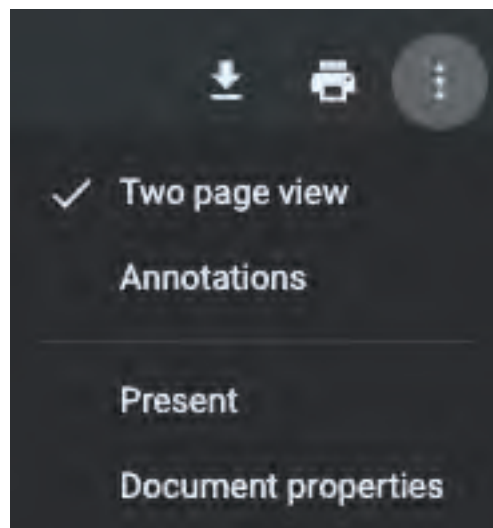


WINDOW+ DOOR

**Welcome to the digital edition of
Window + Door!**

**To view the issue in a two-page format using
Google Chrome, click the triple dots in the
upper right corner and select “Two-page view”
from the drop-down menu.**



WINDOW + DOOR

OFFICIAL PUBLICATION

GlassBuild
AMERICA

THE GLASS, WINDOW & DOOR EXPO

GLASSBUILDAmerica.com

**PROGRESS
AND PRESSURE:**
BROAD-BASED
GROWTH AND
ECONOMIC
UNCERTAINTY

TOP MANUFACTURERS



COEXTRUSION
TECHNOLOGY

IGU
PERFORMANCE

IMPACT-RATED
PRODUCTS

FLEXIBLE AUTOMATION FOR EVERY FLEXSCREEN NEED

ERDMAN® HIGH SPEED FLEXSCREEN LINE

1 Screen Every 15 Seconds | 4 Operators



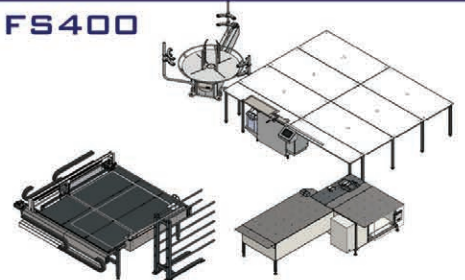
WHY CHOOSE FLEXSCREEN AUTOMATION?

- **Unmatched Savings:** Reduce production costs with in-house manufacturing.
- **Scalable Options:** Choose a line that fits your volume and budget.
- **Rapid ROI:** Your investment pays for itself quickly through cost savings and increased production capacity.
- **The Equipment Does The Work:** Your team will be up to speed and comfortable with the process in minutes - not weeks or months!
- **Industry-Leading Technology:** Built with precision and designed for reliability.

Ready to maximize your profitability? Let us help you choose the perfect manufacturing line for your needs. Contact us now to learn more about FlexScreen's automated solutions.

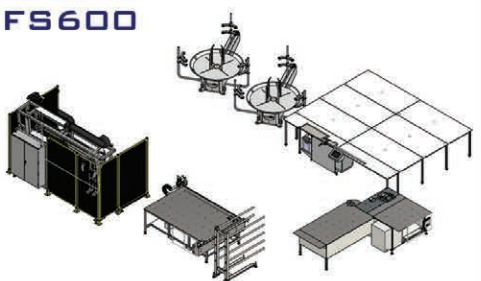
Visit www.erdmanautomation.com or flexscreen.com/licensing

FS400



400+ per 8 hr shift | 3 Operators

FS600



600+ per 8 hr shift | 3 Operators

VISIONARY THINKING. EXCEPTIONAL DOING.

ERDMAN 



Window & Door
Technology



Roto North America

High-quality window and door hardware designed with cutting-edge manufacturing technology

rotonorthamerica.com

Casement & Awning | Sliding Patio | Hinged Patio | Tilt&Turn | Hung & Sliding | Push-out

Residential fenestration coverage, from source to sale // windowanddoor.com // Vol. 33, No.3 // MAY/JUNE 2025

Window + Door Top Manufacturers

30. The Report

Progress and Pressure:
Window and door
manufacturers report
broad-based growth in sales,
production and innovation—
while navigating tariffs, labor
shortages and economic
uncertainty. *By Laurie Cowin*

44. The List

A comprehensive list of
North America's residential
fenestration manufacturers.
By Laurie Cowin



Insights

06. Editor's Notes

Complex Simplicity
By Laurie Cowin

10. In the Trenches

Redefining Durability
and Customization with
Coextrusion Technology
By Gary Luther

12. Decoded

Performance Improvements
in Insulating Glass Units
By Karen Wegert

16. Eye on Fenestration

The Shifting Building Products
Market Landscape
By Andrew Petryk

20. Letter of the Law

Navigating the Storm:
Preparing for ICE
By Melanie Scherer

22. Workforce Development

Closing the Skills Gap
By Jenni Chase

24. Performance

Future of Impact-Rated
Products
By Rachel Vitello

Intel

08. News

In the Know

56. Products

Fenestration Finds

62. FrameWork

Transformation Starts with
New Windows

Sponsored

57. Product Solution

Diamon-Fusion International

60. Ad Index

ON THE COVER: ProVia has added manufacturing equipment, brought processes in-house that it previously outsourced, added square footage to production facilities, and purchased two buildings that are being renovated for future capacity. Learn more about the 2025 Top Manufacturers on p. 30. Photo courtesy of ProVia

WINDOW WRAP®



Self-adhesive. Self-sealing. The system to stick with.

WindowWrap® delivers a complete line of proven flashing solutions.



In today's economy, builders demand maximum value from their building materials.

When it comes to flashing, it means keeping out more than just water. Count on the WindowWrap® family to deliver versatility, quality and value to each and every job. Protect your reputation by using a product line that won't let you down – WindowWrap®.

WindowWrap® Flashing Solutions

- Flex options for sill pan flashing and curved openings
- Variety of straight flash products
- Low-temperature-rated options
- Made in the USA



mfm® BUILDING PRODUCTS CORP.

Visit mfmbp.com or call 800.882.7663 today.

Complex Simplicity

We're part of an intricate industry where many parts work in tandem for the same end goal

BY LAURIE COWIN



One of the best parts of my job is visiting industry members. In mid-April, vice president, sales, Emily Thompson, senior sales consultant Chris Hodges and I visited several companies. We saw research and development, toured manufacturing floors, and saw first-hand how, as one source put it, “We manufacture a very simple product in a very complex way.” Only, once you look at it, you realize a window is anything but simple.

Vitro led us on a tour of its research and development facility in Cheswick, Pennsylvania, outside of Pittsburgh. The building is full of engineers, physicists, scientists and more. Incredible work is done there every day that influences the buildings in which we live, work, play and heal. Glass sits in various testing chambers to evaluate its performance against high heat, humidity, salt spray, dry conditions, freezing temperatures and more. Microscopically thin silver coatings are evaluated to ensure no blemishes exist.

Quanex's Cambridge, Ohio, facility manufactures its spacers. At first glance, they appear to be rather simple. But after touring the facility and getting some hands-on time with the product, I see it's multi-layered and each layer plays a vital role in a window's performance.

GED puts its machinery together in its Glenwillow, Ohio, location, with so many intricate parts that it makes putting even the most complex K'nex system together look like child's play. Veka North America, headquartered in Fombell, Pennsylvania, extrudes incredible amounts of raw material for windows and doors.

This issue further demonstrates the complexity of our industry. The annual Top Manufacturers report and list, which starts on p. 30, takes a 30,000-foot view of the construction and manufacturing industries before diving into fenestration specifics.

The list, however, looks a little bit different this year. Rather than organizing the list by gross sales ranges as we have historically done, the Top Manufacturers are listed by national and regional manufacturers. We know how much manufacturers value their privacy in this industry, and we hear you that it's a big ask to provide us with even a broad range of your gross sales. Our team has researched as best we can where companies don't volunteer that information. With a busy M&A market and more companies going private, this has become harder each year.

Window + Door has the dual responsibility of providing a comprehensive list of fenestration manufacturers and organizing it in a verifiable, factual manner. This new structure allows us to concretely place manufacturers within the list, ensuring we provide a list that meets Window + Door's editorial standards. Companies that opted to provide their revenue range still have that information in their listing.

It was my honor to hear from so many of you to learn more about what you're seeing on the front lines, celebrate your successes and problem-solve challenges. ■

WINDOW+DOOR

Produced by

NGA NATIONAL
GLASS ASSOCIATION
with GANA

344 Maple Ave. West, Unit 272
Vienna, VA 22180
P: 703/442-4890

Editorial

Katy Devlin // Vice President, Content & Programming

Tara Lukasik // Associate Director, Content & Programming

Laurie Cowin // Editor, Window + Door

Norah Dick // Editor, Glass Magazine

Rachel Vitello // Associate Editor

Cory Thacker // Creative Lead

Bethany Stough // Director, Communications & Digital Media

Wendy Vardaman // Digital Media Coordinator

Beth Moorman // Production Director

Cathy Underwood // Production Coordinator

Jo Ann Binz // Circulation Manager

Advertising

Emily Kay Thompson // Vice President, Sales
ethompson@glass.org // 703/442-4890 ext. 150

Chris Hodges // Senior Sales Consultant // chodges@glass.org
703/442-4890 ext. 131 // Cell: 410/459-8619

Holly Robinson // Senior Sales Consultant // hrobinson@glass.org
703/988-3164

Tristan Scofield // Sales Consultant // tscofield@glass.org
703/442-4890 ext. 194

Cameron Francis // Media Sales & Sponsorship Manager // cfrancis@glass.org // 703/442-4890 ext. 132

Board of Directors (2024-25)

Rick Locke // Chair // Montana Sash & Door

Tim Kelley // Chair-Elect // TriStar Glass Inc.

Jim Stathopoulos // Treasurer // Ajay Glass Co.

Ron Crowl // Immediate Past Chair // FeneTech Inc., a Cynclty Company

Taylor Anderson // Anderson Aluminum Corp.

Joey Aragon // Aragon Construction Inc.

Vipul Bhagat // Skyline Design

Tara Brummet // Vitrum Glass Group

Silas Koonse // Koonse Glass Co. Inc.

Courtney Little // Ace Glass

Jodi Martinez // AllStar Glass Co. Inc.

Mark Seeton // Vitro Architectural Glass

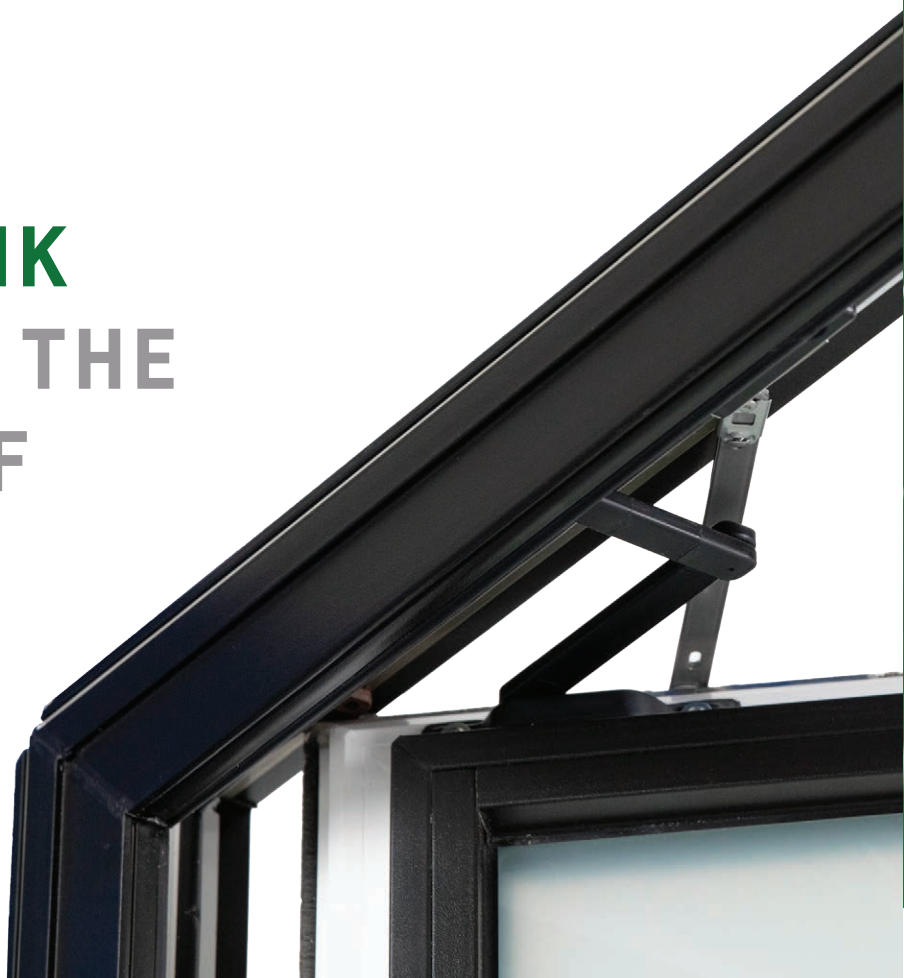
Syndi Sim // Q-railing

Nicole Harris // President & CEO // National Glass Association

Window + Door™ (ISSN 1525-1195), Volume 33, Number 3 is published six times annually in January/February, March/April, May/June, July/August, September/October and November/December by the National Glass Association, 344 Maple Ave. West, Unit 272, Vienna, VA 22180; 703/442-4890. There is no charge for subscriptions in the United States for individuals in the trade and/or qualified requestors. All other subscriptions will be charged \$49.95 in the U.S., and \$79.95 outside the U.S. Periodicals postage paid at Vienna, Va., and other mailing offices. POSTMASTER: Send changes of address to Window + Door™, Subscriptions, Box 460, Congers, NY 10920. Canada Post: Publications Mail Agreement #40612608. Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2. For all subscription inquiries, please call 1-800-765-7514. ©2025 National Glass Association. All Rights Reserved. Printed in the U.S.A.



POWERLINK ENABLING THE FUTURE OF SMART WINDOWS



*Switchable
Privacy Glass*

Quanex is proud to unveil PowerLink—another groundbreaking innovation from AmesburyTruth! PowerLink is a concealed hinged wiring conduit that enables seamless power transfer to a window's operable sash, unlocking new possibilities for hardwired smart home capabilities. By enabling technologies such as switchable privacy glass, electrochromic tinting, transparent solar energy harvesting, and motorized blinds between the glass, it expands the potential of operable windows beyond traditional fixed sash applications.



Scan the QR to learn
more or visit
[AmesburyTruth.com/
PowerLink](https://AmesburyTruth.com/PowerLink)

News

Chelsea Building Products Breaks Ground on New Facility

Chelsea Building Products broke ground on a 228,000-square-foot manufacturing facility in Westmoreland County, Pennsylvania. The project will increase production capacity for the company's PVC window and door profiles, as well as space for blending compound materials.

Once completed, the facility will feature insulated precast construction, 100-by-50-foot bays in the production areas, 32-foot clear height, 10 fully equipped dock positions, and a 10,000-amp electrical service. The facility's design also accommodates a potential future expansion of approximately 170,000 square feet. This project marks Chelsea Building Products' third manufacturing site, and its second facility in Pennsylvania.

Lexington Manufacturing Expands in Georgia

Lexington Manufacturing LLC announced plans to expand its physical footprint by opening a 65,000-square-foot location in Covington, Georgia. This new location will offer on-site profile wrapping capabilities at its opening in early 2026, as well as distribution services of Lexington's other capabilities currently being produced at its four Minnesota-based locations. In addition to supporting its current customers and distribution partners, Lexington aims to expand its relationship with partners in the Southeast region of the country.

Aeroshield Partners with ODL on Insulating Aerogels

AeroShield Materials, which produces

transparent aerogel insulating glass for full-size entry doors, is partnering with ODL Inc. to deliver them to homeowners.

As part of the partnership between the two companies, ODL will complete performance testing on hundreds of the aerogel-insulating doors and windows in various sizes and dimensions, including full-view, 22-by-64-inch door glass. This will support the National Fenestration Rating Council certification for aerogel-insulating products. The aerogel-insulating patio and entry door prototypes currently undergoing testing are expected to be commercially available by the end of 2026.

Energy Star Program to End

The Environmental Protection Agency plans to end Energy Star, a popular program that certifies the energy efficiency of residential windows, doors, skylights and home appliances.

In the residential glass industry, the Energy Star program has traditionally played a significant role in promoting energy-efficient windows and doors, both critical components of building envelopes, influencing energy consumption and occupant comfort. Energy Star-rated products typically feature advanced technologies, such as low-emissivity coatings and improved framing materials, to enhance thermal performance and reduce heat transfer.

Version 7.0 incorporated more stringent requirements and updated technologies to reflect advancements in energy efficiency. These requirements continue to focus on U-factor and solar heat gain coefficient, or SHGC, but update the climate zones to better reflect the International Energy Conservation

Code and the changing climate.

The new criteria for Energy Star 7.0 went into effect in October of 2023.

Kolbe Installs New Solar Panel System

Kolbe Windows & Doors recently completed and activated a solar panel system on the roof of its main manufacturing facility in Wausau, Wisconsin. This 999.6-kilowatt alternative energy system, consisting of 2,061 photovoltaic panels, is expected to offset 31.8% of the plant's current energy consumption.

Kolbe worked closely with Northwind Solar on the design and installation of the system. The double-sided design of the panels allows them to capture sunlight even after snowfall by gathering reflected light through the underside of the panel. The installation began in 2024 and was partially funded by a United States Department of Agriculture Rural Development grant as part of the Rural Energy for America Program.

YKK AP Introduces the BetterBillet

YKK AP America introduced the BetterBillet, a billet comprising recycled aluminum scrap and aluminum sourced from low carbon suppliers. The BetterBillet will move the company's sustainability efforts forward with two core benefits, according to the company: Low carbon sourcing and full control of manufacturing and production processes. BetterBillet also plays a pivotal role in YKK AP's "Evolution 2030" initiative, which focuses on reducing environmental impact through carbon reduction.



Stay in the Know

Subscribe to Window + Door Weekly, our weekly newsletter that keeps you informed with everything fenestration every Wednesday

Miter Brands Implements AI Solution

Syntax Systems, a global technology solutions and services provider for cloud application implementation and management, has expanded its collaboration with Miter Brands to leverage Syntax's GenAI solutions.

This initiative builds on a decade-long partnership, during which Syntax has managed Miter Brands' ERP and customer-facing applications. Miter Brands selected the Syntax GenAI platform to support its distributed sales and marketing teams and help drive business growth as part of its digital transformation strategy.

People



Woods

The **National Glass Association** announced that *Lakisha Ann Woods*, CAE, will be NGA's new president and CEO as of July

14, 2025. Woods will replace 35-year NGA veteran, *Nicole Harris*, in the association's staff leadership role.

