MCN Metal Construction News

March 2026
VOLUME 48 | NO. 3

STRIKING
Metal Walls Panels

- MCN's 45th Annual Contractor Survey
- Thermal Performance in Metal Doors
- Rainscreens: Overlooked No More

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HOW TO REACH US:
266 Elmwood Ave., #289
Buffalo, NY 14222
Tel: (847) 674-2200 Fax: (847) 674-3676
www.kenilworth.com
www.metalconstructionnews.com

PRODUCTION OFFICES:
30 Leek Crescent, Suite 201
Richmond Hill, ON Canada L4B 4N4

EDITORIAL & PRODUCTION
Executive Publisher, Melanie Kowal, mkowal@kenilworth.com
Editor, Dave Flaherty, dflaherty@kenilworth.com
Administrative Assistant, Bess Cheung, bcheung@kenilworth.com
Graphic Designer, Lisa Greco, lgreco@kenilworth.com

BUSINESS & SALES
Vice President of Sales, Joseph Galea, jgalea@kenilworth.com
National Sales Manager, Metal Group, Bob Higgins, bhiggins@kenilworth.com
Circulation Manager, Mei Hong, mhong@kenilworth.com

Founding Publisher John S. Lawrence

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Group Publisher/CEO, Erik Tolles
Chief Financial Officer, Philip Hartung
Senior Director of Operations, Krista Taylor
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Director of Business Development, John MacPherson
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Features

Product Tech: Metal Doors

Departments

On the Cover

The Parc Mosaic apartment building includes striking wood-look panels using aluminum cladding.

PHOTO COURTESY PARALLEL ARCHITECTURAL PRODUCTS

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Melanie Kowal

EXECUTIVE PUBLISHER
mkowal@kenilworth.com

Spring is the Opportunity to Move Forward

March always feels like a reset.

As winter begins to fade and job sites find their rhythm again, it's a natural moment to pause and take stock. Just like that, we're already through the first two months of the year, making this a fitting time to reflect on the work being done across the metal construction industry and the priorities shaping projects right now.

That perspective makes this issue especially meaningful as we present our 45th annual Contractor Survey (on Page 12). For more than four decades, this survey has captured candid insight from contractors across North America, offering a clear picture of current conditions, ongoing challenges, and day-to-day realities in the field. It remains one of the most relied-upon resources we publish each year.

This March issue also takes a close look at performance, protection, and design. In our coverage of paints, coatings, and finishes (on Page 24), Tammy Schroeder of Linetec examines how today's coating technologies support durability while expanding design possibilities. Fire protection is explored by Fernanda Gregati of PPG (on page 22), who underscores the importance of verified, system-level testing for intumescent coatings and their role in preserving steel during fire events.

Our metal rainscreen features address critical building science considerations. Peter Barrett of Dörken explores the enhanced durability of open-joint metal cladding in rainscreens (on Page 32), while Technoform's contribution (on Page 28) focuses on thermal performance and the careful balance between architectural design and energy efficiency.

Design takes center stage in our metal walls coverage on (Page 40), as Dzoanna Pavulina of Móz Designs highlights metal facades inspired by earth's natural elements, showcasing how texture, patina, and material depth can bring warmth and character to modern structures. An additional metal wall feature by Erin Patrick of Parallel Architectural Products (on Page 36) further illustrates the versatility and performance of today's metal wall systems.

We also turn our attention to doors, an essential yet often overlooked building component. On Page 43, Mike Schweiss of Schweiss Doors examines how hydraulic and bifold door systems enhance access, safety, and flexibility across a wide range of applications.

As spring approaches, there's a renewed sense of momentum across projects of all types. We're proud to share the insights, expertise, and real-world experience that help support the work you do every day.

Thank you for being part of the *Metal Construction News* community.

Warm regards

Melanie Kowal

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To Litigate or Not Litigate: Things to Consider in the Decision–Making Process

By Josh Quinter

Josh Quinter is a commercial litigation attorney with a focus on construction law. He is also a founder and shareholder of Quinter Corbett, PC. Active in several construction trade and business organizations, Quinter is the past president of the Mid-Atlantic Chapter of the Metal Building Contractors & Erectors Association (MBCEA) and is the general counsel to national MBCEA. He can be reached at jquinter@quintercorbett.com

Running a business is challenging and requires countless difficult decisions. One of the toughest is whether or not to litigate a dispute. Litigation is risky. Its fluid nature makes it difficult to predict outcomes and impossible to guarantee results. Using a process to evaluate the known elements of the situation and make informed assumptions about the "known unknowns" can help in making the call though.

At the outset, there is no substitute for experience. A good lawyer who has been through the metaphorical "wars" can offer invaluable information and insights on process, the people involved, and how your situation relates to prior experiences. By no means is this an unabashed plug for lawyers. Other people can offer similar feedback, including friendly competitors with similar experiences, seasoned employees who have been through disputes in the past, and other professional services providers.

With your trusted advisors in place, here are some ideas on how to evaluate the situation holistically.

Probability of winning

This first criterion is obvious. While there are never any guarantees, it is essential to understand the strengths and weaknesses of your case. It is important to put all the facts, good and bad, on the table to discuss how the law will apply to them. Do not leave out inconvenient factual truths. Keep in mind, there are both occasions to proceed if the probability of winning is low and reasons not to proceed even when it is high. Understanding your chances of winning is essential to evaluating why you are litigating and your goals in doing so.

Financial

This element usually starts with the cost-benefit analysis. It is rarely (not never) a good idea to spend more to litigate a matter than you can get or retain in return. Even the right to recover attorneys' fees does not always guarantee you will get them. Beyond a simple cost-benefit analysis, however, there are other issues to consider. A cash flow analysis to determine the timing of a payment and whether the reputational elements of the dispute are more important than the financials are among them.

Reputation

Many litigants say they do not care about the money. Instead, it is about their reputation. Litigating for reputation or principle is an acceptable premise, but by definition, it de-emphasizes litigation costs. Too often, "principle" is an emotional reaction in the moment that the party later regrets. If you are giving heavy weight to reputation, be sure it is based on a fundamental principle or reputational element. Sleep on it and do not decide in the heat of the moment.

Time away

This obvious element is often overlooked. The time you spend working on the dispute is time away from doing what you do best—running your company. That lost time has value to the company. There are different ways to measure it for purposes of decision-making, but it is real and should be considered.

One size does not fit all, and no "right" answer exists. Just do your best to evaluate the dispute and make a sound decision.

Contractors should develop a system to assist in deciding whether litigation makes sense or not.

PHOTO © RIVDAN_CELIK/GETTY IMAGES

Frustration factor

Frustration is also usually forgotten. Litigation can be frustrating for a variety of reasons. Parties get discouraged and angry about the amount of time it takes, the behavior and representations of the other side, and, of course, decisions made by the court. This can lead to frustration and everything that comes with it. Stress, sleepless nights, and other fallout from that frustration can negatively your business.

In closing, develop a system to assist in deciding whether litigation makes sense or not. The priority and weight you give the factors in the analysis can vary depending on the decision maker and the nature of the dispute. One size does not fit all, and no "right" answer exists. Just do your best to evaluate the dispute and make a sound decision. Choosing to look at the situation through multiple lenses increases your chances of making a sound decision.

Growth and Opportunity Fuel the Future

By Christen Funk

Christen Brooker *Funk is the president of Butler Manufacturing, a founding MBMA member company. She is the first female president of Butler Manufacturing and the first woman to chair MBMA's board of directors*

As the first quarter of 2026 comes to a close, it's a good time to celebrate recent successes and contemplate our expectations for the rest of this year. Read on to find out how you can use this information to build your own business success and fuel your own future.

Record high membership levels

I'm pleased to announce that the MBMA has many new members who could likely be beneficial contacts for you and your company. We surpassed all previous annual membership records, entering the new year with the most significant number of both metal building manufacturers and associate member firms in MBMA's 70-year history. Here are our most recent inductees:

New building systems manufacturer members

- Waldroop Steel
- Ostro Steel Structures
- Draco Steel Buildings
- Taylor Building Systems
- Phenix Construction Technologies
- AllMetal Building Systems

New associate members

- Arco Design/Build
- BRUCHA
- Centerline Structural Engineering
- Bim Built Innovations
- PermaTherm
- Blast Resource Group
- Quick Veneer

IMP members increasing

Interestingly, the number of associate members who provide insulated metal panels (IMPs) has grown significantly. IMP members now include: All Weather, BRUCHA, Falk, Kingspan, Metl-Span, and PermaTherm. To address this growing segment of our membership, our technical staff is working diligently to add IMP sections to our Fire Resistance Design Guide and to MBMA's Common Industry Practices. These additions will benefit the IMP members by providing clear guidance to builders and owners for using their products in a variety of applications. MBMA will be defining other benefits specific to the IMP industry in the days to come, so stay tuned.

Proprietary stats and new ideas

In speaking with our new members, we have learned that one of the core reasons that firms join the association is for access to our proprietary industry data, which we compile and update throughout the year. Based on internal data shared with us by our manufacturing company members, we compile sales and shipment trends, market share data, and geographic distribution statistics—right down to the county level. It's excellent information and ideal intelligence when planning marketing and regional strategies.

Another way we provide members with business and market intelligence is by inviting experts to speak at our national meetings. At our annual meeting last December, our keynote address was presented by Alex Chausovsky, a nationally recognized market researcher and analyst who advises corporate executives and industry trade associations on analytical, economic, and business-oriented topics. He shared many insights about the future of America's economy in general and about our specific industry.

A few highlights of Alex's presentation include the following:

Understanding:

- Tariffs aren't going anywhere, and there are more coming in 2026.
- Market share gains and new customer acquisition are key to 2026 growth.
- Companies should simulate and prepare action plans for a variety of scenarios.

Prepare strategically:

- Make decisions based on data (taxes, tariffs, sales, and investment).

- Increase communication efforts up and down the supply chain.
- Achieve productivity gains via technology investment and implementation.

Ready to join MBMA?

If your firm is an MBMA member, you have numerous opportunities to impact your industry's future by getting involved in our committees, task groups, and possibly even our board of directors. You and your organization can also benefit by participating in our many technical events throughout the year. Here are some upcoming activities that will educate, inspire, and invigorate you and your team:

MBMA 2026 Events

Architectural Faculty Workshop
April 15-16, Amherst, Mass.
Spring Association Meeting
April 22-24, Colorado Springs, Colo.
Design Seminar
July 21-23, Cleveland
Safety Workshop
September 15-16, Indianapolis, Ind.
Energy and Sustainability Meeting
September (Dates TBD), Minneapolis
MBMA Annual Meeting
Dec 7-9, Orlando, Fla.

Learn how to get involved by visiting the membership section of MBMA's website. If you have specific questions or would like to speak with our general manager, please reach out to Tony Bouquot at mbma@mbma.com or 216-241-7333. We encourage you to share this article with your senior management team and would be pleased to share more insights with you, helping the entire metal building industry achieve greater success.

P.S. Get ready! MBMA is releasing its first book, written specifically for architects, later this year. Geared to educate, enlighten, and enthuse architects and design professionals nationwide, this nearly 300-page resource will be loaded with photos, renderings, floor plans, interviews, and so much more. We can't wait to introduce you to the first definitive professional publication that shows just how amazing metal buildings can genuinely be.

Left: The MBMA has seen an increasing number of members from the insulated metal panel (IMPs) sector.
PHOTO © BALONCICI/GETTY IMAGES

Right: Alex Chausovsky of The Bundy Group provided in-depth insights during his keynote speech at the MBMA annual meeting in December.
PHOTO COURTESY THE BUNDY GROUP

PHOTO © WANGANQI/GETTY IMAGES

45TH Annual MCN Contractor Survey

By Dave Flaherty

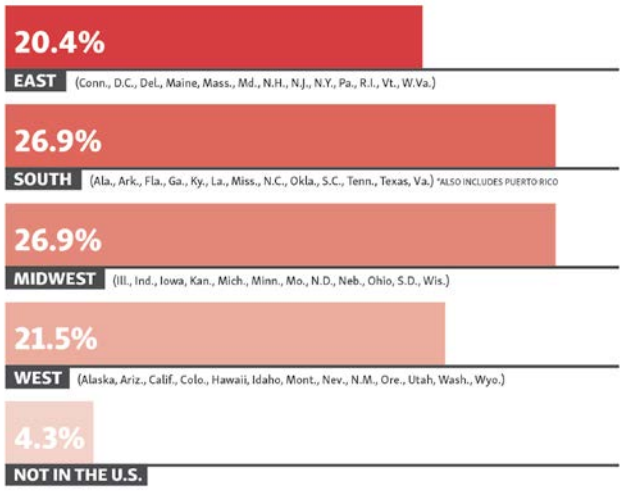
Like many other industries, metal construction continues to face an uncertain outlook for 2026 due to numerous factors, including rising material costs, a declining skilled labor workforce, and the ever-evolving role of tariffs on trade partners.

To check the pulse of the industry, *Metal Construction News* once again heard from those in the field through our 45th annual Contractor Survey. Some key takeaways from the data we collected include lower sales and metal builders generally working on fewer projects.

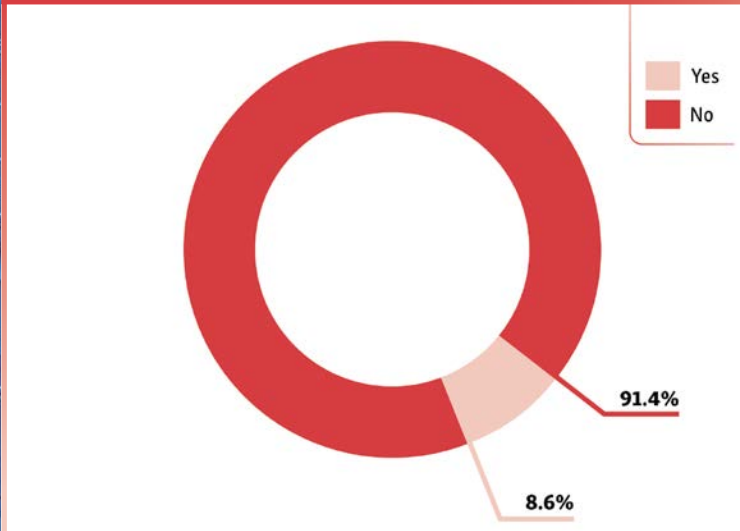
However, overall, the total sales volume for completed and new construction projects appears to be moving upward. Last year, 30.2 percent of contractors sold $15 million or more, up almost 5 percent from 2024. Meanwhile, the number of contractors who sold for less than $1 million was 20.9 percent, down 6 percent from 2024. Additionally, the share of those who sold $7 million to $15 million jumped to 17.4 percent from 13.7 percent the previous year.

For total metal project sales specifically, 2025 saw the number of contractors that sold $10 million or more (18.1 percent) drop by 12 percent, and those that sold under $1 million (31.3 percent) fall by 4.4 percent. Rounding out completed metal project sales, 18.1 percent of respondents sold $1 million to $3 million; 14.5 percent

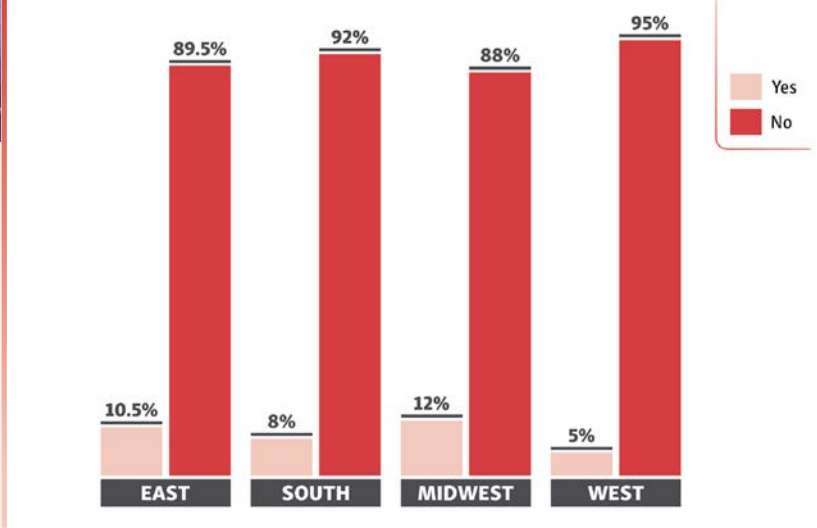
Location of Company



Is the Company a Subsidiary of Another Company (National)



Is the Company a Subsidiary of Another Company (Regional)



of respondents sold $3 million to $5 million; 6 percent sold $5 million to $7 million; 9.6 percent sold $7 million to $9 million; and 2.4 percent brought their businesses $9 million to $10 million.

Where are contractors, and who are they?

