MANUFACTURERS MARK ANOTHER YEAR OF GROWTH AND INCREASED DEMAND

PLUS: THE TOP MANUFACTURERS LIST

THE MANUFACTURING ISSUE
“I certainly wouldn’t want to operate without FeneVision.”

Geoff Roise
Lindsay Window & Door

To read more about the partnership between FeneTech and Lindsay Window & Door, visit http://fene.tech/LWD522WD

FeneTech is the world’s preeminent software provider for the glass fabrication and window & door manufacturing industries.

330.995.2830  |  info@fenetech.com  |  fenetech.com
Roto North America is pleased to showcase our **RotoFasco Secura** Sliding Patio Door Hardware

**Excellence in Window & Door Hardware**

Roto North America | rotonorthamerica.com
Window + Door Top Manufacturers
28. The Report: Manufacturers mark another year of growth and increased demand while navigating material and labor constraints.
By Laurie Cowin

44 The List: North America’s largest manufacturers of residential windows, doors, skylights and related products, based on sales volume.

Insights
10. Observation Desk // Evidence of Growth // By Laurie Cowin
16. Eye on Fenestration // Policy, Regulation to Watch in 2022 // By Laurie Cowin

20. Letter of the Law // Consistency After Acquisition // By Melanie Scherer
22. Your Business Matters // Do More with Less // By Laurie Cowin

Intel
08. News // In the Know
62. Products // Fenestration Finds
66. People // On the Move
70. Market Data // Outside View

From our Sponsors
26. Q+A with W+D // Joseph Machine
63. Product Solution // Low Profile Lock Handle by Roto North America
68. Ad Index

On the Cover: Vector Windows & Doors reported a revenue of $30 to $40 million in 2021. See the full Top Manufacturers List starting on p. 44.
FOR NEARLY A CENTURY, QUANEX HAS FUELED THE BELIEF THAT INNOVATION AND THE RIGHT PEOPLE CAN TRANSFORM THE WORLD — ONE SOLUTION AT A TIME. THROUGH OUR PIONEERING, SUSTAINABLY-DRIVEN PRODUCT SOLUTIONS, WE’RE STRIVING TO BUILD A BRIGHTER FUTURE FOR OUR CUSTOMERS ACROSS THE GLOBE. WE ARE YOUR ONE SOURCE FOR QUALITY BUILDING COMPONENTS. GLOBALLY TRUSTED AND DRIVEN BY INNOVATION — TOGETHER WE CAN BUILD SMARTER PRODUCTS. WE ARE RELIABLE, LEADERS, PIONEERS, INNOVATORS, WORLD-WIDE SOLUTION MAKERS. WE COMBINE AESTHETICS AND PERFORMANCE TO DELIVER LASTING VALUE FOR YOUR BUSINESS AND YOUR CUSTOMERS. WE ARE NOT JUST ANOTHER MANUFACTURING COMPANY, WE ARE A PART OF SOMETHING BIGGER.

Scan the code to watch the video, and learn more about how Quanex can help solve your business challenges today and into tomorrow.
Want Women in Your Workplace? Be Flexible
By Norah Dick

Why Fenestration is a Crucial Part of a Sustainable Future
By Michelle Blackston

Define an Innovation Process
By Janice Yglesias

©2022 National Glass Association. All rights reserved. Printed in the U.S.A.
Choose wisely,
Choose responsibly,
Choose what’s the best
for you!

uPVC system

Innovative technology and the best thermal properties - that is the best characteristic of the BluEvolution 82 system.

3 gaskets - provide waterproofness

multi-point hardware

multitude of colors

high acoustic properties

www.ekookna.us
Industry Companies Garner Awards

Andersen Corp. has been named a Forbes Best Employer for Diversity 2022 for the second year in a row. Honorees were chosen based on an independent survey by Statista Inc. where respondents answered questions regarding age, gender equality, ethnicity, disability, LGBTQ+ and general diversity.

Pella Corp. claimed the No. 8 spot on Fast Company’s list of World’s Most Innovative Design Companies for 2022 for its Easy-Slide Operator hardware solution. “Innovation and the continuous pursuit of a better way are at the heart of everything we do. To see the hard work of our team reflected in Fast Company’s list this year is a tremendous achievement and a testament to the caliber of talent we have here at Pella,” says Tim Yaggi, CEO of Pella.

Houzz named Milgard Windows & Doors to its Best of Houzz Design list for the eighth consecutive year. More than 65 million Houzz user reviews and photos saved to idea books determine the winners. Milgard had four winning photos this year, all of which featured black frames.

Company Growth, M&A Activity Continues

MI Windows and Doors revealed MITER Brands as its new parent brand. The nationwide company will retain two regional product brands: MI Windows and Doors in the East and Milgard Windows and Doors in the West. Sunrise Windows & Doors products will be available under the MI brand.

Centra Windows acquired Supreme Windows, allowing it to move into the Alberta, Canada, marketplace. This will be Centra’s fifth location and second manufacturing plant. With the addition of the Supreme team, Centra will expand from 375 employee owners to 450.

Marvin opened its third facility in West Fargo, North Dakota, which will be the city’s first distribution facility and is expected to bring with it 100 new jobs. The 150,000-square-foot facility will primarily consist of loading dock work, but will create a space for manufacturing work and assembly, including forklift drivers, engineers and purchasing employees, according to the company.

Woodgrain Inc. and Huttig Building Products Inc. reached a definitive agreement whereby Woodgrain will purchase Huttig in an all-cash transaction of approximately $350 million, including the assumption of debt. The acquisition is intended to increase Woodgrain’s distribution network, product offering and value-added service, according to a release.

FlexScreen opened a new plant in Nashua, New Hampshire, marking the company’s seventh facility. Along with the new plant comes an expanded partnership with Harvey Building Products, which has several production facilities in New England and the surrounding areas.

Fortune Brands Home & Security Inc. announced its intent to separate into two publicly traded companies, with the Cabinets business becoming a stand-alone company. A potential separation will take 12 months to complete.

Finally, Trimlite Mfg Inc. acquired Builders Hardware Inc., a Tampa, Florida-based manufacturer of exterior door products and hardware.

IN THE NEWS:
Month in Review

Ubiquitous Energy demonstrated 1½-meter-wide glass coated uniformly with the company’s UE Power transparent solar materials, showing the ability to scale UE Power to large sizes uniformly and pave the way for the company’s upcoming high-volume manufacturing line that will produce 1½- by 3-meter floor-to-ceiling, transparent solar windows.

Roto North America updated its Roto Solid C concealed door hinge and introduced “ELA” special opening restrictors as a safety feature on large turn-only aluminum windows. All Weather Architectural Aluminum also launched new products: the Series 9200 thermally broken bifold door system and Series 7200 thermally broken pivot door system. And Jeld-Wen’s new line of Auraline composite windows and patio doors is in production.

Crystal Window & Door Systems installed a nearly 1 MW solar electricity generation facility on the rooftop of its Queens, New York, headquarters, which includes over 2,300 solar panels and will offset about 35 percent of its overall electricity needs. Its West Coast affiliate, Crystal Pacific Window & Door Systems, celebrated its 10th year of operation.

VEKA Group announced its support for mental health and suicide prevention and will sponsor the Loneliest Road tour, held Sept. 24-Oct. 10 in North America.

Don’t Miss a Headline
Follow @windowdoormag on Twitter for industry updates
EXTRAUDER DIRECT THRESHOLDS

THRESHOLDS
Multi-Family ADA & Residential

ADA125

PRESS CAD DRAWING

• EXTRUDER DIRECT PRICING
• IN STOCK AND READY TO SHIP
• CUSTOM FAB AVAILABLE
• HIGHEST QUALITY FINISHING

SALES REPS NEEDED IN ALL TERRITORIES

2420 Railroad St.
Corona, CA 92880
(951) 735-1770
meritaluminumproducts.com
Evidence of Growth
The Top Manufacturers Report and List shows just how much the industry is growing in a tricky business landscape

Each year while compiling the Top Manufacturers List, I start with the previous year’s list and do some comparing. An active mergers and acquisitions landscape always condenses several entries as those companies merge together under one entry, such as Centra Windows’ acquisition of Supreme Windows and Cornerstone Building Brands acquiring Cascade Windows.

This year I noticed another big reason for shifts in the list compared to last year: revenue category jumps. It’s hardly surprising. After all, 87 percent reported higher gross sales in 2021 compared to 2020 and nearly every survey respondent indicated increased demand. What surprised me was just how much.

In deference to knowing many companies in the residential fenestration space prefer to keep specific revenues private, we ask for broad revenue ranges. That vast range often means it’s unusual for companies to move revenue categories year-over-year. Nevertheless, at least a dozen companies on our list of approximately 100 indicated higher revenue categories than last year. This trend fits with market reports of burgeoning demand, a hot housing market and strong remodeling and replacement market.

Much of our readership, manufacturers and suppliers alike, report hectic business conditions from that demand. In fact, I can’t have a conversation now without talking about operating at what sometimes feels like breakneck speed to keep up with booming business, let alone welcome new business. The challenges are several-fold, none of which are new, but all of which seem to be increasing in pressure.

The majority of survey respondents ranked material cost and availability as among the greatest headwinds. Allocation makes it difficult to get enough material and in some cases where material can’t be obtained, companies are re-engineering their products to exclude what they can’t get and include alternative solutions.

One manufacturer shared the following example of how it adapted to material challenges to keep its production lines running:

“We have worked to adapt to this by constantly striving to be as flexible as possible, often thinking outside of the box. Interlayer, a critical component for impact product, remains in short supply across the market. Normally our company uses interlayer in roll form that is specifically optimized for our exact production lines and processes. Due to the various market shortages, we had to be flexible and switch to using various sizes of rolls and sheet just to keep the production lines running. We also have been striving to control more supplies internally and try to rely less on glass suppliers by utilizing our internal glass assets to supplement underperforming glass suppliers. We also spent significant time with our extruders to determine ways to change profiles in order to support them with efficiency gains during the extrusion process. This activity didn’t lead to cost savings, but allowed the supplier to push more metal for us throughout their production runs. Lastly, we have been placing a lot of focus and energy on single-sourced parts and digging deep into our suppliers’ supply chain to identify risk potential.”