Woods is the former executive vice president and CEO of the American Institute of Architects where she grew revenue 40% and grew membership to a historic high of over 100,000. Woods also previously served as president and CEO of the National Institute of Building Sciences where she led efforts to expand the organization's programs and markets while growing and strengthening its membership base. Prior to joining NIBS, Woods was the senior vice president and chief marketing officer at the National Association of Home Builders. ■

IT TAKES TWO TO TANGO...

*But when it comes to handling large windows, doors or special application products, it only takes **ONE!***

THE K-51DV DOOR FLIPPING TABLE & CONVEYOR

from



- Each custom designed unit allows 1 person to handle the work of 2 people.
- Ergonomic features help ensure a safer and more productive work environment.
- It's Flippin' Awesome!





Left: Cornerstone Building Brands showcases industry innovation by leveraging coextrusion technology in product brands like Ply Gem Windows & Doors. **Below:** To achieve seamless integration of color and durability, coextrusion is applied to the interior and exterior of select Ply Gem Windows & Doors products.



Redefining Durability and Customization with Coextrusion Technology

Coextrusion technology is streamlining production and enhancing performance to meet modern architectural demands

BY GARY LUTHER

In the world of windows and doors, innovation is the name of the game. Builders, architects and homeowners demand materials that go beyond the basics—delivering durability, low maintenance and standout design. This is where coextrusion technology comes into play, offering an advanced approach that is reshaping the industry. By enabling multi-layered materials that enhance performance and aesthetics, it transforms the design, manufacturing and durability of modern windows and doors.

This article delves into this technology, highlighting its benefits and its role

in helping manufacturers streamline production, reduce costs and adapt to emerging trends, all of which help ensure a competitive edge in a dynamic market.

Understanding coextrusion technology

At its core, coextrusion builds on the traditional extrusion process, where materials like polyvinyl chloride, or PVC, are shaped by pushing them through a die to form specific profiles. What sets coextrusion apart is its ability to combine multiple layers in a single pass, bonding them at a molecular

level. This process integrates structural strength, weather resistance and color into the profile without requiring additional steps like painting or laminating.

The result is a unified product that resists common wear issues such as peeling or fading. Coextrusion's efficiency and precision ensure that protective layers and finishes are built into the product during production. While painting and laminating offer benefits like customizable colors and unique textures, coextrusion can provide a complementary solution for projects that prioritize durability and shorter lead times in manufacturing.

From structural support to weather resistance and vibrant colors, coextrusion combines essential features in one streamlined process. Its ability to adapt to bold, modern design trends, like black and bronze finishes, has made it a transformative solution.

How coextrusion is adapting to market trends

In today's construction landscape, fin-

ishing methods such as paint, laminate and coextrusion each cater to specific needs. Coextrusion, however, is gaining momentum for its ability to address the demands of modern design. As darker, bold colors such as black and bronze rise in popularity, manufacturers must address heat absorption and potential material stress. Coextruded profiles feature protective capstock layers enriched with ultraviolet inhibitors and reflective pigments

This technology becomes even more significant for manufacturers that are vertically integrated, as it enables them to efficiently adapt to design shifts while managing production costs. By controlling key processes like coextrusion in-house, vertically integrated companies can shorten the supply chain and eliminate secondary finishing steps, such as painting or coating. This not only reduces costs but also shortens lead times since the color is built directly into the material during extrusion.

Balancing performance and production

Each finishing method offers unique strengths. Painting remains ideal for highly customized, one-off colors, while laminating is prized for its ability to add textures like woodgrain. Coextrusion, however, stands out for its seamless integration of color and durability during production. This process simplifies manufacturing, enabling quick color transitions and reducing overall production complexity.

This flexibility can make coextrusion a preferred choice for large projects requiring consistency and resilience. By providing a reliable, efficient option that can address a variety of design and performance needs, coextrusion is a valuable tool for manufacturers navigating the evolving demands of modern construction.

Future directions in coextrusion

As coextrusion technology evolves, its potential applications are expanding beyond windows and doors. Some manufac-

turers are working to develop even more weather-resistant materials and capstock formulations. New micro-ingredients, designed to combat fading and heat build-up, are making darker colors more viable in demanding environments.

Emerging possibilities include using coextrusion technology to incorporate components directly into the profile part. One such application is coextruding weatherstripping with the profile to create enhanced weather seals to address extreme weather conditions, such as hurricanes. These advancements demonstrate how coextrusion meets today's needs while preparing for tomorrow's challenges.

A comprehensive approach to design

No single method dominates the landscape of window and door manufacturing. Instead, the industry

thrives on the complementary strengths of coextrusion, painting and laminating. Whether the goal is efficiency, aesthetic customization or unique surface textures, each approach plays a vital role.

By leveraging these technologies together, manufacturers continue to push the boundaries of innovation, creating building materials that are durable, adaptable and visually stunning. Coextrusion stands out for its ability to address multiple demands in a single, efficient process, making it an indispensable tool in the evolving construction landscape. ■



Gary Luther is senior product manager at Cornerstone Building Brands where he brings new products to market and enhances existing ones in collaboration with the design team.

507-476-9376

**DESIGNER
DOORS**



Let us help you with
your door needs!

Schweiss Doors designed and built the glass bifold
door for Fermilab National Particle Physics Lab, IL

 **SCHWEISSDOORS.COM**

Performance Improvements in Insulating Glass Units

Elevating efficiency and unlocking superior insulation with advanced IGUs

BY KAREN WEGERT

The following is an excerpt from NGA Glass Technical Papers FB49-17 (2022) Performance Improvements in Insulating Glass Units: Cavity Gap and Insulating Gases, and FB63-19 Products for Energy Applications, available for free download at glass.org/store.

The insulating glass unit has replaced single lites of glass in all but a few areas. The basic principle of an IGU is to improve thermal performance by incorporating a gap between two or more lites of glass. A properly sized gap will reduce convection within the IGU with no effect on daylighting, thus reducing thermal transfer by as much as half. The design professional can further improve thermal performance by choosing from a variety of IGU component options, such as coated glass products with low-emissivity properties, insulating gases, multi-cavity IGUs and varying cavity gap width.

Importance of gas content

The thermal performance improvements of the IGU are dependent on the ability of the IGU to retain the insulating gas. A reduction in the concentration of insulating gas within the IGU has a linear correlation

to the reduction in the thermal improvement of the unit. Gas retention within an IGU is dependent on several variables including, but not limited to:

- Permeability of the sealants used in the edge seal construction
- Permeability of the spacer
- Integrity of the bond between glass and sealants, and spacer and sealants

- Sealant bond width
- Uniformity of the sealants used in the unit construction
- Cleanliness of the glass and spacer during construction of the IGU that enables proper adhesion of sealants
- Fluctuation of internal airspace pressure due to wind loads, changes in temperature, altitude, glazing

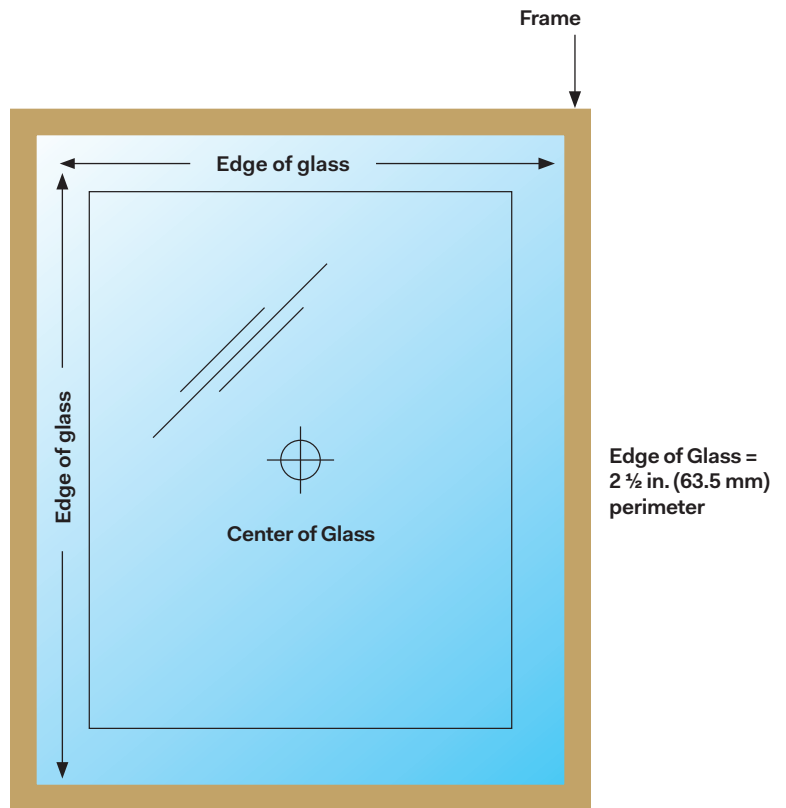


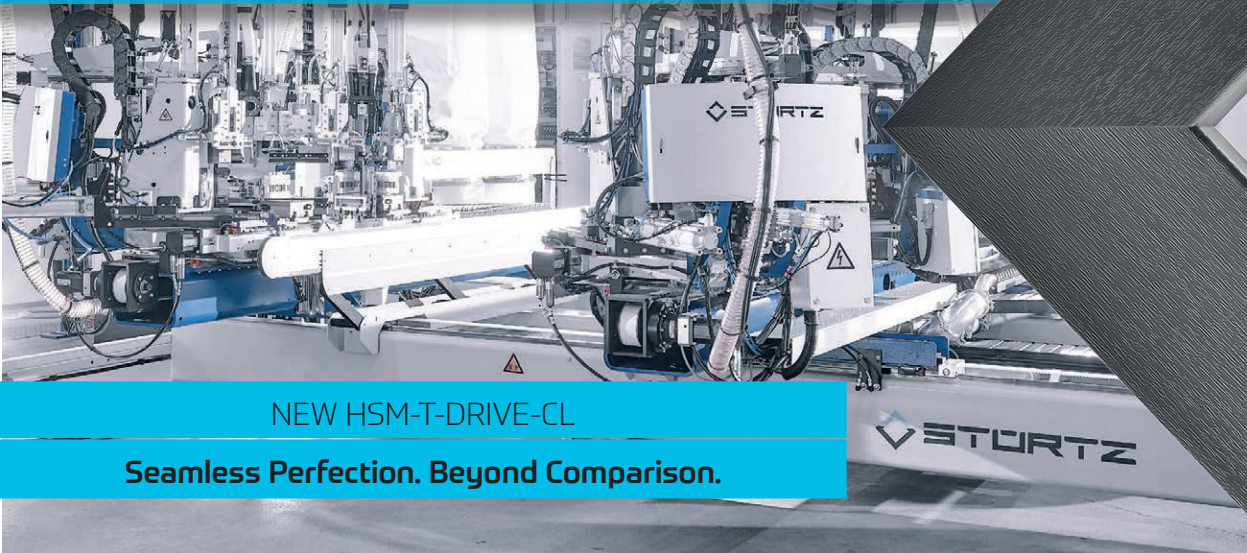
Figure 1: Components of total fenestration U-factor (center-of-glass, edge of glass and frame).



STÜRTZ AUTO- MATION.

Unlock your production's potential with Stürtz Automation! Whether you need standard machines or custom equipment, we offer solutions tailored to your specific needs. Elevate your efficiency and safety with Stürtz – from single machines to turnkey lines, Stürtz will help take your production to the

NEXT LEVEL.



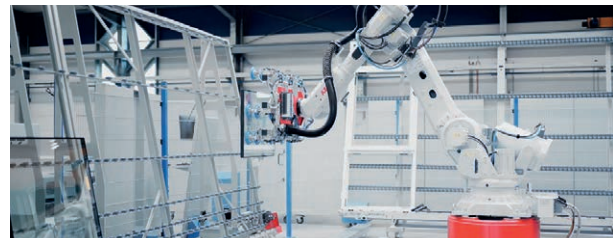
NEW HSM-T-DRIVE-CL

Seamless Perfection. Beyond Comparison.



GLASS-SORTER

Streamlined Glass Handling



SRS GLAZING ROBOT

More Efficiency - Less Labor

Stürtz Consulting

Contact us to schedule a consultation.

Our experts can work with you to develop a tailored solution specific to your operational needs. **STÜRTZ MACHINERY INC. | www.stuertz.com/us/**



Scan to watch!

system and general environmental conditions

Thermal performance

The fenestration industry measures the thermal performance of its products in terms of thermal transmission, or U-factor (also known as U-value), which is expressed in Btu/hr/ft²/°F. U-factor is a measure of the air-to-air heat transmission (loss or gain) due to the thermal transmittance resulting from the difference between indoor and outdoor temperatures. As the center-of-glass U-factor decreases, so does the amount of heat that is transferred through the IGU. The lower the U-factor, the better the product will insulate a building.

U-factor and R-value are reciprocals. For instance, dividing 1 by the U-factor will obtain the R-value for glass (for example, a 0.25 U-factor equals an R-value of 1/0.25, or 4). However, U-factors and R-values for other building materials, such as insulation, are not always directly comparable to glass.

While center-of-glass U-factors are useful for comparison in many glass products, the center-of-glass U-factors will typically be lower than the total fenestration system U-factor. Total fenestration system U-factor is calculated using thermal measurements from the center and edges of the glass, the frame and along any dividers the window/door may have (see Figure 1).

Coating type and surface location

Low-e coatings are designed to minimize the amount of ultraviolet and infrared light that can pass through glass without compromising the amount of visible light that is transmitted. There are two types of low-e coatings: passive low-e coatings and solar control low-e coatings. Passive low-e coatings are designed to maximize solar heat gain into a home to create the effect of “passive” heating and reducing reliance on artificial heating. Solar control low-e coatings are designed to limit the amount of solar heat that passes into

a home for the purpose of keeping the interior cooler and reducing energy consumption related to air conditioning.

Low-e coatings are applied to various surfaces of IGUs. Passive low-e coatings function best when on the third or fourth surface (furthest away from the sun) and are typically used in heating dominated climates, while solar control low-e coatings function best when on the lite closest to the sun, typically the second surface, and are normally used in cooling dominated climates. Solar control coatings can be combined with passive coatings on the fourth surface to improve performance values. In addition, tinted substrates can be combined with low-e coatings to decrease solar heat gain and add desired aesthetics.

Insulating gases

Traditionally, an IGU is filled with air. Some inert gases are less thermally conductive than air and will lower, or improve, the U-factor of the IGU, typically in the range of 10% to 15%. Argon is the most commonly used inert gas between the lites of an IGU to improve its thermal performance. Krypton and argon-krypton mixtures are also possible. Contact the IGU fabricator for available gas mixtures.

Optimize the cavity gap

A key to proper IGU design for insulating gases is to optimize the cavity gap for the gas being used. There is an optimal spacer width for every type of low conductivity gas, which minimizes the gas convective heat transfer. This optimum gap width differs for different gas types and different weather conditions. In general, warmer weather conditions result in wider optimum gap widths. The free LBNL WINDOW computer program can be used to readily determine optimum gap widths for unique conditions. In North America, the National Fenestration Rating Council standard summer or winter environmental conditions are used in the calculation. Consult the fabricator

for cavity gaps available, as spacers are only available in discrete dimensions.

Different gases have different optimal glazing space gaps based on their respective densities to reduce convection inside the IGU, while also having the greatest possible distance to reduce conduction. The typical nominal gap width dimensions are:

- For air, approximately ½ inch (13 millimeters)
- For argon, approximately ⅞ inch (11-12 mm)
- For krypton, approximately ⅝ inch (8 mm)

Anything greater will increase convection inside the IGU, decreasing thermal performance.

Summary

When thinking of window designs, size, substrate, tint color and other aesthetic qualities come to mind. However, low-e coatings play an equally important role and significantly affect the overall performance of a window and the total heating, lighting and cooling costs. The cavity gap size and addition of gas or coatings are designed based on the performance requirements of the building envelope. Inert gases (argon and krypton) offer lower U-factor than with air. The effect of using krypton gas in place of argon gas is more beneficial with narrower gaps than with wider gaps.

The use of multiple low-e coatings can also significantly reduce U-factor. The interrelated nature of properties like U-factor and building interior glass surface temperature means that at times performance in one aspect may need to be reduced to achieve better performance in another. In addition, choice of overall IG thickness may be a consideration based on the framing system, which can then affect gap distance, glass thickness and choice of inert gas. ■



Karen Wegert is director of technical services with the National Glass Association.

Now
Available

5000 Series

Easy installation,
smooth operation

Ideal for panels of up to 550lbs

TESTED TO
10,000
CYCLES



End adjustable making
installation and on-site
servicing easy

Bogie carriage design
ensures smoother
panel operation

All Anthony Innovations products are

- AAMA Tested to 10,000 cycles
- AAMA 906 certified for durability
- Made with sealed precision bearings for reduced operational force
- Available in CNC machined **stainless steel** or **polymer** tire options
- Multiple housing variants to suit a range of systems
- Wheel sizes available 1.1", 1.25" and 1.4"

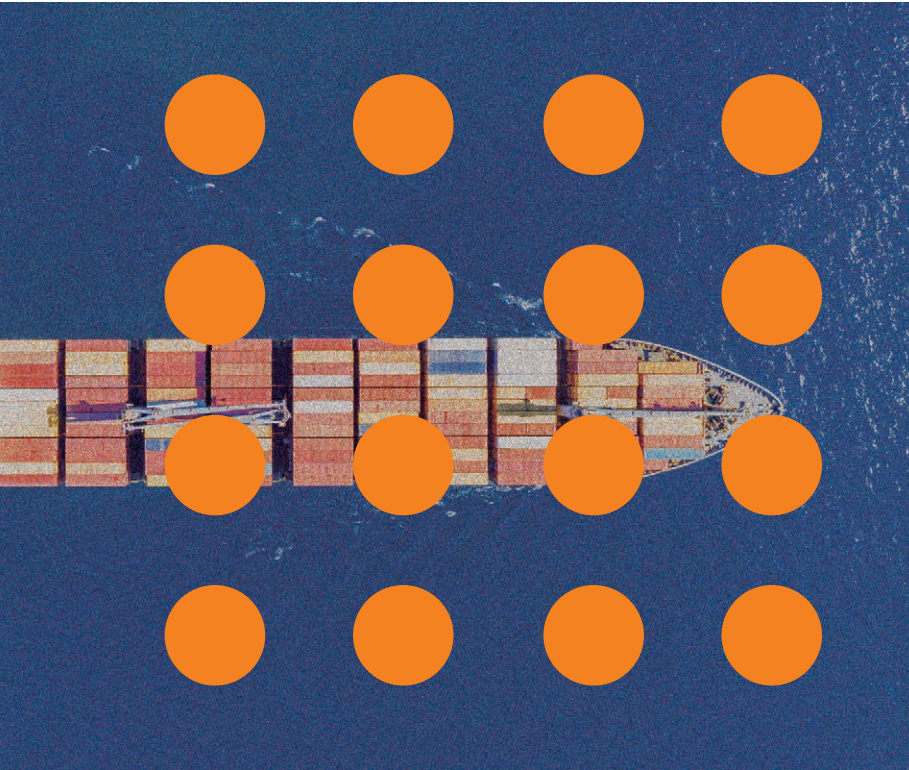


**ANTHONY
INNOVATIONS**

Moving Doors And Windows Forward



For the full product range, visit anthonyinnovations.com
or contact us on salesna@anthonygroup.net
Scan the QR code to learn more about our rollers



Navigating Uncertainty

As tariffs and economic headwinds begin to unravel confidence, industry leaders brace for impact amid mixed signals on consumer demand and housing affordability

BY ANDREW PETRYK

Sentiment at the start of 2025 was positive with companies reporting healthy backlogs and expecting growth coming off solid performance in 2024. More recently however, the tone has shifted to one of caution amid broader uncertainty, partly driven by policies of the Trump administration that are creating near-term headwinds in the market. We took a deeper dive into the “state of the market” through conversations with industry participants to gauge current confidence levels and their outlook for 2025.