While contractor companies are spread out across the United States, the South again produced the most contributors to our survey, although the share was

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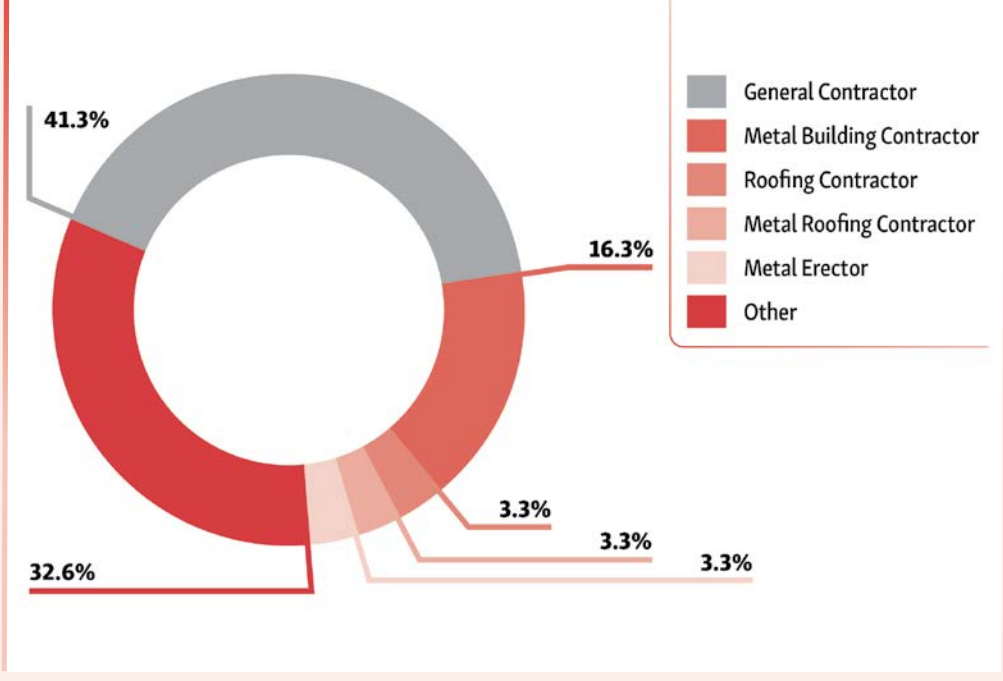
Type of Firm (National)



reduced. Thirty percent of this year's respondents are in the South, a drop from 35 percent last year.

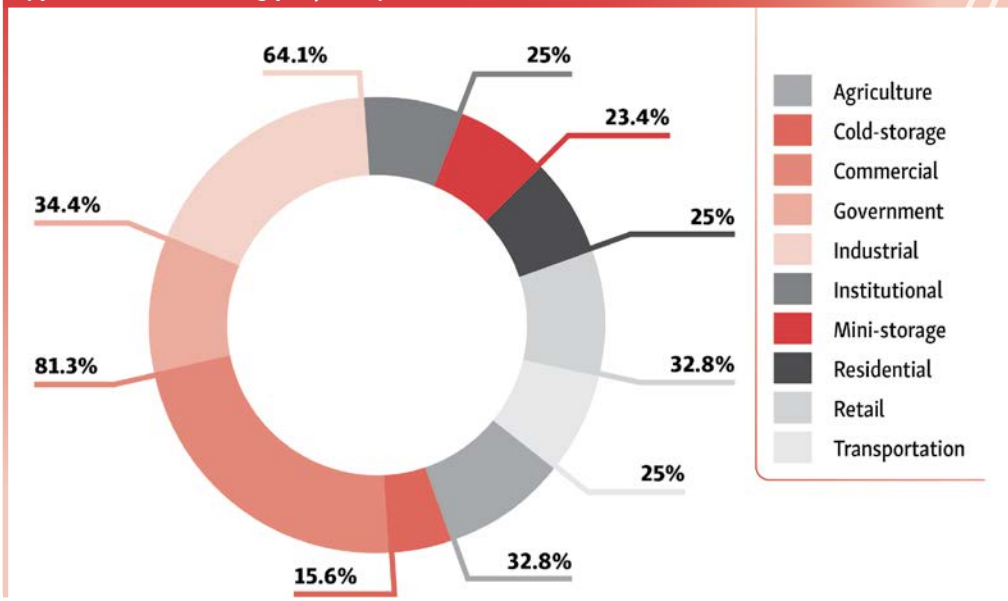
The Midwest, also steadily represented, has 27 percent of businesses reporting this year, a slight decrease from the 28 percent reported in last year's survey. The East and West regions traded places in representation this year. The West region jumped to 22 percent from 19 percent last year, while the East also increased its share from 17 percent in 2024 to 21 percent in 2025.

The makeup of contractor types changed significantly this year. The majority (41.3 percent) of respondents identified as general contractors, up from 29.9 percent in 2025. This year's survey saw the greatest concentration of general contractors in the East. The number of general contractors in the other three regions was also up considerably.

The next largest group is metal building contractors, at 16.3 percent nationwide. Here, the East was most represented, with 27.8 percent. After that, 4.5 percent of respondents were metal erectors, while the roofing contractor, metal roofing contractor, and metal erector titles represented 3.3 percent of those surveyed. The number of those answering "other" was 32.6, down nearly 11 percent from 2024.

An overwhelming majority (91 percent) of companies are stand-alone businesses; subsidiaries comprise just 9 percent of survey respondents this year, up from 6 percent in 2024. Regionally, 95 percent of companies in the West are standalone, 92 percent in the South, 89.5 percent in the East, and 88 percent in the Midwest.

Type of metal building projects your firm was involved in 2025 (National)



Most sectors saw less activity in 2025

While contractors were involved across sectors in 2025, the most common type of metal building system among our respondents was in the commercial space at 81.3 percent, up about 7 percent from 2024. By region, the East was the highest at 92.3 percent, followed by the Midwest at 81.3 percent, the South at 81 percent, and the West at 76.9 percent.

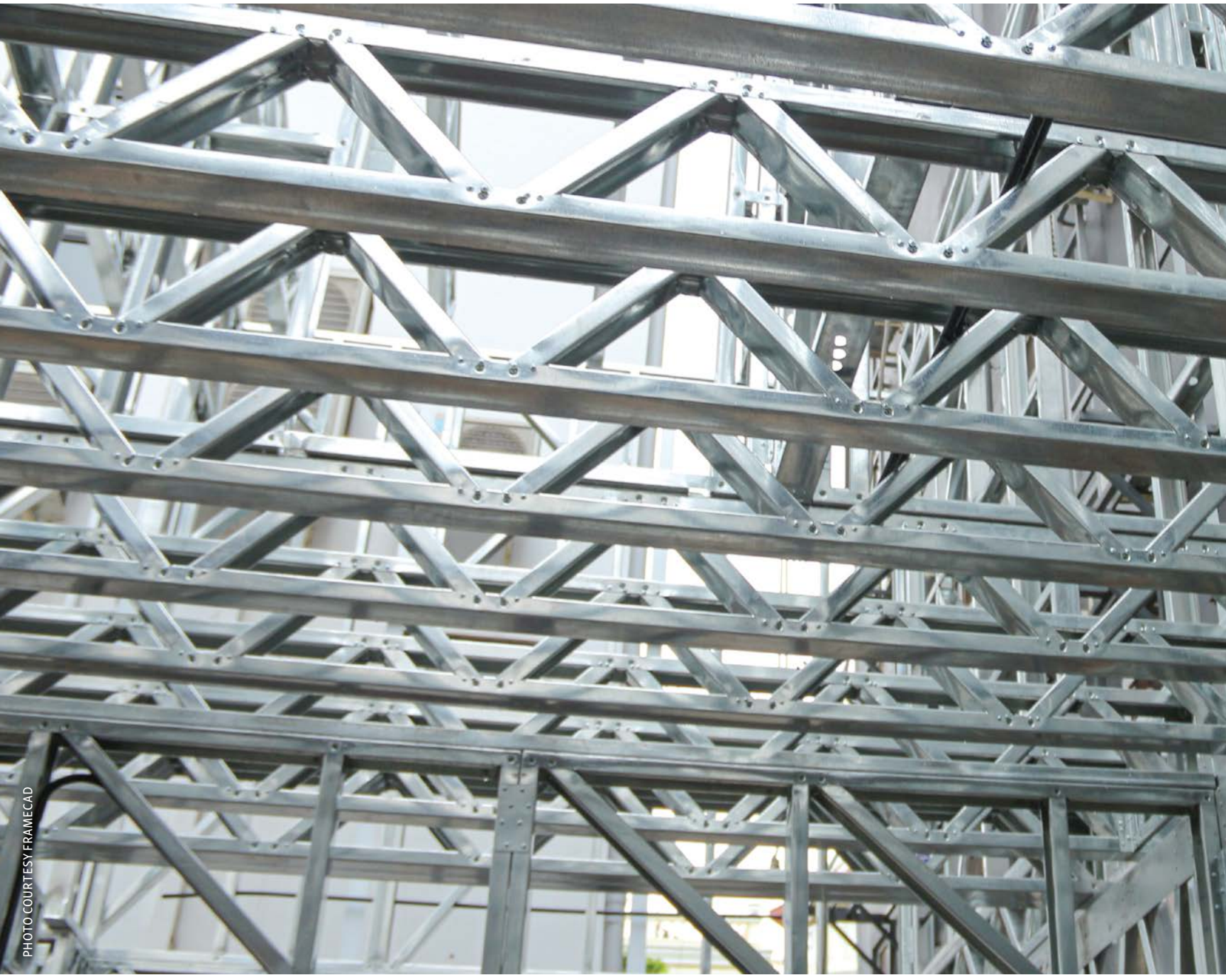


PHOTO COURTESY FRAMECAD

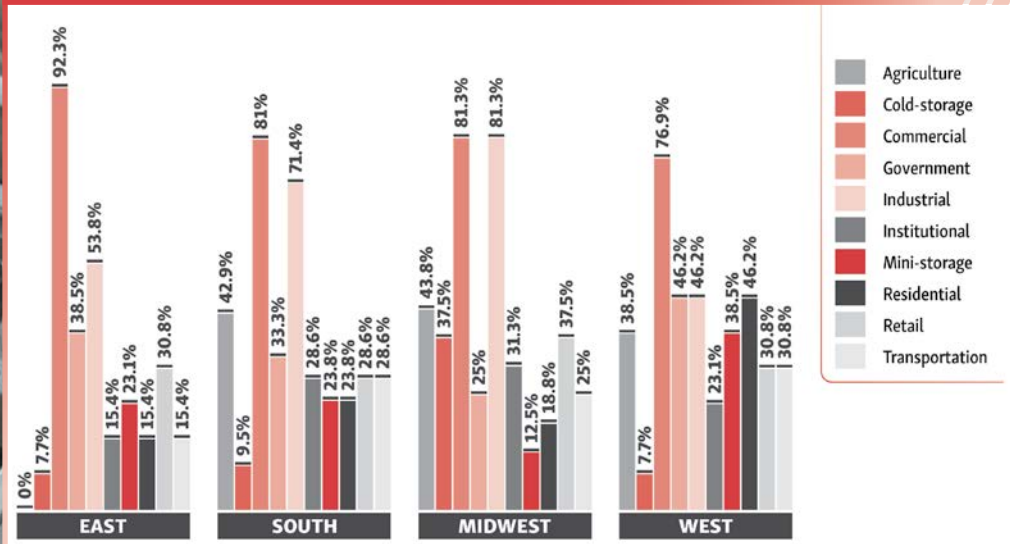
Overall, only four of the 10 categories listed in the survey saw increases in 2024. In addition to commercial, cold storage increased to 15.6 percent from 13 percent in 2024, government grew from 32.6 percent in 2024 to 34.4 percent, and mini-storage went from 17.4 percent in 2024 to 23.4 percent in 2025.

All other sectors saw declining shares in 2025. Agriculture (down from 43.5 to 32.8) and transportation (down from 34.8 to 25) saw the most significant drops. The other declining sectors were industrial (65.2 to 64.1), institutional (28.1 to 25), residential (26.1 to 25), and retail (37 to 32.8).

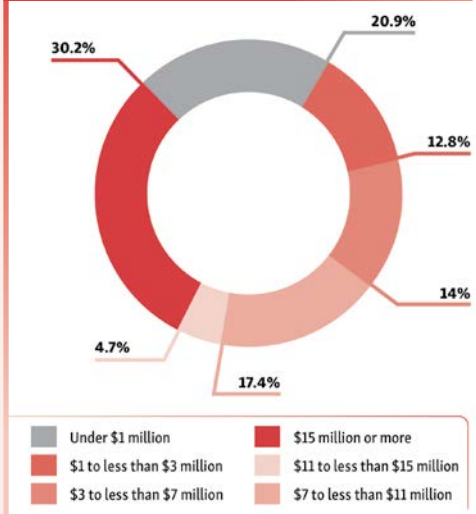
When it comes to metal roofing, every sector saw declines, except government, which grew from 24 percent in 2024 to 32.6 percent last year. Residential saw the biggest drop, going from 40 percent in 2024 to 23.3 percent in 2025. Agriculture (32.6 percent), cold storage (14 percent), commercial (65.1 percent), industrial (60.1 percent), institutional (16.3 percent), mini-storage (14 percent), retail (23.3 percent), and transportation (20.9 percent) all saw decreased activity in 2025.

For metal wall panel projects, it was much of the same, as every category saw a drop from 2024. Transportation saw the biggest decline, from 35 percent in 2024 to 10.3 percent in 2025, followed by commercial, which dropped from 69 percent in 2024 to 53 percent in 2025, a 16 percent tumble, and residential, at 13.8 percent last year, down from 25 percent in 2024. The shares for other sectors were agriculture (27.6 percent), cold storage (13.8 percent), government (20.7 percent), industrial (62.1 percent), institutional (13.8 percent), mini-storage (13.8 percent), and retail (20.7 percent).

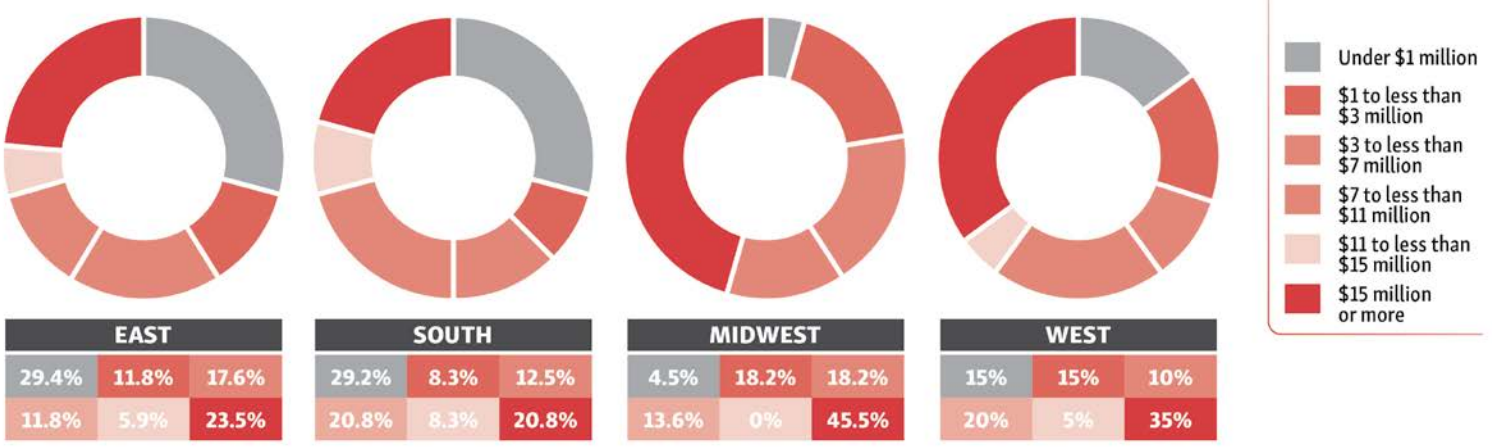
Type of metal building projects your firm was involved in 2025 (Regional)



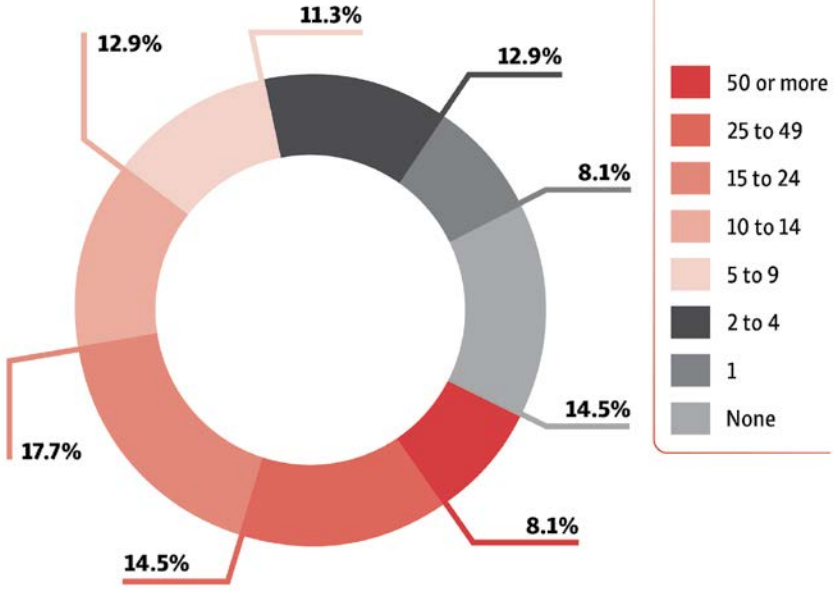
Total metal project sales volume for all completed renovation and new construction projects in 2025 (National)



Total metal project sales volume for all completed renovation and new construction projects in 2025 (Regional)