Although from some angles this year’s survey paints a bleak picture of big challenges, from another angle the survey demonstrates just how innovative, adaptive and resilient this industry is. Despite significant and long-term headwinds that could dampen others’ spirits and lessen their bottom lines, the exact opposite holds true for residential fenestration.
Attention Window Manufacturers!
Put Your Window Business into Overdrive with AllView

Why Every Window Fabricator Should Be Fabricating AllView Shutters

- Tap Into a New Revenue Source
  Replace the window AND the window coverings!

- Beat All Imports on Price
  With low-cost shutter components and lighting fast production times.

- Increase Your Profits
  One of the most profitable hard window coverings you can build.

- Install Shutters in One Week
  Fabrication is quick and easy.

- Produce a Poly Shutter with a Wood-like Finish
  Thanks to WoodTex™ finish, shutters look and feel like painted wood.

- Make Money Right Away
  AllView gives you a one-month return on investment once you start fabricating and selling.

For more information, call an authorized AllView representative at (323) 717-4072

Learn More About Why You Should Be Fabricating Allview Shutters
www.uspolymersinc.com/all-view
jdobel@uspolymersinc.com • (323) 717-4072
Elevating the design of luxury in North America & the Caribbean for over 30 years.

Detailing the meaning of quality and durability, we present to you the Voyage Select Pivot Door. Tastefully defining what it means to make a grand entrance, these contemporary pivot doors rise up to 18 feet in height. In addition, our newest partnership with the technologically innovative Tuval Minimal will introduce Steel Windows & Doors as it offers the timeless opulence and rugged durability of steel.
Voyage Select Pivot Doors

Tuval Minimal

REQUEST A QUOTE TODAY.
+1.888.246.1651
@PANDAWINDOWSDOORS
WWW.PANDA-WINDOWS.COM
INFO@PANDA-WINDOWS.COM
The Argument for Wood Plastic Composites

5 benefits to WPCs that may help make the material more popular in the high-performance fenestration segment

When I became the new marketing manager for PVC windows at Rehau Plastic’s North American division in 1985, PVC windows had less than 2 percent market share here, but in Europe PVC was rapidly replacing other framing materials. In North America, PVC now accounts for about 65 percent of the total market.

So, what is the biggest news on the framing material market? I would argue it is more widespread adoption of large window producers using PVC-based wood plastic composite (WPC) as a material of choice for high-performance fenestration.

Why WPCs?

Aside from product differentiation, the advantages are superior strength, lower expansion/contraction, less heat deformation, better U-values and “green- ness.” Let’s examine each in turn.

1. Strength // Strength is well-known, with most of the fence/deck and rail industry long since moving to composites. There are higher flexural, compression and rupture modulus values. The wood fiber makes profiles stronger, and that means less need for metal reinforcement.

2. Expansion/Contraction // With one-third the expansion-contraction of traditional, hollow-rigid PVC, WPC profiles can have this coefficient be much closer to the glass, wood and metal to which they must mate.

3. Thermal Conductivity // Then we have K-factor, which is the natural heat and cold transmission of any material. We know that real wood is warm to the touch, and that’s good because the K-factor for pine is about half of that for traditional, hollow-rigid PVC. That means that in any given profile, R-values will be higher for any compound replacing PVC with wood fiber.

4. Heat Deformation Resistance // Next is heat deformation resistance. Heat combined with pressure has always been a concern for PVC producers, with the darker colors requiring exterior paint or cladding treatments. With the market share of darker colors increasing in general, and architectural specifications requiring an even greater percentage of dark colors, this WPC advantage is one of the most important attributes.

5. Greenness // We know architects are an important factor in high-end product selection, and as a group, they may be more concerned with green issues than the producers of the windows they specify. However, the more important these green issues become, the more important it will be to be able to self-certify your products as sustainable.

This is one reason thermoplastic composites made with a bio-component are more highly regarded than composites that are simply a “composite” of resins.

Also, with WPC profiles you can provide a “done on the extrusion line” surface treatment that is paintable/stainable with ordinary household paints. The profiles can be mechanically fastened or welded. Thickness options vary from “builder’s grade” to premium commercial, and the profiles can be bent for round tops.

Conclusions

So, you are thinking it may be time to plan your next generation of fenestration products. Sure, demand is strong for current products and backlogged orders from COVID, but you also know that product development cycles take six to nine months if everything goes well.

In my 20 years with the Royal Plastics Group, we dealt with the complete process of framing material change, including arranging product design, extrusion dies and fabrication dies, in most cases from wood and aluminum to PVC. It may now be time to look at the next generation of framing material choices.

Ross DeMeritt is president of Window Choice Co. Inc., with offices in Sautee, Georgia, and Mackinaw City, Michigan. He can be reached at ross@worldwidewindowdesign.com.
The original Q-LON™ door seal now with increased domestic production!

Q-LON door seals are the preferred choice for entry doors.

Known for soft compression and superior recovery while providing excellent sealing protection. AmesburyTruth customers have grown to love the consistency and reliability of Q-LON door seals for over 50 years!

Inquire now to secure your domestically sourced door seals!
Email us at Q-LON@AmesburyTruth.com

www.amesburytruth.com
In late March, the Biden administration lifted steel and aluminum tariffs from the United Kingdom that former president Donald Trump imposed in 2018. Industry groups applauded the action, while also taking the opportunity to encourage the administration to similarly re-examine tariffs on Canadian softwood lumber.

“The Biden administration’s move to end steel and aluminum tariffs from the United Kingdom is a welcome development and a positive first step that can help lower construction and housing costs,” said Jerry Konter, chairman of the National Association of Home Builders. “The administration must now act with the same sense of urgency to negotiate a new agreement with Canada that will eliminate tariffs on softwood lumber shipped into the U.S. “As the construction and manufacturing industries continue to grapple with supply chain challenges and record-high price volatility, this action by the Administration is an important step to help stabilize supply and improve conditions for residential construction,” said Michael O’Brien, Window & Door Manufacturers Association president and CEO, in a statement. “Moving forward, WDMA encourages the Administration to also re-examine tariffs on Canadian softwood lumber and Chinese imports subject to Section 301 tariffs.”

Notable though this tariff lifting is, it’s merely the tip of legislative and regulatory topics to watch in the coming year. The WDMA 2022 Spring Meeting and Legislative Conference, March 30-31, addressed myriad topics and highlighted what might impact the industry moving forward.

Build Back Better Act and tax credits

Although the Build Back Better Act did not pass the Senate, Kevin McKenney, vice president, government affairs, WDMA, said it’s still worth addressing several provisions. He specifically referenced a proposed minimum 15 percent corporate tax on corporations that book income with profits more than $1 billion.

Several efficiency tax credits also bear examination, McKenney said:

• 25C increases the percentage of credit from 10 percent of the cost to 30 percent and replaces lifetime cap on credits with a $1,200 annual credit. It also creates a new credit level of $600 for Energy Star most-efficient windows and removes all skylights from 25C credit eligibility. Manufacturers and taxpayers must comply with reporting the ID number of certain properties, including windows, to access the credits.

• 25D extends the full 30 percent tax credit for eligible products through 2031 before it phases down to 26 percent in 2032 and 22 percent in 2033.

• 45L extends the credit for energy-efficient new homes through 2031, with the single-family criteria being that of the Energy Star Single-Family New Homes Program. There is also a $5,000 credit for single-family and manufactured new homes certified as zero-energy ready.

Much of WDMA’s lobbying efforts focused around 25C, said McKenney. “We see this as unworkable for manufacturers.” He believes his team made “significant progress” in getting some members of Congress to see issues with the way it was written. “There’s no real justification for creating this new credit level for essentially triple-pane products,” he said. He added the credit level for windows should be at least $1,000.

Trade and tariffs

A lot of focus revolves around the America Competes Act, which addresses trade imbalances Congress sees with China and unfair trading practices they’re engaged in, much of which focuses on semiconductors, said McKenney.

In addition to the lifting of U.K. steel and aluminum tariffs, efforts are also underway for the administration to reopen exclusion requests for Chinese products (Section 301).

Regulatory updates

OSHA withdrew its Emergency Temporary Standard around COVID-19 vaccinations after the Supreme Court ruling blocked it, but it still remains an active proposed rule. As of late March, it’s unclear if OSHA will move forward with the rulemaking, said McKenney.

In late 2021, OSHA issued advance notice of proposed rulemaking for a heat illness and prevention standard that would protect workers who “work outdoors in agricultural, construction and delivery services, as well as workers in such indoor facilities as warehouses, factories and kitchens.” Specific considerations include heat stress thresholds, heat
YOU ASKED. WE ANSWERED.

Best-In-Class Protection for a Dangerous Job

AeroDex® Technology | Lighter, more comfortable PPE that stands up to your needs!

- Cut A9 Garments up to 30% Lighter
- Gloves that Last 6X Longer
- Unmatched Service & Savings

Glass Manufacturers
TRY IT FREE!

magidglove.com/windowanddoor
800-203-9540
acclimatization planning, exposure monitoring and strategies to protect workers. Biden’s administration said it would prioritize work inspections on days where the heat index exceeds 80 F.

Supply chain challenges
Representatives from the U.S. Chamber of Commerce shared insight as to the current supply chain challenges and federal responses. Plenty of challenges existed prior to the COVID-19 pandemic; the pandemic was a tipping point for supply chain woes, said Jack Overstreet, senior manager in the cyber, intelligence and supply chain security division at the U.S. Chamber of Commerce.

The pandemic’s resulting fiscal stimulus packages injected wealth into American homes, thereby increasing and shifting spending habits, causing further disruptions. Businesses prepared for an anticipated slowdown and factory closures in Asia disrupted the flow of goods into the U.S. The pandemic also put three times the usual number of trucking companies out of business in 2020. Today, there’s a shortage of 80,000 drivers and the U.S. workforce is 3.6 million below pre-pandemic levels. An estimated five to seven years’ worth of e-commerce growth was compressed into a single year, which put further strain on the logistics and transportation industry, explained Overstreet.