Tariffs and surcharges

Tariffs have become the hot button issue for executives across the building products market. Some companies are reexamining their supply chains and considering alternative sources; however, certain materials have limited substitutes. According to industry sources, an estimated 80% of U.S. softwood lumber imports come from Canada. Float glass currently doesn’t have a domestic source in Canada where window and door manufacturers are bracing for the next round of U.S. tariffs to be announced.

“We’re certainly expecting some sort of medium-term tariff impact,” remarked Neil Fast, CEO at Loewen Windows, a supplier of premium windows and doors serving the luxury architectural market in Canada. Loewen has plans in place for multiple different tariff scenarios, Fast indicated. “Softwood, lumber, steel, wallboard, gypsum, all those materials have a high degree of cross border trade between the U.S. and Canada, and that’s going to be tricky. I feel like the entire supply chain serving the residential housing market is holding their breath right now.”

“Even with domestic suppliers, there is some ‘opportunism,’” says Kevin Madden, co-founder and managing partner at Saothair Capital Partners. “Pricing tends to increase across the market.” Saothair owns Pioneer Windows, a manufacturer of architectural aluminum products for high-end residential, commercial and institutional buildings, which it acquired in November 2024. “No one is fully insulated,” Fast adds. “We do think there’s going to be some pricing pressure here in the market. I’m really expecting sort of an off-cycle, mid-year price increase in the window and door business here.”

Given the prevalence of tariffs, most companies don’t anticipate having issues passing on those costs because everyone is going to be impacted by them. Ultimately, the higher construction costs will have ramifications on consumer spending with executives speaking to tempering demand over the intermediate term. “We’re starting to see some easing in our markets,” says Michael Barr, CEO of U.S.-based WeatherBarr Windows

Discover Novacel Global Surface Solutions

You make it perfect, we keep it that way!

High-Quality Films to preserve all your IGUs, profiles and doors



High-Performance Laminators, ready to be integrated into your production



Horizontal Laminators



Vertical Laminators



Contact us!

contactusa@novacel-solutions.com

www.novacel-solutions.com



& Doors, a third-generation family business specializing in high-quality, custom vinyl windows and doors. “To me, that’s consumer confidence. It’s certainly not a fundamental issue of whether we need houses or not. At the end of the day, the housing market has demand, but affordability is a problem.”

Barr cited the potential impact of tariff surcharges, in addition to higher prices on building materials, which is driving up housing inputs. Added to that is a shortage of reasonably priced homes, leading some consumers to pause on home buying and forgo large renovation projects until there is more visibility. “It does undermine consumer confidence because everything is going to get more expensive,” Barr adds. In the U.S., consumer confidence declined in March to its lowest level since February 2021 underpinned by concerns that rising inflation and Trump tariffs would undercut economic growth.

Affordability and inventory

Relief for borrowers would be a welcome catalyst in the U.S., where mortgage rates continue to remain above 6%, and despite expectations for interest rate cuts in sight, experts predict only modest easing keeping rates elevated in the 6% to 7% range through 2025. Mortgage rates in Canada have declined, with the prime rate now at 4.95%.

March heralded the formation of a Joint Task Force to identify public land suitable for residential development, marking a first step in the Trump administration’s promise to lower the cost of U.S. housing and expand housing supply. The U.S. Department of Housing and Urban Development will work alongside the Department of the Interior in this effort. “Lack of inventory remains one of the biggest barriers to affordability, driving up home prices and putting the dream of homeownership out of reach for too many Americans,” says Shannon

McGahn, executive vice president and chief advocacy officer at the National Association of Realtors, in a statement. According to Brookings, the housing shortage stood at an estimated 4.9 million housing units in 2023.

Despite the near-term challenges, we continue to hold firm to a bullish outlook on the positive long-term fundamentals of the U.S. housing market and believe investors are underwriting to this thesis as well. This is confirmed by the demand we see in the building products M&A market as well as recent conversations with strategic and financial buyers. ■



Andrew Petryk is a managing director and leads the industrials practice at Brown Gibbons Lang & Company, an independent investment bank serving the middle market. He can be reached at 216/920-6613 or apetryk@bglco.com.



TIP OF THE ICEBERG



Making a great door or window should be simple – but we know it’s not. What looks easy on the surface hides layers of sourcing, specs, and headaches below. At Lexington, we take on the hidden complexity so you can stay focused on what matters. Because together, we can navigate through any waters.

support@lexingtonmfg.com



Lexington
Manufacturing

PROFILE WRAPPING • PANEL PROCESSING & OPTIMIZATION • GLUING • LAMINATION • PAINTING • MOULDING • CNC MACHINING

GLASS SOLUTIONS REDEFINED:

Precision High-Speed Cutting Meets Robust Assembly



GED MADE, SOLD, AND
SERVICED IN THE USA

CleanCut™ 1700 & 1800 Series

Experience peak productivity & efficiency with the CleanCut™ series, featuring the proprietary GED premium optimization engine that *outperforms European systems in pace and yield.*



Optimized With Look-Ahead® Software



IG Assembly System 2.0®

Included with the ATLAS® 2.0 or for individual purchase.

Rapid & reliable assembly of IG units with state of the art electric actuation & up-to-date controls for high quality production.



Intelligent
Automation

31100 Diamond Pkwy
Glenwillow, OH 44139
330-963-5401



SCAN THE QR CODES FOR
MORE INFORMATION!

CleanCut™
Series



IG ASSEMBLY
System 2.0®



IG SYSTEMS



SOFTWARE



WINDOW SYSTEMS





and trained, as well as provided with contact information for legal counsel in the event outside assistance is needed to address any inquiry.

Second, conduct an internal review of your employee work eligibility documents to prepare for an ICE inquiry and confirm compliance with all federal laws. Ensure each employee's work eligibility can be supported with the necessary documents. Promptly address any discrepancies or missing documentation. On an ongoing basis, periodic internal audits will ensure your documents remain current and complete, especially if the nature of your workforce is subject to frequent change or may prove seasonal. Your designated contact should also be familiar with the documents that will need to be presented in the event a work eligibility inquiry is made. The contact should also have the credentials to access those documents at all times.

On-site ICE visit

ICE may visit your physical company property and request, or even demand, to be permitted entry to conduct a work eligibility inquiry. This request can proceed only with either your consent or through ICE's provision of a valid warrant. In the interest of maintaining formality and following proper procedures, it is advisable to always first request a valid warrant be presented. This step will help ensure that decision-making regarding consent is removed from your employee-representative's scope of responsibility in reliance upon established company procedures. Providing clear guidance to review and confirm a valid warrant before access can assist your designated representative in a successful interaction with ICE.

It is important to train your designated representatives to determine whether a specific warrant is valid and sufficient to proceed. For example, the warrant must be signed by a judge, as opposed to an administrative arrest warrant. This is where legal counsel can assist if there is any question regarding the nature of a presented warrant.

Navigating the Storm

Prepare for ICE on-site visits and ensure compliance with IRCA

BY MELANIE SCHERER

The challenges of being an employer are always evolving. One of those evolving issues is compliance with the Immigration Reform and Control Act.

At its most basic, IRCA requires an employer to provide documented eligibility for all of its human resources. Employment Eligibility Verification Form I-9 is used to verify the identity and legal work eligibility of paid employees. The law outlines express requirements employers must meet to attest to their worker's eligibility for employment and steps that must be taken to avoid recruiting unauthorized workers. Most employers are generally familiar with this aspect of the federal law and need to effectively address work eligibility inquiries.

Many employers are not as familiar with other aspects of IRCA

enforcement; in particular, an on-site visit by representatives of United States Immigration and Customs Enforcement, or ICE. Taking a few steps to prepare for such events can help your company and your employees respond appropriately and in accordance with all legal requirements.

Plan for on-site inquiry

First, it is recommended to designate a company point of contact who will be responsible for any ICE inquiry into employee work eligibility. If you have multiple locations, consider designating an employee representative for each site, or alternatively, a point of contact to field inquiries from multiple locations depending on the structure of your business. Your designated representative should be educated

Employers can consent to access without a warrant. In those circumstances there can be later contests by affected individuals and the scope of what is subject to disclosure can become legally clouded. Regardless, access can be voluntarily and also be withdrawn at any point.

Document compliance

Once the issue of entry is addressed, documentation and compliance become the focus. Ideally, through preparation, review and training, your company's designated contact will already be familiar with the I-9 documents that need to be presented to confirm compliance with IRCA. Providing complete and accurate documents for each employee will result in successful completion of this administrative process. Here too, the scope of information subject to access can be spelled out in the warrant and

should be reviewed to ensure full compliance.

Escalated or external guidance

While your designated company representative should be trained to evaluate the sufficiency of a warrant presented for entry, this person should also feel comfortable to reach out to management, legal counsel or other escalation pathways within your company. If there are questions surrounding the validity of a warrant, or if no warrant is presented, it is acceptable to request that ICE remain outside of private, employee-only portions of the premises. At that point, internal communications can occur to determine how to best proceed while remaining compliant. If needed, the designated representative should escalate communication to a person within your company who can quickly assist to provide further instruction or reach out to those who can.

Employee rights

As a final consideration, just like employers, individuals also have rights. These can include the right to remain silent, even if questioned, and the right to request legal representation. Companies need to ensure that their policies balance complying with legitimate requests for access, while also not infringing on the rights held by individual employees.

Taking some prudent steps in advance, employers can prepare so that a potentially stressful situation becomes a simple administrative inquiry in keeping with established company protocol. ■



Melanie Scherer is an attorney with Gary Law Group, a law firm based in Portland, Oregon, that focuses on legal issues facing manufacturers of windows and doors.



Coatings for the Window & Door Industry

Premium Coatings, Superior Service

NUCOAT specializes in high-quality, eco-friendly coatings for the building industry, offering unparalleled support and efficient fulfillment.

- Efficiency
- Ease of Application
- Independently Verified
- Simplified Prep Process
- Proven Performance
- Environmentally Conscious



LEARN MORE

info@nucoat.com



Tristar Glass facility in Catoosa, Oklahoma.

to monitor training compliance; supervisors can track employees' training activity and test scores using the MyGlassClass.com Team Manager functionality. Companies can customize their Team Manager to monitor and conduct training for different lines, under different line leaders. While all employees may be required to take safety courses, for example, only a few may need glass measurement and math training. The Team Manager function allows companies to customize training for different employee groups, as well as run comprehensive reports on individuals or all employees.

Closing the Skills Gap

Training for glass fabrication personnel now available via MyGlassFAB

BY JENNI CHASE

Editor's Note: This article originally appeared in Window + Door's sister publication, Glass Magazine. As more window and door fabricators move glass production in-house, the Window + Door audience also can find value in courses through MyGlassFAB.

The manufacturing industry is facing a skills gap. Industry growth is driving the need for more workers of every type—from entry-level production personnel to skilled workers to engineers, according to the 2024 Deloitte and Manufacturing Institute Talent Study. This is not news to the glass and fenestration industry, where the skills gap reveals itself as a lack of industry experience among new hires. Glass fabricators report this is true at all levels of employment, but particularly among entry-level production personnel, who often come onboard with little to no glass experience. To help close that gap, the National Glass Association has launched MyGlassFAB.

Addressing the skills gap

MyGlassFAB is designed for entry-

level production personnel who are responsible for tasks like inspecting and measuring glass; loading and unloading glass; and rotating glass through the various phases of the tempering, laminating, cutting or shipping processes. Available on the MyGlassClass.com online learning platform, MyGlassFAB allows new personnel to take training courses on their phones. The interactive courses range in length from five to 15 minutes, with the initial training focusing on safety, glass quality inspection, how to measure glass and basic math. Courses are available in English and Spanish, and as the course catalog grows, NGA will add training on tempering, laminating, decorative glass and insulating glass production.

Tristar Glass, which has three glass fabrication plants in the South-Central U.S. that span 390,000 square feet and employ more than 250 people, uses MyGlassFAB to onboard new employees. As part of their orientation process, new hires take MyGlassFAB courses on their phones, alongside an instructor.

MyGlassFAB also allows companies

The applicant gap

The manufacturing industry faces not just a skills gap, but an applicant gap. There is a shortage of potential candidates applying for positions, whether skilled or unskilled, according to the Deloitte/MI Talent Study.

The labor pool continues to challenge industry companies. Nearly half of respondents in Window + Door's 2025 Industry Pulse survey indicated recruiting is their top labor challenge. Employee retention isn't far behind. Several survey respondents noted quality training is an effective way to retain quality employees.

The Deloitte/MI study substantiates this. "Many companies are also leveraging e-learning platforms to facilitate flexible and self-paced learning opportunities," the research group reports.

To view the MyGlassFAB course catalog, visit myglassfab.com. To learn more about how to set up a company training program using the Team Manager functionality, email myglassclass@glass.org. ■



Jenni Chase is vice president of workforce development at the National Glass Association.

STORMFORCE

In coastal regions, protecting your home from extreme weather isn't just a consideration—it's a necessity. That's why Wincore® has engineered its impact-resistant windows and doors to meet the highest standards of safety and durability. Specifically designed for areas prone to hurricanes and severe storms, our StormForce™ series offers unmatched protection while maintaining the elegance and style homeowners desire. Built tough to withstand the harshest elements, these products deliver reliable performance and lasting peace of mind—without compromising on curb appeal. With Wincore, you don't have to choose between safety and style—you get both.



SET THE STANDARD. AND THEN SURPASS IT.

Because to us, *That's the way it should be.*™

Whether you're looking to boost curb appeal or fortify your home, Wincore delivers the perfect fit. With multitudes of door styles and window options to choose from, finding the right look and level of protection has never been easier. Crafted for durability, beauty, and peace of mind, Wincore products set and surpass the standard in both form and function.

WINCORE®
WINDOWS & DOORS

Wincore Windows and Doors® offers a wide range of premium entry doors and windows, including high-performance storm-resistant options built to handle even the harshest weather.



Scan QR code to
learn more, or visit
wincorewindows.com

✕ @wincorewindows

f wincorewindows.com/fb

The Importance and Future of Impact-Rated Products

Industry experts weigh in on the significance of hurricane impact-rated products

BY RACHEL VITELLO



Kolbe Windows & Doors' Vista Luxe Collection is an example of impact-rated products for the residential market.

© Phillip Ennis

When hurricanes storm through communities, they can ravage and destroy peoples' homes, businesses and other property. Hurricane impact-rated systems—the windows, doors and other glass and fenestration products that are specifically designed and tested to withstand the high winds and flying debris that come along with hurricanes—are one way to help alleviate and prevent this destruction. These systems are especially important in areas prone to hurricanes, like coastal regions in the United States.

“Hurricane Helene traveled nearly 500 miles inland, creating disaster areas in Florida, Georgia, North Carolina and Tennessee. The glass and fenestration industries continue to innovate and enhance the performance of all their units to combat extreme weather conditions,” says Mike Layne, regional sales manager, Kolbe Windows & Doors. “Now is also the time for manufacturers to educate all customers on the impact options available, clearly demonstrating the level of performance these windows and doors offer while communicating

their ability to adapt to a variety of lifestyles and visions.”

The importance of impact-rated products

Hurricanes and other extreme weather events can have a devastating effect on homes, even if only one system is damaged. “Impact-resistant products are essential for protecting a home from rapid internal pressurization,” says Dean Ruark, vice president of engineering and innovation, Miter Brands. “If a single window or door fails during a storm,

Engineered for Flexibility. Now Expanded for Compatibility.

The Vision Constant Force Balance System is now available in a 3/4" size.

Due to overwhelming demand, Vision Hardware has expanded its popular constant force balance system to now include a 3/4" version. This new size accommodates windows designed with larger cavities—delivering the same easy integration, consistent performance, and fast fulfillment you've come to expect from Vision. (Patent Pending)



Add the 3/4" Constant Force Balance to Your Next Supply Order.

- A full range of single, double, triple, and quad balances up to 44 pounds.
- Preassembled to meet your exact specifications for easy integration.
- Integrated pivot bar containment option available
- Easy reconfiguration if needed, providing adaptability to changing requirements.
- Multiple housing options and brake forces are available to suit your needs.
- Various pivot bars and mounting clips are available to accommodate your unique design.
- Open cam design allows for a lift-out sash with a single non-handed SKU.
- Tensioning screw enables customizable friction on cusp weights.
- Independently tested and listed on the AAMA-approved product list for quality assurance.
- Now available in both 1/2" and 3/4" widths to support more window designs.
- Next-day pickup or 24-hour shipping available on all stocked parts.



480 Elizabeth Avenue, Somerset, NJ 08873 | (800) 220-4756 USA | (908) 822-2003

Copyright © 2025 Vision Hardware. All Rights Reserved. These products may be protected by one or more Vision patents. Patent information can be obtained at <http://www.visionhardware.com/patent>



© Nat Rea Photography

it can create intense pressure on the building's roof and walls, often leading to catastrophic structural failure."

According to Layne, the primary advantage of impact-rated products is the enhanced performance they offer to a home's interior against windborne debris during hurricanes and tropical storms. Additional benefits include superior UV ratings, improved energy efficiency and better acoustic performance.

"It's important to invest in impact-rated products if you live coastal areas because they help protect homeowners and their families from the devastating effects of hurricanes and extreme weather," says Jeffrey Gore, vice president general manager coastline, Marvin. "They also eliminate the inconvenience, cost and aesthetics associated with using plywood sheets and storm shutters which require installation, removal and storage."