How many metal building projects did your firm complete in 2025



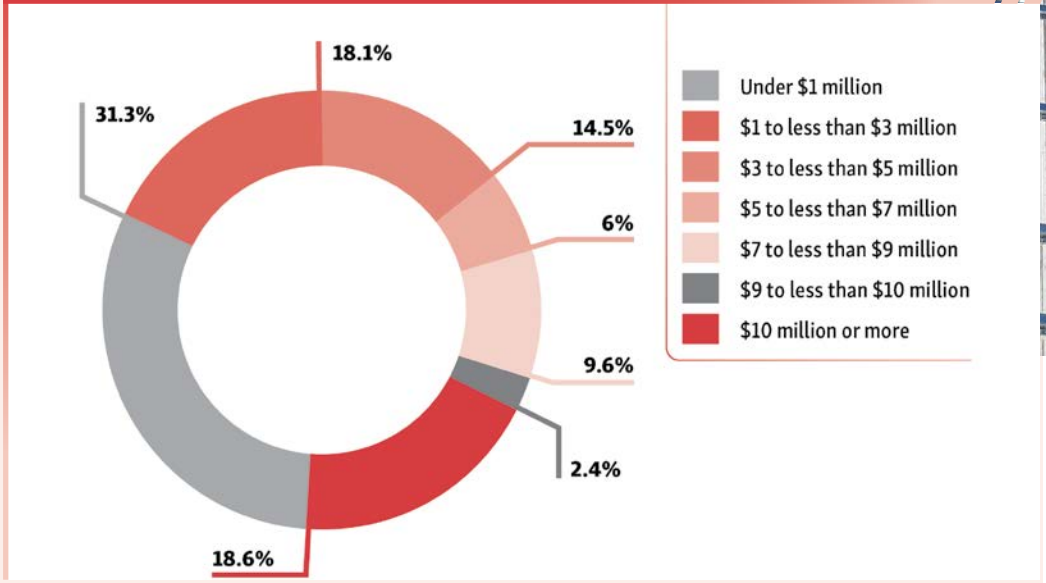
Construction insights from last year

Buildings

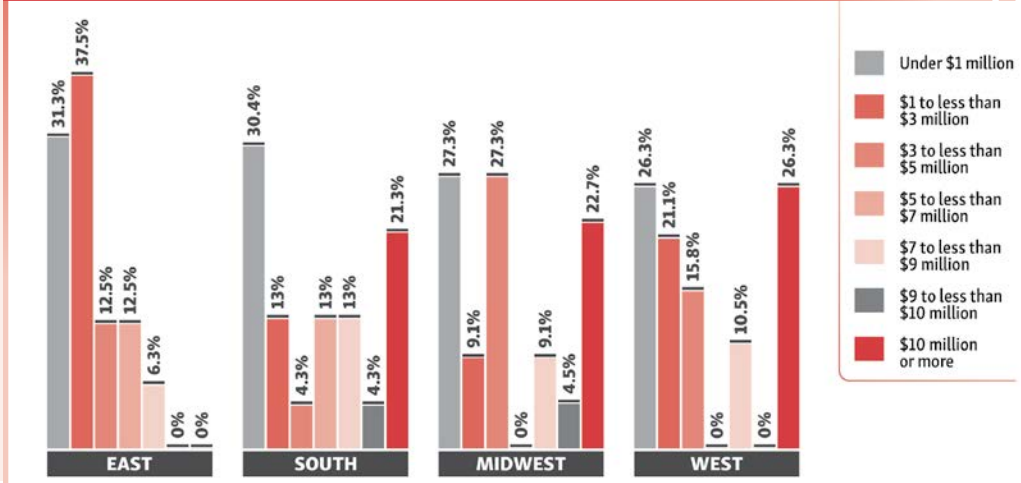
Most contractors worked mostly on metal building projects, including smaller to mid-sized projects. In 2025, 57.1 percent of contractors worked on projects less than 929 m^2 (10,000 sf), followed by 69.8 percent working in the 929 to 1,858 m^2 (10,000 to 20,000 sf) range, and more than half (54 percent) working on 1,858 to 4,645 m^2 (20,000 to 50,000 sf) metal building projects. Buildings between

PHOTO COURTESY ROOF HUGGER

Total metal project sales volume in 2025 (National)



Total metal project sales volume in 2025 (Regional)



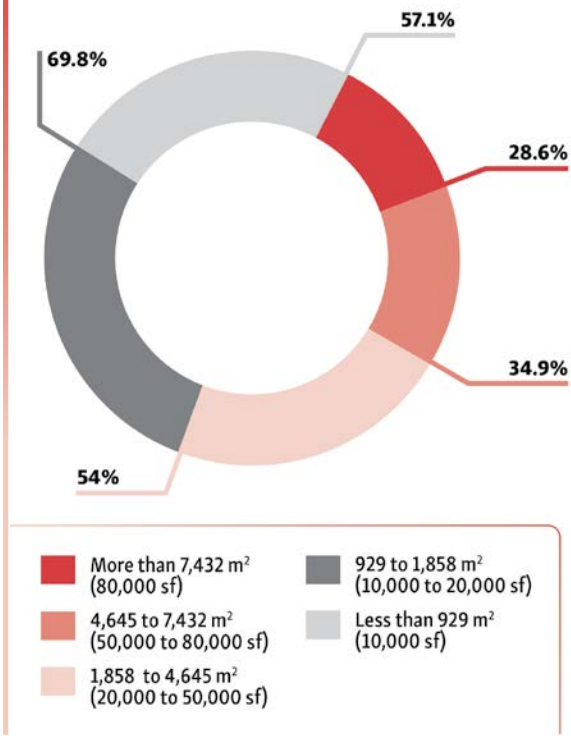
4,645 and 7,432 m² (50,000 to 80,000 sf) were up slightly at 34.9 percent. Lastly, larger-size metal projects of 7,432 m² (80,000 sf) or more saw a decline from 36 percent in 2024 to 28.6 percent in 2025.

Regionally, the West had the most in the largest category, the Midwest in the second-largest, the South in the third-largest, and the East in the second-smallest and smallest categories.

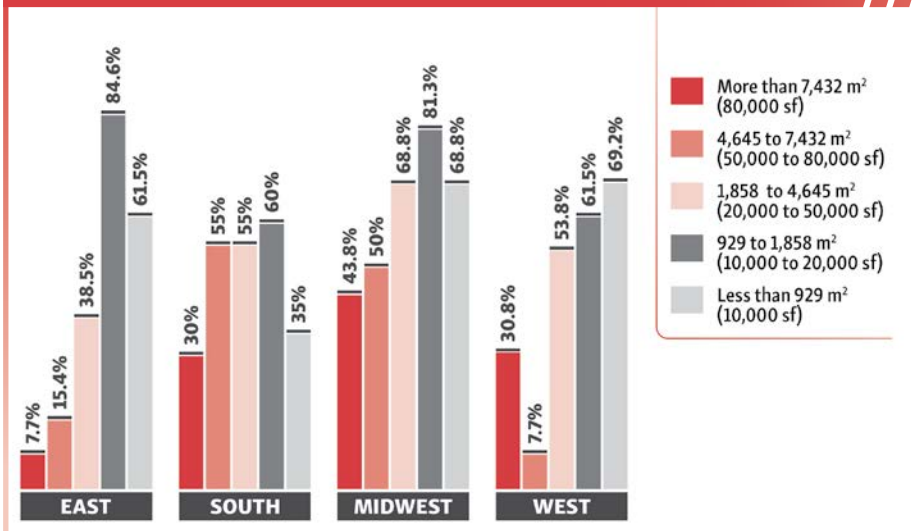
Regarding the share of completed projects, the South led the way with 31.1 percent, followed by the Midwest and West at 24.6 percent and the East at 19.7 percent. Notably, the Midwest led last year with 35.7 percent.

In 2024, most firms completed 15 to 24 projects (19.7 percent), while two to four and 25 to 49 were at 16.4 percent, respectively, and 10 to 14 projects (13.1 percent). This was followed by 5 to 9 (9.8 percent), more than 50 projects (8.2 percent), and one single project (3.3 percent). The number of

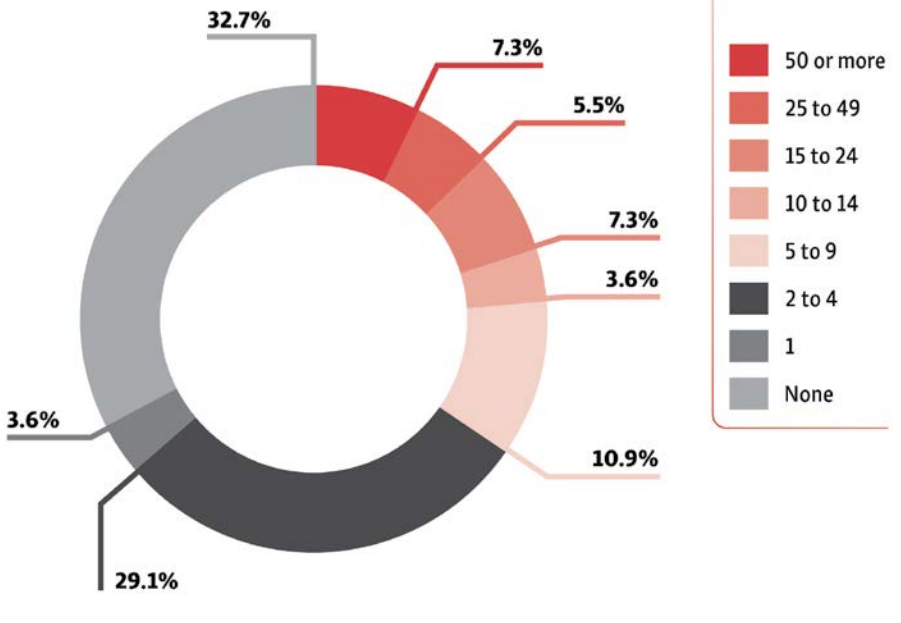
Size of the metal building projects your company was involved with in 2025



Size of the metal building projects your company was involved with in 2025



How many metal roof projects did your firm complete in 2025



respondents who did not complete any metal building projects was down 20 percent to 13.1 percent.

Roofing

For metal roofing projects, the South led with 32.8 percent completed in 2025. East and West companies followed at 24.1 percent, and the Midwest at 19 percent.

In 2025, most firms completed two to four projects (23.7 percent), while five to nine and 10 to 14 were at 11.9 percent, respectively, and one project (10.2 percent). This was followed by 15 to 24 and more than 50 projects, each at 3.4 percent and 25 to 49 at 1.7 percent. The number of respondents who did not complete any metal building projects was up 11 percent to 33.9 percent.

Walls

Among completed metal wall panel projects, the Midwest had 37.5 percent completion, with the East region second at 25 percent. The West and South rounded things out with 18.8 percent each.

For metal wall panels, most contractors completed two to four projects (20.8 percent), while 14.6 percent completed 10 to 14. The categories of one project and five to nine projects had 6.3 percent, while 25 to 49 and more than 50 were 4.2 percent, respectively.

Light-gauge framing

In 2025, contractors also completed several light-gauge framing projects, both interior and exterior.

Of the light-gauge interior framing projects, 38.5 percent were completed in the South, 30.8 percent were in the East, 18 percent in the West, and 12.8 percent in the Midwest. The figures were the same for light-gauge exterior framing projects.

Sixty-eight percent of responders did not complete an interior light-gauge framing project, and 58.5 percent did not complete an exterior project.

Forecasts for the coming year

This year, 8.2 percent of survey respondents project they will complete 50 or more metal building projects, with 16.4 percent looking to complete 25 to 49 projects. However, most contractors predict they will complete between two and 24 metal projects.

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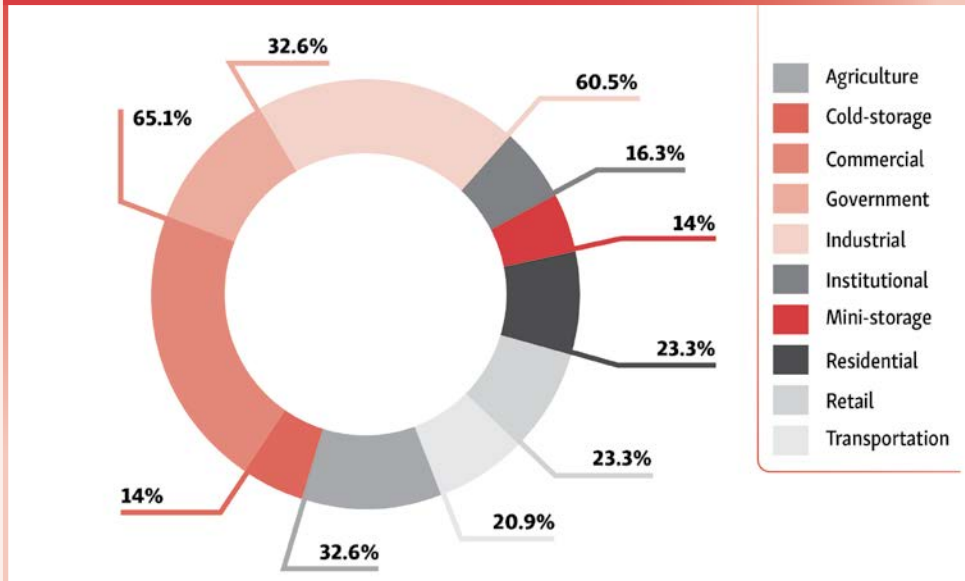
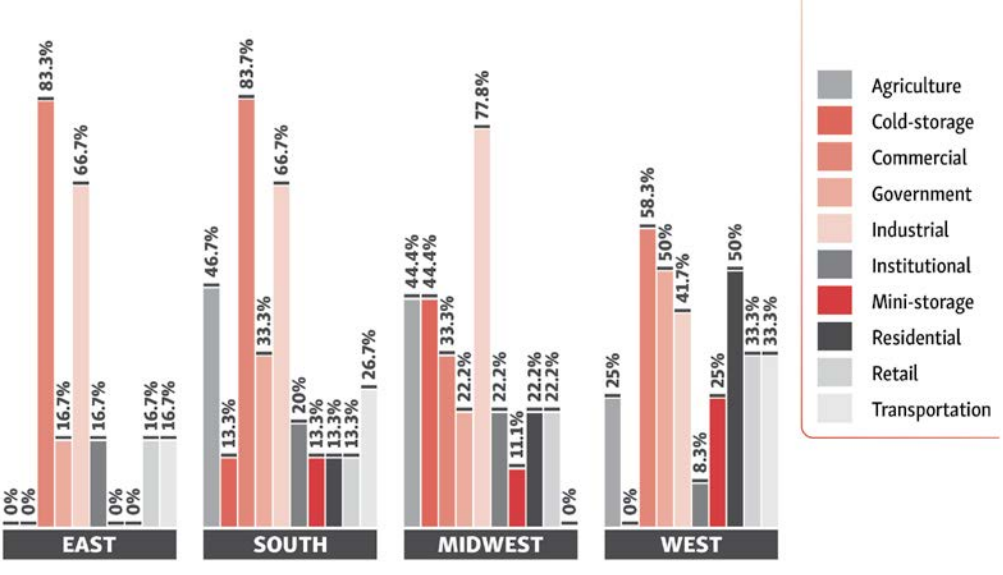
Types of metal roofing projects your firm was involved in 2025 (National)



Type of metal roofing projects your firm was involved in 2025 (Regional)



Namely, 19.7 percent aim to complete 15 to 24 projects, 13.1 percent target 10 to 14 projects, and 9.8 percent project to complete five to nine projects. Around 13 percent do not project to complete any metal projects in 2025, down from 19 percent last year.

The majority of respondents, 67.3 percent, expect to complete at least one metal roofing project this year. Of those, 29.1 percent estimate two to four projects, 10.9 percent estimate five to nine projects, and 7.3 percent estimate 25 to 49 projects. Additionally, 7.3 percent expect to complete more than 50 projects, a jump from 5.6 percent in 2024.

About 40 percent of respondents do not expect to complete one metal wall panel project this year. However, more than half (54.2 percent) expect to complete between two and 49 projects, with the most represented projection between two and four. Only 6.3 percent of respondents believe they will complete between 25 and more than 50 projects, down from 11.9 percent in the 2024 survey.

While the data points to a less active 2025 in some metrics, contractor confidence has not taken a nosedive; instead, it has shown a gradual decline in 2026. Many experts have predicted the actual impacts of tariffs would not be seen for one year, so the next 10 months will be interesting in terms of what is on the horizon.

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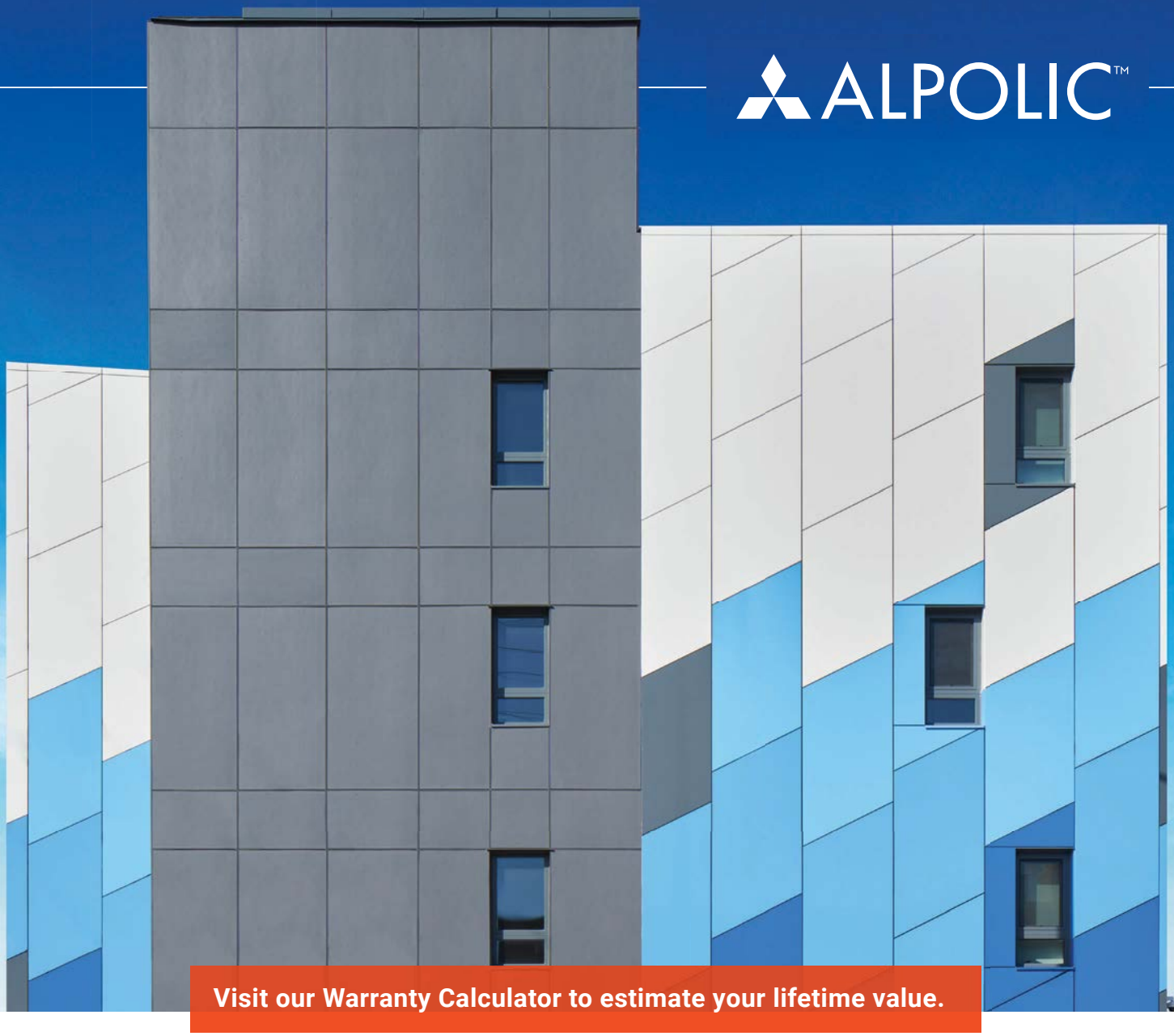

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35TH ANNIVERSARY

The Case for Verified Fire Protection

By Fernanda Gregati

PHOTOS COURTESY PPG

Steel shapes modern society. Its strength and versatility drive design freedom and construction speed from airports to arenas. But when exposed to fire at certain temperatures, steel does not hold. According to the American Institute of Steel Construction (AISC), it begins to lose half its strength around 538°C (1000°F). These temperatures can be reached within minutes in a building fire fueled by standard office contents such as furniture, textiles, and wood.