Forty percent of seaborne imports to the U.S. arrive through the Ports of Los Angeles and Long Beach, which remain center stage for congestion. At peak, more than 100 container ships anchored off the coast waiting to offload. The number has since subsided, but remains “very problematic.”

Overstreet predicts supply chain woes aren’t through their worst. COVID remains part of the equation, especially with China’s zero-tolerance policy and locking down major ports. Some businesses are hoarding goods, which affects supply. West Coast ports are also negotiating contracts with unions, which Overstreet has heard “isn’t going very well.”

The government, however, is examining supply chain resilience through measures such as America’s Supply Chain Executive Order, the U.S. Innovation and Competition Act and recent riders on the National Defense Authorization Act. It also appears as though the administration is exploring ways to rely less on the Chinese market, he said. Businesses, meanwhile, are shifting supply chains through regionalization, near-shoring and re-shoring. Overstreet warns, however, that these tactics take time, money and increase the risk of supply chain turmoil.

We Make The Case For CUSTOMIZATION

Looking for quality? Every case we create is hand-crafted and customized to your specifications.

Winston-Salem, NC | 1-855-774-7974 | smithcase.com
Creative Millwork
Grille Products

**RESIDENTIAL | COMMERCIAL | HISTORICAL | SPECIALTY**

**ALUMINUM**
Elaborate Custom & Standard Grille Patterns
To Make Your Next Project Stand Out
- AAMA 2600/2604
- KYNAR AAMA 2605
- PRIMED
- ANODIZED
- STAINABLE WRAPS
- INTERIOR/EXTERIOR WRAPS

**VINYL**
A Classic Choice To Establish Style
Created With Quality In Mind
- COLOR MATCHED
- PAINTABLE/STAINABLE
- INTERIOR/EXTERIOR WRAPS

**BRONZE**
V-CUT Specialty Grilles Created To
Exceed Client Expectations
- BARE/BLASTED
- NATURAL
- POLISHED

**WOOD**
Breathtaking Crafted Grilles Created By
Our Precision Carpenters
- SOFT WOODS
- HARD WOODS
- SPECIALTY WOODS

Visit us at www.creativemillwork.com

**VCUT ONE PIECE EXACT REPLICATIONS!**

**EXPERTS IN GRILLE SOLUTIONS & PROFILE REPLICATION**

**OVER 1500 ENDWORKS**

**PRE-NOTCHED KITS WITH NO HASSLE ALIGNMENT**

CreativeGrillePro+
An Easy & Automatic Ordering/Quoting System
Consistency After Acquisition
Risk management, certification and service are among factors to consider to ensure consistency across businesses

You may have noticed the window and door industry is experiencing a period of significant consolidation, driven by private equity and individual business decisions. We have seen evidence of this trend most recently with the acquisition of Cornerstone Building Products Inc. by private investment firm Clayton, Dubilier & Rice, one example of many over the past several years.

Following any acquisition, the desire for consistency across businesses involves more than simply harmonizing the differing cultures and business philosophies. There is also a need to establish consistency across business practices and strategies for the existing and acquired entities, starting with fundamental, practical considerations.

Certification is a factor that is relatively unique in this industry. While no window and door business is unfamiliar with the challenge of navigating standards and regulations, it is unlikely that newly combined companies fully align on how this is accomplished. Thorough attention must be given not only to how certification programs are implemented, but also generally to the role of certification as a business viewpoint. What level of importance is placed on participating in these programs? How is compliance documented and managed internally?

Service is another major consideration when joining different companies together. How are service requests and warranty claims managed? Which system is used for intake and completing service under the product warranties? And along those same lines, how is the applicable warranty interpreted and applied? When and by whom are exceptions to the warranty approved, if ever? These questions tie into all aspects of the strategic business decisions and should be addressed through working with the relevant departments as well as through the company leadership team.

Aligning the interconnected pieces of a business is a challenge all on its own, and bringing together previously stand-alone companies with the same goal presents an even greater challenge. However great, these and other important questions surrounding the business practices should be answered in order to set up the affiliated companies for even greater success once joined together.

The desire for consistency across businesses involves more than simply harmonizing the differing cultures and business philosophies.

One essential component involves assessing the acquisition’s impact on risk management. The affiliated companies must take early steps to identify the points of risk to ensure a cohesive response as issues inevitably arise. Wrapped up in this risk assessment are legal resolution strategies, insurance and financial decisions, and a general product defense philosophy requiring a critical evaluation across the entities and a strategic plan to bring the varying approaches together.

Melanie Scherer is an attorney with The Gary Law Group, a law firm based in Portland, Oregon, that focuses on legal issues facing manufacturers of windows and doors. Contact her at 503/620-6615 or melanie@prgarylaw.com.
Contact Vision to visit our newest 130,000 sq/ft state-of-the-art facility.

Vision Hardware offers a complete line of casement and awning hardware available for next day pick up or shipping from any of our 5 warehouse locations. Our casement and awning systems are designed to be “Plug and Play” to your existing fabrication without the need for any modifications. Vision will evaluate your drawings, install our system into your sample unit and support the conversion at your location to ensure a smooth transition.

Best of all, Vision will inventory your components to your supply agreement, with guaranteed stock available.

Vision Hardware casement parts have been tested and certified in accordance with AAMA 901-10 and AAMA 904-09, and are listed on the AAMA approved product list.

Vision’s wide selection, available in a range of colors and styles, easily accommodates any casement or awning design.
In a moment where manufacturers cite high demand, it might seem counterintuitive to consider discontinuing product lines. Sometimes, however, doing just that is the key to expanding and adding value to a business.

For example, Weather Shield Windows & Doors in February announced its intent to exit production and sales of vinyl windows and doors, which includes eliminating its Visions brand of vinyl windows and doors, as part of a corporate initiative to focus on the luxury window and door market. “This decision is a natural next step in our strategy to position the business toward the premium segments of the market,” explained Robert Foote, president of Weather Shield Windows & Doors, in a statement. “Our new VUE Collection all-aluminum product, along with our wood clad product lines, represent the product portfolio best-suited to pursue the growing high-end of the market.”

Climate Solutions Windows & Doors also opted to discontinue some lower-volume products. Aron Perelman, VP marketing and sales, explains the decision. “We discontinued all interior color options on our 9100 Classic series windows and only stock white vinyl. We’re still painting the exterior in any color but not stocking laminates on any 9100 products. This allows us to focus on our flagship 8100 series products with a full color line, maintaining adequate material for order fulfillment. The 8100 line is faster to manufacture, better U-factor and has a custom designed low-profile sloped sill (completely sealed, no weep holes). These changes help maintain our four- to six-week lead time.”

Zach Williams, host of Venveo’s Smarter Building Materials Marketing podcast, invited Jeremiah Hershberger, product manager for Key-Link Fencing & Railing, to discuss this topic during a podcast earlier this year, “Adapt or Die: How to Reevaluate your Building Materials Business Strategy.”

**Define value**

Companies strive to create more value for customers, but value is defined by the withholder, says Hershberger. Further, the definition of value can

Weather Shield Windows & Doors exited production and sales of vinyl windows and doors to focus on its VUE Collection all-aluminum product and pursue growth in the high-end market.

**Do More with Less**

*How offering fewer product lines can bring value to your business*

In a moment where manufacturers cite high demand, it might seem counterintuitive to consider discontinuing product lines. Sometimes, however, doing just that is the key to expanding and adding value to a business.

For example, Weather Shield Windows & Doors in February announced its intent to exit production and sales of vinyl windows and doors, which includes eliminating its Visions brand of vinyl windows and doors, as part of a corporate initiative to focus on the luxury window and door market. “This decision is a natural next step in our strategy to position the business toward the premium segments of the market,” explained Robert Foote, president of Weather Shield Windows & Doors, in a statement. “Our new VUE Collection all-aluminum product, along with our wood clad product lines, represent the product portfolio best-suited to pursue the growing high-end of the market.”

Climate Solutions Windows & Doors also opted to discontinue some lower-volume products. Aron Perelman, VP marketing and sales, explains the decision. “We discontinued all interior color options on our 9100 Classic series windows and only stock white vinyl. We’re still painting the exterior in any color but not stocking laminates on any 9100 products. This allows us to focus on our flagship 8100 series products with a full color line, maintaining adequate material for order fulfillment. The 8100 line is faster to manufacture, better U-factor and has a custom designed low-profile sloped sill (completely sealed, no weep holes). These changes help maintain our four- to six-week lead time.”

Zach Williams, host of Venveo’s Smarter Building Materials Marketing podcast, invited Jeremiah Hershberger, product manager for Key-Link Fencing & Railing, to discuss this topic during a podcast earlier this year, “Adapt or Die: How to Reevaluate your Building Materials Business Strategy.”

**Define value**

Companies strive to create more value for customers, but value is defined by the withholder, says Hershberger. Further, the definition of value can
Stand out from your competition

Homeowners love the ease and beauty that Blink blinds between glass brings to their home. Increase your margins with no investment. 

Include Blink in your offering! 
(or someone else will)

Visit blinkblinds.com to learn more.
vary depending on where a company is in the supply channel. Key-Link considers the distributor, dealer and homeowner, but ultimately targets the installer when considering what value is. “If an installer doesn’t love to install it, he won’t request that product anymore,” he says. “That’s what our litmus of pass-fail is.”

Education and resource allocation is another part of the value a company can give its clientele. Hershberger notes his business development team educates down channel to ease transactions. “The process, as well as the product, brings value,” he says.

Data insights
Hershberger shares that Key-Link is discontinuing 44 percent of its product line this year and undergoing what he calls a “major overhaul” of its product lines. “There aren’t many easy conversations,” he says, “but the past two years have allowed us to sit down and look at the numbers behind it.” For example, the company has about 10 infill options, yet only three accounted for 96 percent of all sales. The remaining four percent were being ordered in job lot, meaning from customers who didn’t want stock and were shipping through a channel. “If our partners in the channel won’t stock it,” he queried, “how much of a demand is that product having in the marketplace?”

Hershberger encourages companies to gain insights into product line data, including what products are the top movers and what categories customers are demanding. Key-Link’s decision to discontinue products was born out of about a year of data analysis, he says.

He also notes today’s “unique environment” precipitated much of the decision to discontinue products. “We’ve had to consolidate resources as raw materials and supply chains are constrained and devote resources to top-moving product.”