Marvin produces impact-rated windows and doors in its Coastline, Ultimate and Elevate product lines that are engineered to withstand high winds and flying debris generated by severe storms. These impact certified products appear the same as standard products, with no visible differences such as hinges or added reinforcements. Properly installed windows and doors

harden a home and prevent storm damage by maintaining structural integrity, ensuring that extreme winds do not penetrate and create dangerous pressure imbalances that can lead to catastrophic structural failure.

The future of impact-rated products and the industry at large

Josh Jensen, president of YKK AP's residential business group, says that these more frequent weather events often cause building codes to be reviewed and modified, which drives changes to product development and design. Jensen says that when it comes to impact-rated systems, customers have been asking for larger window lites, a bolder aesthetic and energy efficiency. "These trends will likely remain; however, we will likely see higher demand for hurricane-resistant windows and doors in coastal areas, and in particular, Florida," says Jensen.

Layne says the most common request for impact-rated systems is for larger units; however, the laminated glass used in the construction of impact-rated units has size limitations. Architects and home designers who frequently work in regions where building codes mandate impact products have grown increasingly aware of these constraints and how to design their projects accordingly. Layne

adds that geometric windows with impact capabilities are also in demand, and they serve as an excellent design solution. Unique shapes like triangles or trapezoids are another way for designers to maximize the use of glass and frame views of the outdoors while working within the size limitations.

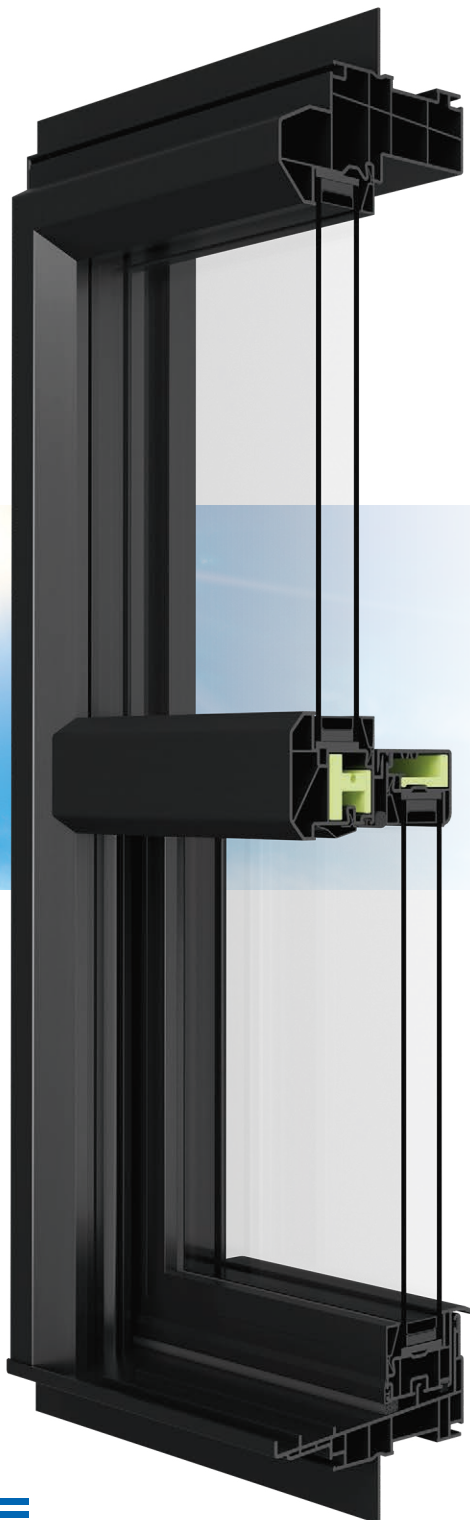
In Florida specifically, Ruark says that many new Floridians are less familiar with hurricanes, which has driven a surge in demand for impact-resistant products. "Currently, most of the conversation centers on designing for surge, scouring and wave action, as recent hurricanes have been predominantly surge-related. However, when we see wind-driven storms like Hurricane Andrew, or more recently Hurricane Dorian, which bring significant debris impacts to structures, the focus traditionally shifts to improving impact-resistant products and standards. Both surge and wind resilience will likely shape future industry standards and building codes."

Ruark adds that the Florida Building Code is proving effective, where homes built to recent codes are withstanding the barrage of hurricanes that have made landfall in Florida in 2024. He says that Miter is exploring "code-plus" options, such as those in the IBHS Fortified Program, which prepare buildings for even more severe wind events than current codes mandate.

"In light of recent hurricanes, it is likely that more regulations will be introduced in areas that have traditionally recommended—but not required—the use of impact-rated products," says Layne. "Relatedly, new customers are expected to express an interest in impact-rated window and door products for the first time."

Gore says that moving forward, the glass and fenestration industries should proactively enhance product offerings to anticipate the intensifying demands of extreme weather; including investing in R&D for stronger, more resilient materials, and manufacturers should emphasize education for contractors and homeowners about the importance of proper installation and maintenance of impact-rated products. ■

⚡ We are solutions



E C L I P S E

BLACK PVC EXTRUSIONS

INNERGY
Rigid Thermal Reinforcements

POLYURETHANE FIBERGLASS
REINFORCEMENTS

SUNshield
COMPOUND

HIGH-PERFORMANCE PVC



WATCH THE VIDEO



⚡ **deceuninck**



WE ARE NOT JUST ANOTHER
MANUFACTURING COMPANY
WE ARE A PART OF
SOMETHING BIGGER



EXPANDED SOLUTIONS FROM YOUR FENESTRATION PARTNER

We are not just another manufacturing company. We are *A Part of Something Bigger*. We are a community of talented employees, working together as one source for quality building components.

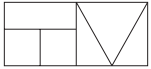
At Quanex, we are focused on creating a positive impact for our customers. This year, we're thrilled to take our commitment to the next level with the introduction of **Hardware Solutions** that include the **AmesburyTruth** and **Lawrence** products you know and trust. We aim to deliver the same trusted service and quality you expect from Quanex, while also providing comprehensive solutions that cater to all your fenestration needs.

Learn more at [QUANEX.COM](https://www.quanex.com)

A Part of Something Bigger®



IG SPACER SYSTEMS ▪ KITCHEN AND BATHROOM CABINET DOORS
WINDOW AND PATIO DOOR SCREENS ▪ **DOOR COMPONENTS**
DECORATIVE HARDWARE ▪ SPECIALTY ACCESS, SAFETY
PRODUCTS AND SECURITY ▪ **HARDWARE SOLUTIONS** ▪ ROLL-
FORMED METAL WINDOW COMPONENTS ▪ POLYMER, SEALANT
AND SILICONE SOLUTIONS ▪ EXTRUSIONS AND WEATHER SEALS
VINYL WINDOW AND DOOR PROFILES ▪ CUSTOM WINDOW GRILLES,
TRIM, MILLWORK, AND ARCHITECTURAL MOLDINGS ▪ **AND MORE!**



Progress AND Pressure

WINDOW AND DOOR MANUFACTURERS REPORT BROAD-BASED GROWTH IN SALES, PRODUCTION AND INNOVATION—WHILE NAVIGATING TARIFFS, LABOR SHORTAGES AND ECONOMIC UNCERTAINTY **BY LAURIE COWIN**


A close-up photograph of a man with a beard and safety glasses, looking intently at his work in a factory setting. The background is blurred, showing industrial lights and structures.

Photo courtesy of ProVia

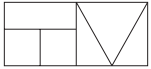
T

This year's Top Manufacturers Report reflects, in a word, growth. Growth in sales. Growth in production. Growth in business and product development.

Even so, plenty of unknowns and challenges test the industry. As of this writing, U.S. President Donald Trump's administration has implemented tariffs on dozens of countries, including a 104% levy on Chinese goods. China has responded with a retaliatory tariff of 84% on U.S. goods.

Concerning though these tariffs are to many in the fenestration industry, several respondents noted everyone is in the same boat and all are navigating it together.

This year's Top Manufacturers Report gives an overview of the new construction and remodeling and repair markets, plus the state of the larger manufacturing industry, before diving into findings from the Top Manufacturers survey, which collected responses in March 2025. The report is bolstered by data from John Burns Research and Consulting's quarterly Window & Door Market Survey, the result of an exclusive partnership between Window + Door and JBREC.



The

Big

Picture

New construction

Last year ended with single-family growth in all geographic regions, according to the National Association of Home Builders Home Building Geography Index. “Single-family housing construction ended the year with growth as a shortage of existing homes for sale continues to increase demand for newly built homes,” says NAHB Chairman Buddy Hughes.

“Single-family construction has been holding remarkably steady, despite elevated mortgage rates and tight lending standards for construction and development loans,” says NAHB Chief

Economist Robert Dietz. “Upside and downside risks will become clearer as the new year progresses. An easing regulatory environment and tax cuts could act as tailwinds, but tariffs and potentially higher deficits could dampen market momentum. Additionally, a growing trend away from work-from-home could increase building activity in inner suburbs in the quarters ahead.”

New home sales increased 1.8% in February and are up 5.1% compared to a year earlier, according to data from the U.S. Department of Housing and Urban Development and the U.S. Census Bureau. The organizations also

report that overall housing starts increased 11.2% in February to a seasonally adjusted rate of 1.5 million units.

“Lower mortgage rates helped to lift demand in February, despite other near-term risks such as tariff issues and affordability concerns,” says Dietz. “While new home inventory is at an otherwise elevated 8.9 months’ supply, total home supply—new and existing—is a relatively lean 4.2 months’ supply for February.”

Builders continue to express concern. “While solid demand and a lack of existing inventory provided a boost to single-family production in February, our latest builder survey shows that builders remain concerned about challenging housing affordability conditions, most notably elevated financing and construction costs as well as tariffs on key building materials,” says Hughes.

R&R

Annual expenditures for improvements and maintenance to owner-occupied homes are expected to grow modestly through 2026, according to the latest Leading Indicator of Remodeling Activity from Harvard University’s Joint Center for Housing Studies. Year-over-year spending for home renovation and repair will increase a projected 2.5% to reach a record \$526 billion by the first quarter of 2026.

The report indicates high home values and other strong economic indicators have supported an uptick in homeowner improvement spending, but cautions economic volatility around tariffs and falling consumer confidence could dampen this expected growth.

Meanwhile, the NAHB/Westlake Royal Remodeling Market Index for the first quarter of 2025 showed a five-point drop in remodeling market sentiment. Although the reading of 63 is in positive territory, it is only the second time since the first quarter of 2020 that the RMI has been this low. Dietz echoes the LIRA’s caution. “The five-point decline in the RMI likely reflects consumer uncertainty, fueled by rising costs and tariff concerns,” he says. “Although almost all the data for the first-quarter RMI were collected before the release of specific reciprocal tariffs, the debate and uncertainty over tariffs has had an effect on consumer confidence. Indeed, remodelers responding to the RMI survey reported that their suppliers have already increased prices by an average of 6.9% since January, due to the anticipated effect of tariffs.”

If Congress fails to act now on extending the Tax Cuts and Jobs Act, 69.35% of survey respondents will delay purchasing capital equipment. Additionally, 45.23% would hold off on hiring, 44.72% would stall expansion of operations, 41.71% would limit R&D investments, and 40.20% would curb increases in employee wages or benefits.

Manufacturing

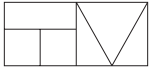
The U.S. faces a shortage of 1.9 million manufacturing workers by 2033, according to a study from the Manufacturing Institute and Deloitte. Nearly half of the 3.8 million positions that will open could go unfilled. The manufacturing industry averages about 500,000 open jobs through the past 12 months, making it a systemic challenge rather than a short-term trend, said Carolyn Lee, president and executive director, Manufacturing Institute, in the State of the Manufacturing Workforce Address in February. Retirement and manufacturing growth contribute to these shortages.

“We have to inspire more Americans to see themselves in manufacturing,” Lee says. “That starts early, with programs that spark curiosity and excitement for careers in our industry. And when I say early, I mean as young as

nine or 10 years old—because today’s fourth graders will graduate in 2033 and may be our future team members.”

The National Association of Manufacturers Q1 2025 Manufacturers’ Outlook Survey revealed 76.2% of participants cite trade uncertainties as the foremost challenge. This is a 20-percentage point increase from the prior quarter and 40 percentage points from the third quarter of last year. Increased raw material costs were the second-most cited challenge (62.3%).

The survey also says that if Congress fails to act now on extending the Tax Cuts and Jobs Act, 69.35% of survey respondents will delay purchasing capital equipment. Additionally, 45.23% would hold off on hiring, 44.72% would stall expansion of operations, 41.71% would limit R&D investments, and 40.20% would curb increases in employee wages or benefits.



Meet the Respondents

Respondents to this year's Top Manufacturers survey had about equal parts national versus regional companies, with a small percentage serving Canada only. The highest number of respondents posted sales in the \$100-\$200 million range, but participants ranged from upwards of \$1 billion in sales to less than \$15 million, ensuring the survey data represents small, medium and large manufacturers.

NATIONAL OR REGIONAL (U.S.)

National **47%**



Regional **46%**



Do not serve the US **7%**



NATIONAL OR PROVINCIAL (CANADA)

National **29%**



Provincial **8%**



Do not serve Canada **63%**



2024 VS 2023 GROSS SALES

Higher **74%**



About the same **21%**



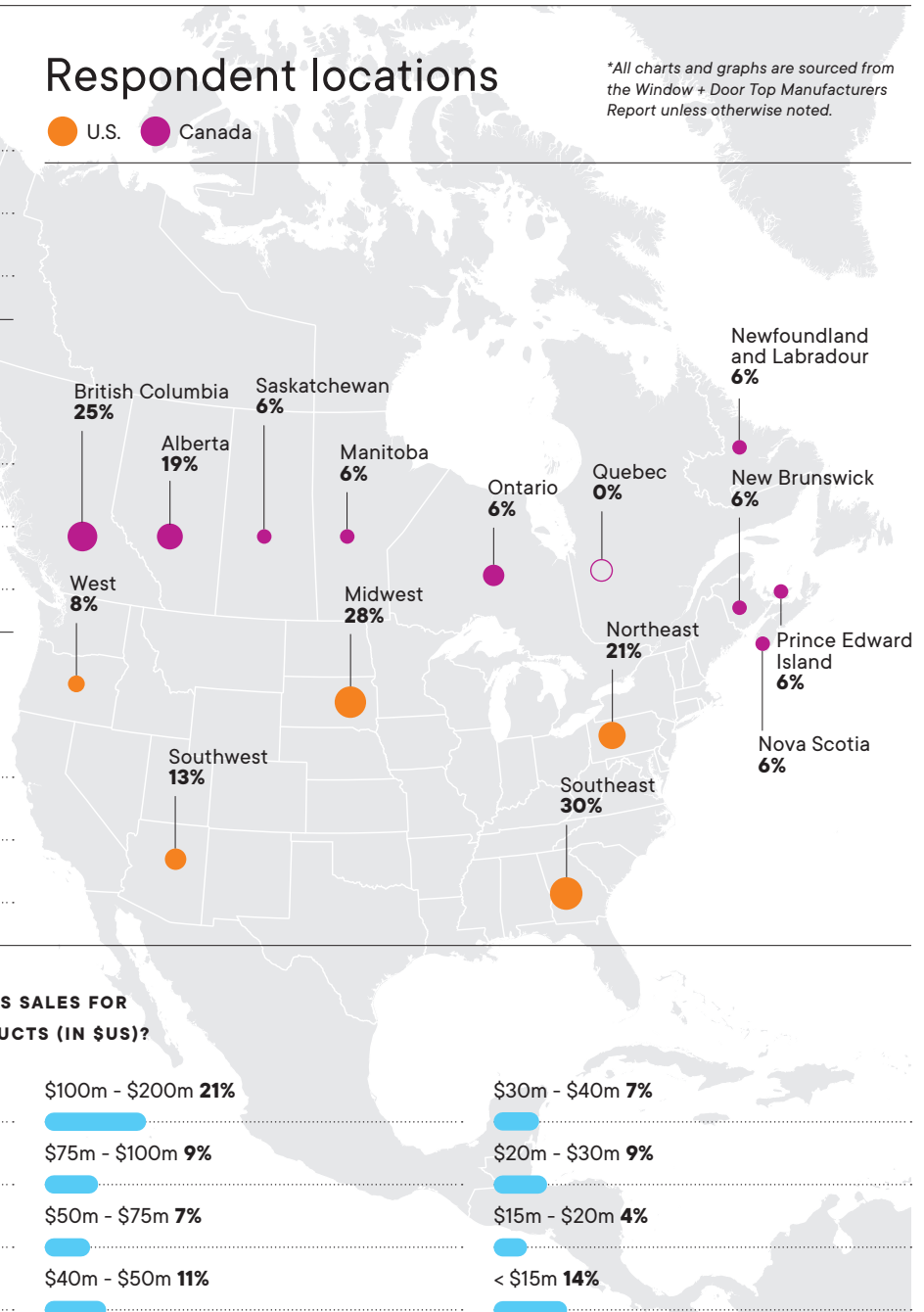
Lower **5%**



Respondent locations

● U.S. ● Canada

**All charts and graphs are sourced from the Window + Door Top Manufacturers Report unless otherwise noted.*



WHAT ARE YOUR ESTIMATED 2024 GROSS SALES FOR RESIDENTIAL WINDOW AND DOOR PRODUCTS (IN \$US)?

> \$1b **4%**



\$500m - \$1b **2%**



\$300m - \$500m **7%**



\$200m - \$300m **5%**



\$100m - \$200m **21%**



\$75m - \$100m **9%**



\$50m - \$75m **7%**



\$40m - \$50m **11%**



\$30m - \$40m **7%**



\$20m - \$30m **9%**



\$15m - \$20m **4%**



< \$15m **14%**





WHERE PRECISION MEETS PERFORMANCE

AUTOMATED MACHINERY FOR CUTTING, FABRICATING, AND ADVANCING PRODUCTION.

At Joseph Machine Company, we engineer high-performance, lineal processing systems that transform raw extrusions into precision-ready parts— built to deliver **speed, safety, and efficiency**.

Whether you're looking to automate a single step or streamline your entire production line, our solutions deliver:

- ▶ **Zero Scrap Technology** – Exceed 95% material yield and reclaim up to \$800K/year
- ▶ **Custom-Engineered Machinery** – Tailored controls, outfeeds, and fab modules built to spec
- ▶ **24/7 Service & Support** – Backed by real engineers who understand your line
- ▶ **Smarter Manufacturing** – Consolidate machines, optimize labor, and exceed throughput targets

FROM CONCEPT TO CREATION

EVOLVING AUTOMATION. ENDURING PARTNERSHIP.