Intumescent coatings extend the time to steel's calculated structural failure temperature. These systems expand when exposed to heat and form an insulating char. The char delays heat transfer to the steel, helping maintain structural integrity long enough to allow occupants enough time to evacuate and emergency crews more time to respond.

Performance depends on testing

However, the benefits of coatings only hold up if they perform as tested. Misapplied systems or mismatched conditions can introduce risk. Instead, specifiers and contractors must ensure fire testing aligns with how coatings will be used in real construction scenarios. Fire testing must account for application thickness, primer and topcoat interaction, applied loads, and system performance under both restrained and unrestrained conditions

Coatings proven in the lab show their full potential when tested to match actual construction methods. Testing under real-world loads and assembly configurations can help ensure the effectiveness of the coatings.

No universal standard

There is no single fire testing standard that applies globally. North America uses UL 263 and ASTM E119. The EU follows EN 13381-8, while China enforces GB 14907. Each standard uses a similar cellulosic fire curve but applies

Do not rely on performance claims alone when evaluating structural steel intumescent coatings.

different failure limits, furnace setups, and durations. Coatings tested for one region's standard cannot be assumed to be compliant elsewhere.

To ensure compliance, engineers must verify that every system component meets the applicable regional test criteria, including primers and topcoats.

What the testing shows

At the Chongqing Jiangbei International Airport T3B Terminal, engineers faced a three-hour fire resistance requirement for structural columns that included circular, conical, and shuttle-shaped assets. These columns, filled with concrete, required coatings that could withstand stress and match the architectural finishes.

Enter an intumescent coating designed to provide passive fire protection for structural steel in buildings and infrastructure. This advanced solution underwent extensive testing that simulated real-world weld seams, assembly loads, and surface preparation variables. With design driven by the highest standards, third-party labs confirmed performance through mechanical load fire testing and complete system evaluation. This validation proved critical. It kept the project on track and allowed designers to retain the exposed steel aesthetics, demonstrating what effective fire testing delivers: clarity, protection, and speed.

To avoid costly delays and rework while effectively safeguarding assets, contractors and specifiers should:

- Review complete system testing, not just the intumescent layer.
- Confirm third-party certification from Underwriters Laboratories (UL), Factory Mutual (FM), or other approved agencies.
- Ensure testing includes actual steel profiles, loads, and assembly types.
- Align every layer of the coating system to the tested conditions.
- With support from the coating manufacturer, select the appropriate intumescent coating system based on the corrosive environment to ensure durability and long-term performance.

Coating selection is important

Do not rely on performance claims alone when evaluating structural steel intumescent coatings. Ask about the test standards and verify third-party validation. It is essential to confirm that the system includes tested primers and topcoats. Find the right coatings partner that can help ensure test conditions match how the product will be used on-site, effectively working to reduce rework, premature failure, and costs.

Fernanda Gregati *is PPG's business development manager for the protective and marine coatings business. She is a seasoned chemical engineer and business development leader with over a decade of experience in passive fire protection and protective coatings.*

Painted Coatings, Anodize Finishes, and Custom Options for Aluminum

By Tammy Schroeder

Architectural aluminum products are essential to constructing modern commercial and institutional buildings. A building envelope's facade, daylighting systems, and exterior components are usually fabricated from aluminum. The finish applied to these products plays a critical role in how they perform, their life cycle, and how well they contribute to a project's design and sustainability goals.

Painted coatings, anodize finishes, and specialty options protect the aluminum and enhance its material properties, while adding visual appeal. When these finishes are applied to architectural aluminum products under controlled conditions and paired with proper handling, installation, and maintenance, they deliver decades of durable service.

Aluminum applications

In North America, aluminum is readily available, easily formed, has a high strength-to-weight ratio, and can be recycled at the end of its long life. For commercial building construction projects, it is extruded in linear lengths, stretch-formed into curves, and produced as flat sheets.

The aluminum material is then finished, fabricated, and assembled into:

- Window, skylight, curtain wall, storefront, and entrance framing systems.
- Doors, column covers, and wall panels.
- Facade and rainscreen systems.
- Canopies, sunshades, and other shading devices.
- Coping, fascia, and louvers.
- Ornamental and decorative elements, trim, and railings.

Performance–driven decisions

More than an aesthetic choice, exterior aluminum finishes represent an intentional decision for building performance. Architectural-grade finishes protect the aluminum and its appearance from weather, wear, and much more.

To ensure expected performance and color consistency, experienced finishing service providers apply the paint or anodize under quality-controlled conditions using a combination of automated equipment and human control. Along with quality assurance procedures, they adhere to stringent industry standards and offer detailed warranties for their finishes.

The Fenestration Glazing and Industry Alliance's (FGIA) AAMA standards are commonly referenced for architectural aluminum finishes, especially for windows, doors, skylights, curtain walls, and storefronts.

Painted coatings

Because of their nearly unlimited color choices, painted coatings remain the most widely used for architectural aluminum. High-performance, 70 percent fluoropolymer resin-based coating systems meet the industry-leading AAMA 2605 standard for architectural aluminum extrusions and panels. Finished materials

Shamrock Trading Corporation's global headquarters in Kansas exemplifies monolithic, modern building design. Its two Class A office towers, single-story connecting building, and parking garages feature high-performance curtain walls with architectural painted coatings and anodize finishing.

PHOTO © ABSTRACT PHOTOGRAPHY, INC. - TERRY WICKERT/ COURTESY TUBELITE, APOGEE ARCHITECTURAL METALS

In Indiana, Trine University's Steel Dynamics Inc. Center of Engineering and Computing features a transparent, jewel-box exterior with bright, daylit interiors.

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PHOTO © JOE BRENNAN/COURTESY LINETEC/ APOGEE ARCHITECTURAL METALS

meeting this standard exhibit excellent color uniformity, gloss, film hardness, and adhesion, as well as superior resistance to impact, chemicals, corrosion, and weathering-induced fading.

AAMA 2605 is the highest-level standard for painted coatings, with a 10-year outdoor weathering test and 4,000 hours of high-humidity and salt-spray testing. When applied correctly, these painted coatings provide decades of service in various climates, from hot, coastal, solar-intensive locations to cold, precipitation-intensive regions to those with a combination of extreme temperatures and weather.

The long-term performance of an architectural coating is influenced strongly by pigment composition. Inorganic pigments are commonly used and preferred for their exceptional durability and resistance to fading. Historically, some bright, high-chromatic colors, such as vibrant reds, were achieved using organic pigments. With some manufacturers moving away from these, the range of intensely saturated colors available in specific coating systems may be limited today. When organic pigments are used, adding a clear coat provides additional UV protection and helps maintain color vibrancy over time.

Anodize finishes

Anodizing offers a fundamentally different approach to painting aluminum. With an inherent metallic appearance and an exceptionally durable surface, anodize finishes are integral to aluminum. They are produced via electrochemical processes that accelerate oxidation and increase surface hardness.

Anodization produces a uniform, hard oxide film that protects the remaining aluminum from corrosion. The resulting anodize aluminum cannot peel or flake. It does not require a clear coat or ongoing treatment to maintain color stability. Anodize color choices typically are offered in clear, black, bronze, and champagne.

Meeting the AAMA 611 specification performance standards, Class I anodize aluminum ensures excellent resistance to abrasion, weather, UV exposure, and salt spray, plus exceptional wear in high-traffic environments. Some anodizing service providers list a 40-year life expectancy.

Specialty finishes and custom options

Beyond traditional painting and anodizing techniques, specialty finishes continue to expand the design options available for architectural aluminum products, such as:

- Copper and Bordeaux anodize specialty finishes create rich and earthy elemental tones using a proprietary three-step color process. The resulting finish retains its luster and will not patina like natural copper.
- Mica and metallic specialty painted coatings contain reflective flakes that add sparkle, shine, and shimmer to the finished aluminum.
- Textured painted coatings contain an additive to simulate the tactile feel of brick, stone, terra cotta, and other masonry.
- Woodgrain textured specialty coatings mimic the look and feel of natural wood grain using a dye sublimation process.
- Dual finishing options allow different colors or finish types on a building's exterior and interior surfaces, such as a window frame or door.
- Custom finishes can be precisely matched to almost any natural or manufactured material, brand standard, or decorating style. Architectural coatings manufacturers' 2026 Color of the Year selections range from light natural neutrals to fresh-cut green to a sea of subtle to vibrant blues.

Sustainable advantages

The selected finish can significantly impact a project's sustainability profile. Durable finishes that extend the service life of aluminum components reduce the need for replacement and refinishing, conserving resources over time. Factory-applied finishing also reduces waste through controlled processes and, in many cases, the use of reclaimed energy or recycled materials.

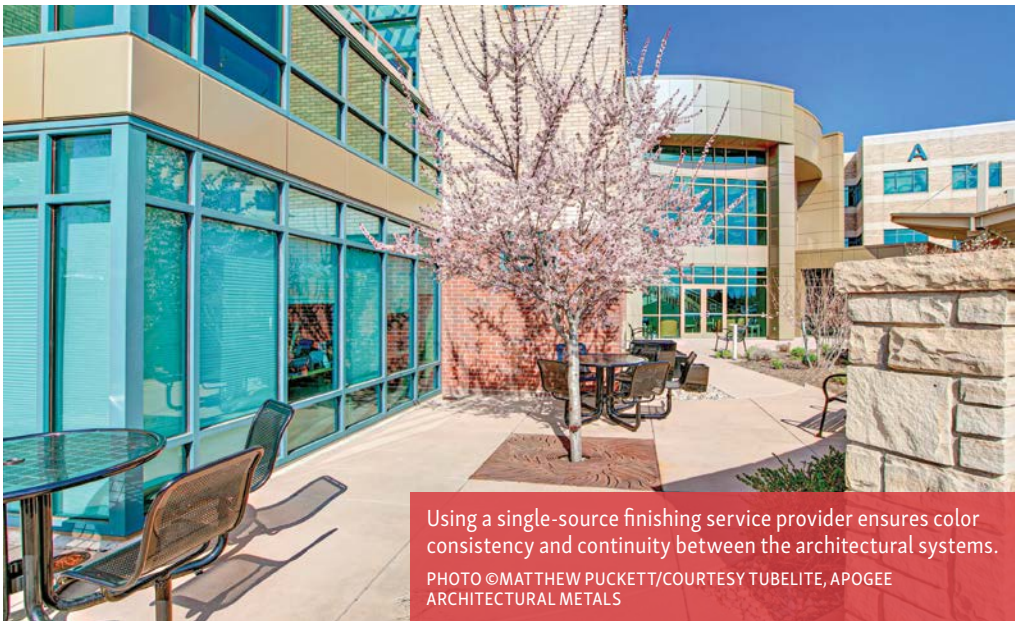
Liquid-painted coatings contain solvents with volatile organic compounds (VOCs). An environmentally responsible finishing service can safely capture and

Tennessee's Hilton Franklin Cool Springs features a Light Seawolf Beige 70 percent fluoropolymer resin-based architectural coating on its aluminum doors and window walls.

PHOTO COURTESY TUBELITE, APOGEE ARCHITECTURAL METALS

Oklahoma's Crossings Christian School features an aluminum storefront and custom entrances finished in a sage green color.

PHOTO © DAYBREAK PICS/ COURTESY TUBELITE, APOGEE ARCHITECTURAL METALS



Using a single-source finishing service provider ensures color consistency and continuity between the architectural systems.

PHOTO ©MATTHEW PUCKETT/COURTESY TUBELITE, APOGEE ARCHITECTURAL METALS

destroy VOCs within its facility before the finished material is shipped to the jobsite.

Anodize finishes do not contain VOCs. The finished aluminum material is inert, non-combustible, and 100 percent recyclable. A few anodize aluminum providers and product manufacturers have earned a Declare Label as Living Building Challenge (LBC) Red List Free. This means the finished material is fully compliant with the highest level of LBC criteria established by the International Living Future Institute (Living Future). Red List Free and sustainable building materials can contribute to green building certification programs, such as the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Rating System and the International WELL Building Standard.

When combined with aluminum's inherent recyclability, high-quality finishes help support long-term sustainability goals without compromising durability or appearance.

Care and cleaning

Even the highest-quality finish can be compromised by improper handling or installation during transportation and construction. Following manufacturer guidelines for storage, protection, and installation is essential to preserving finish integrity and ensuring the full warranty is retained.

Warranties can vary from 12 months to five years to more than 10 years. Almost all of them require routine maintenance as a condition of coverage. The installation team plays a key role in educating owners and property managers about proper care and cleaning of their finished products.

Whether the architectural aluminum is painted, anodized, or uses a specialty finish, it represents a long-term investment in a building's performance and appearance. When correctly specified, applied, and maintained, these finished products contribute to smooth installation and operation for many years to come. MCN

Tammy Schroeder, *LEED Green Associate, is the director of marketing for Apogee Architectural Metals, which includes Linetec, EFCO, Wausau Window and Wall Systems, Tubelite, and Alumicor brands. With more than 25 years of industry experience, she serves as an educator on high-performance architectural products, finishing, and services. She can be reached at tammy.schroeder@apog.com or through linetec.com*

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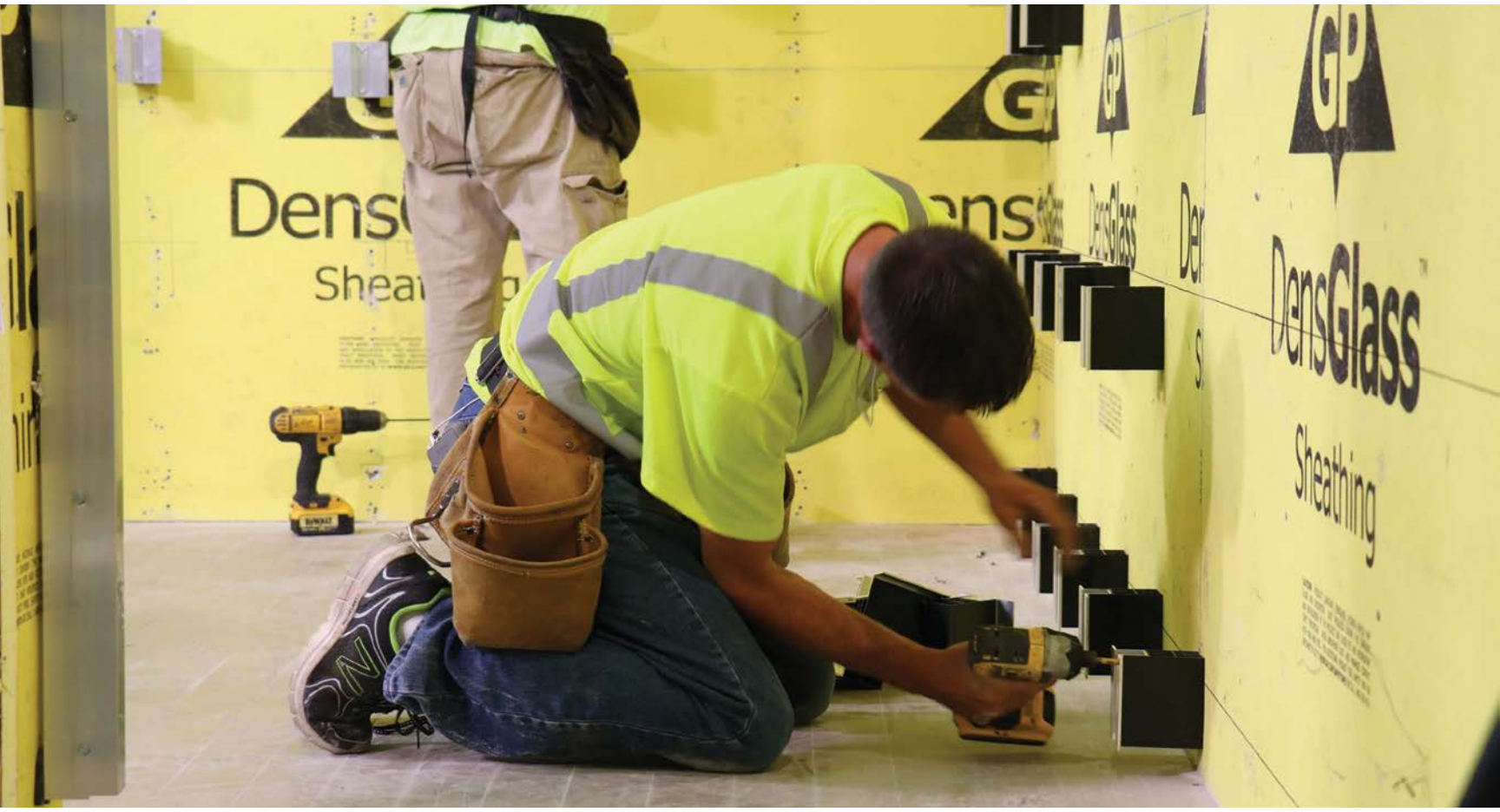


Rainscreen Attachments: An Overlooked Strategy to Cost–Effective, Energy–Efficient Facade Performance

By Helen Sanders and Bill Blazek

PHOTOS COURTESY TECHNOFORM

Designing building envelopes to increase energy efficiency and long-term serviceability remains at the forefront of architectural design. Many building owners see the potential of net-zero energy and passive house performance, and that it is within reach using proven design and installation methods and commercially available components and assemblies. Design strategies include high R-value walls, high-performance fenestration, increased air tightness, substantially mitigated thermal bridging, and heat-recovery ventilation.