Companies also must continually evolve. “We have some legacy SKUs that make us who we are today, but is it the right product for today’s environment?” Hershberger asks. He recommends examining SKU rationalization and why a company sells what it sells. “If we don’t change and adapt [to the current environment], we’re going to die,” he says.

Product marketing and life cycle is another area to examine. Hershberger notes the cycle of product launch, implementation, growth, maturity and then potential decline. The question is how to move a product from the decline stage back to growth. He presents two options: tweak it and launch it back through, or discontinue it, take some time to reimagine it and relaunch it through the entire cycle. Key-Link is choosing the latter option for many of its discontinued products. “We know we need to market those products better and have a team that can market these down through the channel once we have the ability to relaunch those products,” he says.

Clear communications
Hershberger urges companies to consider internal and external communications around business decisions and announcements. The internal team should be aware of any changes and armed with information in advance of the customer being notified. Key-Link shares information through typed letters, email and on its website and social media.

Weather Shield shared the letter it sent to its customers from Todd Hallstrand, vice president of sales, explaining its decision to exit vinyl production. The letter cited increasing constraints from labor availability and supply chain disruptions, noting that “the time is right to focus our labor resources and capacity on the best business lines and products to ensure success in the future for Weather Shield.”

It continued, “The discontinuation of vinyl windows and doors will allow production employees to transition to clad production so that we can fully staff those lines for increased output. The market for wood window and door products remains exceptionally strong, and we already have adequate demand to support significantly expanded manufacturing capacity of these products.”

Weather Shield stopped accepting orders for its vinyl line in mid-May and expects winding down vinyl production will take several months as they work to fulfill the backlog of orders.

The letter concluded with an open door to sales representatives so that customers can adjust volumes as needed and examine other product lines for their needs.

Weather Shield, Climate Solutions and Key-Link are just some examples of companies consolidating and discontinuing products for the greater good of the company. “Change is tough, but if we don’t embrace that change, we’ll ultimately falter or fail,” says Hershberger. “We all need to continue to move forward to get where we’re going.”
If You are Stuck Being Dependent on Imports, We Offer our Condolences

16,000 Miles from your source, Long Supply Chain, Long Term Contracts, Managing Supply Chain Logistics,

If You Would Like to Enjoy the Benefits of American Made Hardware We Offer our Services

Want to Visit one of the Only Hardware Companies In the USA? We will Pay your Way to Visit Our Domestic Factory!

Tilt Latches
Routed In-Top Mount-or Submarine

RoBo-Sync
Lock/Tilt Combo

Vent Stops
FER Rated
Trouble Free
WOCF Slips
WOCF Jamb Holders

RoBo-Shot

Weeps
Weep Covers
Hole Plugs

Sash Locks

Reduced Inventory
World Class Prices
World Class Quality
Inventory Management Programs

In House:
Design
Tooling

Why Buy from
Any Other
Country?

From Concept to Delivery
Faster than Anyone on the Planet!

100% Made in USA
Capital Investments
The state of window manufacturing from an equipment supplier’s perspective

The Top Manufacturers Report in this issue (page 28) details the conundrum of the fenestration industry post-pandemic: orders are nonstop with no signs of slowing, while product, materials and labor are no match for the demand. Automation and technology are critical to the resolution. Window + Door asked Joseph Machine Company’s David Kline, Vice President of sales and marketing and CEO Anthony Pigliacampo to address why it is crucial for manufacturers to continue to invest and how choosing the right partner makes all the difference in a successful transition.

WD: Let’s dive right into the current state of the industry. What are you seeing from JMC’s vantage point?

David Kline: Our industry is facing the same inflationary and labor pressures as everyone else. The good news is that demand is high; the bad news is fulfilling it is more challenging than ever. We believe automation is a solution to many of these issues. As wages rise and workers become harder to come by, automated solutions can allow manufacturers the ability to produce more with the same head count… and make the jobs easier so that the worker experience is improved, helping retention and satisfaction.

WD: Yes, labor is a big one. And, of course, supply chain. How is JMC navigating supply chain challenges?

Anthony Pigliacampo: The current supply chain challenges are unprecedented and unpredictable. We have worked to expand our supplier network and seek out alternative components so, when one is unavailable, we are not limited in our ability to produce machinery. Our experience in custom manufacturing has also helped us tremendously. We have a large engineering team that has been able to redesign various parts of machines around what we are able to source.

On our customers’ end, supply chain certainly impacts lead times, but not nearly as much as high demand. There is a tremendous need in our industry for automated solutions right now and that is driving lead times more than anything else. It’s paramount to be more proactive in budgeting and planning.

WD: Yes, and, in the same vein, we hear manufacturers struggle to take a production...
time-out to focus on integrating new systems and equipment. What do you have to say about this time factor?

AP: What we see is that new solutions tend to integrate into operations easily and pay for themselves relatively quickly. Where time becomes important is planning for future needs. Customers often come to us with an immediate need for a solution. And, with customized capital equipment, machines and parts are not just sitting on a shelf. Manufacturers need to allow appropriate time for their suppliers to produce machines in relation to when they need them to be put into service.

WD: Point taken. Now, let’s shift to talk more about specific equipment. What’s trending in automated equipment?

DK: Every manufacturer has specific bottlenecks in their production; we offer solutions for maximizing output accordingly. There is no single solution. JMC has a deep engineering team that engages with customers to understand exactly what they need and help them craft solutions to meet those goals.

We are also able to offer an advanced automated manufacturing line from ‘stick to opening.’ A line built with Joseph fab centers, welders and cleaners offers the highest throughput, safest worker environment and best ROI of any solution in the market.

But also consider that, in modern manufacturing, capital equipment is really a software system that drives a mechanical system. We spent years developing a new .NET software platform to power all JMC equipment. This architecture will enable equipment to stay up to date much easier than in the past, with remote upgrade capabilities and a seamless way to roll out new features to customers. Our system not only works across equipment, but offers simple, easy-to-use menus and screens to train operators more easily. It also has a flexible back end that can connect to all data sources present in a modern factory.

WD: What about the universal problems most manufacturers contend with? What are the issues and what solutions exist?

DK: In a word, consistency. Our welder fixtures are the most mechanically rigid in the industry, which ensures every weld is identical when welding multiple frames and sashes at the same time. Our controls and software can be seamlessly tied to our fabrication equipment, allowing for a consistent user interface across a production line along with easy industry 2.0 data collection. And, our 24/7/365 service with remote diagnostic capability ensures our welders and cleaners will have the highest uptime of any equipment in the category.

WD: Consistency—we could all use more of that, especially after years of uncertainty. Another lesson we’ve come away with during such unprecedented times is how important relationships are across the board. Talk about why the supplier/manufacturer relationship is so important.

AP: Buying capital equipment is not a transaction; it is a marriage. We recently took in the 18th machine we ever produced to refit some tooling on it. This machine was delivered in the 1980s! You have to trust that whomever you purchase equipment from is going to be there 30 years from now. Manufacturers need to be able to trust that their vendor has a willing and capable team that is ready to help should the need arise. We believe selling the equipment is just the starting point and we pride ourselves on providing the best support possible over the lifecycle of our equipment.

WD: One last thing: tell us the secret to how JMC has thrived in this industry for, what, 35-plus years?

AP: Yes, more than 35 years. JMC is a values-led, family-owned company that is committed to helping American manufacturing thrive. The team is committed to doing everything we can to not just deliver great equipment, but keep it working properly for as long as it is in service. Ours is a culture that is obsessed with the success of both our customers and our team members. This is incredibly important—we are always focused on innovating and improving our products and everyone that works here loves that continual growth mindset.
GREATEST OPPORTUNITIES FOR THE YEAR AHEAD

• INTERNET SALES
• REMODELING
• GEOGRAPHIC EXPANSION
• TECHNOLOGY AND AUTOMATION
• PRODUCT GROWTH
• REDUCED LEAD TIMES
• LARGE PROJECTS
• ENERGY EFFICIENCY

Source: 2022 Window + Door Top Manufacturers Survey

Photo courtesy of Van Isle Windows
Headlines and reports from the past year have made it easy to focus on the challenges in the overall economy and hardships in the construction products market specifically. From worsening supply chain complications to rapidly rising inflation to fallout from the ongoing Ukraine-Russia war, many factors have negatively impacted the market. Within those hardships, however, lies plenty of opportunity for manufacturers to expand business and continue to innovate.

As the 2022 Industry Pulse, published in the January-February issue of Window + Door, said, this is the year when companies are finally starting to work on their businesses again, rather than just in their businesses. Labor, costs, materials and supply chain might be hard, but rather than merely “getting by,” many companies are navigating these challenges while actively growing and best meeting their customers’ evolving needs. Window + Door’s Top Manufacturers Report, presented in the coming pages, supports this sentiment.

This year’s report examines the market, pain points and product trends with commentary from manufacturers about how they are expanding in today’s conditions while mitigating challenges.
The Big Picture

The Big Picture

Despite operating in a niche market, it’s important that residential fenestration manufacturers take stock of the building market as a whole to best understand where window and door products fit in and what overall building trends are affecting the market.

New Home Construction

Sales of newly built single-family homes in March fell 8.6 percent to a 763,000 seasonally adjusted rate from an upwardly revised reading in February, according to the U.S. Department of Housing and Urban Development and the U.S. Census Bureau. New home sales are down 12.6 percent compared to March 2021. “Buyers are facing sticker shock due to deteriorating affordability conditions and a lack of existing home inventory,” says Danushka Nanayakkara-Skillington, NAHB assistant vice president of forecasting and analysis. “Only 14 percent of new home sales in March were priced below $300,000. A year ago, it was 34 percent.” The median sales price rose to $436,700 in March from $421,600 in February and is up more than 21 percent compared to a year ago, due primarily to higher development costs.