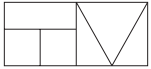
Dillsburg, PA



josephmachine.com



sales@josephmachine.com



Sales, Growth and Production

Most survey respondents indicated growth in nearly every area the survey queried about. The Window & Door Market Survey, in partnership with John Burns Research and Consulting, substantiates this. Over half (55%) of window and door companies reported volumes growing in fourth-quarter 2024 with average volumes across all companies growing 2.2% year over year. Revenue likewise increased, with an average year-over-year growth of 3.7%.

Many companies have expanded into new geographic areas and have plans to continue that growth. Several also referenced facility additions and expansions to increase production and add product lines. Marvin, for example, is investing in a 400,000-square-foot manufacturing facility in Kansas City, slated for completion this year. It also opened two new distribution centers in the past year.

“We are in the process of expanding our manufacturing facility in 2025 to add innovative aluminum storage solutions and improved aluminum fabrication equipment,” says Sarah Harper, president, All Weather Architectural Aluminum. “These investments are a predecessor to launching a whole new line of minimalist, modern windows and doors.”

More companies each year indicate they are bringing more glass operations

in house. Yet others have explored new markets, such as multifamily, commercial or focusing on new construction or replacement markets.

“ProVia has dramatically grown in every area over the past five years. We have more than doubled our employee count, built new facilities, bought and renovated other facilities, acquired a lamination company, and increased market share,” says Joe Klink, executive director of corporate engagement, ProVia.

Despite the labor concerns in the industry, many survey respondents cite hiring more people to keep up with the growth and product demand.

“We have grown from 400 to 700 employees and expanded into glass tempering through GlassBuilt Manufacturing,” shares Durabuilt Windows & Doors. “Our revenues have doubled, with consistent year-over-year growth of 18% to 24%. We have increased market share across all regions and successfully expanded into British Columbia. Innovation continues to drive our success with the introduction of new product lines. Beyond products, we have made significant advancements in supply chain efficiency, automation, IT infrastructure and operational systems, reinforcing our ability to scale.”

One respondent that serves the U.S. and Canada has grown through strate-

74%

experienced higher gross sales in 2024 compared to 2023.

90%

have experienced “measurable, significant” growth over the past five years.

78%

added production capacity in 2024.

IN WHICH GEOGRAPHIC MARKETS DID YOU SEE THE MOST GROWTH IN 2024?

Southeast **41%**

Northeast **20%**

West **16%**

Southwest **14%**

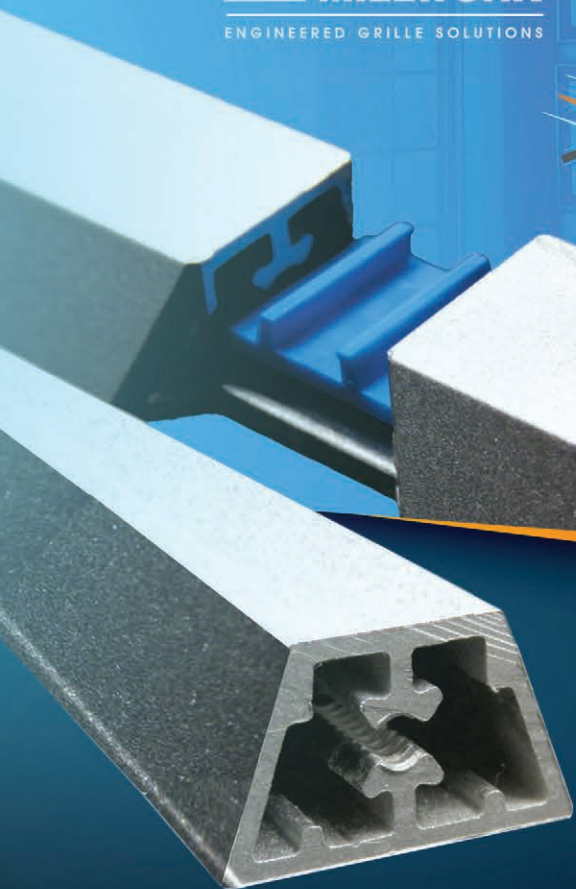
Midwest **9%**



GridRunnerTM

ASSEMBLY SYSTEM

PATENT 11795757



PROFILES

GR1



.875" WIDE X .500 TALL

GR2



.875" WIDE X .500 TALL

GR3



.875" WIDE X .500 TALL

GR4



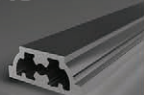
.875" WIDE X .500 TALL

GR5



.875" WIDE X .375 TALL

GR6



.875" WIDE X .375 TALL

GR7



.875" WIDE X .375 TALL

GR8



.875" WIDE X .375 TALL

FRAMES

FS-025

.625" WIDE X .531 TALL

FS-026

.781" WIDE X .531 TALL

FS-027

1.250" WIDE X .531 TALL

FS-028

.781" WIDE X 1.250 TALL

GridRunnerTM SYSTEM

On a 12 lite grille, the GridRunner system has only 5 bars that easily snap together with pre-installed GridRunner clip hardware for hassle free install

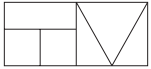


OTHER SYSTEMS

Other 12 lite systems have over 30 components that need manually assembled with pins that make it difficult and take time to install



SEE OUR SYSTEM IN ACTION



Sales

gic expansion and innovation, as well as a shareholder transition that enabled the company to invest \$8 million in automation and restructuring into business units. “Our focus on innovation—26% of current sales come from products developed in the past four years—has helped us gain market share and sustain long-term growth,” shares the company.

Production growth is also high on companies’ minds. Responses for what drives production growth vary from “everything,” or, “nearly every business factor,” to specific product materials and processes, such as aluminum, co-extrusion and insulating glass units, to specific business goals like product quality and safer processes.

“We are focused on enhancing several key areas of production, including the addition of a new glass line and upgrading our welding capabilities with new welders and weld cleaners,” says Aron Perelman, vice president marketing and sales, Climate Solutions Windows and Doors.

Enhancing production, including automation, also allows companies to shift current employees to areas that require more skill.

Products

Energy efficiency rules much of today’s product development, with over a third of respondents planning to put product development dollars into energy efficiency in 2025 and efficiency being the most-requested product feature from customers. (Larger windows and doors and color are close behind.)

Although most companies do not have Environmental Product Declarations for their products, the 18% that reported they do is up from the 11% of companies that reported having one in Window + Door’s 2025 Industry Pulse survey.

Among those that do not have EPDs, most report they are not important to the end user and creating EPDs is not a priority. “As a small company, we continuously evaluate where to make investments that will have the greatest impact on our customers, colleagues and communities. Unfortunately, the EPD has not made it to the top of priorities in recent years,” wrote one respondent.

Some, however, do note requests for EPDs, with some saying the requests are “frequent” and others saying requests are increasing. Others note it is part of their commitment to environmental responsibility and helps support transparency.

Beyond requests is a sense of responsibility for some companies. “It

aligns with our vision to create healthier and safer living environments,” writes manufacturer ES. “At ES, having an EPD reflects our commitment to sustainability and transparency. It allows us to support green building certifications, meet regulatory requirements, and provide our clients with verified data on the environmental impact of our windows and doors—helping us drive responsible innovation and reduce our carbon footprint.”

In addition to sustainability and energy-efficiency considerations, technology continues to infiltrate the product sector in two major categories: hardware and glass.

Automatic sliding doors primarily target the luxury market right now. More and more entry door manufacturers offer entry door locks controlled via smartphones, digital keypads or finger scanners. “We offer automated products because they enhance functionality, comfort and energy efficiency meeting the evolving needs of modern architecture and smart living,” representatives from ES share.

Privacy glass, such as CLiC and Fog are gaining momentum for added customization, security and energy efficiency. “We continue to explore smart

18%

of companies have Environmental Product Declarations for products.

PLEASE LIST ALL RESIDENTIAL PRODUCTS YOU MANUFACTURE

Vinyl windows **21%**

Vinyl patio doors **19%**

Aluminum patio doors **9%**

Other **9%**

Multi-panel vinyl doors **8%**

Clad windows **6%**

Fiberglass entry doors **6%**

Wood windows **4%**

Multi-slide packaging aluminum clad doors **4%**

Steel doors **3%**

Wood doors **3%**

Interior doors **3%**

Fiberglass windows **1%**

Skylights **1%**

WHERE DO YOU PLAN TO FOCUS YOUR PRODUCT DEVELOPMENT DOLLARS IN 2025?

Energy efficiency **34%**

Functionality **24%**

Aesthetics **21%**

Technology and other smart functions **18%**

Other **4%**

WHAT PERCENTAGE OF PRODUCTS ARE NEW CONSTRUCTION VERSUS REPLACEMENT?

More than 50% new construction **46%**

More than 50% replacement **33%**

50/50 **14%**

100% replacement **5%**

100% new construction **2%**

PLEASE SELECT THE TOP THREE FEATURES IN PRODUCTS YOUR CUSTOMERS ARE REQUESTING.

Larger windows/doors **23%**

Energy-efficient products **23%**

Color **20%**

Customized products **13%**

Impact-rated products **11%**

Sound abatement **6%**

Historically accurate products **2%**

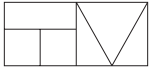
Smart and tech-enabled products **2%**

ARE YOU EXPLORING/DO YOU HAVE SMART HOME PRODUCTS?

No **51%**

Yes **26%**

No, but we plan to **23%**



Products

home products,” says Dean Ruark, VP of engineering and innovation, Miter Brands. “Within the Florida market, we offer automated lock solutions for select door systems that provide unique keyless and remote entry solutions to drive the multipoint locks required in

the impact resistant market. In addition, our iLAB offers privacy glass solutions while also meeting impact-resistant requirements, allowing the homeowner to control privacy, without compromising the benefits of 24/7 protection from hurricanes.”

WHAT TECHNOLOGIES HAVE YOU IMPLEMENTED/ARE YOU CONSIDERING IMPLEMENTING TO ENHANCE ENERGY EFFICIENCY? (SELECT UP TO THREE.)

Triple pane **21%**



Gas fill **17%**



Fourth surface low-e **17%**



Glass coatings **17%**



Foam fill **9%**



Thermally broken aluminum **7%**



Skinny triples **5%**



Larger IG pockets **5%**



Other **3%**



Aerogel **1%**



Dynamic glass **0%**



WHICH MATERIALS ARE MOST CHALLENGING TO SOURCE?

Aluminum **22%**



Glass **21%**



Hardware and components **20%**



Laminate **10%**



Vinyl **9%**



Wood **6%**



Weatherstripping **4%**



Sealants **2%**



Paint **1%**



Thermal breaks **1%**



Glass spacers **1%**



Fiberglass resin **1%**



Other **1%**



Labor

Despite labor being an evergreen pain point, manufacturers indicate it's no harder to find workers than usual. And most plan to hire new employees this year. Challenging though recruitment can be, it is employee retention that tops manufacturers' labor struggles. A positive company culture and competitive salaries are by far the most effective retention strategies.

On the recruitment side, nearly one-third of companies note referrals are the most effective strategy. Agencies and open interviews come in a distant second and third.

Training is another big component of labor and serves to both attract new talent and retain existing talent. Companies share a range of difficulties around training new employees. Some of it involves employee motivation and reticence to learn new skills. Other challenges revolve around language barriers. Many comments reference the time commitment for training—the time it takes to train a new employee, the struggle to find time among an already stretched-thin workforce and the years it can take to build a true knowledge base for what can be very customized and complex products. “The majority of our manufacturing process are craftsman positions, with hand tools. Learning the materials behaviors and natural tendencies and learning the ‘feeling’ is a talent that goes beyond a standard operating procedure,” shares Tanisha

Arellano, chief operating officer, Pan-
oramic Doors.

“Training new employees can be time-consuming, especially if it involves teaching complex processes or systems,” shares Patrys Wild, senior vice president and chief human resources officer, YKK AP North America. “Balancing training with regular work responsibilities can be challenging for both the trainer and the trainee. This applies to both sides of training; managers must dedicate time while still completing their work. The new employee must learn everything with the expectation that they can begin producing in short order, sometimes even before they are completely trained.”

Wild further notes that it can be difficult for new employees to retain large amounts of information, especially as it could be likely new employees lack essential knowledge and experience in fenestration. “Because we participate in a niche industry, we sometimes underestimate the ability for new employees to grasp key concepts quickly,” she says. “Reinforcement and repetition may be necessary to ensure comprehension and retention.”

Cross-training is another critical part of training, which also demands time and a willingness to teach and learn. “This requires new hires to learn and master a wide range of tasks and procedures quickly, while we balance our daily production requirements,” says Perelman.

“The majority of our manufacturing process are craftsman positions, with hand tools. Learning the materials behaviors and natural tendencies and learning the ‘feeling’ is a talent that goes beyond a standard operating procedure.”

WHAT IS YOUR BIGGEST LABOR CHALLENGE?

Retaining **33%**

Recruitment **28%**

Training **25%**

Wage expansion **7%**

Bilingual communication **4%**

Other **4%**

WHAT ARE YOUR MOST EFFECTIVE EMPLOYEE RECRUITMENT STRATEGIES?

Referrals **61%**

Agencies **16%**

Open interviews **7%**

Social media **5%**

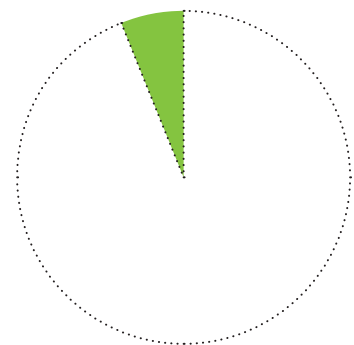
Other **5%**

Job fairs **2%**

Partnerships with local schools **2%**

Location signage **2%**

Signing bonuses **0%**



Direct labor costs grew **6%** year over year

Source: JBREC Window & Door Market Survey

WHAT ARE YOUR MOST EFFECTIVE EMPLOYEE RETENTION STRATEGIES?

Company culture **39%**

Competitive salaries **30%**

Increased benefits **11%**

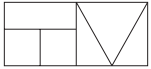
Opportunity for advancement **9%**

On the job training **5%**

Flexible work shifts **4%**

Other **4%**

Education incentives **0%**



Automation & Technology

Three years ago, 84% of manufacturers used automation. Today, that number has grown further to 91%. Nearly two-thirds anticipate adding automation in the coming year. Welders, cleaners, robotics, tooling, material handling, assembly, packaging and glass fabrication are all on the table for where companies leverage automation.

“It can vary from a simple machine that makes a repetitive process easier to a more complex machine cell that automates multiple processes,” writes Miter Brands. “In short, we’re looking to make the hardest work easier.”

This year’s survey asked manufacturers how they decide to add automation. Return on investment, enhanced employee safety and cost-benefit analyses factor into the decision, but it goes much deeper than that.

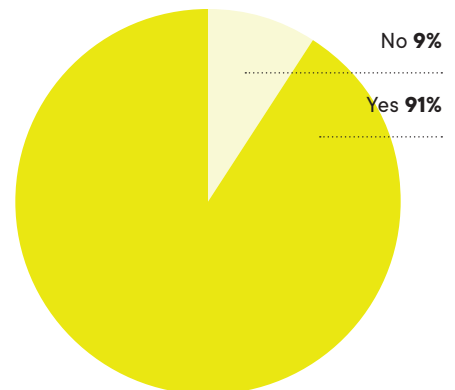
Automation and technology should facilitate continuous improvement. ES shares its process: “We evaluate the potential return on investment, considering factors like increased throughput, labor optimization and reduced waste. We also assess how automation will integrate with our existing systems and workforce,

“We evaluate the potential return on investment, considering factors like increased throughput, labor optimization and reduced waste.”

ensuring it supports—not disrupts—overall operations.”

Artificial intelligence is another area of growth. While only 36% of respondents use it in their businesses, the figure is growing. Most manufacturers report using it in an office setting. AI helps generate marketing materials and automates meeting minutes and other administrative tasks. It can also help employees craft emails, communications, and respond to service issues and online reviews.

DO YOU CURRENTLY EMPLOY AUTOMATION IN YOUR FACTORY?



WHAT ARE THE BIGGEST BENEFITS OF AUTOMATION?

Increased output **44%**

Increased quality **38%**

Labor savings **15%**

Cost savings **2%**

Operational transparency **0%**

Looking Ahead

Housing affordability is affecting the industry. While 40% indicate it hasn't influenced their business, a full quarter are unsure, with the remaining indicating it has. The list of how is extensive. Builders are downsizing their homes to increase affordability. Markets aren't growing with the economy. High interest rates affect both new construction and R&R. An overall increase in home costs leaves less for people to spend on home improvement costs, plus many consumers are conservative with their incomes during times of uncertainty.

Of note, however, is that the luxury market remains mostly insulated from the effects of housing affordability.

The Window & Door Market Survey showed material costs increased an average of 6% year over year for companies. However, more than two-thirds of respondents report no extended material lead times, allowing for improved cycle times.

Many respondents wrote about concern over what some call the "tariff wars." They've extended the lead times on raw materials and, of course, cost. Some companies seek to renegotiate vendor partnerships and explore other supply chain options.

"The economic climate is decreasing consumers' confidence, which in turn will translate into potential lower sales."

"The economic climate is decreasing consumers' confidence, which in turn will translate into potential lower sales," writes one manufacturer. "This will compound with rising labor and material costs, challenging the overall business profitability."

Top Manufacturers survey respondents shared several tactics for tackling tariffs:

- Sourcing domestically as much as possible
- Raising prices as needed

- Ensuring secondary and tertiary suppliers
- Maintaining transparency with customers
- Absorbing costs where possible
- Meeting with elected representatives
- Splitting the costs with suppliers

Data from John Burns backs this up. About 73% of companies expect to raise prices in 2025 with an average increase of 3.6%. The same survey revealed an overall optimism for business in 2025: 91% expect full-year 2025 revenue to be the same or higher than in 2024. Of note, however, is the likelihood that revenue increases will be related to price rather than increased volume.

It can be easy to focus on the challenges, but the other side of the same coin is the opportunities the industry looks to leverage. Those opportunities can include growing market share in adjacent geographies, adding products and expanding marketing efforts. One company notes it is recognizing cost efficiencies through doing its own glass. Others are growing into the multifamily market. ■

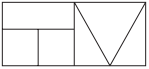


Photo courtesy of Vector Windows

The List

Regional definitions

Northeast: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Puerto Rico, Rhode Island, Vermont, Virgin Islands, Virginia and West Virginia.

Southeast: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin.

Southwest: Arkansas, Colorado, Louisiana, Montana, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah and Wyoming.

West: Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon and Washington.