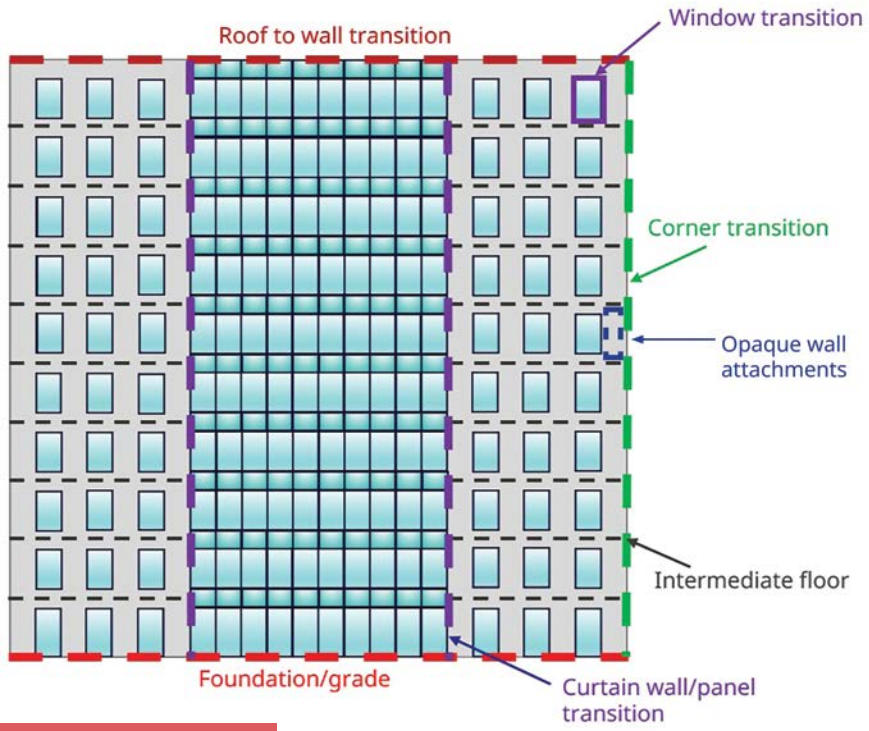
Implementing all these elements is key to achieving a project's energy efficiency goals. However, many studies show that opaque wall performance is consistently and significantly overestimated. Much of this can be attributed to the impact of ignoring uncontrolled thermal bridging across opaque wall assemblies.

What is a thermal bridge?

Thermal bridges are localized points or linear penetrations in the building envelope's continuous insulation (c.i.) caused by higher conductance materials. They create unintended thermal shorts through the building envelope, leading to uncontrolled heat transfer between the building's interior and exterior.

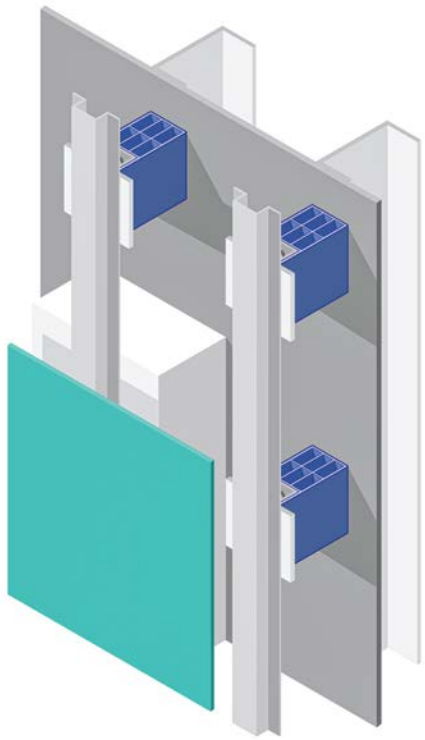
This heat flow not only degrades energy performance but also reduces thermal comfort for occupants and creates cold areas within the wall, which can lead to condensation. Moisture in the walls can lead to harmful mold and microorganism growth, as well as a reduction in wall service life.

FIGURE 1



Examples of potential thermal bridges on a vertical facade.

FIGURE 2



Example of a thermally broken hybrid clip and rail cladding attachment system in a vertical configuration.

Examples of thermal bridging include cantilevered balconies, parapets, metal cladding attachments, and assembly transitions between windows and walls, at corners, and between vertical wall and horizontal elements, such as floors, at grade, and roofs (Figure 1).

Ignoring thermal bridging leads to worse energy performance than expected, and long-term moisture management and occupant comfort issues.

Why are thermal bridges ignored?

Unfortunately, the energy codes adopted across much of the United States do not require thermal bridge mitigation and incorrectly assume conductive interfaces and penetrations have no impact on performance. As a result, designers are not used to identifying and addressing thermal bridging.

Thermal bridge mitigation was first required in the 2024 revision of the *International Energy Conservation Code (IECC)* and in the 2022 version of ASHRAE Standard 90.1. State adoption of these newest model code revisions is still very limited.

In the few jurisdictions where thermal bridge mitigation is a code requirement, such as most of Massachusetts and British Columbia, practitioners routinely recognize and mitigate thermal bridges. For example, in these jurisdictions, thermally broken cladding attachments are routinely used in rainscreen systems rather than the typical continuous metal z-girt attachment mechanism.

What is a rainscreen wall?

Rainscreen systems have been designed to improve the thermal performance and longevity of opaque walls. A typical rainscreen system is a double wall consisting of a main structural wall with outboard insulation and an exterior air and water barrier. The second, outer skin, which is the wall cladding, is mounted to the structural inner wall to create a ventilated cavity between the insulated structural inner wall and the outer skin.

The outer skin acts as the primary water barrier, limiting the interior skin's exposure. The cavity is critical for providing a drainage system and airflow necessary for the evaporation of any water that penetrates the outer skin. The double-wall design also improves overall thermal performance.

Overlooked degradation

The cladding attachment system is often an overlooked factor in the rainscreen's thermal performance. The traditional use of continuous aluminum z-girts to attach the panel perimeter to the building structure can cause a significant linear thermal bridge and substantially degrade the overall thermal performance. According to Stantec (formerly Morrison and Hershfield), this reduces the thermal performance of rainscreen panels by up to 80 percent. Because of this, it is very important to mitigate thermal bridging at the perimeter of rainscreen systems.

Any oversight in the initial assembly performance evaluation, omission of attachment performance in project specifications, or subsequent value engineering can sacrifice long-term energy efficiency and service life for short-term cost savings.

Improving rainscreen thermal performance

Because only a few jurisdictions now require thermal bridge mitigation, market capacity has grown, with many thermally broken cladding attachment options now

FIGURE 3

Installation efficiency for cladding attachment systems is very important, especially in high-cost labor markets. Some systems have been designed specifically for fast, reliable installation.

available. These include clip-and-rail systems that replace the continuous conductive girt with point supports (called clips). These clips are spaced around the panel perimeter according to their load-carrying capacity.

Available clip systems include fiberglass clips, a hybrid glass-reinforced polyamide–metal combination (Figure 2), and metal clips (galvanized steel or aluminum) with thermal breaks. Thermally broken continuous girt systems are also available using isolator pads or shims to interrupt the heat flow path.

The available attachment options vary widely in terms of thermal performance, load-carrying capacity, fire resistance, installation efficiency, and overall cost of installation.

It is critical to carefully consider these performance factors when choosing an attachment method.

Thermal performance

The available attachment systems exhibit a wide range of thermal bridging performance, depending on the degree of thermal barrier they create. This can significantly affect the effective panel R-value.

High-performance thermally broken attachment systems can reduce losses to as little as 2 to 10 percent, compared with the unmitigated 80 percent losses caused by aluminum z-girts.

The thermal performance of attachment solution options should be properly evaluated using 3D thermal modeling, a step often skipped during value engineering. 3D modeling is essential for capturing all heat flow paths in complex assemblies.

Alternatively, British Columbia Housing's Thermal Bridging Guide provides a catalog of precalculated thermal performance for various rainscreen configurations, including different insulation depths, cladding attachment type, and attachment spacing. This allows design teams to appropriately de-rate the center of panel R-value to account for perimeter thermal bridging when replicating the calculated wall configuration.

Using either method ensures the attachment and panel solution combination meets the specified R-value. This will ensure the expected thermal efficiency is achieved for the building.

Attachment systems must accommodate project-specific insulation thicknesses up to 304.8 mm (12 in).

Load carrying capacity

Attachment systems must satisfy structural loads from the cladding elements (dead, wind, and seismic) and transfer them through the insulation layer to the primary structure. For clip attachments, the higher each clip's load-carrying capacity, the fewer clips are needed to attach to the wall. Fewer clips support higher thermal performance because of less wall penetrations and deliver lower material and installation costs.

Most clip system manufacturers provide load tables to allow designers to calculate the clip spacing based on the substrate, cladding weight, and wind load. Heavier cladding, such as stone, typically requires smaller spacing than lighter-weight cladding, such as fiberboard.

Installation cost

System cost is not determined solely by the number and unit cost of cladding clips; it is also influenced by installation efficiency. The easier and faster that attachment systems can be installed, the lower the cost. Field labor is a major budget driver, especially in high labor cost markets. Some systems have been especially designed for rapid installation (Figure 3).

Installation efficiency is a key consideration in attachment choice and is determined by:

- The number of components and parts.
- The number of steps in the process.
- Assembly complexity.
- Error-proofing strategies.
- Features that reduce moisture ingress risk.

Air, water, and fire safety performance

Cladding attachment systems should be tested for air infiltration and water penetration performance using ASTM E283, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*, ASTM E331, *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*, AAMA 501.1-05, *Standard Test Method for Water Penetration of Windows, Curtain Walls, and Doors Using Dynamic Pressure*, and AAMA 501 for pressure-equalized rainscreen systems.

Fire testing to meet NFPA (National Fire Protection Association) 285, *Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components*, to verify the full wall system assembly is also critical. Insulation material significantly impacts fire performance, so be certain to review NFPA test reports for systems tested with the project-specific insulation material.

Selecting an appropriate cladding attachment system is important. Thermal performance, load capacity, installation efficiency and effectiveness, and test-based performance validation are all necessary to deliver cost-effective installed performance, and system comparisons should be evaluated holistically across all categories.

Impact of improving panel attachments

Where codes still do not require thermal bridge mitigation on opaque walls, metal z-girts can be a lower-cost alternative to thermal cladding attachments in the short term. However, they have proven to be more costly in the long term due to reduced wall durability caused by poor moisture management, significantly degraded building energy efficiency, and poor occupant comfort.

FIGURE 4

PHOTO COURTESY TECHNOFORM AND ©DAVID PIRES PHOTOGRAPHY

Thermally broken hybrid cladding clip system used to attach rainscreen panels on the Division of Capital Asset Management and Maintenance building in Boston, before and after installation.

Specifying and installing a high-quality thermal attachment method for rainscreen panels benefits all stakeholders. Architects can be more confident that the project meets desired energy efficiency goals while still delivering their design aesthetic, even with the heaviest cladding (Figure 4). Installers save time and labor while reducing their callback risk. Building owners reap the long-term energy savings and can be more confident of a long service life. MCN

Helen Sanders, *PhD, is a general manager, and* ***Bill Blazek*** *is a market team manager at Technoform North America, which provides high-performance solutions that improve the thermal performance of facade, fenestration, insulating glass, and cladding systems. Sanders and Blazek have decades of experience in construction, architectural glass and metals, and thermal zone technology. They can be reached at helen.sanders@technoform.com and bill.blazek@technoform.com.*

Enhanced Durability of Open-Joint Metal Cladding in Rainscreens

By Peter Barrett

PHOTOS COURTESY DÖRKEN SYSTEMS

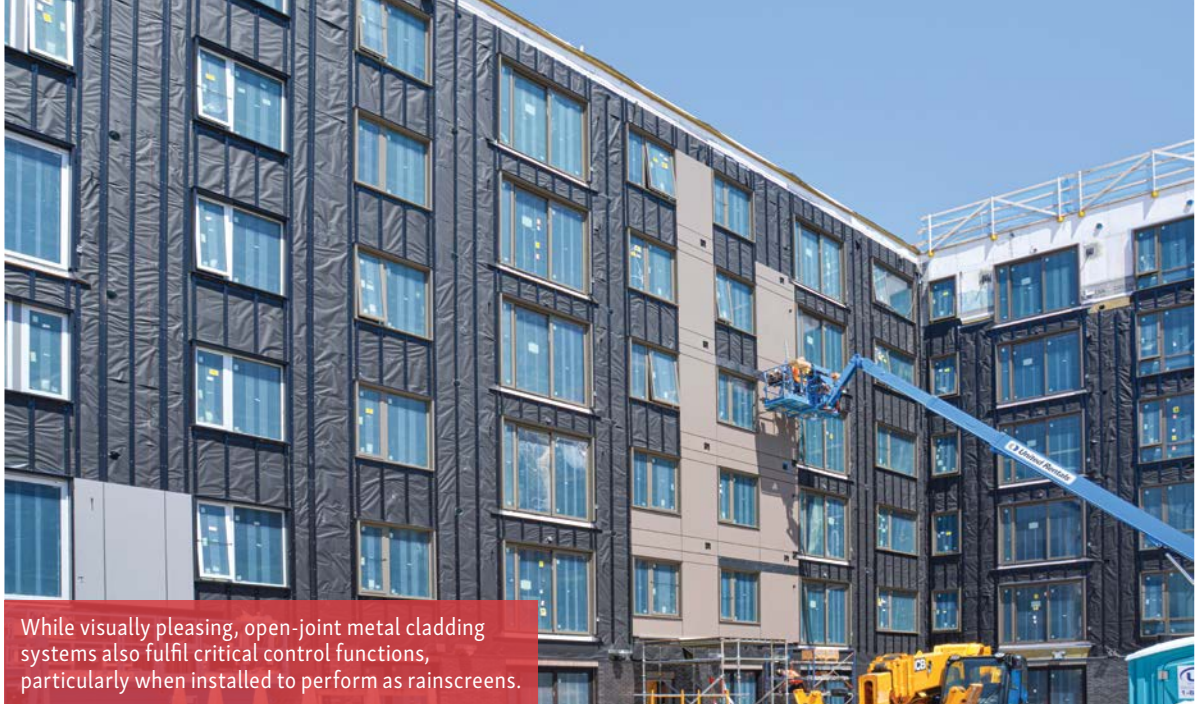
Open-joint metal cladding systems are commonly used in contemporary building design, offering a sleek, modern aesthetic. While visually pleasing, they also fulfil critical control functions, particularly when installed to perform as rainscreens. These systems have gained popularity due to their enhanced ability to manage moisture, their use of continuous thermal insulation, and their contribution to the overall durability of the building envelope. The effectiveness of these systems is enhanced by incorporating additional elements, such as air barriers and UV-resistant water-resistive barriers (WRBs), which improve moisture management and extend the longevity of the cladding and substructures.

This article examines how air barriers and UV-resistant WRBs enhance the durability of open-joint metal cladding in a rainscreen assembly.