Those higher costs, which include rising interest rates and higher construction costs, continue to deteriorate builder confidence and housing affordability. Builder confidence in the market for newly built, single-family homes declined in April for the fourth consecutive month, according to the National Association of Home Builders/Wells Fargo Housing Market Index. “Despite low existing inventory, builders report sales traffic and current sales conditions have declined to their lowest points since last summer as a sharp jump in mortgage rates and persistent supply chain disruptions continue to unsettle the housing market,” says Jerry Konter, NAHB chairman.
Leading Indicator of Remodeling Activity - Fourth Quarter 2021

"The housing market faces an inflection point as an unexpectedly quick rise in interest rates, rising home prices and escalating material costs have significantly decreased housing affordability conditions, particularly in the crucial entry-level market," says Robert Dietz, NAHB chief economist.

Mortgage interest rates have jumped more than 1.9 percentage points since the start of the year and currently stand at 5 percent, the highest level in more than a decade.

Remodeling

Spending for home improvements and repairs is expected to expand at a stronger pace in 2022, but signs point to some easing of growth by year end, according to the latest Leading Indicator of Remodeling Activity from the Joint Center for Housing Studies of Harvard University. The LIRA projects double-digit gains in annual homeowner renovation and maintenance expenditure will top out in the third quarter of 2022 before beginning a deceleration toward more sustainable rates of growth.

While annual owner improvement and repair spending could reach $430 billion by the second half of 2022, several headwinds may still temper growth expectations this year, including rising costs of labor and construction materials, difficulty retaining contractors and climbing interest rates.

Strong remodeling conditions continue to boost remodeler confidence, according to the first quarter National Association of Home Builders/Westlake Royal Remodeling Market Index.

“Business remains strong
for most remodelers at the beginning of 2022,” says Kurt Clason, NAHB Remodelers chair. “However, a few are starting to report that customers are reluctant to move forward on projects due to the delays and higher costs caused by supply chain problems.”

The most recent RMI score of 86 indicates “positive remodeler sentiment and is consistent with NAHB’s projection of moderate growth in the remodeling market for 2022,” says Dietz.

### Manufacturing

Nearly 89 percent of the overall manufacturing industry is positive about their companies’ outlook, according to the National Association of Manufacturers’ Outlook Survey for the First Quarter of 2022.

A further breakdown of survey findings revealed:

- Expected growth rate for sales over next 12 months: 6.1 percent
- Expected growth rate for full-time employment over next 12 months: 3.7 percent
- Expected growth rate for production over next 12 months: 5.6 percent
- Expected growth rate for prices of company’s products over next 12 months: 6.1 percent (record high)
- Expected growth rate for inventories over next 12 months: 2.4 percent
- Expected growth rate for raw material prices and other input costs over next 12 months: 7.1 percent

Labor concerns in manufacturing will remain a concern for the rest of the decade. According to a study by Deloitte and The Manufacturing Institute, 2.1 million manufacturing jobs could go unfilled by 2030, which could cost $1 trillion in 2030 alone. An estimated 1.4 million manufacturing jobs were lost during the early days of the COVID-19 pandemic, setting the industry back by more than a decade. Executives report trouble filling higher-paying entry-level production positions, let alone finding and retaining skilled workers for specialized roles.

DEI initiatives can exert a growing influence on workforce trends, according to the report. “Attracting and retaining diverse talent presents both a challenge and solution to bridging the talent gap. To attract a new generation of workers, the industry should work together to change the perception of work in manufacturing and expand and diversify its talent pipeline,” says Paul Wellener, Deloitte vice chairman and U.S. industrial products and construction leader.

### Price Increases

Nearly all (93 percent) of professional contractors reported increased material costs in the past six months, with an average hike of 19 percent, according to research from the Home Improvement Research Institute. Here’s how contractors responded:

- 55 percent raised prices and absorbed increases
- 16 percent absorbed all price increases
- 29 percent passed all price increases to customers
- 57 percent lost bids due to price increases

The majority of pros expect prices will be even higher in six months, but the current high demand for contractors also means they aren’t yet concerned about losing jobs.
Unleash the power of PRODUCTIVITY

If you’re an Intercept® customer who’s looking to improve IG productivity by at least 30%, with no additional labor or capital expenses, GED has the solution for you.

Our IG Productivity Team will help you...

- Improve production throughput
- Maximize machinery uptime
- Optimize product quality
- Minimize material waste
- Optimize scheduling using GED Software
- Learn industry best practices

Unleash the full potential of your Intercept® IG manufacturing line and set yourself up for additional bottom-line gains.

CALL TO SCHEDULE A CONSULTATION: 330-289-6202

TAKE THE ONLINE ASSESSMENT: GEDUSA.COM/INTERCEPT-OPE-CALCULATOR
THE WINDOW + DOOR TOP MANUFACTURERS SURVEY, CONDUCTED IN LATE MARCH AND EARLY APRIL 2022, TOOK STOCK OF RESIDENTIAL FENESTRATION MANUFACTURERS OF ALL SIZES ACROSS NORTH AMERICA. NEARLY ALL RESPONDENTS CITED INCREASED DEMAND AND SALES, AND MOST EXPECT THAT TREND TO CONTINUE EVEN AS PRESSURE RELATED TO MATERIALS, LABOR AND SUPPLY CHALLENGES INCREASES.

Source for all charts unless otherwise noted: 2022 Top Manufacturers Survey

**Market Conditions**

Unpredictability in material availability; rising material costs, often with little to no notice; long lead times and labor continue to plague most companies and cause many to rethink how to manage their businesses. “Rising material costs make it difficult to meet consumers’ needs,” said one, while another noted the “choke-hold on production” supply chain issues caused. “The projects are still coming in, but the challenges to get materials, produce and deliver are still prevalent, meaning at some point capacity will hit a ceiling.”

**GROWTH METHODS:**

- Hired employees: 84%
- Gained market share: 79%
- Expanded product lines: 73%
- Expanded geographic sales areas: 50%
- Acquired other companies: 18%
- Other: 9%

*Other includes organic growth, increased production and new product launches*
The Arizona-based window and door manufacturer has achieved astounding growth in recent years through its unique business model, customer dedication, and building quality products with help from Quanex.

How does a window and door company achieve tremendous growth in a challenging business climate? Ask Arizona’s Avanti Windows & Doors, and they’ll tell you it’s a dedication to a unique business model and always delivering quality to its customers.

“We specialize in window and door products and installation for the nation’s leading big builders,” says Dustin Petty, president, Avanti Windows & Doors. “Our customers are looking for trade partners to help them build better homes in less time—and that’s what we help them do. We only sell what we manufacture—high-quality window and door systems. And for everything we sell, we provide installation services, following a strict quality control process to ensure long-term performance for our customers and homeowners.”

Avanti began manufacturing window and door systems in 2014. From the beginning, Avanti worked with Quanex to source warm-edge spacer systems to deliver high-performing insulating glass (IG) that Petty knows his customers are seeking. Built with either Duralite® or Super Spacer® systems depending on the product line, Avanti has consistently delivered quality window and door systems across an explosive growth trajectory.

Growing with the Market

Part of Avanti’s mission is to help homebuilders complete new homes quickly and profitably to keep up with consumer demand. “Our focus, day in and day out, is to build quality homes and do it in less time,” said Petty. “The challenge is scaling our business to support the rapid growth of our customers.”

And throughout the Southwest where Avanti does most of its business, demand is particularly high for large-format windows and sliding doors. In the warm climate, many homeowners want to welcome in the weather as much as their homes will allow them to do so.

“Large-format patio door configurations, where we use Super Spacer to fabricate the insulating glass, have become our bread and butter,” Petty adds. “And that’s some of the most complex IG to make. It’s big, heavy and hard to handle. It has to be perfect when it’s being installed in someone’s new home.”

For these reasons, Avanti has invested in high-speed automated equipment to reliably fabricate large-format and other IG with Super Spacer and Duralite technologies. “We have a dedicated line that produces patio door IG all day long. It has run almost continuously every day for the past six years, and it’s a huge part of how we’ve been able to deliver on higher demand and grow our business.”

To further support this area of the business, Avanti also works with Quanex to source screen door solutions for a variety of its patio door systems. Petty notes that the high-quality screen doors, which they purchase in a variety of configurations, have helped Avanti further differentiate itself from the competition.

Continuous Collaboration

Like any window and door manufacturer, Avanti is keenly aware of how difficult sourcing and supply of raw materials have been throughout the past couple years.

“You can’t build windows without glass and spacer,” Petty says. “And continuity of supply has been a challenge for everyone in the industry. We’ve worked closely with Tony Thiret [Quanex territory sales manager] to make sure we have what we need. He’s done a great job truly being our advocate—he works hard to understand the growth trajectory that we’re on and what we need to continue our success. Quanex has provided a tremendous level of service and transparency. Relationships like this one are critical for this moment in the industry and where we’re headed.”

Learn more about our solutions at www.Quanex.com.
That trend toward indoor-outdoor living has only grown and spread across the U.S., particularly in the South. Likewise, Win-Dor has extended its footprint over the years, offering its high-quality windows and doors to homeowners through a nationwide network of retailers.

“Now, more than ever, people want to extend their living spaces into the outdoors, and more and more builders have adopted the concept into the design of their homes,” said David May, general manager, Win-Dor. “This was really our first step into the big specialty market that has fueled our growth over the years.”

While Win-Dor became known for large-format doors, the company offers a wide range of standard-sized and customized sliding doors, swing doors and folding windows that are on trend with consumer design preferences.

An Ally in Quality and Growth

As Win-Dor was looking to grow its business, they made the decision to make the switch to Super Spacer® in 1998—and they never looked back.

According to May, switching to Super Spacer was the easy way to make better insulating glass (IG). They were using aluminum spacers prior and always counted on a certain number of failures. But all that changed.

“The failure rate went from what we considered acceptable down to practically zero,” he said. “We were also able to improve energy efficiency and provide better lead times, creating an excellent experience overall for our customers.”

And as the years passed, the Win-Dor and Quanex relationship only grew stronger as the company added automated Erdman Super Spacer lines that would further improve quality and production efficiency.

May considers it their biggest success story when it comes to automation. “The process was smooth, worked well and enabled us to solve any problems in-house. It gave us much more control over production. We know with certainty the number of IG units we can produce in a shift and what we can get off the line. The consistent volume has been a game changer for our business.”