U.S. - National

Arcadia Custom

arcadiacustom.com

303/665-5700

Vernon, California

PRODUCT LINES: Steel, thermal aluminum and wood windows; steel, thermal aluminum and wood swing, sliding and pivot doors; wood entry doors; wood interior doors; impact-rated windows; impact-rated swing and sliding doors

Climate Solutions Windows & Doors

cswindows.com

847/233-9800

Franklin Park, Illinois

REVENUE: \$15 Million to \$20 Million

PRODUCT LINES: Vinyl windows and patio doors; Clad windows; Multi-panel vinyl doors

Croft LLC

croftllc.com

800/222-3195

Magnolia, Mississippi

PRODUCT LINES: Aluminum and vinyl windows and patio doors

Earthwise Group LLC

earthwisewindows.com

513/755-6707

Loudon, Tennessee

SUBSIDIARIES/SISTER COMPANIES:

Acadian Windows, Advanced Window Products, Alpen High Performance Products, D&W Windows, Dasan Glass and Windows, Earthwise Windows of Kansas City, Eastern

Architectural Systems, Home Guard Industries, Mercury Excelum, Morfe Windows, RJT Industries, Sprouse Windows, Synergy Windows, U.S. Energy Windows, Western Window

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors

ES

eswindows.com

754/900-2300

Miami, Florida

PARENT COMPANY: Tecnoglass Inc.

SUBSIDIARIES/SISTER COMPANIES:

ES Metals, Tecnoglass SAS, GM&P, Energia Solar ESWindows, Componenti

REVENUE: \$300 Million to \$500 Million

PRODUCT LINES: Vinyl windows and patio doors; Aluminum patio doors; Interior doors

Euro-Wall

euro-wall.com

888/989-3876

North Port, Florida

PARENT COMPANY: Euro-Wall, LLC

REVENUE: \$40 Million to \$50 Million

PRODUCT LINES: Clad windows; Aluminum patio doors; Multi-slide pocketing aluminum clad doors

FrontLine Bldg. Products Inc.

frontlinebldg.com

920/393-1340

Green Bay, Wisconsin

PRODUCT LINES: Exterior entry door cladding, windows, geometric windows, door transoms, grilles, commercial doors, commercial storefront grilles

GlassCraft Door Co.

glasscraft.com

713/690-8282

Houston, Texas

REVENUE: \$40 Million to \$50 Million

PRODUCT LINES: Fiberglass entry doors; Wood doors; Barn Doors

Ikon Windows LLC

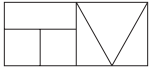
ikonwindows.com

888/365-4934

Brooklyn, New York

REVENUE: Less than \$15 Million

PRODUCT LINES: Vinyl windows; Clad windows; Wood windows;



Aluminum patio doors; Multi-slide pocketing aluminum clad doors

Interstate Window & Door Co.

interstatebldg.com
570/905-2716
Pittston, Pennsylvania
SUBSIDIARIES/SISTER COMPANIES:
IWD Installation + Services Inc.
PRODUCT LINES: Vinyl windows, CompositWood windows

Lincoln Windows & Patio Doors

lincolnwindows.com
715/536-2461
Merrill, Wisconsin
REVENUE: \$100 Million to \$200 Million
PRODUCT LINES: Clad windows; Aluminum patio doors; Multi-slide pocketing aluminum clad doors

Lindsay Windows

lindsaywindows.com
507/625-4278
North Mankato, Minnesota
SUBSIDIARIES/SISTER COMPANIES:
Lindsay Windows Minnesota, LLC
Lindsay Windows Missouri, LLC
Lindsay Windows Illinois, LLC
Lindsay Windows Georgia, LLC
Lindsay Windows Washington, LLC
Lindsay Windows California, LLC
Lindsay Windows Texas, LLC
REVENUE: \$100 Million to \$200 Million
PRODUCT LINES: Vinyl windows and patio doors; Multi-slide pocketing aluminum clad doors; Fiberglass entry doors

NT Window Inc.

ntwindow.com
800/969-8830
Fort Worth, Texas
PRODUCT LINES: Vinyl windows and patio doors, aluminum windows,

Impact windows, aluminum patio doors, sunrooms

OpenView Products LLC

openviewproducts.com
713/926-8500
Missouri City, Texas
PARENT COMPANY: OpenView Products HoldCo
SUBSIDIARIES/SISTER COMPANIES:
Showcase Window and Door Co, LLC. Hayfield Window and Door Co, LLC.
REVENUE: \$50 Million to \$75 Million
PRODUCT LINES: Vinyl windows and patio doors

Panoramic Doors

panoramicdoors.com
817/952-3500
Fort Worth, Texas
REVENUE: \$20 Million to \$30 Million
PRODUCT LINES: Aluminum patio doors; Multi-panel vinyl doors; Vinyl patio doors

ProVia

provia.com
800/669-4711
Sugarcreek, Ohio
REVENUE: \$500 Million to \$1 Billion
PRODUCT LINES: Vinyl windows and patio doors; Wood windows; Multi-panel vinyl doors; Fiberglass entry doors; Steel doors; aluminum storm doors

Steves & Sons Inc.

stevesdoors.com
800/627-5111
San Antonio, Texas
PRODUCT LINES: Barn doors, bi-fold doors, entry doors, fiberglass entry and patio doors, glass exterior and interior doors, interior doors, patio doors, prehung doors, steel doors, wood entry and patio doors

Thermal Windows LLC

thermalwindows.com
918/663-7580
Tulsa, Oklahoma
REVENUE: Less than \$15 Million
PRODUCT LINES: Vinyl windows; Thermally broken aluminum windows, thermally broken aluminum doors

Quaker Windows & Doors

quakerwindows.com
800/347-0438
Freeburg, Missouri
REVENUE: \$100 Million to \$200 Million
PRODUCT LINES: Vinyl windows and patio doors; Clad windows; Wood windows; Aluminum patio doors; Multi-slide pocketing aluminum clad doors

Wincore Windows & Doors

wincorewindows.com
304/485-7463
Parkersburg, West Virginia
REVENUE: \$100 Million to \$200 Million
PRODUCT LINES: Vinyl windows and patio doors; Fiberglass entry doors

doors; Multi-slide pocketing aluminum clad doors; Aluminum Windows

ATI Windows

vinylwindows.co
909/946-3697
Riverside, California
SUBSIDIARIES/SISTER COMPANIES:
ABC Window Systems
REGION: West
PRODUCT LINES: Vinyl casement windows, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows

Aurora Doors & Windows

auroradoorsandwindows.com
847/804-4280
Wheeling, Illinois
REGION: Midwest
PRODUCT LINES: Vinyl windows and patio doors

Castle Windows

castlewindows.com
800/360-4400
Mount Laurel, New Jersey
REGION: Northeast
PRODUCT LINES: Vinyl replacement, casement, awning, garden, and slider windows, steel and fiberglass doors

Comfort View Products LLC

cvpwindows.com
770/251-4050
Newnan, Georgia
REGION: Southeast
REVENUE: \$40 Million to \$50 Million
PRODUCT LINES: Vinyl windows and patio doors

Comfort Windows

comfortwindows.com
716/340-0660
Syracuse, New York
REGION: Northeast

U.S. - Regional

Air Master Windows and Doors

airmasterwindows.com
787/623-1800
Barceloneta, Puerto Rico
REGION: Northeast, Southeast
PRODUCT LINES: Impact-resistant windows and doors

All Weather Architectural Aluminum

allweatheraaa.com
707/654-6535
Vacaville, California
REGION: Southwest, West
PRODUCT LINES: Aluminum patio

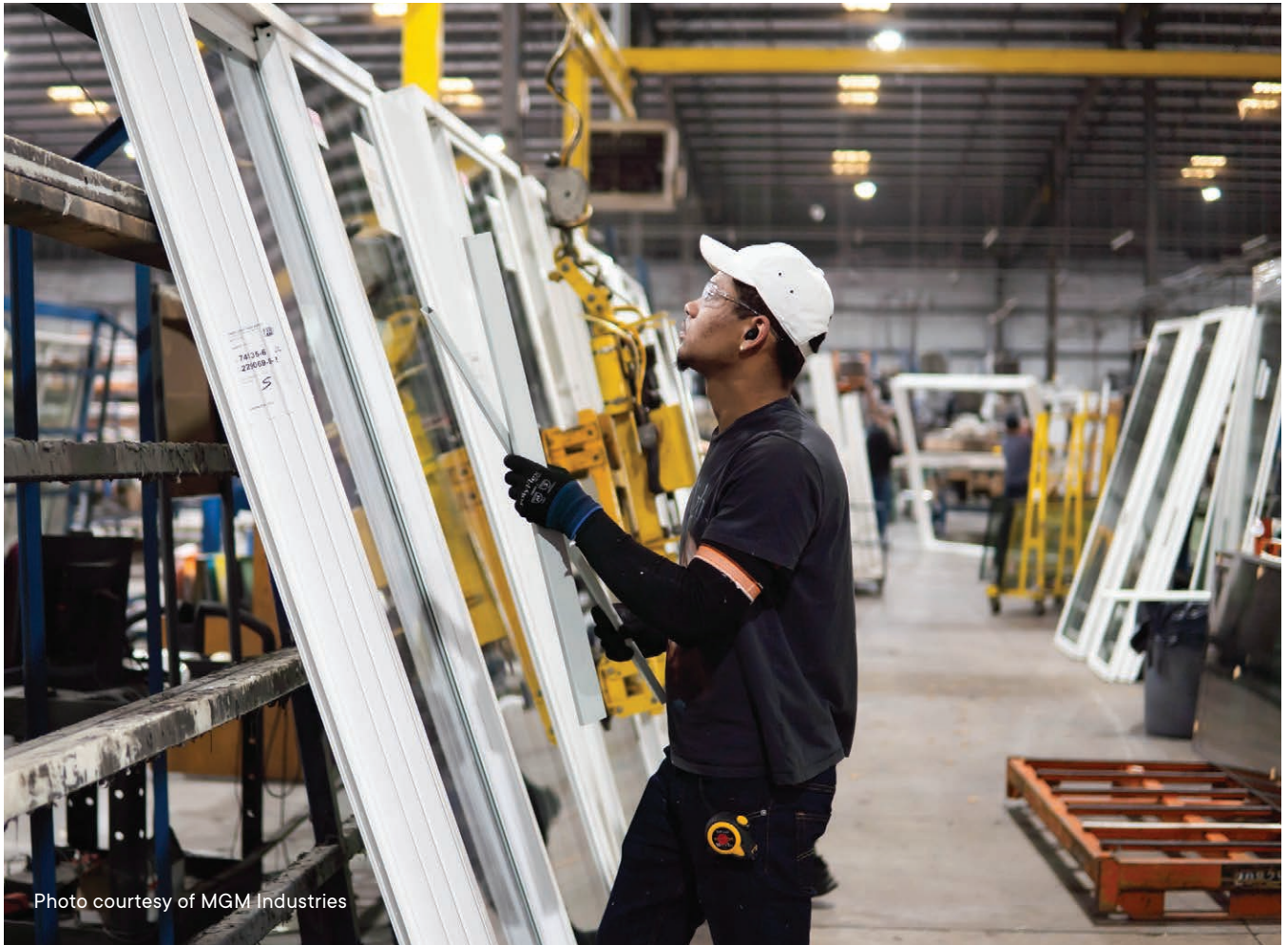


Photo courtesy of MGM Industries

REVENUE: \$75 Million to \$100 Million

PRODUCT LINES: Vinyl windows

Elevate Windows and Doors

elevatewindows.net

469/490-1100

Grand Prairie, Texas

REGION: Southeast, Southwest

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors

Gerkin Windows and Doors

gerkin.com

402/494-6000

South Sioux City, Nebraska

REGION: Midwest, Southwest

REVENUE: \$75 Million to \$100 Million

PRODUCT LINES: Vinyl windows and patio doors; Aluminum patio doors; Multi-panel vinyl doors; Aluminum windows

Gilkey Window

gilkey.com

513/310-7380

Cincinnati, Ohio

REGION: Midwest

PRODUCT LINES: Vinyl windows, vinyl doors, fiberglass windows, fiberglass doors

Glass Rite

glassrite.com

505/764-9899

Albuquerque, New Mexico

REGION: Southwest

REVENUE: Less than \$15 Million

PRODUCT LINES: Vinyl windows

Ideal Window

idealwindow.com

800/631-3400

Bayonne, New Jersey

REGION: Northeast

REVENUE: \$20 Million to \$30 Million

PRODUCT LINES: Vinyl windows

International Window

internationalwindow.com

800/477-4032

Corona, California

SUBSIDIARIES/SISTER COMPANIES:

Precision Screen, Vista Security Screens, Raco Interior Products, Northstar Roll Form

REGION: West

REVENUE: \$50 Million to \$75 Million

PRODUCT LINES: Vinyl windows and patio doors; Aluminum patio doors; Aluminum Swing Doors

Joyce Manufacturing Co.

joycemfg.com

440/239-9100

Berea, Ohio

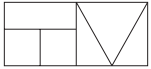


Photo courtesy of Crystal Window & Door Systems



SUBSIDIARIES/SISTER COMPANIES:

Joyce Factory Direct

REGION: Southeast, Midwest

REVENUE: \$30 Million to \$40 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors; vinyl sunrooms, patio roofs, and screen rooms

Mathews Brothers Co.

mathewsbros.com

207/338-3360

Belfast, Maine

REGION: Northeast

PRODUCT LINES: Vinyl windows and patio doors

MGM Industries

mgmindustries.com

800/476-5584

Hendersonville, Tennessee

REGION: Southeast, Midwest

REVENUE: \$50 Million to \$75 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors; Vinyl Swing Doors

Midway Windows and Doors

midwaywindows.com

708/594-2600

Chicago, Illinois

SUBSIDIARIES/SISTER COMPANIES:

Alliance

REGION: Midwest

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors

Moss Supply Co.

mosssupply.com

704/900-1634

Charlotte, North Carolina

REGION: Southeast

PRODUCT LINES: Vinyl windows and doors

Northeast Windows USA Inc.

northeastwindowsusa.com

516/378-6577

Merrick, New York

SUBSIDIARIES/SISTER COMPANIES:

Quality Lineals USA Inc.

REGION: Northeast

REVENUE: \$40 Million to \$50 Million

PRODUCT LINES: Vinyl windows and patio doors

Okna Windows Manufacturing

oknawindows.com

215/788-7000

Bristol, Pennsylvania

REGION: Northeast, Midwest

PRODUCT LINES: Vinyl and composite windows and patio doors

Polaris Windows and Doors

polariswindows.com

216/926-6151

Austintown, Ohio

REGION: Northeast, Midwest, Southeast, Southwest

PRODUCT LINES: Vinyl windows and patio doors; steel and fiberglass entry doors

Premium Windows & Doors

premiumwindows.com

562/333-4805

Corona, California

REGION: West

REVENUE: \$40 Million to \$50 Million

PRODUCT LINES: Vinyl windows and patio doors; Aluminum patio doors; Multi-panel vinyl doors; Aluminum Windows

Regency Windows Plus

regencypluswindow.com

570/339-3374

Mount Carmel, Pennsylvania

REGION: Northeast, Southeast, Midwest, Southwest

PRODUCT LINES: Vinyl replacement windows, sliding glass doors, impact- and non-impact replacement windows

Seaway Manufacturing Corp.

seawaymfg.com

814/898-2255

Erie, Pennsylvania

REGION: Northeast, Southeast, Midwest

REVENUE: Less than \$15 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors

Slocomb Windows and Doors Inc.

slocombwindows.com

570/825-3675

Wilkes-Barre, Pennsylvania

REGION: Northeast, Southeast, Midwest

REVENUE: \$30 Million to \$40 Million

PRODUCT LINES: Vinyl windows and patio doors

Stewart Brannen Millworks

brannenmillwork.com

912/488-2397

Register, Georgia

REGION: Southeast

PRODUCT LINES: Wood windows, wood doors, interior doors

The Coeur d'Alene Window Co.

coeurdalenewindow.com

509/340-0705

Spokane, Washington

SUBSIDIARIES/SISTER COMPANIES:

McVay Brothers Inc.

REGION: Southwest, West

PRODUCT LINES: Patio doors; vinyl multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows

Thompson Creek Window Co.

thompsoncreek.com

866/572-7335

Lanham, Maryland

REGION: Northeast

PRODUCT LINES: Replacement vinyl windows and patio doors, steel and fiberglass entry doors

United Window & Door

unitedwindowmfg.com

973/912-0600

Springfield, New Jersey

REGION: Northeast, Southeast, Midwest

REVENUE: \$200 Million to \$300 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors

Upstate Door

upstatedoor.com

800/570-8283

Warsaw, New York

SUBSIDIARIES/SISTER COMPANIES:

Architectural Openings Inc.