Open-joint metal cladding in rainscreen systems

Before delving too deeply into the details, a review of common terminology will help ensure an understanding. One excellent resource for this is the industry association dedicated to supporting performance-driven assemblies, RAiNA (Rainscreen Association in North America). RAiNA provides definitions for several relevant terms:

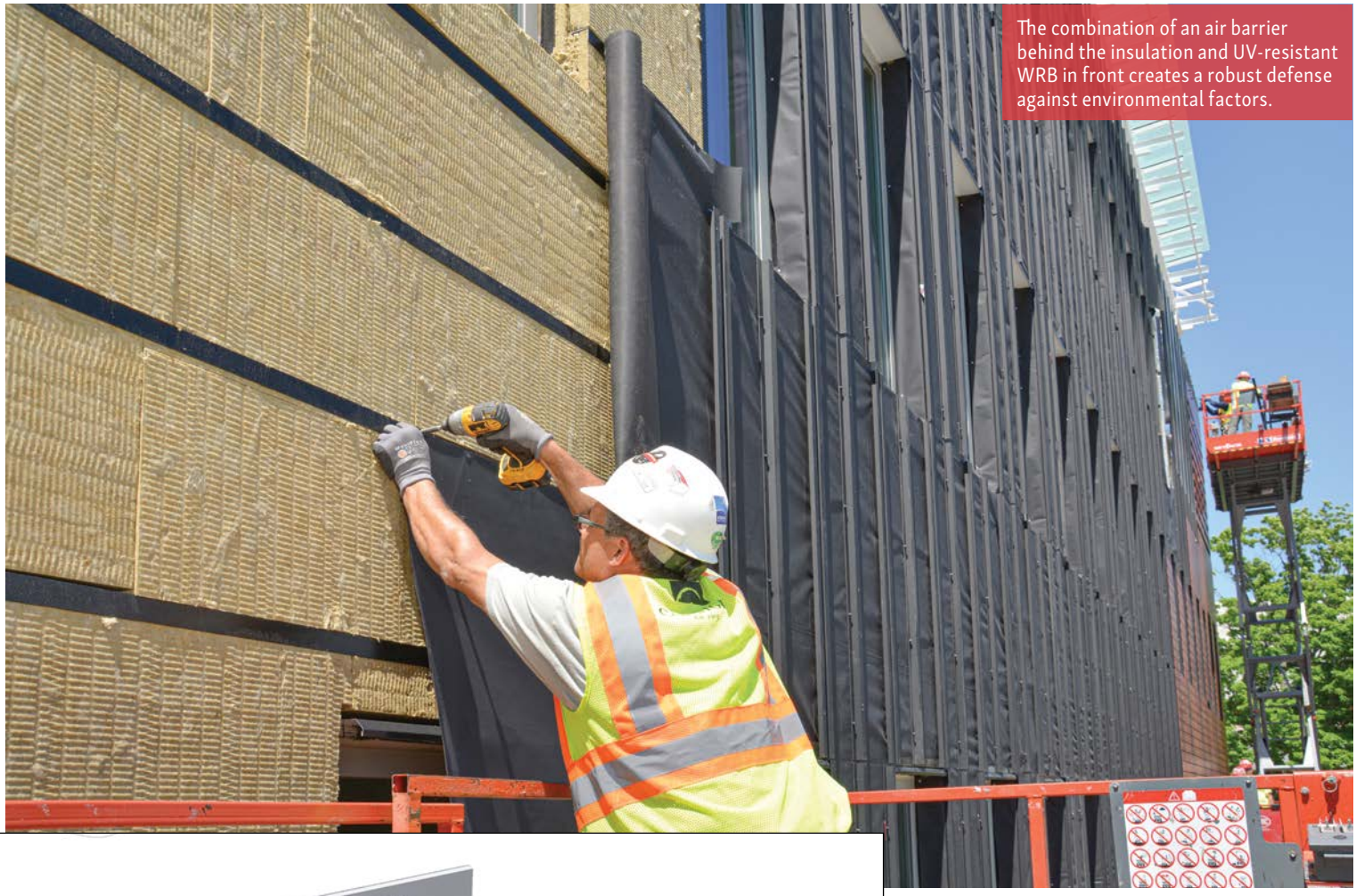
- **Rainscreen:** An assembly applied to an exterior wall that consists of—at a minimum—an outer layer, an inner layer, and a cavity between that is sufficient for the passive removal of liquid water and water vapor. The design typically consists, from the outside in, of an exterior cladding (such as metal panels, wood, or stone), an air gap (or cavity), a water-resistant barrier, a substructure, thermal insulation, and an air barrier.
- **Open-joint metal cladding:** A system with a gap or reveal between adjacent cladding edges or between cladding panels and adjacent components, designed to accommodate movement and allow water, air, and daylight to penetrate the rainscreen cavity. In simpler terms, there are visible gaps between the panels, allowing air to circulate freely behind the cladding.



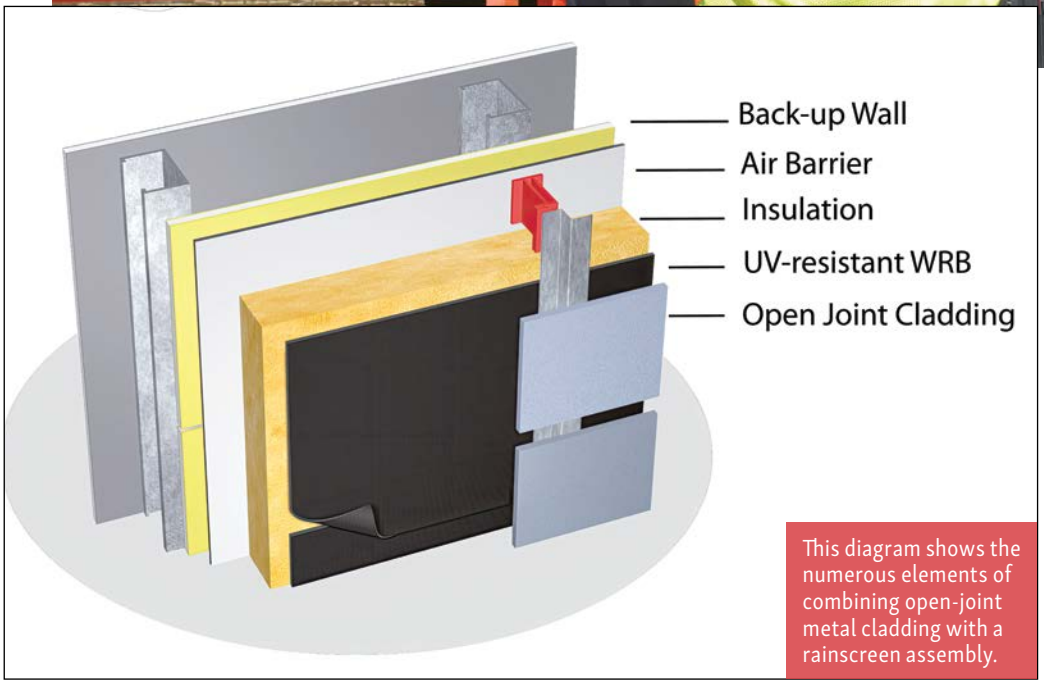
While visually pleasing, open-joint metal cladding systems also fulfil critical control functions, particularly when installed to perform as rainscreens.

This design creates a ventilated cavity that helps prevent moisture buildup and enables the cladding to drain and dry out efficiently after rain or other wetting events.

While open-joint cladding systems have aesthetic and functional benefits, their performance depends significantly on how well they manage air, water, and moisture. Here, the role of air barriers



The combination of an air barrier behind the insulation and UV-resistant WRB in front creates a robust defense against environmental factors.



This diagram shows the numerous elements of combining open-joint metal cladding with a rainscreen assembly.

and UV-resistant WRBs becomes critical in ensuring the durability and longevity of the rainscreen assembly.

Air barriers in rainscreen systems

An air barrier is a critical component of the building envelope that controls the movement of air between the interior and exterior of the building. The best definition here comes from the Air Barrier Association of America (ABAA):

- An "air barrier" is a combination of materials designed and installed in such a manner in order to drastically reduce or even stop the flow of air into and through the building enclosure. The air barrier of a building is an "air barrier system." The air barrier system is comprised of "air barrier assemblies." Air barrier assemblies are comprised of "air barrier materials" and "air barrier accessories." (ABAA Technical Note #1)

To be clear, an air barrier assembly is a system requiring specific components to perform as desired. This is particularly important in climates with significant temperature and humidity fluctuations, as uncontrolled airflow can cause moisture infiltration that eventually degrades building materials.

In a rainscreen system, an air barrier on the backup wall prevents moist, warm indoor air from entering the cavity behind the cladding, where it might condense and cause issues such as mold growth, rotting, or metal corrosion. Air barriers enhance the system's ability to control moisture and maintain a dry, ventilated environment behind the cladding.

UV–resistant WRBs

Typically, a UV-resistant WRB is located behind the cladding panel but in front (to the exterior) of the continuous insulation (c.i.). The function at this location is to prevent water from penetrating the building envelope while still allowing water vapor to escape. To that end, it must be highly moisture-vapor-permeable. In open-joint metal cladding systems where the cavity behind the cladding is ventilated, a WRB becomes even more critical because it acts as a primary line of defense, especially during heavy rain, strong winds, or storms when water can be driven behind the cladding. Wind-driven rain can force water through joints, which could lead to water damage, rusting, or staining of the cladding material. Without this WRB, water infiltration could soak the insulation and reach the sheathing and framing, potentially causing structural damage.

The role of a UV-resistant WRB is particularly important in areas where the cladding may be exposed to direct sunlight for extended periods. UV rays can break down materials over time, causing regular WRBs to lose water-resistant properties and the ability to prevent moisture and wind from entering the wall assembly. A UV-resistant WRB is designed to withstand the degrading effects of UV radiation, ensuring that the membrane maintains its integrity and performance over the long term, while adding the 3D look desired by designers.

The combination of an air barrier behind the insulation and UV-resistant WRB in front creates a robust defense against environmental factors that can degrade both the cladding and the building's structural components.

Combined benefits of air barriers and UV–resistant WRBs

When integrated into a rainscreen assembly, open-joint metal cladding, air barriers, and UV-resistant WRBs work synergistically to increase the durability and performance of the building envelope.

The air barrier on the backup wall effectively minimizes moisture infiltration and regulates airflow. Meanwhile, the UV-resistant WRB behind the cladding ensures any water that enters the cavity is effectively managed and directed away from the building's interior before it can penetrate deeper into the wall system.

This combination of protective layers also improves the building's thermal efficiency. By controlling air movement (wind-washing) and moisture levels, the rainscreen assembly helps regulate indoor temperatures, reducing the need for energy-intensive heating or cooling systems. This contributes to the building's overall sustainability, reducing its environmental impact.

Further, the enhanced durability of open-joint metal cladding systems with air barriers and UV-resistant WRBs translates into reduced maintenance costs and an extended service life. Look for guide specifications that provide a complete system, integrate products into a full assembly that delivers high performance, and ensure compatibility among various manufacturers.

Conclusion

Incorporating air barriers and UV-resistant WRBs into open-joint metal cladding systems enhances the durability of rainscreen assemblies by improving moisture management, protecting structural components from water damage, and ensuring the longevity of the cladding itself. These components work together to create a building envelope that is not only more resistant to environmental stresses but also more energy-efficient and cost-effective over time. As building designs continue to prioritize sustainability and performance, the combination of open joint cladding, air barriers, and UV-resistant WRBs will remain a critical strategy for ensuring the durability and resilience of modern buildings. MCN

Peter Barrett *is the product and marketing manager for Dörken Systems Inc. and has been with the company for more than 17 years. His involvement with the design community and building materials industry spans over 30 years. Peter earned a BA (Hons.) from Queen's University and an MBA from Wilfrid Laurier University. He currently serves on the board of directors for the Air Barrier Association of America (ABAA), chairs the audit committee, and serves as co-chair of the Rainscreen Association in North America (RAinA) residential rainscreen committee. Peter has also contributed technical articles to The Construction Specifier, Construct Canada, Tunnel Business, and Masonry Magazine.*

Striking Metal Wall Exteriors with Aluminum Cladding and Battens

By Erin Patrick

PHOTOS COURTESY PARALLEL ARCHITECTURAL PRODUCTS

Metal walls are chosen for their durability, fire resistance, contemporary aesthetics, and eco-friendly qualities—especially compared to composite, fiber cement, wood, and vinyl. Wood-look metal panels resist invasive pests such as termites, a significant advantage over natural wood. Wood, fiber cement, and composite materials are also prone to warping or becoming brittle over time. Metal cladding boards avoid these issues, requiring less maintenance and material replacement. Compared to vinyl siding, metal offers superior resilience, fire safety, and strength. While vinyl dents from impact and fades over time, well-crafted metal panels maintain their aesthetics and performance for decades.

Why aluminum stands out

Rollformed vs. extruded

When it comes to metal walls, not all metal options are the same in terms of metal type, gauge, manufacturing processes, etc. While options such as single-skin metal wall panels–panels rollformed in steel or aluminum–can be an economical choice upfront, projects that use these materials often encounter problems with distortion or "oil-canning" (visible waviness across the panel surface). This is due to the panel's thin gauge and the stress it undergoes during the rollforming process.

Additionally, ACM (aluminum composite material) has become a popular choice for achieving a modern, metal wall aesthetic. However, when considering ACMs for metal wall installation, it is essential to look beyond initial cost and evaluate the long-term investment, sustainability, and combustibility of the panels. While ACM material costs can be relatively low, the preparation required—including field dimensions, shop fabrication, and installation—extends project timelines and compounds overall costs. Because ACM panels are constructed with a polyethylene core sandwiched between aluminum layers, recycling is complicated, and the material cannot be considered non-combustible. This makes it more challenging to meet local fire code requirements.

When striving to create an eye-catching exterior or interior metal

The Parc Mosaic multifamily project involved replacing existing composite cladding with aluminum panels, highlighting a growing trend in renovation and retrofit applications.

wall installation that is easy to install and customize, wood-look architectural aluminum cladding and battens are a reliable, efficient choice for achieving these design goals. This type of product consists of extruded aluminum profiles, specifically engineered to interlock or mate for streamlined installation, while the extruded material is both lightweight and strong.

Durability and aesthetic considerations

Manufacturers and suppliers use advanced powder coating and sublimation technology to create solid colors, realistic woodgrain finishes, and metallics. This specialized coating process adds durability and protection to a building's exterior while producing wood-look finishes that rival the authenticity of many ACM and vinyl products.

The aluminum is strengthened during extrusion, and the finishing process applies a thick, impermeable coating layer to each cladding and batten profile. This coating resists impact and performs well in challenging climates. Beyond their durability against impact and weather, aluminum architectural

The integration of battens adds visual complexity to the metal wall system, transforming what could be a flat surface into an engaging exterior.

cladding and battens resist corrosion. Aluminum oxidizes during extrusion and manufacturing, creating a natural protective barrier that prevents rust—even in coastal areas. Plus, aluminum is a non-combustible material. With proper finishing techniques, wood-look battens and cladding panels become a fire-safe choice for exteriors that will not spread flames. In many cases, they are Class A fire-rated.

Design trends in aluminum cladding and battens

Why use both cladding and battens for metal wall installations? Metal panels alone can create an attractive facade, but adding battens is a growing trend that revitalizes classic aesthetics while enabling modern design possibilities. From the "modern farmhouse" look with neutral solids to dynamic entryways combining woodgrain cladding and battens, these profiles elevate metal facades beyond a sustainable, easy-to-install option—they become a design-forward choice that increases curb appeal and ROI.

Nature-derived textures and colors have grown increasingly popular as building owners and occupants seek to enhance wellness through thoughtful design in built environments. Powder-coated and sublimated extruded aluminum panels excel in this trend, seamlessly integrating natural elements into metal exteriors. The long-lasting woodgrain finishes produced by these techniques create metal walls that feel like more than metal. These wood-look aluminum panels provide the warmth and character of timber without the maintenance demands, creating inviting spaces that connect occupants to nature while maintaining the practical benefits of metal construction.

Beyond woodgrains, contemporary metal wall design embraces bold color blocking, mixes matte and metallic finishes, and combines horizontal and vertical orientations to create dynamic facades. Architects are increasingly using battens to define zones, frame entryways, or add sculptural elements to metal exteriors. Whether used horizontally or vertically, adding batten profiles as standalone design elements or in board-and-batten installations is a strategic way to incorporate rhythmic patterns across a metal facade.

Case studies: Successful aluminum wall exterior projects

Wendy's Restaurant - Alabama

This Wendy's location showcases the versatility of aluminum cladding by combining two profile widths—152.4 mm and 304.8 mm (6 in. and 12 in.) panels—to create visual interest and depth on the exterior. The mixed-width application demonstrates how varying panel dimensions can break up large wall surfaces while maintaining a cohesive design language. This approach is efficient for commercial buildings where brand identity meets architectural appeal, proving that functional fast-casual architecture can still achieve design sophistication through thoughtful material selection and installation patterns.

GR Chair Company - Michigan

The GR Chair Company project exemplifies the contemporary board-and-batten trend, utilizing both cladding panels and batten profiles to create a dynamic, textured facade and entryway. A homogeneous woodgrain finish was used to achieve a warm, approachable aesthetic that connects the commercial space to natural materials while leveraging aluminum's durability and low maintenance requirements. The integration of battens adds visual complexity to the metal wall system, transforming what could be a flat surface into an architecturally engaging exterior.

Parc Mosaic - Colorado

The Parc Mosaic multifamily project involved replacing existing composite cladding with aluminum panels, highlighting a growing trend in renovation and retrofit applications. This demonstrates aluminum's value proposition in replacement scenarios—offering superior longevity, weather resistance, and lower maintenance than composite alternatives. The decision to transition to aluminum addressed performance issues common to composite materials, such as fading, warping, or moisture damage, while updating the building's appearance with a more contemporary metal aesthetic that will maintain its integrity for decades.