Almost a Quarter Century of Success

After 24-plus years of working with Quanex, May takes comfort in knowing he has people he can reach out to for help—but he doesn’t need it very often. Because of the quality of Super Spacer and decades of collaboration, when the Quanex technical services team visits, they don’t find much in their audits.

“Working with the Quanex technical services team has been a positive experience,” May said. “Even when they do find things, it’s usually small, and they make good recommendations on how to resolve any issues. We might not need to call very often, but when we do, the Quanex team is always readily available.”

Enduring products start with enduring relationships—and that’s how Win-Dor and Quanex have grown together over the years.
That's exactly what the Mikron team did leading up to the installation of new state-of-the-art equipment in 2019. What started as an initiative to keep up with market demands and reduce scrap ended up having far-reaching benefits, including improved morale, shortened lead times, energy savings, increased scrap recycling and many process improvements.

“We found that attending to the core issue involved shifting our collective frame of mind,” said Larry Robinson, vice president, Operations for Window and Door Profiles. “We went from asking what needs to be fixed temporarily to constantly asking how we can make things better.”

It was a shift in attitude for everyone in the organization. The team shifted from reacting to orders as they happened to planning ahead—and that planning involves sales, purchasing and production that forecast demand and proactively source raw materials to get product in the hands of customers faster.

“As of early 2022, our on-time delivery has improved to around 98% even among widespread global supply chain problems,” Robinson said. “We are a work in progress, but we are learning what it takes to succeed in today’s environment, and our customers appreciate the commitment to delivering on their needs.”

The commitment, the investment and the change in mindset have put Quanex in a position to stay ahead of curve when it comes to supplying consistent, high-quality vinyl window and door profiles. But the shift has also had a significant impact on sustainability efforts. Mikron now recycles more than 90% of scrap generated, and the new equipment has generated energy savings of nearly 1,500,000 kilowatt hours annually—that’s as much as used in nearly 1,400 homes.

The biggest lesson learned? Robinson said it is to always ask “Why?” and to focus on continuous improvement that will have lasting benefits. It’s how companies go from “the way that it’s always been done” to “the way that is best for our future.”

Keeping up with the demand in today's business environment requires a new kind of decision-making. So often decisions are made based on what’s good for today. But the best decisions are not often the easiest ones because it requires companies to dig deep, explore root causes and find sustainable solutions to daily problems.

Quanex Hits the Road!

We’re excited to see our customers face-to-face once again this year at some of the fenestration industry’s biggest tradeshows. It’s where we make and strengthen the quality connections with our customers that drive our mutual success.

Where will we be this year? Find us at:
- GlassBuild America, October 18-20 in Las Vegas | Booth 7026
- WinDoor, November 9-10 in Montreal

At each show, we’ll be showcasing our latest innovations that fenestration professionals can count on. From warm-edge spacer solutions to groundbreaking efficient window and door framing systems, we can show you how to seize the future in our ever-changing industry.
Contributing to the success of our customers while helping them make a positive impact on the world has always been a driving motivator for Quanex. And today, that mission is more important to us than ever before.

It’s why this year, we’ve launched A Part of Something Bigger—an evolution of the Quanex brand that you trust, with a greater emphasis on all that we do and the people who do it every day.

What it Means
At Quanex, we are A Part of Something Bigger by:

• Improving the performance and aesthetics of end products through continuous innovation
• Helping customers achieve greater production efficiencies
• Giving back to communities where we operate
• Enhancing shareholder value
• Helping our employees learn, grow and thrive

As industry-leading experts, we partner with our customers to offer solutions and services that help their products and business stand out. Our solutions and processes are found in a wide range of industries and applications, including windows, doors, kitchens, offices, global landmarks, on transportation, refrigeration, solar panels—and much more.

We’re excited to carry out our new brand mission in everything that we do—for you, our customers and the world.

Why We’re Doing It
Quanex was founded as Michigan Seamless Tube Company in 1927. The original focus was on producing tubing made from steel alloys. It wasn’t until 1977 that the company became Quanex, moving its headquarters to Texas. Today, Quanex has over 3,800 employees at more than 30 locations around the world. Our products and technologies can be found in 90 countries.

While we are everywhere, people may not see all we do. Quanex was born from a series of acquisitions over the course of our history—each with their own culture and way of doing things. Each and every legacy company is valued for their history and innovation. We’re now more connected than ever.

A Part of Something Bigger ties together our legacy, our scope and our heritage. It reflects how we’re positively impacting customers one idea, one component and one person at a time. It’s who we are and drives us to continue pursuing ongoing innovation for the most demanding applications of our customers around the world.

Scan the code to see how Quanex is A Part of Something Bigger.
The seeming permanence of working from home and strong housing and remodeling demands were among the most-cited reasons companies gave for increased demand. One Florida-based manufacturer said, “The ‘work from home’ mentality is driving new construction and remodeling not only in Florida, but across the country. People are spending more time in their homes and therefore wanting to invest more in them.”

The work from home trend also allows families to relocate without sacrificing existing jobs. “The residential construction market is growing due to housing shortages in most major markets,” says another manufacturer. “The pandemic also had an impact on housing, sparking many individuals and families to move into new homes or relocate to new areas due to more prevalent remote work opportunities.”

87% had higher gross sales in 2021 compared to 2020, while 11% remained about the same.
Labor and Automation

Several manufacturers noted how many come from outside the industry and have little to no relevant manufacturing experience. Training is also difficult, especially when demand is so high. “Training requires the attention of a supervisor or other worker to train the new employee. Being busy makes that difficult to do without impacting current production rates,” said one manufacturer. Many manufacturers also commented that retention is a problem, with many people leaving quickly, further constraining the ability to properly train.

Several manufacturers said added overtime and flexible shifts have helped ease labor challenges. One noted, however, to be careful with overtime because of the potential of reduced job satisfaction and even greater retention difficulties.

Materials and Supply Chain

Supply chain remains a widespread concern across all industries. Survey respondents offered some of their best practices for keeping upstream and downstream supply chains operating.

- Ordering earlier
- Increasing inventory levels
- Managing customer expectations
- Being flexible
- Multi-source
- Consistent communication with suppliers and customers

Clear customer communication and transparent, efficient operations are especially critical during a time of price volatility and increases. “We have looked for ways to operate more efficiently to allow for us to absorb price increases from our suppliers, rather than forward them onto our customers,” said one respondent. “We are also picking up on additional market share from competitors.”

Are you considering looking for domestic suppliers?

- Yes: 63%
- No: 21%
- Undecided: 16%

What are the biggest benefits?

- Increased output: 68%
- Increased quality: 65%
- Labor savings: 59%
- Cost savings: 35%
- Operational transparency: 32%
- Other: 11%

*Other includes reduced waste and easier training

84% employ automation at their factory.

66% of respondents source materials internationally.

66% plan to add automation in the coming year.

100% of respondents indicated their material prices increased in the past year with an average increase of 29%.
**How deep is your backlog?**

1. 1-2 weeks: 2%
2. 2-4 weeks: 12%
3. 4-8 weeks: 19%
4. 8-12 weeks: 29%
5. 12-16 weeks: 23%
6. Longer: 15%

---

**What is your biggest labor challenge?**

- Recruitment: 46%
- Retaining: 45%
- Training: 42%
- Other: 23%

79% of respondents had more difficulty finding workers in 2021 compared to 2020.

---

**What materials are most challenging to source?**

- Hardware and components: 72%
- Aluminum: 41%
- Glass: 39%
- Vinyl: 37%
- Laminate: 22%
- Wood: 13%
- Paint: 9%
- Chemicals: 6%
- Other: 9%

*Other includes weatherstripping and sealants

---

**How does this compare to last year?**

- Longer: 49%
- Shorter: 27%
- About the same: 24%

---

Many companies added suppliers for products they already use, primarily out of necessity because of lack of availability with existing suppliers and so they can reduce long lead times and ensure material availability. One survey respondent said multi-sourcing “allows us to stay competitive with both price and lead time.”

---

Strategic alliances have given some manufacturers increased assurance of timely shipments and volume and help with consistent, open lines of communication. “Establishing healthy partnerships and relationships are extremely important in our industry,” wrote one survey respondent. “Unlike in a down market, suppliers today have a nearly unlimited choice with which customers to service so the biggest benefits of having alliances, partnerships, etc., is that it enables higher levels of service and open/honest dialogue when challenges occur.”

---

Window and door manufacturers are tackling this challenge by submitting blanket orders, sourcing from other suppliers, making product changes when possible and sometimes just waiting for the supplies.
**Products**

About 70 percent of survey respondents manufacture vinyl windows and/or doors, again making vinyl the most ubiquitous material worked with, but manufacturers of all materials and product types, including wood, aluminum, fiberglass and more, share the common goal of manufacturing products to meet customers’ needs and market demand.

---

**What product features are your customers asking for?**

- Customized products (includes color, hardware, options, finishes): 84%
- Energy-efficient products: 82%
- Larger windows/doors: 76%
- Impact-rated products: 42%
- Sound abatement: 38%
- Historically accurate products: 24%
- Other: 6%

---

**How so?**

1. Triple-pane: 71%
2. Gas fill: 57%
3. Skinny triples: 20%
4. Dynamic glass: 17%
5. Thermally broken aluminum: 23%
6. Other: 29%

*Other includes spacers, foam fill, glass coatings and a larger IG pocket*
Fenestration and Glazing Industry Alliance 2021/2022 Study of the U.S. Market for Windows, Doors and Skylights

Forecasts are based on projections of construction activity as of April 2022.