REGION: Northeast

REVENUE: \$20 Million to \$30 Million

PRODUCT LINES: Wood windows and doors; Interior doors

Vinyl Kraft

vinylkraft.com

740/456-4949

New Boston, Ohio

REGION: Southeast, Midwest, Northeast

REVENUE: \$20 Million to \$30 Million

PRODUCT LINES: Vinyl windows and patio doors

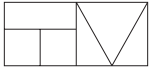
Vinylmax Windows

vinylmax.com

513/772-2247

Hamilton, Ohio

REGION: Northeast, Southeast, Midwest, Southwest



REVENUE: \$75 Million to \$100 Million

PRODUCT LINES: Vinyl windows and patio doors

Viwinco Inc.

viwinco.com

610/286-8884

Morgantown, Pennsylvania

REGION: Northeast, Southeast, Midwest

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors; Multi-panel vinyl doors

ViWinTech Window & Door Inc.

viwintech.com

800/788-1050

Paducah, Kentucky

REGION: Southeast, Midwest

PRODUCT LINES: Vinyl windows and patio doors

Vytex Windows

vytexwindows.com

877/747-8735

Laurel, Maryland

REGION: Midwest, Southeast, Northeast

REVENUE: \$75 Million to \$100 Million

PRODUCT LINES: Vinyl windows and patio doors

Wallside Windows

wallside.com

313/292-4400

Taylor, Michigan

REGION: Midwest

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors

Winchester Industries

winchesterwindows.net

724/639-3551

Saltsburg, Pennsylvania

REGION: Northeast, Midwest

Southwest

PRODUCT LINES: Vinyl windows, steel doors, vinyl patio doors

Window Mart

windowmart.com

888/283-6278

Royal, Arkansas

REGION: Southeast, Midwest, Southwest

PRODUCT LINES: Vinyl windows and patio doors

YKK AP America Inc.

ykkap.com

678/838-6000

Atlanta, Georgia

REGION: Southeast

PRODUCT LINES: Vinyl windows and patio doors

Canada

(National unless otherwise indicated)

All Weather Windows

allweatherwindows.com

780/451-0670

Edmonton, Alberta, Canada

Provinces: Alberta, British Columbia, Saskatchewan, Manitoba

PRODUCT LINES: Vinyl windows, clad windows, fiberglass and steel entry doors, patio doors, multi-panel vinyl doors

Centra Windows & Install Pros

centrawindows.com

888/534-3333

Langley, British Columbia, Canada

REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors; Clad windows; Fiberglass windows; Multi-panel vinyl doors; Skylights; Fiberglass entry doors



Photo courtesy of Panoramic Doors

Durabuilt Windows and Doors

durabuiltwindows.com

780/455-0440

Edmonton, Alberta

SUBSIDIARIES/SISTER COMPANIES:

Glassbuilt Manufacturing, Durabuilt Commercial Solutions
PRODUCT LINES: Vinyl windows, fiberglass windows, patio doors, entry doors

Madero

madero.ca

306/934-4600

Saskatoon, SK

PARENT COMPANY: West Four Group of Companies

REVENUE: \$20 Million to \$30 Million

PRODUCT LINES: Aluminum patio doors; Fiberglass entry doors; Steel doors; Wood doors; Interior doors

Regal Aluminum Windows & Doors

regalaluminum.com

905/738-4375

Concord, Ontario, Canada

SUBSIDIARIES/SISTER COMPANIES:



Progress Doors Limited, Regal
Windows & Railings Systems Inc.
PRODUCT LINES: Vinyl windows and
patio doors

Solaris International

solarisquebec.com
800/363-0643
Quebec, Canada

PRODUCT LINES: Vinyl windows
and patio doors, hybrid windows
(aluminum exterior, PVC interior)

Stage Windows and Doors

stagewindows.com
883/887-8243

Vaughan, Ontario, Canada
REVENUE: \$50 Million to \$75
Million

PRODUCT LINES: Vinyl windows
and patio doors; Steel doors;
Fiberglass entry doors

Vinyl Window Designs

vinylwindowdesigns.com
416/741-7820

Toronto, Ontario, Canada
SUBSIDIARIES/SISTER COMPANIES:
Vinyl Window Designs, Aluminum
Window Designs, The Vinyl
Company, Performance Windows
& Doors, Vinylbilt

PRODUCT LINES: Vinyl windows and
patio doors, aluminum windows,
steel entry doors, fiberglass entry
doors

Wintegra Windows Inc.

wintegra.ca
778/981-0309

Abbotsford, BC, Canada
PRODUCT LINES: Tilt & Turn
Windows, casement windows, lift
& slide doors, exterior swing door,
French patio door

U.S. And Canada

National unless otherwise indicated

Andersen Windows & Doors

andersenwindows.com
800/426-4261

Bayport, Minnesota
SUBSIDIARIES/SISTER COMPANIES:
Andersen Windows and Doors,
Renewal by Andersen, Heritage,
MQ and Weiland brand names
REVENUE: More than \$1 Billion
PRODUCT LINES: Wood, composite,

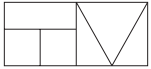


Photo courtesy of Joyce Manufacturing



vinyl-clad wood windows, aluminum and fiberglass windows, entry doors, and patio doors

Associated Materials

associatedmaterials.com
234/542-4328
Cuyahoga Falls, Ohio

SUBSIDIARIES/SISTER COMPANIES:
Alside, Associated Materials Innovations, Gentek Building Products

PRODUCT LINES: Vinyl windows and patio doors

Bigfoot Door

bigfootdoor.com
905/602-5887
Mississauga, Ontario

REVENUE: Less than \$15 Million
PRODUCT LINES: Aluminum patio doors; Aluminum windows and entrance doors

Builders FirstSource

buildwithbmc.com
770/429-9285
Marietta, Georgia

PRODUCT LINES: Vinyl windows

Champion

championwindow.com
877/424-2674
Cincinnati, Ohio

PARENT COMPANY: Great Day Improvements
PRODUCT LINES: Vinyl windows

Cornerstone Building Brands

cornerstonebuildingbrands.com
888/975-9436
Cary, North Carolina

SUBSIDIARIES/SISTER COMPANIES:
Ply Gem, Simonton, Silver Line, Atrium, American Craftsman, North Star, Cascade, Prime, Ertha, Harvey, Thermo-Tech, SoftLite

REVENUE: More than \$1 Billion
PRODUCT LINES: Vinyl windows

and patio doors; Clad windows; Aluminum patio doors; Multi-panel vinyl doors; Fiberglass entry doors

Crystal Window & Door Systems

crystalwindows.com
718/961-7300
Flushing, New York

SUBSIDIARIES/SISTER COMPANIES:
Crystal Pennsylvania Window & Door Systems (Crystal PA); Crystal Pacific Window & Door Systems (Crystal Pacific); Crystal Illinois Window & Door Systems (Crystal Chicago); Crystal Canada

PROVINCE: Ontario
REVENUE: \$100 Million to \$200 Million

PRODUCT LINES: Vinyl windows and patio doors; Aluminum patio doors; Multi-panel vinyl doors

EuroLine Windows Inc.

euroline-windows.com
604/640-8485
Delta, BC Canada

PRODUCT LINES: Vinyl windows, vinyl patio doors, aluminum patio doors, multi-panel vinyl doors

Everlast Group of Companies

everlastproducts.ca
800/897-5118
Etobicoke, Ontario, Canada
REGION: West

PRODUCT LINES: Aluminum patio doors, porch enclosures, sliding doors

Fenplast Inc.

fenplast.com
514/990-0012
Candiac, Québec, Canada
SUBSIDIARIES/SISTER COMPANIES:
Altek Portes et Fenêtres; Altek Installation; Fenêtres Lajeunesse inc.; Solarcom inc.; Ramp-Art; ADG Portes et Fenêtres inc.;

Portes et Fenêtres Magog inc.; Portes et Fenêtres Rimouski inc.; Portes et Fenêtres Rive-Sud; Portes et fenêtres Sorel inc.; Portes et fenêtres Terrebonne; Portes et Fenêtres Lac-Brome inc.; Bourcier Portes et Fenêtres inc.; Portes et Fenêtres Québec inc.; Fenex Windows and Doors; Comfort King Limited Portes et Fenêtres Saint-Hilaire inc.; Portes et Fenêtres Saint-Jérôme inc.; Vitrerie Repentigny inc.; Portes et Fenêtres De Villers inc.; Ouellet Portes et Fenêtres inc.; Édificom inc.

PRODUCT LINES: Vinyl windows, wood windows, vinyl patio doors, aluminum patio doors, steel doors, wood doors, interior doors

Hope's Windows Inc.

hopeswindows.com
716/665-5124
Jamestown, New York

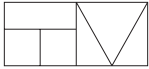
PRODUCT LINES: Steel and bronze windows and doors, hurricane- and impact-rated windows and doors

Inline Fiberglass Ltd.

inlinefiberglass.com
866/566-5656
Toronto, Ontario, Canada
PRODUCT LINES: Fiberglass windows and patio doors

Innotech Windows & Doors Inc.

innotech-windows.com
604/854-1111
Langley, British Columbia
PARENT COMPANY: Innotech Holdings Ltd.
SUBSIDIARIES/SISTER COMPANIES:
Innotech Windows Services Inc.
REVENUE: \$40 Million to \$50 Million
PRODUCT LINES: Vinyl windows and patio doors; Huge Lift and Slide Doors; Multi-panel vinyl doors

**Jeld-Wen**

jeld-wen.com
704/378-5700

Charlotte, North Carolina

SUBSIDIARIES/SISTER COMPANIES:
LaCantina, VPI, MMI, ABS, Dana,
Swedoor

REVENUE: More than \$1 Billion
PRODUCT LINES: Vinyl windows,
composite windows, clad
windows, wood windows, vinyl
patio doors, aluminum patio
doors, multi-panel vinyl doors,
multi-slide pocketing aluminum
clad doors, fiberglass entry
doors, steel doors, wood doors,
interior doors

Kensington HPP Inc

khpp.us
724/236-5300

Vandergrift, Pennsylvania

PARENT COMPANY: Kensington HPP,
Inc

REGION: Northeast, Southeast,
Midwest, Southwest
REVENUE: \$15 Million to \$20 Million
PRODUCT LINES: Vinyl windows and
patio doors; Insulated Glass

Kolbe & Kolbe Millwork Co.

kolbewindows.com
715/842-5666

Wausau, Wisconsin

PRODUCT LINES: Wood, vinyl and
aluminum windows and patio
doors

Kömmerling USA

kommerling.us
800/330-2239
Huntsville, Alabama

PARENT COMPANY: profine group
PRODUCT LINES: Lift & slide patio
doors, tilt-and-turn windows,
balcony doors, residential doors,
large fixed lights

LePage Millwork

lepagemillwork.com
877/289-0191
Quebec, Canada

REGION: Northeast

PRODUCT LINES: Wood and
aluminum-clad windows and
doors, vinyl windows and doors,
hybrid aluminum/vinyl windows,
steel doors

Loewen Windows and Doors

loewen.com
431/305-0874
Steinbach, Manitoba
REVENUE: \$100 Million to \$200
Million

PRODUCT LINES: Wood windows;
Clad windows; Multi-slide
pocketing aluminum clad doors;
Wood doors

Lux Windows and Doors

luxwindows.com
403/276-7770
Calgary, Alberta, Canada
PRODUCT LINES: Vinyl windows,
clad windows, wood windows,
vinyl patio doors, aluminum patio
doors, multi-panel vinyl doors,
fiberglass entry doors

Manhattan Steel Door and Window Co.

manhattansteeldoors.com
212/252-2038
New York, New York
REVENUE: Less than \$15 Million
PRODUCT LINES: Steel doors; Steel
Windows, steel interior doors

Marvin

marvin.com
888/537-7828
Warroad, Minnesota
SUBSIDIARIES/SISTER COMPANIES:
Infinity from Marvin Replacement
Windows & Doors, TruStile Doors
and SIW Solutions
REVENUE: More than \$1 Billion
PRODUCT LINES: Clad windows;
Wood windows; Fiberglass
windows; Aluminum patio doors;
Multi-slide pocketing aluminum
clad doors; Skylights; Fiberglass

entry doors; Wood doors; Interior
doors

Masonite

masonite.com
817/739-1828
Tampa, Florida
SUBSIDIARIES/SISTER COMPANIES:
Endura Products, Fleetwood
Windows and Doors
REVENUE: More than \$1 Billion
PRODUCT LINES: Interior doors,
aluminum patio doors, multi-
slide pocketing aluminum clad
doors, fiberglass entry doors,
steel doors, wood doors, interior
doors, pivot and hinged glass
entry doors, high performance
components

Miter Brands

miterbrands.com
717/365-3300
Harrisburg, Pennsylvania
SUBSIDIARIES/SISTER COMPANIES:
MI Windows and Doors, Milgard
Windows and Doors, PGT
Innovations
PROVINCE: British Columbia
REVENUE: More than \$1 Billion
PRODUCT LINES: Vinyl windows;
Fiberglass windows; Vinyl patio
doors; Aluminum patio doors;
Multi-panel vinyl doors; Multi-
slide pocketing aluminum clad
doors

Novatech

novatechgroup.com
800/257-8641
Egg Harbor Township, New
Jersey
SUBSIDIARIES/SISTER COMPANIES:
Garaga, Laurier Architectural
REVENUE: \$300 Million to \$500
Million
PRODUCT LINES: Steel doors; Vinyl
patio doors; Aluminum patio
doors; Decorative Doorglass,
Hurricane Impact Doorglass

Peerless Products Inc.

peerlessproducts.com
620/223-4610
Fort Scott, Kansas
REVENUE: Less than \$15 Million
PRODUCT LINES: Aluminum patio
doors; curtainwall, windowwall,
Aluminum windows, bi-fold
doors, aluminum entry doors, pvc
doors, pvc windows

Pella

pella.com
641/780-5162
Pella, Iowa
SUBSIDIARIES/SISTER COMPANIES:
Custom Window Systems, Reilly
Windows and Doors, Bonelli
Windows and Doors, Duratherm
Windows Corp., Win-Dor,
Avanti Windows, Burris, Lawson
Industries Inc.
PRODUCT LINES: Wood windows,
vinyl windows, clad windows,
vinyl patio doors, aluminum patio
doors, multi panel vinyl doors,
fiberglass entry doors, steel
doors, wood doors, fiberglass
windows and patio doors

Plastpro

plastproinc.com
310/693-8600
Los Angeles, California
PRODUCT LINES: Fiberglass entry
doors, polyfiber door frames,
glass inserts, vinyl planking,
wainscoting

Sierra Pacific Windows

sierrapacificwindows.com
800/824-7744
Red Bluff, California
PRODUCT LINES: Aluminum-clad
doors and windows, bi-fold
doors and windows, curtain
wall, impact-resistant doors and
windows, multi-panel doors,
multi-slide pocketing doors,
pivot doors, sliding doors; vinyl
casement windows, doors, patio
doors, replacement doors and

windows; sliding doors, windows,
window wall, wood patio doors
and windows; wood-clad
windows and doors

Simpson Door Company

simpsondoor.com
800/746-7766
McCleary, Washington
PROVINCES: British Columbia;
Alberta
REVENUE: \$75 Million to \$100
Million
PRODUCT LINES: Wood doors;
Interior doors

Stanley Doors

stanleydoorproducts.com
877/290-0941
Joubert, Montreal, Canada
PRODUCT LINES: Fiberglass and
steel entry doors; patio doors;
decorative glass

Starline Windows

starlinewindows.com
604/882-5100
Surrey, British Columbia, Canada
SUBSIDIARIES/SISTER COMPANIES:
Starline Installations Ltd.
PRODUCT LINES: Aluminum window
wall, unitized curtain wall, patio
doors, sliding sealing doors, patio
doors and swing doors; vinyl
windows, patio doors, sliding
sealing doors, patio doors and
swing doors; entry doors

Sun Windows and Doors

sunwindows.com
270/684-0691
Owensboro, Kentucky
REGION: Southeast
REVENUE: \$30 Million to \$40
Million
PRODUCT LINES: Vinyl windows;
Clad windows; Wood windows;
Aluminum patio doors; Aluminum
exterior/ Wood exterior

Taylor Entrance Systems

taylordoor.com
800/248-3600
West Branch, Michigan
SUBSIDIARIES/SISTER COMPANIES:
Waudena Entrance Systems and
Diamond Kote Building Products
PRODUCT LINES: Fiberglass and
steel entry doors

Therma-Tru Doors

thermatru.com
800/843-7628
Maumee, Ohio
PARENT COMPANY: Fortune Brands
Innovations
SUBSIDIARIES/SISTER COMPANIES:
Larson, Fiberon, Fypon, Solar
Innovations, MasterLock,
American Lock, SentrySafe,
Moen, House of Rohl, Perrin &
Rowe, Riobel, Victoria + Albert,
Aqualisa, Rohl and Shaws
England
PRODUCT LINES: Fiberglass and
steel entry doors, impact-rated
fiberglass doors, door system
components

Trimlite LLC

trimlite.com
425/251-8685
Renton, Washington
SUBSIDIARIES/SISTER COMPANIES:
CODEL Doors, BHI Doors,
Francis-Schulze
REGION: Southeast, Midwest, West,
Southwest
Provinces: Alberta; British
Columbia; Manitoba;
New Brunswick;
Newfoundland; Labrador; Nova
Scotia; Ontario; Prince Edward
Island; Saskatchewan
REVENUE: \$200 Million to \$300
Million
PRODUCT LINES: Interior doors;
Doorlites and door accessories

Trinity Glass International

trinityglass.com
253/875-6700
Federal Way, Washington
SUBSIDIARIES/SISTER COMPANIES:
Signamark, Feather River Doors
PRODUCT LINES: Door glass, entry
doors, fiberglass entry and patio
doors, fire-rated doors, impact-
resistant doors and vinyl patio
doors, patio doors

Vector Windows

vectorwindows.com
218/739-9899
Fergus Falls, Minnesota
REGION: Midwest
REVENUE: \$30 Million to \$40
Million
PRODUCT LINES: Vinyl windows and
patio doors

Velux

veluxusa.com
803/396-5700
Greenwood, South Carolina
PRODUCT LINES: Residential
skylights, tubular skylights,
commercial dome skylights,
structural framed skylights, barrel
vault skylights, polycarbonate
panels, modular commercial
skylights, flashing systems,
electronic controls and blinds

Weather Shield Mfg.

weathershield.com
800/222-2995
Medford, Wisconsin
PRODUCT LINES: Wood, aluminum-
clad wood, aluminum, vinyl-clad
wood, fiberglass, fiberglass-clad
wood windows and patio doors

Westlake Royal Building Products

westlakeroyalbuilding
products.com
855/769-2585
Houston, Texas
PRODUCT LINES: Vinyl and
aluminum windows and
aluminum patio doors

Wincore Windows and Doors

wincorewindows.com
304/424-3880
Parkersburg, West Virginia
REVENUE: \$200 Million to \$300
Million
PRODUCT LINES: Vinyl windows and
patio doors; Multi-panel vinyl
doors; Fiberglass entry doors

Woodgrain Millwork

woodgrain.com
888/783-5485
Fruitland, Idaho
SUBSIDIARIES/SISTER COMPANIES:
Huttig Building Products
PRODUCT LINES: Wood-clad, wood,
aluminum-clad, composite and
vinyl windows; wood-clad and
vinyl patio doors; wood-clad,
wood, aluminum-clad, and
fiberglass entry doors ■

Products



Find More Products Online

See all the latest products and trends online at WindowandDoor.com



01



03



02

01. Roto North America

Roto's Patio Alversa offers a range of sliding solutions, including one tilt and slide and three parallel sliding options. These solutions provide various ventilation functions and are compatible with all frame materials, accommodating sash weights from 352 pounds to 440 pounds. The product ranges' same roller units, sliding scissor stays and track sets are compatible across multiple versions, and all versions can be produced on the same production line. All versions offer different ventilation options and burglary inhibition components.

860/526-4996 | ROTONORTHAMERICA.COM

02. NanaWall Systems

NanaWall's Generation 4 tilt and turn windows are designed to complement the existing Generation 4 product family with the same uniform glass lines and frames. The Generation 4 tilt and turn windows are engineered with dual-opening functionality, tilting vertically and turning horizontally. Other features include continuous perimeter seals, concealed hardware, and double- or triple-insulating glass.

800/873-5673 | NANAWALL.COM

03. Velux

The Velux skylight system is designed for total light control, enhanced energy efficiency and homeowner convenience. The skylight system features a pre-installed, remote-controlled, solar-powered shade, as well as a white shade. Alternative shade colors are available by custom order. The solar-powered remote operation charges on ambient light and includes optional smart home integration. Built-in rain sensors on venting skylights enable automatic closure.

800/888-3589 | VELUXUSA.COM

Product/Solution



The FuseCube Express delivers consistent, automated Diamon-Fusion coating to both sides of the glass in a single cycle.