The future of sustainable construction and design through metal walls

As the construction industry continues to prioritize sustainability, recyclability, and long-term performance, aluminum wall systems are positioned to become the standard for exterior cladding. The material's infinite recyclability, combined with advancements in finishing technologies that deliver authentic aesthetics without environmental compromise, makes aluminum an essential component of green building strategies. By choosing aluminum cladding and battens, builders invest in metal wall solutions that meet today's design demands and tomorrow's environmental goals. MCN

Erin Patrick *is the marketing manager for Parallel Architectural Products.*

Nature-Inspired Metal Walls: Layering, Performance, and Durability in Interior Spaces

By Dzoanna Pavulina

PHOTOS COURTESY MÓZ DESIGNS

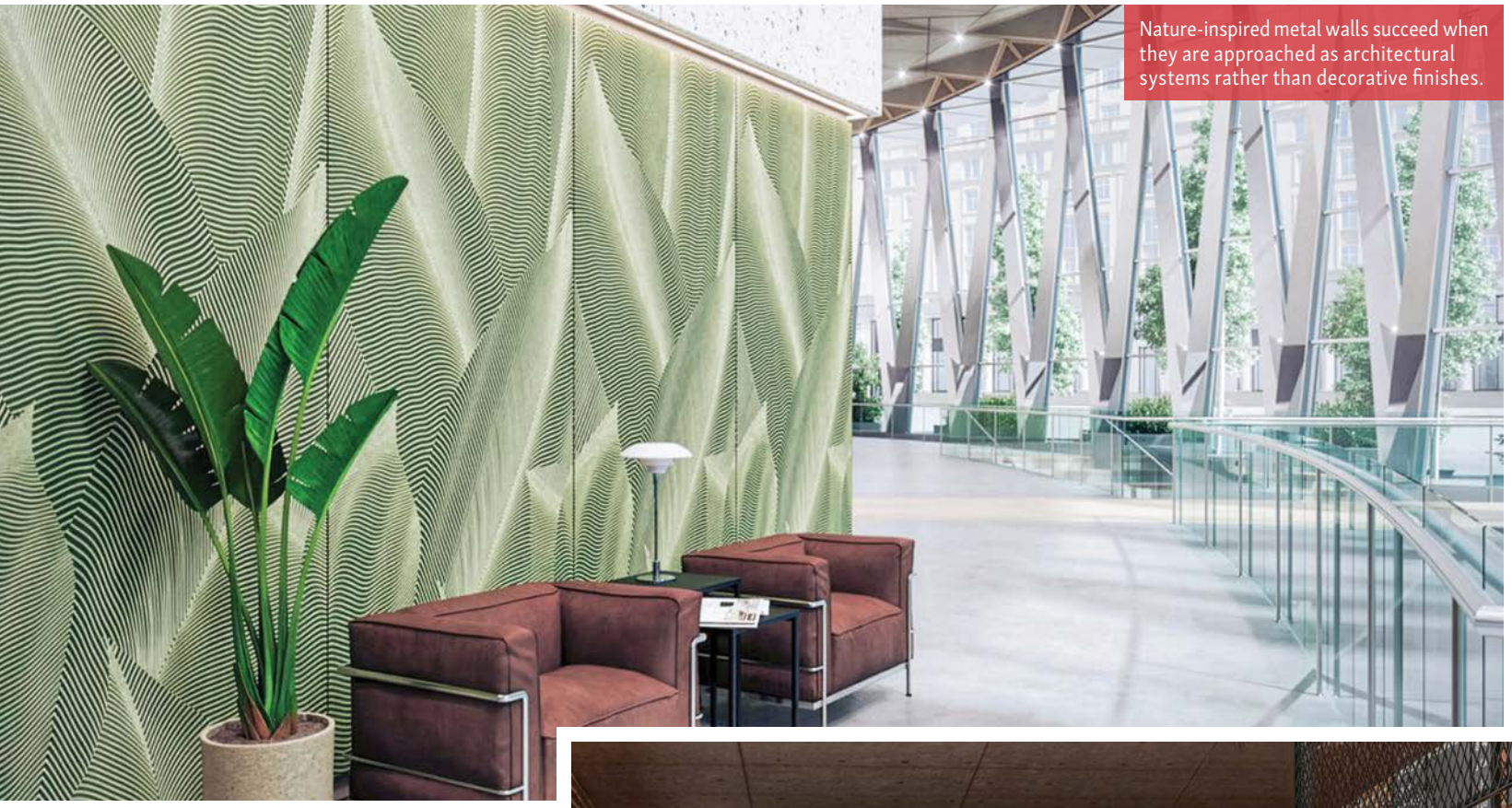
Walk into an airport terminal, hotel lobby, healthcare facility, or corporate campus, and there are an increasing number of metal walls that reference the natural world, layered like sediment, fluid like water, or patterned after organic growth. To most visitors, these surfaces register as calm, textured backdrops that soften large interiors and add warmth to otherwise hard-working spaces. But for the teams designing and installing them, nature-inspired metal walls are anything but passive elements.

Metal walls of this kind do far more than decorating a space. They help organize circulation, define zones without fully enclosing them, and create continuity across walls, dividers, and vertical elements. When properly installed, they feel cohesive and intentional. However, when coordination breaks down, the issues become immediately visible: misaligned seams that interrupt pattern flow, panels that telegraph uneven substrates, vibration that creates unwanted noise, or lighting that flattens what should feel layered and dimensional.

In high-traffic environments, these walls must endure constant contact—rolling carts, luggage, furniture, cleaning equipment, and daily maintenance—while maintaining their finish and visual clarity. Selecting aluminum or stainless steel provides durability, but material choice alone does not guarantee performance. Long-term success depends on how panels are fabricated, how tolerances are managed in the field, and how the wall system is coordinated with adjacent floors, ceilings, and architectural elements.

The work before the work begins

Before installation ever begins, understanding what is being built is critical. Nature-inspired metal walls rely on visual continuity. Patterns that reference landforms, wave motion, or organic growth are typically designed to read across multiple panels, meaning layout and sequencing matter as much as



Nature-inspired metal walls succeed when they are approached as architectural systems rather than decorative finishes.

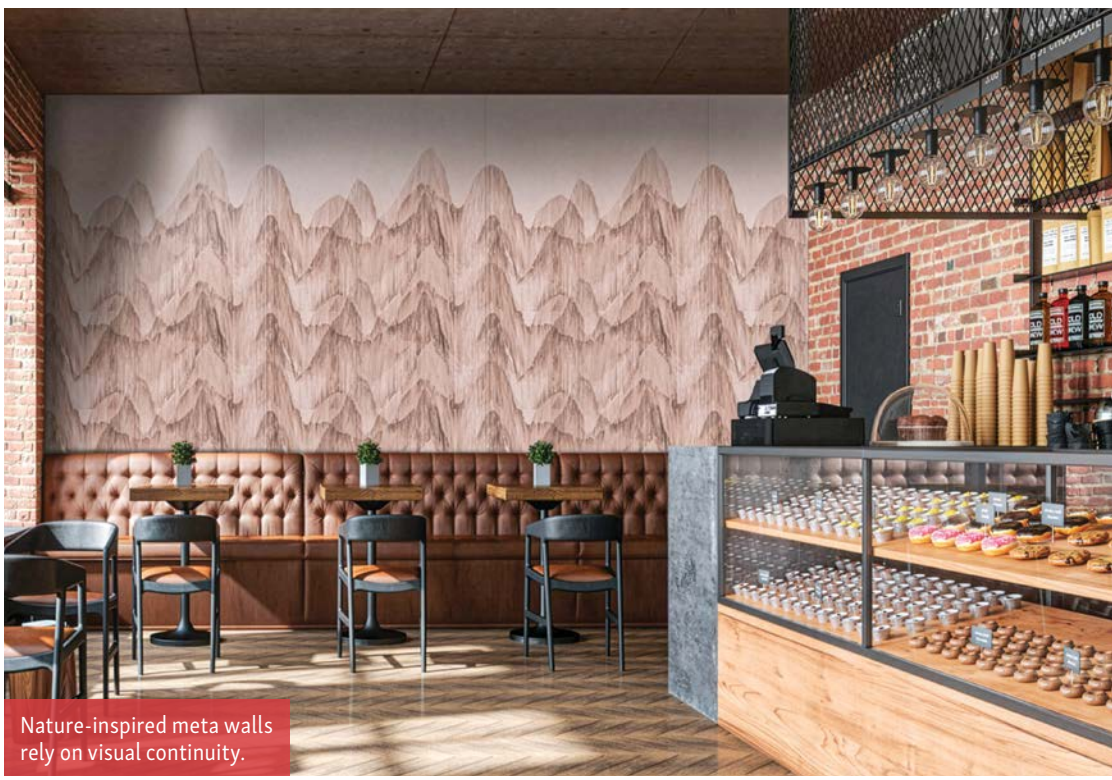
attachment. Relying solely on drawings can lead to costly field adjustments. Early field verification of wall dimensions, framing conditions, and substrate flatness allows fabricators and installers to anticipate where adjustments may be needed before panels are manufactured.

The role of the panels

Panel size and construction play a significant role in how forgiving an installation will be. While smaller panels can create a more detailed, continuous visual field, they demand tighter tolerances in framing, fabrication, and alignment because even minor deviations become more visible at each seam. Larger panels are typically more forgiving, but smaller formats require precise layout to preserve the design's rhythm and integrity. Once fabrication is complete, opportunities for adjustment are limited, making early coordination essential to achieving a clean, cohesive surface.

The surrounding elements

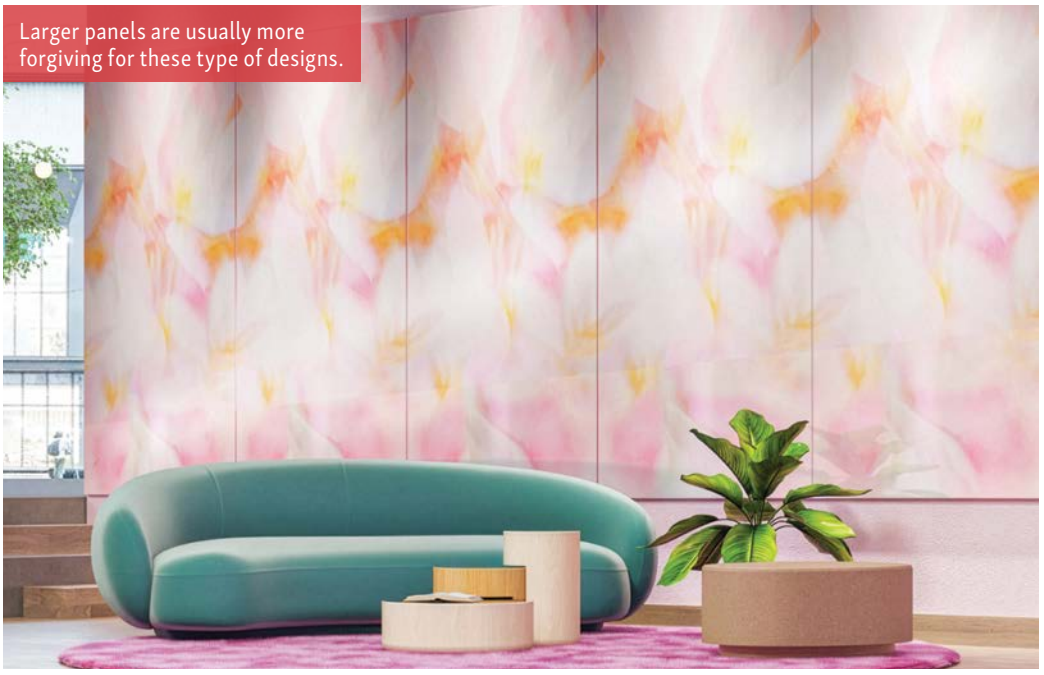
Alignment with surrounding systems is where many installations succeed or fail. Metal walls rarely exist in isolation. They meet finished floors that may slope subtly for drainage or accessibility, and ceilings that shift to accommodate mechanical systems. If those conditions are not accounted for early, installers are left managing gaps or misalignments that draw the eye to exactly the wrong places. Systems that allow for field adjustability through floating details, reveals, or custom trims help absorb real-world inconsistencies without compromising the overall design intent.



Nature-inspired meta walls rely on visual continuity.

At the base, metal walls are subjected to the most abuse. Impacts, moisture from cleaning, and constant foot traffic all concentrate at this transition point. Durable base details, whether recessed,

Any installation inconsistencies are immediately noticeable with these type of metal walls.



Larger panels are usually more forgiving for these type of designs.

flush, or protected with integrated metal trims, help prevent damage while maintaining a clean visual edge. These details may seem minor, but in public interiors, they often determine how well the installation ages over time.

Nature-inspired metal walls are also increasingly used beyond traditional wall planes, extending into dividers and partial enclosures that define space while maintaining openness. In offices, hospitality settings, and transportation hubs, layered metal dividers provide visual separation without blocking light or sightlines. These assemblies introduce depth and movement, but they also require careful planning. Multi-layered panels must be securely anchored and precisely spaced to prevent vibration or visual distortion, especially as people move past them and experience the changing relationships between layers.

Columns present another opportunity and challenge for extending metal wall systems. Wrapping structural columns with patterned or layered metal helps integrate them into the broader architectural language rather than letting them stand out as interruptions. However, column applications require additional coordination, particularly when dealing with curved or irregular shapes. Panels may need to be segmented or custom-formed to maintain pattern continuity, and seams must be carefully placed to avoid disrupting the design's flow.

Visual and sound considerations

Acoustics are often overlooked in these applications. Hollow metal assemblies can amplify sound if not properly isolated, creating unwanted resonance in already noisy environments. Installing sound-dampening materials on the backside of metal surfaces helps eliminate vibration and the hollow "drum effect" that can occur with unsupported metal panels. In large public interiors, this detail contributes meaningfully to overall acoustic comfort.

Lighting integration can further elevate metal walls, emphasizing texture and depth while reinforcing the design's natural inspiration. Whether through backlighting, grazing light, or subtle washes, lighting must be coordinated early to avoid exposed wiring, uneven illumination, or difficult maintenance access. When thoughtfully integrated, light brings metal surfaces to life, allowing them to shift throughout the day and respond to changing conditions within the space.

Conclusion

Nature-inspired metal walls succeed when they are approached as architectural systems rather than decorative finishes. From full-height feature walls to layered dividers and wrapped columns, the most successful installations anticipate real-world use, movement, sound, and maintenance from the outset. When carefully coordinated and properly installed, these metal surfaces do not compete for attention—they quietly support the architecture, grounding expansive interiors in texture, rhythm, and durability. MCN

Dzoanna Pavulina *is a product designer at Móz Designs and the creative force behind several of the company's most celebrated material and product launches. An Industrial Design graduate from the Academy of Art University in San Francisco, she has introduced multiple award-winning designs that have redefined the aesthetic and potential of architectural metal. With a sharp eye for color, form, and future trends, Dzoanna brings bold innovation and artistic vision to Móz projects across the country.*

Using bifold doors on a metal building allows for the design of large doors.

Metal building structures can be engineered to support large bifold and hydraulic doors.

Metal Doors are as Versatile as Metal Buildings

By Mike Schweiss

PHOTOS COURTESY SCHWEISS DOORS

Metal buildings are regularly specified for a wide variety of building types. From cold storage to industrial and commercial applications, as well as residential, metal buildings can meet the durability, functionality, and aesthetic demands of almost any project.

Due to their versatility, metal buildings are a popular option for projects that require a one or multiple large doors, allowing access for the delivery of goods inside the building or for the storage of larger vehicles, equipment, or aircraft. Metal building structures can be engineered to support large bifold and hydraulic doors.

There are several reasons customers choose metal buildings for their projects. Customers like metal buildings because they can be completed quickly, offer a long lifespan, and allow for flexibility in interior and exterior finishes. Aesthetically, metal buildings offer a wide range of options, including an almost endless choice of durable polyvinylidene fluoride (PVDF) coating colors and the ability to clad the exterior in materials such as wood, glass, masonry, or concrete.

Hydraulic doors can be engineered to meet mandated wind load requirements.

Whether choosing a bifold or hydraulic door for a metal building, both have numerous benefits.

The right metal door for metal buildings

Choosing a door can be complicated, considering the variety and quality of doors available. The size of the door depends on what is going in and out.

Hydraulic doors and/or bifold doors are suitable for almost any project, regardless of the door's size. Both hydraulic and bifold doors can be constructed with windows or all glass, metal panels, or insulated metal panels (IMPs). Any construction material, or even a combination of materials, can be used in the construction of hydraulic and bifold doors. This versatility opens the door to a wider variety of projects.

Hydraulic doors

One-piece hydraulic doors are an ideal option for both new and retrofitted metal buildings. Hydraulic doors open to the outside of metal buildings, so they do not reduce headroom on the inside. Hydraulic doors are quiet, safe, and open quickly via remote control. They can be constructed with a variety of insulation materials to help maintain energy efficiency in temperature-controlled buildings. Another benefit of hydraulic doors includes the ability to custom-finish doors to match the building's exterior and interior. They can also be engineered to meet mandated wind load requirements.

Bifold doors

Using bifold doors on a metal building allows for the design of large doors, up to 39.6 m (130 ft) wide. Bifold doors open to the outside of the building, so they do not reduce headroom. They are available with strong and durable lift straps to ensure safety, as well as a door that opens quickly. Bifold doors are ideal where it snows, as they lift up and out of the snow.

Whether choosing bifold or hydraulic doors, metal doors work effectively in combination with any type of metal building. MCN

Mike Schweiss *is the owner and founder of Schweiss Doors.*

The Role of Thermal Breaks in Rolling Steel Door Design

By Heather Bender

PHOTOS COURTESY CLOPAY CORPORATION

Insulated rolling steel doors are a staple of commercial construction, providing strength, durability, and security while also helping control HVAC costs. But even a door filled with best-in-class insulation can be a source of energy loss if it is not engineered correctly to address points of metal-on-metal contact. Without thermal breaks, these contact points create thermal bridges that undermine door performance, leading to inconsistent indoor temperatures and increased energy demand. For architects, designers, and specifiers, understanding the importance of thermal breaks and how they optimize energy efficiency within insulated rolling steel doors and the broader building envelope is paramount.

How thermal breaks are applied in door design

When two high-conductivity materials, such as the steel slats in an insulated rolling steel door, come into direct contact, they create a high-speed thermal pathway through the assembly. These pathways, called thermal bridges, contribute to significant energy loss if left unchecked. In colder climates, thermal bridges lead to heat loss, and in warmer climates, they allow heat to enter. Thermal breaks address this issue by introducing a low-conductivity material, such as CPVC, between the steel curtain components, effectively interrupting the pathway and significantly slowing thermal transfer.

The impact of thermal bridging and the value of properly engineered thermal breaks is clearly illustrated in an insulated rolling steel door with double-wall construction. In this configuration, interior and exterior steel curtains are separated by an insulated core in a sandwich-style design. While insulation improves thermal performance, some rolling steel door designs may still allow the steel curtains to make direct contact at specific points, creating thermal bridges that operate independently of the insulated core. In these cases, the door's insulated core may have a high R-value, while the overall assembly, represented as a U-factor, experiences energy loss at other points.

To recognize where opportunities for thermal bridging occur in an insulated rolling steel door and how they are mitigated using thermal breaks, here is a look at the individual door components, along with tips on what to look for when specifying for optimal energy efficiency.

