees that change with the swings of upstate New York seasons, from the pale greens that resemble ATAS Patina Green, to the earthy hue of ATAS Hemlock Green on sturdy trees, and the turning oranges and reds of leaves with ATAS' Gold color.

PHOTOS COURTESY ATAS INTERNATIONAL

Owner: Cornell University, Ithaca, N.Y, **cornell.edu**
Architect: ikon5.architects, New York City, **ikon5architects.com**
Wall and roof metal panels: ATAS International, Allentown, Pa., **atas.com**

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