Key features

- Automated dual-sided coating in one cycle
- Plug-and-play installation with a compact footprint
- Enhances glass with hydrophobic, easy-to-clean properties
- Reduces maintenance costs and extends glass lifespan

FuseCube Express // Diamon-Fusion International

Challenge

The FuseCube Express™ by Diamon-Fusion International is a cutting-edge protective glass coating machine that automates the application of DFI's patented Diamon-Fusion® coating on both sides of glass panels in a single cycle. This innovation was developed to meet the window and door industry's demand for efficiency, consistency and enhanced product value.

Solution

With a compact, plug-and-play design, the FuseCube Express is perfect for glass fabricators of all sizes. It eliminates the need for manual coating methods, which can be time-consuming and inconsistent, replacing them with a fully automated process that ensures quality and uniformity. The machine bonds Diamon-Fusion directly to the glass, creating a hydrophobic, scratch-resistant surface that is easier to clean and maintain over time.

Options

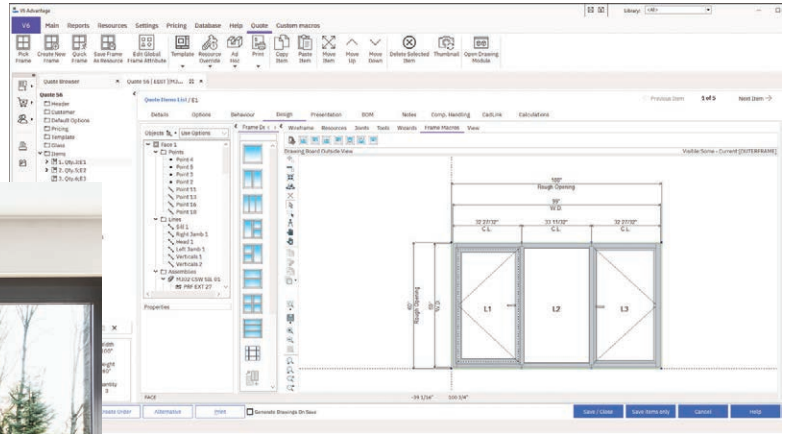
In addition to performance, the FuseCube Express helps reduce water usage, cleaning chemicals and labor, making it a more sustainable and cost-effective solution for today's manufacturers.

Results

"With FuseCube Express, we're empowering fabricators to differentiate their products in an increasingly competitive market," says Guillermo Seta, vice president of business development, DFI. "It's not just about surface protection, it's about delivering lasting performance and customer satisfaction."

For more information, visit dfsolutions.com or call 949/388-8000. ■

01



03

02



01. Alpen High Performance Products

Alpen now offers slimmer profile options in its Tyrol uPVC window system. Tyrol Edge and Tyrol Contour advance the platform's design flexibility while preserving its energy efficiency, with whole-window thermal performance up to R-11 (U-0.09). Tyrol is manufactured from uPVC, with a multi-chambered frame design and continuous fiberglass reinforcements.

303/834-3600 | THINKALPEN.COM

02. Nova Doors

Nova Doors' high-performance fiberglass-aluminum hybrid door sill balances structural strength, energy efficiency and advanced water management, all in a 1 ½-inch profile. The sill features a fully supported anodized aluminum cap bonded to an injection-molded ABS base. A fixed fiberglass sill riser creates a thermal break, reducing conductive heat loss at the threshold. To prevent water intrusion, the sill includes a dual-layer protection system.

402/510-5611 | NOVAFIBERGLASS.COM

03. Cyncly

Soft Tech V6 Advantage is a customer-driven release that builds on the capabilities of Soft Tech V6, adding capabilities that help manufacturers improve their estimation, strengthen their dealer network and streamline manufacturing processes. The software can produce out-of-the-box reports and custom reports to track performance and gain business insights. A customer portal provides access to an online ticketing system, release notes, troubleshooting tips and more. Online training videos also are available.

330/954-7530 | CYNCLY.COM

ATTENTION EMPLOYERS

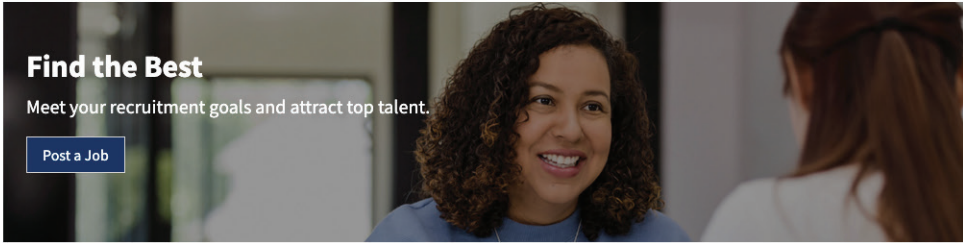
Meet Your Recruitment Goals and Attract Top Talent
with the Window + Door Employment Center

Job SeekerEmployer

HOMEPRICINGPOST JOBS▼RESUME SEARCH

HelpSign In

Find the Best
Meet your recruitment goals and attract top talent.
[Post a Job](#)



Window + Door Employment Center Account Features

Make use of our employer account features below to quickly post your latest job openings, search through viable employee resumes, and manage your applications to select the ideal candidate.

[Post Jobs](#)

[Manage Apps](#)

[Search Resumes](#)

Job Posting Pricing Options

Review our most popular job posting packages below and choose the package that's right for you!

Best Seller

Single 45-Day Job Posting
\$235

- ✓ 1 job posting
- ✓ 45 days online
- ✓ Resume Search access
- ✓ Use within 1 year

[POST NOW](#)

Three 45-Day Job Postings
\$535

- ✓ 3 job postings
- ✓ 45 days online per job
- ✓ Resume Search access
- ✓ Use within 1 year

[BUY NOW](#)

Five 45-Day Job Postings
\$845

- ✓ 5 job postings
- ✓ 45 days online per job
- ✓ Resume Search access
- ✓ Use within 1 year

[BUY NOW](#)

[More Pricing Options](#)

Powered By **NAYLOR**
ASSOCIATION SOLUTIONS

Visit jobs.windowanddoor.com to learn more!

Advertiser Index

Advertiser	Page	Phone	Website or email address
AmesburyTruth	7		amesburytruth.com
Anthony Innovations	15		anthonyinnovations.com
Creative Millwork	37	888/759-7121	creativemillwork.com
Deceuninck	27	513-539-5505	Deceuninckna.com
DFI	57	949/388-8000	dfisolutions.com
eBuyingGuide.net	61	703/442-4890 ext. 129	ebuyingguide.net
Erdman	2	763/389-9475	erdmanautomation.com
GED Integrated Solutions, Inc.	19	330-963-5401	
GlassBuild America	63		glassbuildamerica.com
Joseph Machine Co	35		josephmachine.com
Lexington Manufacturing	18		support@lexingtonmfg.com
MFM Building Products Corp.	5	800/882-7663	mfmfbp.com
Novacel	17		email:contactusa@novacel-solutions.com
NuCoat North America LLC	21		email: info@nucoat.com
Quanex	28-29		quanex.com
Roto North America	3		rotonorthamerica.com
Schweiss Doors	11		schweissdoors.com
Sturtz Machinery	13	330/405-0444	sturtz.com
Urban Machinery	64	800/263-4216	urban-machinery.com
Vision Hardware	25	800-220-4756	visionhardware.com
Wakefield Equipment	9	440/899-5658	wakefeldequipment.com
Wincore Windows and Doors	23		wincorewindows.com
Window + Door Employment Center	59	703/442-4890 ext. 129	jobs.windowanddoor.com

WINDOW+ DOOR WEEKLY

**Delivering the Fenestration Industry to
Your Desktop, Tablet or Smartphone**

To receive your copy every Wednesday, go to WindowandDoor.com
and click the Subscription Services tab

Homeowners, contractors and manufacturers use eBuyingGuide.net as their online directory resource.

Brought to you by Window + Door
Magazine

What do you need:

Select an option

Specializing in:

Select an option

More Options

More Options

Search by location:

city or post code

Search Now

**Purchase a
Silver or Gold
Membership
Today for
Maximum
Exposure**



Select

Select the Product You Need



Find and Compare

Find and Compare Suppliers



Contact

Make Contact

FrameWork



ONLY ON
WINDOWANDDOOR.COM

Rethinking Plastics: An evolving industry's push for top talent

By Lytia Watson

Once perceived as static, industrial and bad for the environment, the plastics industry has transformed significantly over the past few decades. A career in plastics manufacturing offers long-term growth and career fulfillment and provides a pathway for someone to have a positive environmental impact. This presents an opportunity for manufacturers to reestablish their image with the public on sustainability and the robust career opportunities that exist in manufacturing. This, in turn, will help such employers to appeal to smart, ambitious job seekers in a competitive recruiting landscape.

By fostering a culture of innovation, sustainability and continuous improvement, Deceuninck North America is positioning itself as one of those employers of choice. It prioritizes key initiatives such as complex and innovative training programs; an emphasis on diversity, culture building and inclusion; and an unwavering dedication to sustainability that aligns with the values of the modern workforce.

To truly thrive, the entire plastics industry must address misconceptions and actively work to attract new talent by demonstrating how it has become much more innovative and environmentally responsible.



READ MORE AT
WINDOWANDDOOR.COM



The Denver apartment complex before (left) and after (right) being retrofitted with Simonton DaylightMax windows.

Apartment Complex Revitalization

Project: Denver, Colorado, apartment complex

Products: Simonton Windows & Doors DaylightMax windows

Description: In Denver, Colorado, an aging three-story apartment complex needed a transformation, and quickly because tenants were slated to move in. As part of a broader neighborhood revitalization, property managers turned to Lakewood Glass and

Windows to bring the building up to modern standards—starting with new windows.

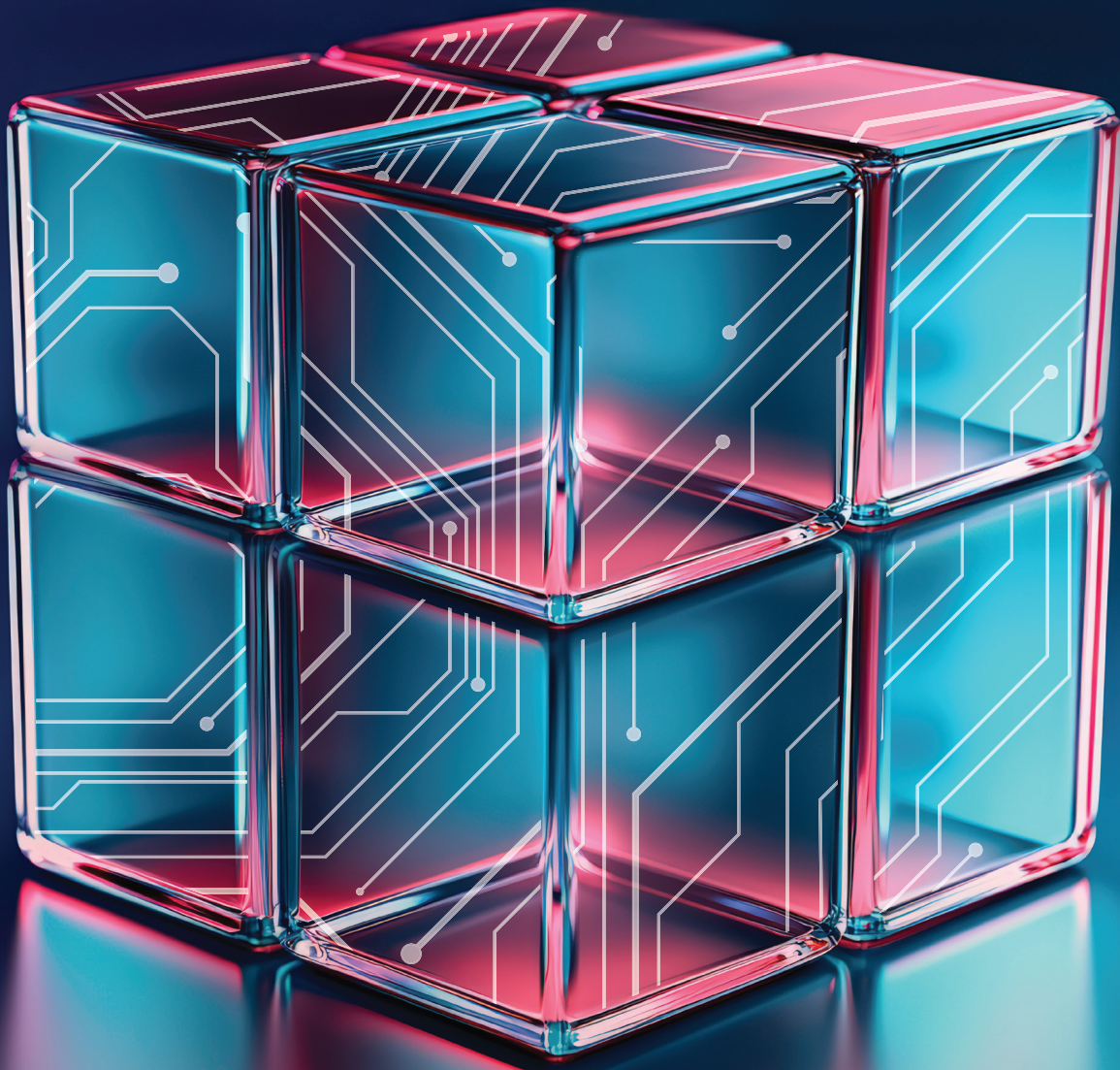
With energy efficiency and tenant comfort as priorities, Matt Vergano, owner of Lakewood Glass and Windows, chose Simonton Windows & Doors for the job. Over just five days, the team replaced the outdated windows with 109 of Simonton's DaylightMax sliding windows in a tan color.

The windows were chosen for their low

U-factor and high R-value, which help insulate the units, making them both quieter and warmer.

Simonton premium vinyl windows also offer weatherability, energy efficiency and thermal performance.

The retrofit took only five days and serves as an example of how thoughtful upgrades can benefit both property managers and residents. ■



BUILT ON INNOVATION

The largest event for the glass, window and door industries in North America is your place to see the latest innovations across the entire supply chain, from components to state-of-the-art processing equipment. With access to live demonstrations and education focused on the next residential trends, you'll leave with a clear understanding of where the fenestration industry is headed — and an unbeatable edge. **Everything you need to build a stronger business, all in one place.**

Registration opens July 24.

glassbuildamerica.com | [#glassbuild](https://twitter.com/glassbuild)

GlassBuild
AMERICA
THE GLASS, WINDOW & DOOR EXPO

NOV 4-6, 2025 | ORLANDO, FL
ORANGE COUNTY CONVENTION CENTER

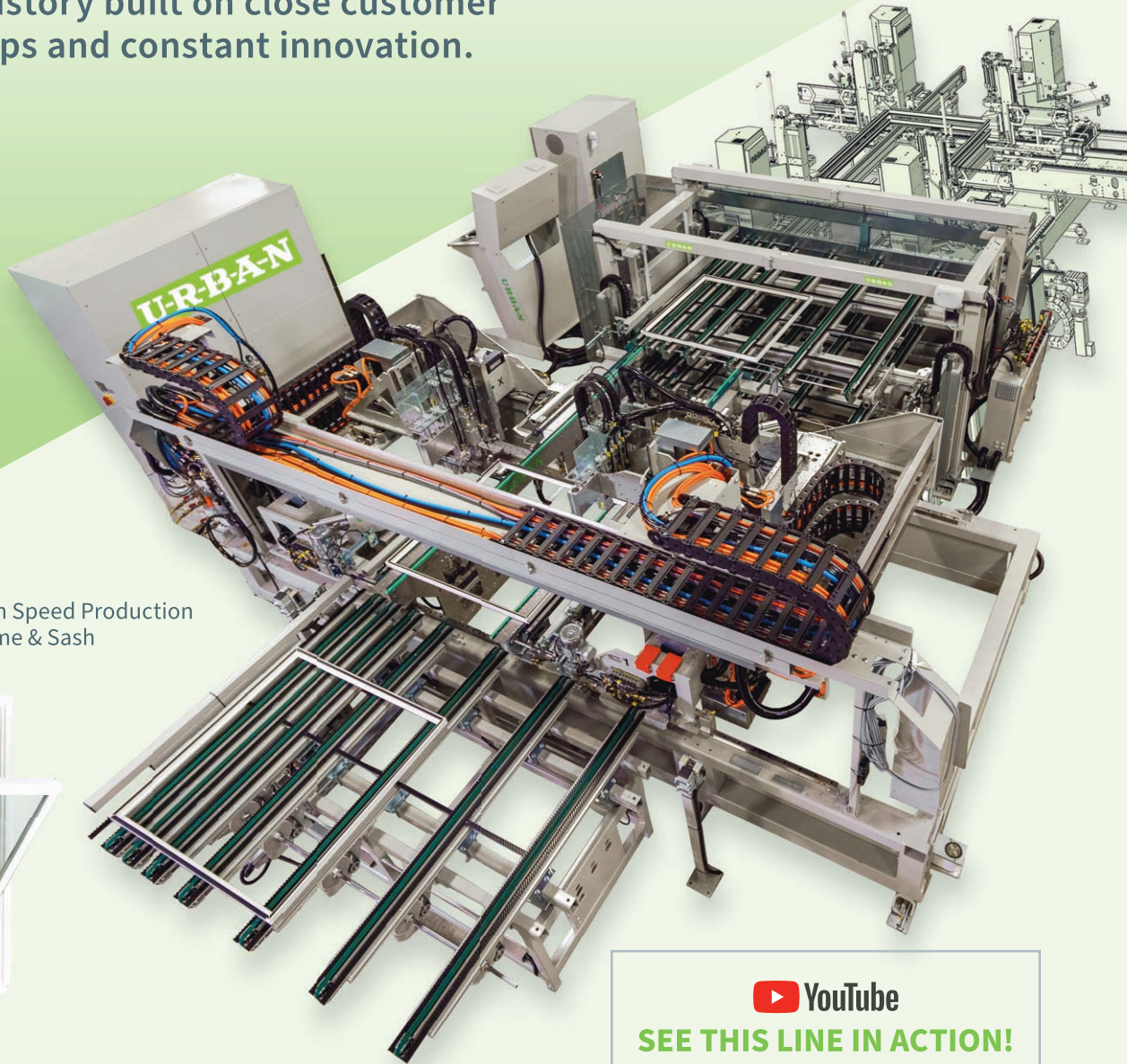
NGA
NATIONAL GLASS ASSOCIATION of AMERICA

FGIA
Fenestration & Glazing
Industry Alliance

AUTOMATION CONCEPT – PLANNING – EXECUTION

A proven history built on close customer relationships and constant innovation.

Hung Window High Speed Production Machinery for Frame & Sash



 YouTube

SEE THIS LINE IN ACTION!

youtube.com/UrbanMachinery

urban-machinery.com

1-800-263-4216

U-R-B-A-N

Trust. Right from the start!