Curtains

The curtain is the primary moving part of the assembly, comprising interlocking steel slats that articulate vertically to open and close the door. In an insulated rolling steel door with double-wall construction, the curtain is formed by an interior and exterior layer separated by an insulated core. While this configuration limits thermal transfer across much of the curtain surface, direct steel-to-steel contact does still occur along the slat profiles and interlocking joints where the layers are fastened together. To interrupt these bridging points, some manufacturers replace the backing components with high-durability, low-conductivity CPVC, significantly slowing thermal transfer through the slats while maintaining the door's structural integrity and operability.

What to look for

Rather than relying solely on core insulation values, evaluate the door based on its overall U-factor, which reflects how effectively the entire assembly controls thermal transfer. Specify double-wall curtain designs that include an insulated core and engineered thermal breaks, such as low-conductivity backers, to eliminate steel-to-steel contact within the slat assembly. When combined with targeted thermal breaks in adjacent components such as the guides, these design strategies can significantly reduce thermal bridging and help achieve U-factor ratings as low as 0.532.

Guides

Guides are the vertical steel track assemblies mounted to each side of the door opening that retain, align, and support the curtain during operation. Guide design can influence air leakage and thermal performance at the door perimeter, particularly when configured with integrated weather seals and thermal breaks.

What to look for

Since weather seals alone do not address thermal bridging, specify guide assemblies that apply thermal breaks to improve the assembly's perimeter performance and reduce energy loss at the sides of the door.

Hood

The hood is the protective cover at the top of a rolling steel door that encloses the coiled curtain when the door is open and protects the rolling apparatus from dirt, debris, and weather. The hood can also incorporate a seal that helps shield the building's interior from the outdoor weather.

What to look for

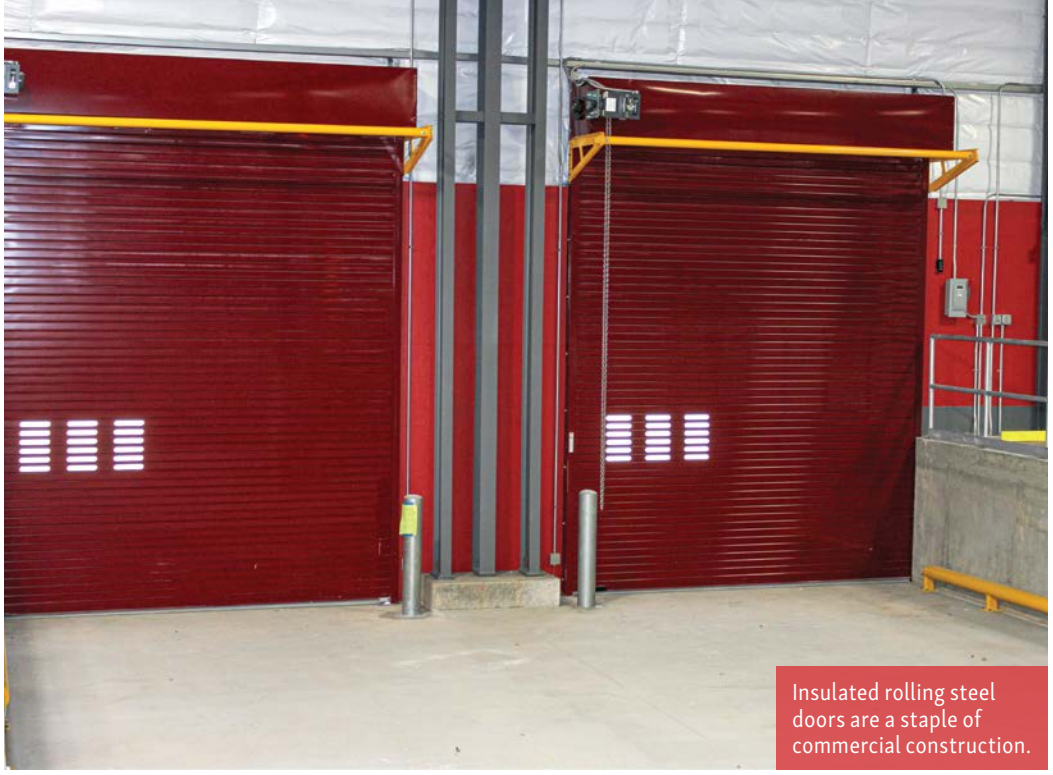
The hood is often treated only as a protective cover, but a quality hood design goes beyond basic enclosure and addresses thermal performance at the top of the door opening. Look for insulated hood construction, tight-fitting joints, and perimeter weather seals that limit air leakage and reduce heat loss where warm air naturally accumulates above the door.

Bottom bar

The bottom bar is the horizontal component attached to the lower edge of the curtain, serving as the interface between the door and the floor when the door is closed. It controls air flow at the sill with continuous weather seals or edge gaskets. Properly detailed sealing elements reduce air infiltration and limit thermal transfer at the base of the door.

What to look for

Instead of evaluating the bottom bar solely for strength and security, also look for designs that actively reduce air leakage at the sill. Specify bottom bars with continuous, compressible seals that conform to floor irregularities and maintain consistent contact, limiting air infiltration and associated energy loss at the base of the door.



Insulated rolling steel doors are a staple of commercial construction.

Understanding how thermal breaks are applied to door components and complement other energy-conscious features helps building professionals make decisions that deliver on performance. In addition to these features, look for a reputable door manufacturer that supports architects and designers in selecting, incorporating, and specifying products best suited for an application's needs. This may include self-serve tools or a dedicated architectural support team.

Where thermally broken rolling steel doors shine

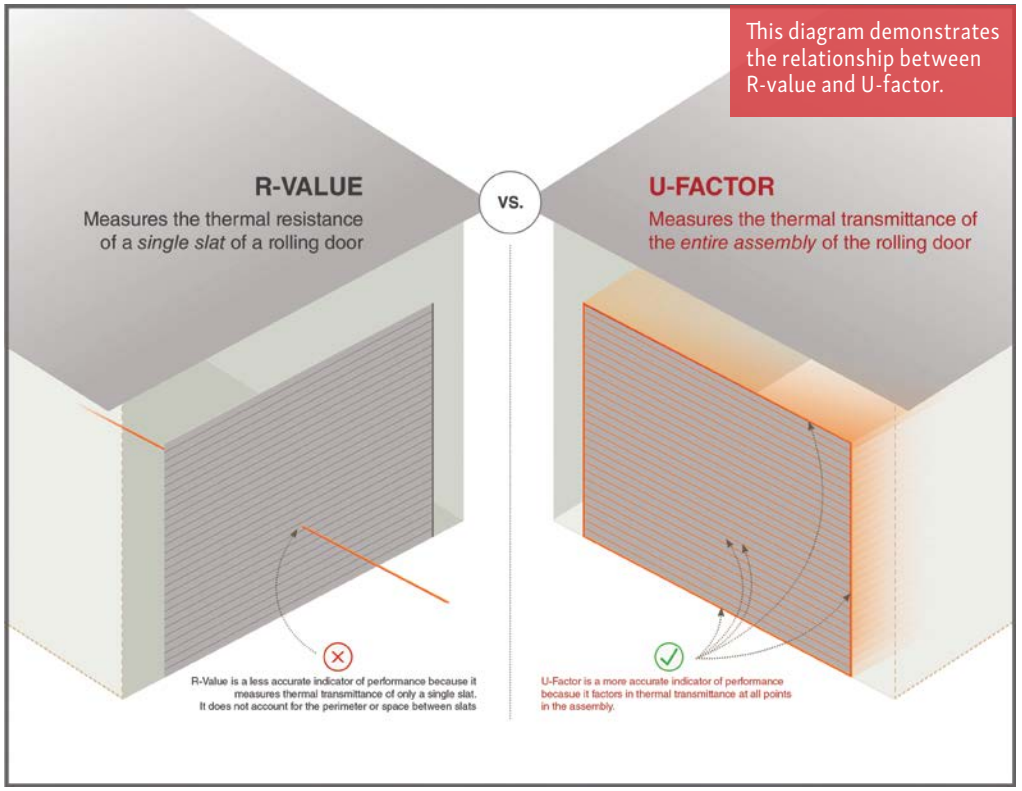
Rolling steel doors with double-wall construction, insulated cores, and engineered thermal breaks play an essential role in maintaining consistent indoor environmental conditions in commercial buildings. When combined with effective air sealing, these door systems help control temperature differentials, humidity, and condensation—issues that are particularly pronounced in four-season and extreme climate zones. The following is examples of commercial buildings that stand to benefit the most from thoughtfully engineered rolling steel doors.

Warehouses and manufacturing facilities with loading docks

Loading docks feature many doors, each of which represents a thermal weak point in the building envelope. Often, sectional doors (that feature very favorable U-factors) are used in these applications, but there may also be instances where

Rather than relying solely on core insulation values, evaluate the door based on its overall U-factor.

Even a door filled with best-in-class insulation can be a source of energy loss if it is not engineered correctly to address points of metal-on-metal contact.



This diagram demonstrates the relationship between R-value and U-factor.

the smaller footprint of a rolling door is required. In that case, insulated rolling steel doors with thermal breaks can help meet energy-efficiency requirements in tighter spaces.

Cold-storage facilities for food, beverages, and pharmaceuticals

Cold-storage environments rely on strict temperature and humidity control to maintain product integrity and regulatory compliance. Thermally efficient rolling steel doors reduce thermal transfer between refrigerated interiors and warmer exterior spaces, helping prevent frost buildup, condensation, and temperature fluctuations. Low U-factor doors also reduce energy loads on refrigeration systems, supporting long-term operational efficiency and equipment longevity.

Commercial storefronts with customer-facing areas

In retail and mixed-use storefront applications, rolling steel doors often separate conditioned interior spaces from exterior environments while remaining visible to customers and occupants. Thermally broken rolling steel doors help maintain comfortable indoor temperatures near the storefront opening, reducing drafts and cold spots that negatively affect customer experience.

Educational facilities with large openings

Schools, universities, and training facilities frequently incorporate large openings for gymnasiums, cafeterias, maintenance areas, and shared-use spaces. In these applications, insulated rolling steel doors help maintain indoor comfort for students and staff while limiting energy loss across large spans of the building envelope.

By thoughtfully specifying insulated rolling steel doors, building professionals can ensure consistent comfort, protect sensitive environments, and reduce energy costs across a wide range of commercial applications.

Little details, significant impact

As energy codes become more stringent and expectations for building performance continue to rise, building components such as insulated rolling steel doors require greater scrutiny. Thermal breaks at the curtain and guides, along with ample sealing at the hood and bottom bar, can further improve the performance of a well-insulated assembly. By understanding how thermal breaks are applied to these components, contractors, architects, designers, and specifiers can make more informed choices that improve envelope continuity. MCN

Heather Bender *is the director of commercial product marketing at Clopay Corporation. At ClopayDoor.com, Heather leverages 16 years of experience in manufacturing and building materials. Excelling in product management, she adeptly handles product inception to commercialization. Her role involves finding unique solutions for building owners and designers, highlighting her strategic and innovative approach to complex industry challenges.*

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 embeds the current level of job openings, industry unemployment, and projected industry retirements into 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.

"The industry needs to attract fewer workers than in recent years, a decline that can be traced to extremely modest spending growth forecasts for 2026 and 2027," said Basu. "Given current assumptions regarding prospective industry growth, a majority of new worker demand in 2026 will be attributable to retirement rather than increased demand for construction services, despite the ongoing boom in artificial intelligence (AI) infrastructure buildout.

"The industry will need even more workers than the model predicts should current spending projections prove overly conservative," said Basu. "That is a distinct possibility, especially if project financing costs decline unexpectedly or if lingering policy uncertainty resolves itself quickly and favorably. It is also important to note that non-residential specialty trade contractors have added 95,000 jobs since August 2024, according to ABC analysis of BLS employment data, demonstrating that certain sectors of non-residential construction hiring are going strong."

"ABC's 2026 workforce shortage analysis shows a series of macro-dynamics at play in the industry," said Michael Bellaman, ABC president and CEO. "These include an aging and retiring workforce, immigration enforcement, high materials prices, tariffs, office vacancies, and rapidly evolving technologies and innovation. Despite these variables, the analysis shows the construction industry still faces an urgent need for talent to build and rebuild America's infrastructure."

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"Even if construction spending fails to exceed expectations this year and next, contractors will continue to struggle to fill open positions, especially in certain occupations and regions," said Basu. "For instance, demand for electricians capable of precision wiring has surged due to the rapid increase in data center construction. Recent industry efforts to accelerate skilled worker development have helped, but the industry is effectively swimming upstream. Approximately one-fifth of all electricians are over 55. Worker shortages also remain more severe in areas associated with industrial megaprojects, including semiconductor fabrication facilities.

"The effects of immigration policy represent another potential wildcard for the industry's labor force dynamics," said Basu. "While the extent to which undocumented workers have exited the workforce remains unclear, data regarding border encounters indicate that the flow of undocumented workers into the country fell precipitously in 2025 while voluntary deportations accelerated."

"This slight dip in the industry's chronic, massive worker shortage offers practical lessons," said Bellaman. "These include federal lawmakers introducing a market-based worker visa system; reskilling and upskilling workers on new tech and innovation; and deploying ABC's all-of-the-above workforce development strategy to bring new workers into the industry and educate them through both industry-driven and government-registered apprenticeship programs.

"The construction industry does not have to fall off the workforce shortage cliff," said Bellaman. "To avoid this outcome and shore up the talent pipeline, now is the time for action—not complacency—to reaffirm that the construction industry offers careers of choice in today's complex job market." MCN

PHOTO COURTESY LA.IO

SSE Steel Fabrication Teaming With Louisiana and AI Firm on Humanoid Robotics

The State of Louisiana and Persona AI are launching a pilot program to advance humanoid robotics in active, heavy-industry environments. The pilot will be conducted at SSE Steel Fabrication's (SSE Steel) large-scale fabrication facility in St. Bernard Parish, La.

Facilitated by Louisiana Innovation (LA.IO), a division of Louisiana Economic Development (LED), and supported by Greater New Orleans, Inc. (GNO, Inc.), the pilot will focus on collecting real-world human movement and task data in an operating steel manufacturing facility. According to a media release, this will inform "how humanoid systems will perceive, move, and work alongside skilled tradespeople in complex, dynamic environments."

The pilot will use SSE Steel's advanced fabrication operations to test Persona AI's upcoming release of rugged humanoid platforms, which are being designed to operate in environments originally built for human workers rather than redesigned for traditional automation.

"Unlike fixed industrial robots, humanoid robots are envisioned to use existing tools, navigate uneven terrain, and adapt to changing conditions, capabilities that make them particularly well-suited for heavy industry sectors facing persistent labor shortages and operational complexity," the media release states.

"This collaboration allows us to explore emerging technologies where they matter most, on the shop floor, not in a lab," said Justin Airhart, COO of SSE Steel Fabrication. "SSE Steel has long embraced innovation in service of safety, productivity, and workforce sustainability. Supporting this pilot aligns directly with that mission."

Persona AI is developing humanoid robots purpose-built for what the company calls "4D jobs": work they call "dull", "dirty," "dangerous," and "declining."

According to the media release, the company's approach centers on "augmenting" human workers, with robots taking on "high-risk or hard-to-staff" tasks while tradespeople move into "higher-value roles" such as supervision, quality assurance, and robotic operations.

"Partnering with the State of Louisiana allows us to accelerate humanoid development in one of the most industrially relevant regions in the country," said Nicolaus Radford, CEO of Persona AI. "Louisiana is actively investing in the innovation required to rebuild domestic shipbuilding and heavy manufacturing capacity. Working alongside LA.IO, GNO, Inc., and industrial leaders like SSE Steel gives our humanoid the conditions it needs to mature and deploy at scale."

The pilot is focused on data collection and real-world validation ahead of broader deployments. Additional details on the pilot program will be announced as the project progresses.

Baptist Health IcePlex, Ft. Lauderdale, Fla.

The Baptist Health IcePlex is a cutting-edge, multi-purpose facility developed for the Florida Panthers hockey team and the surrounding community. This modern complex houses two regulation-sized indoor ice rinks and a dedicated training and practice center tailored to the Panthers' needs. Beyond its athletic focus, the IcePlex serves as a dynamic community hub. It includes thoughtfully designed public spaces and tenant zones for medical offices, dining venues, and retail shops—creating a lively, welcoming environment for all visitors. To optimize space and functionality, the interior features multiple mezzanines. Architecturally, the structure showcases American Buildings' Loc Seam 360 roof system in Galvalume, paired with a sleek, contemporary façade that blends Pearl Gray R-panels and Slate Gray insulated metal panels (IMPs). The Baptist Health IcePlex seamlessly integrates sports, wellness, and community engagement under one roof.

Steel structural framing was used to expand an existing pre-engineered metal building (PEMB). A combination of metal wall systems, including IMPs and metal roofing systems provides a complete metal building envelope. Also key to the design was the incorporation of steel mezzanines to optimize space and functionality. Clear-span framing provided open space to accommodate the two regulation-sized ice rinks. A steel beam was also used in the decorative entryway outside of the main entrance.

Architects for this project specified the utilization of a PEMB due to cost-effectiveness in this economy. Certain products were selected to enhance aesthetics and to avoid a simple look. MCN

Owner: War Memorial Benefit Corporation, Ft. Lauderdale, Fla., **ftlwarmemorial.com**
Architect: ROSSETTI, Detroit, **rossetti.com**
General contractor: Lemartec Corporation, Coconut Grove, Fla., **lemartec.com**
Metal installer: Commercial Metal Building Services Corporation, Oakland Park, Fla., **cmbscorp.com**
PEMB manufacturer: American Buildings, **americanbuildings.com**
IMP manufacturer: All Weather Insulated Panels, **awipanels.com**

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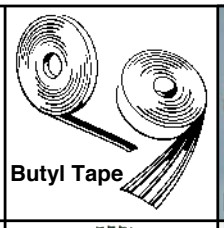

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