### Prime Window Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>8.8%</td>
</tr>
<tr>
<td>2022 (projected)</td>
<td>5%</td>
</tr>
<tr>
<td>2023 (projected)</td>
<td>Flat</td>
</tr>
<tr>
<td>2024 (projected)</td>
<td>-5%</td>
</tr>
</tbody>
</table>

### Remodeling and Replacement Window Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>5%</td>
</tr>
<tr>
<td>2022 (projected)</td>
<td>5%</td>
</tr>
<tr>
<td>2023 (projected)</td>
<td>3%</td>
</tr>
<tr>
<td>2024 (projected)</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Entry Door Growth

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>New construction</td>
<td>8%</td>
</tr>
<tr>
<td>R&amp;R</td>
<td>-2%</td>
</tr>
<tr>
<td>Total Market</td>
<td>2%</td>
</tr>
<tr>
<td>Continued growth projected through 2024</td>
<td></td>
</tr>
</tbody>
</table>

### Residential skylight growth

6% increase in shipments in 2021
The Top Manufacturers List

THE TOP MANUFACTURERS LIST DETAILS NORTH AMERICA’S LARGEST MANUFACTURERS OF RESIDENTIAL WINDOWS, DOORS, SKYLIGHTS AND RELATED PRODUCTS, BASED ON SALES VOLUME

*Sales are estimated based on research; figures not provided by company

More than $1 Billion

Andersen Windows & Doors
BAYPORT, MINN.
ANDERSENWINDOWS.COM
800/426-4261
Product Lines: Wood, composite, vinyl-clad wood windows, aluminum and fiberglass windows, entry doors, and patio doors sold under the Andersen Windows and Doors, Renewal by Andersen, Heritage, MQ and Weiland brand names
Brands include Renewal by Andersen

Cornerstone Building Brands
CARY, N.C.
CORNERSTONEBUILDING BRANDS.COM
888/624-8677
Product Lines: Acoustic windows; aluminum patio doors, sliding doors and windows; aluminum-clad doors and windows; composite windows; impact-resistant aluminum doors and windows; impact-resistant doors; impact-resistant vinyl patio doors and windows; impact-resistant windows; insulating glass units; multi-panel doors; multi-slide pocketing doors; patio doors; sliding doors; vinyl casement patio doors and windows; vinyl doors, entry doors, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows; and wood patio doors and windows

Jeld-Wen
CHARLOTTE, N.C.
JELD-WEN.COM
800/535-3936
Product Lines: Aluminum patio, sliding and swing doors, and windows; aluminum-clad doors and windows; architectural windows; barn doors; bi-fold doors and windows; composite patio doors and windows; entry doors; fiberglass entry doors, patio doors and swing patio doors; fire-rated doors; flush-glazed door panels; glass exterior and interior doors; hybrid aluminum/ vinyl doors and windows; impact-resistant doors; impact-resistant vinyl patio doors and windows; insulating glass units; interior doors; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; prehung doors; sliding doors; steel doors; tilt-and-turn windows; vinyl casement patio doors and windows, multi-panel patio doors, patio doors, replacement windows, sliding doors, swing doors and windows; vinyl-clad patio doors and windows; and wood-clad doors and windows
Brands include Aneeta Window Systems, Corinthian, Dana, Dooria, Karona, LaCantina, MMI, Stegbar, Swedor, and VPI Quality Windows

Marvin Windows and Doors*
WARROAD, MINN.
MARVIN.COM
888/537-7828
Product Lines: Aluminum and fiberglass doors, wood and aluminum-clad windows and doors, fiberglass windows and doors, interior doors, impact-resistant windows and doors, impact-resistant garage doors, fiberglass skylights and smart skylights, aluminum and fiberglass Sky-cove units
Subsidiaries include Infinity from Marvin Replacement Windows, TruStile Doors, Tecton Products and SIW Windows & Doors

Masonite
TAMPA, FLA.
MASONITE.COM
800/895-2723
Product Lines: Barn doors; bi-fold doors; composite entry doors; door glass; entry doors; fiberglass entry doors, patio doors and swing patio doors;
fire-rated doors; flush-glazed door panels; impact-resistant doors; injection-molded frames; insulating glass units; interior doors; prehung doors; steel doors; and wood entry doors, interior doors and patio doors

Subsidiaries include USA Wood Door, Premdor, National Hickman, Door-Stop International, Solidor, Residor, Nicedor, BWI Distribution, Louisiana Millwork and Florida Made Door

**MITER Brands**

GRATZ, PA.
MIWINDOWS.COM
717/365-3300

**Product Lines:** Aluminum entry doors and windows; fiberglass patio doors and windows; and vinyl sliding doors and windows

Subsidiaries include MI Windows and Doors, Milgard Windows & Doors and Sunrise Windows & Doors

**Pella Corp.**

PELLA, IOWA
PELLA.COM
877/473-5527

**Product Lines:** Wood windows and patio doors, vinyl windows and patio doors, fiberglass windows and patio doors, wood entry doors, multi-slide doors, pivot doors

Subsidiaries include Duratherm Windows, Custom Window Solutions, Avanti Inc., Avanti Install California, Bonelli, Bonelli Southwest and Reilly Windows

**PGT Innovations**

NORTH VENICE, FLA.
PGTINNOVATIONS.COM
941/480-1600

**Product Lines:** Aluminum entry and patio doors, porch enclosures, sliding doors, swing doors and windows; architectural windows; bi-fold doors; door glass; entry doors; glass exterior doors; impact-resistant aluminum doors and windows; impact-resistant vinyl patio doors and windows; insulating glass units; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; porch and patio enclosure; sliding doors; vinyl casement windows, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors, swing doors and windows; and window wall

Subsidiaries include CGI, PGT Custom Windows and Doors, WinDoor, Western Window Systems, Eze-Breeze, CGI Commercial, NewSouth Window Solutions, Eco Window Systems, Anlin Windows & Doors

**PGT Innovations**

NORTH VENICE, FLA.
PGTINNOVATIONS.COM
941/480-1600

**Product Lines:** Aluminum entry doors and windows; fiberglass patio doors and windows; and vinyl sliding doors and windows

Subsidiaries include MI Windows and Doors, Milgard Windows & Doors and Sunrise Windows & Doors

**MITER Brands**

GRATZ, PA.
MIWINDOWS.COM
717/365-3300

**Product Lines:** Aluminum entry doors and windows; fiberglass patio doors and windows; and vinyl sliding doors and windows

Subsidiaries include MI Windows and Doors, Milgard Windows & Doors and Sunrise Windows & Doors

**Pella Corp.**

PELLA, IOWA
PELLA.COM
877/473-5527

**Product Lines:** Wood windows and patio doors, vinyl windows and patio doors, fiberglass windows and patio doors, wood entry doors, multi-slide doors, pivot doors

Subsidiaries include Duratherm Windows, Custom Window Solutions, Avanti Inc., Avanti Install California, Bonelli, Bonelli Southwest and Reilly Windows

**PGT Innovations**

NORTH VENICE, FLA.
PGTINNOVATIONS.COM
941/480-1600

**Product Lines:** Aluminum entry and patio doors, porch enclosures, sliding doors, swing doors and windows; architectural windows; bi-fold doors; door glass; entry doors; glass exterior doors; impact-resistant aluminum doors and windows; impact-resistant vinyl patio doors and windows; insulating glass units; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; porch and patio enclosure; sliding doors; vinyl casement windows, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors, swing doors and windows; and window wall

Subsidiaries include CGI, PGT Custom Windows and Doors, WinDoor, Western Window Systems, Eze-Breeze, CGI Commercial, NewSouth Window Solutions, Eco Window Systems, Anlin Windows & Doors

**Velux USA**

GREENWOOD, S.C.
VELUXUSA.COM
803/396-5700

**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

**$500 Million to $1 Billion**

**KÖMMERLING USA**

HUNTSVILLE, ALA.
KOMMERLING.US
800/330-2239

**Product Lines:** Lift-and-slide patio doors, tilt-and-turn windows, balcony doors, residential doors, large fixed lights

KÖMMERLING is a profine Group company

**Starline Windows**

SURREY, BRITISH COLUMBIA, CANADA
STARMINETEWINDOWS.COM
604/882-5100

**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; and entry doors

Subsidiaries include Starline Installations Ltd.

**Therma-Tru Doors**

MAUMEE, OHIO
THERMATRU.COM
800/843-7628

**Product Lines:** Fiberglass and steel entry doors, impact-rated fiberglass doors, door system components

Subsidiaries and sister companies include Moen, Perrin & Rowe, Riobel, ROHL, Shaw's Victoria Albert, LARSON, Fiberon, Fypon, Master Lock, American Lock SentrySafe, and Master-Brand Cabinets

Therma-Tru’s parent organization is Fortune Brands Home Security

**$300 Million to $500 Million**

**Associated Materials**

CUYAHOGA FALLS, OHIO
ASSOCIATEDMATERIALS.COM
800/922-6009

**Product Lines:** Vinyl windows and patio doors, multi-panel vinyl doors

Brands include Alsie, Gentek, Alpine Windows, Preservation

**Harvey Building Products**

WALTHAM, MASS.
HARVEYBUILDINGPRODUCTS.COM
800/598-5400

**Product Lines:** Acoustic windows; entry doors; impact-resistant vinyl windows; patio doors; porch and patio enclosures; vinyl patio doors, replacement windows and sliding doors; and wood patio doors and windows

Subsidiaries include Harvey Windows + Doors, SoftLite Windows & Doors, Thermo-Tech Windows and Doors, Northeast Building Products

**Novatech**

SAINTE-JULIE, QUEBEC, CANADA
GROUPENOVATECH.COM
844/986-8001

**Product Lines:** Steel and fiberglass entry doors; vinyl patio doors; door glass; vinyl frames; injection-molded frames; louvers

Subsidiaries includes RSL Inc.

**Sierra Pacific Windows**

RED BLUFF, CALIF.
SIERRAPACIFICWINDOWS.COM
800/824-7744

**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; and wood-clad windows and doors
PRO-CLEAN CNC-43
Single Head Programmable Cleaner

PRO-CLEAN CNC-6100
Twin Head Programmable Sash Cleaner with full fabrication capabilities

PRO-CLEAN CNC-27
Twin Head Programmable Cleaner for Frame or Sash with auto sizing
Sierra is part of Sierra Pacific Industries

Steves & Sons Inc.
SAN ANTONIO
STEVESDOORS.COM
800/627-5111
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, and wood entry and patio doors

Woodgrain Millwork*
FRUITLAND, IDAHO
WOODGRAIN.COM
888/783-5485
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 via the Windsor Windows & Doors, Ashworth, and Monarch Windows and Doors brand names
Subsidiaries include Huttig Building Products

$200 Million to $300 Million

Champion*
CINCINNATI, OHIO
CHAMPIONWINDOW.COM
877/424-2674
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, and wood entry and patio doors

Kolbe & Kolbe Millwork Co.*
WAUSAU, WIS.
KOLBEWINDOWS.COM
715/842-5666
Product Lines: Wood, vinyl and aluminum windows and patio doors; wood and fiberglass entry doors

ProVia*
SUGARCREEK, OHIO
PROVIA.COM
330/852-4711
Product Lines: Wood-clad and vinyl windows and patio doors; steel and fiberglass entry doors; aluminum storm doors and storm windows

Polaris Windows & Doors*
AUSTINTOWN, OHIO
POLARISWINDOWS.COM
216/926-6151
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, and wood entry and patio doors

Polaris is part of Modern Builders Supply

Quaker Windows and Doors
FREEBURG, MO.
QUAKERWINDOWS.COM
800/347-0438
Product Lines: Aluminum sliding doors, swing doors and windows; aluminum-clad doors and windows; architectural windows; impact-resistant aluminum doors and windows; impact-resistant vinyl patio doors and

Photo courtesy of Glo Windows & Doors
Discover the fehr difference

Get custom warehousing solutions tailor-made for the window and doors industry. We are the only company specializing solely in manufacturing warehouse solutions. Fehr makes it easy for you to envision what’s possible with innovative logistics. Plus, with perfectly coordinated handling, ergonomics, and efficiency planned in, you can optimize your warehouse system even more.

Fehr Warehouse Solutions Inc.
4801 Chastain Avenue, Suite 140, Charlotte, NC 28217
T +1-704-666-8448, info@fehr-usa.com, www.fehr-usa.com
Product Lines: Vinyl and aluminum windows and aluminum patio doors
Boral’s parent organization is Boral North America

Crystal Window & Door Systems
FLUSHING, N.Y.
CRYSTALWINDOWS.COM
718/961-7300
Product Lines: Aluminum patio doors, sliding doors and windows; insulating glass units; tilt-and-turn windows; vinyl casement windows, patio doors, replacement windows, sliding doors and windows; and upVC windows and sliding doors
Subsidiaries include Crystal California Window & Door Systems, Crystal Window & Door Illinois Manufacturing (Crystal Chicago), Crystal Pennsylvania Window & Door Systems

Weather Shield Mfg.*
MEDFORD, WIS.
WEATHERSHIELD.COM
800/222-2995
Product Lines: Wood, aluminum-clad wood, aluminum, vinyl-clad wood, fiberglass, and fiberglass-clad wood windows and patio doors

$100 Million to $200 Million

All Weather Windows*
EDMONTON, ALBERTA, CANADA
ALLWEATHERWINDOWS.COM
780/451-0670
Product Lines: Vinyl windows, clad windows, fiberglass and steel entry doors, patio doors, and multi-panel vinyl doors

Boral Windows LLC*
ATLANTA
BORALWINDOWS.COM
469/862-5178
Product Lines: Vinyl and aluminum windows and aluminum patio doors
Boral’s parent organization is Boral North America

Loewen Windows and Doors
STEINBACH, MANITOBA, CANADA
LOEWEN.COM
800/563-9367
Product Lines: Bi-fold doors; bronze-clad doors and windows; copper-clad doors and windows; impact-resistant doors and windows; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; sliding doors; tilt-and-turn windows; wood entry doors, patio doors and windows; and wood-clad doors and windows
Subsidiaries include CODEL Doors, Builders Hardware

Trinity Glass International
FEDERAL WAY, WASH.
TRINITYGLASS.COM
253/875-6700
Product Lines: Door glass; entry doors; fiberglass entry and patio doors; fire-rated doors; impact-resistant doors and vinyl patio doors; and patio doors
Subsidiaries include Signamark, Feather River Doors

Vinylmax Windows*
HAMILTON, OHIO
VINYLMAX.COM
800/847-3736
Product Lines: Replacement and new construction vinyl windows and doors

Wincore Windows and Doors
PARKERSBURG, W.VA.
WINCOREWINDOWS.COM
304/424-3880
Product Lines: Entry doors; fiberglass entry and patio doors; impact-resistant doors, vinyl patio doors and vinyl windows; insulating glass units; patio doors; and vinyl casement windows, patio doors, replacement windows, sliding doors and windows

Air Master Windows and Doors
BARCELONETA, PUERTO RICO
AIRMASTERPR.COM
787/623-1800
Photo courtesy of All Weather Architectural Aluminum
Product Lines: Aluminum windows; bi-fold doors; entry doors; glass interior doors; interior doors; pivot doors; skylights; sliding doors; and storm windows
Subsidiaries include Megalum and sister company is Valmeg LLC
Air Master Windows and Doors’ parent company is Air Master Group

Elevate Windows and Doors
GRAND PRAIRIE, TEXAS
ELEVATEWINDOWS.NET
439/490-1100
Product Lines: Vinyl windows, sliding and patio doors

Midway Windows & Doors
CHICAGO
MIDWAYWINDOWS.COM
708/594-2600
Product Lines: Vinyl casement windows, patio doors, replacement doors and windows and new construction windows

Simpson Door Co.
MCCLEARY, WASH.
SIMPSONDOOR.COM
800/746-7766
Product Lines: Barn doors; bi-fold doors; entry doors; fire-rated doors; glass exterior and interior doors; impact-resistant doors; interior doors; patio doors; pivot doors; and wood entry, interior and patio doors

Thompson Creek Window Co.*
LANHAM, MD.
THOMPSONCREEK.COM
866/572-7335
Product Lines: Replacement vinyl windows and patio doors

Viyinco Inc.
MORGANTOWN, PA.
VIWINCO.COM
610/286-8884
Product Lines: Impact-resistant doors; impact-resistant vinyl multi-panel patio doors; vinyl patio doors and windows; multi-panel doors; multi-slide pocketing doors; patio doors; sliding doors; vinyl casement windows, doors, multi-panel patio doors, patio doors, replacement windows, sliding doors, windows; and window wall

Wallside Windows
TAYLOR, MICH.
WALLSIDEWINDOWS.COM
313/292-4400
Product Lines: Vinyl windows and patio doors

WinDor
BREA, CALIF.
WINDORSYSTEMS.COM
866/244-2193
Product Lines: Bi-fold doors and windows; multi-panel doors; multi-slide pocketing doors; patio doors; sliding doors; and vinyl casement windows, doors, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors, swing doors and windows

Window Mart*
ROYAL, ARK.
WINDOWMART.COM
888/283-6278
Product Lines: Vinyl windows and patio doors
Subsidiaries include Windows USA and WinTransport
Window Mart’s parent company is Big4 Companies

Vytex Windows
LAUREL, MD.
VYTEXWINDOWS.COM
877/747-8735
Product Lines: Vinyl casement windows, patio doors and replacement windows
Need to increase production?

We have solutions!

We build with top quality components. We custom build machinery for specific applications.

The challenge for every business is finding ways to maximize revenue and minimize costs. Your machine and equipment should be up for this challenge too! Hopefully, identify several factors that may have negative impact to your bottom line. Imagine the possibilities of trading in this money lost activities in exchange for revenue-generating ones. Your machine or equipment purchasing decisions may be the single biggest factor in this equation, so proceed with good investment.

Bromer equipment are made here in North America since 1984.

Visit us at www.bromerinc.com
Contact us at info@bromerinc.com
or by phone at 450-477-6682
### $50 Million to $75 Million

<table>
<thead>
<tr>
<th>Company</th>
<th>City, State/Province</th>
<th>Website</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arcadia Custom</strong></td>
<td>Tucson, Ariz.</td>
<td>ARCADIACUSTOM.COM</td>
<td>520/284-2070</td>
</tr>
<tr>
<td><strong>Builders FirstSource</strong></td>
<td>Marietta, Ga.</td>
<td>BUILDWITHBMC.COM</td>
<td>770/429-9285</td>
</tr>
<tr>
<td><strong>Castle Windows</strong></td>
<td>Mount Laurel, N.J.</td>
<td>CASTLEWINDOWS.COM</td>
<td>800/360-4400</td>
</tr>
<tr>
<td><strong>Conservation Windows</strong></td>
<td>Mount Carmel, Pa.</td>
<td>CONSERVATIONWINDOWS.COM</td>
<td>570/339-3374</td>
</tr>
<tr>
<td><strong>Durabuilt Windows &amp; Doors</strong></td>
<td>Edmonton, Alberta, Canada</td>
<td>DURABUILTWINDOWS.COM</td>
<td>800/544-3815</td>
</tr>
<tr>
<td><strong>Earthwise Group LLC</strong></td>
<td>Liberty Township, Ohio</td>
<td>EARTHWISEWINDOWS.COM</td>
<td>513/755-6707</td>
</tr>
<tr>
<td><strong>Gerkin Windows and Doors</strong></td>
<td>South Sioux City, Neb.</td>
<td>GERKIN.COM</td>
<td>402/494-6000</td>
</tr>
<tr>
<td><strong>LePage Millwork</strong></td>
<td>Quebec, Canada</td>
<td>LEPAGEMILLWORK.COM</td>
<td>877/289-0191</td>
</tr>
<tr>
<td><strong>Lincoln Windows &amp; Patio Doors</strong></td>
<td>Merrill, Wis.</td>
<td>LINCOLNWINDOWS.COM</td>
<td>800/967-2461</td>
</tr>
<tr>
<td><strong>Lux Windows and Doors</strong></td>
<td>Calgary, Alberta, Canada</td>
<td>LUXWINDOWS.COM</td>
<td>403/276-7770</td>
</tr>
<tr>
<td><strong>Fenplast</strong></td>
<td>Candiac, Quebec, Canada</td>
<td>FENPLAST.COM</td>
<td>514/990-0012</td>
</tr>
</tbody>
</table>

**Product Lines**
- Aluminum entry doors, patio doors, sliding doors, swing doors and windows; architectural windows; bi-fold doors; bronze-clad doors and windows; curtain wall; entry doors; glass exterior and interior doors; impact-resistant aluminum doors and windows; interior doors; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; prehung doors; sliding doors; steel doors; thermal steel doors and windows; tilt-and-turn windows; window wall; and wood entry doors, interior doors, patio doors and windows
- Arcadia's parent company is Arcadia Inc.

**Product Lines**
- Vinyl replacement windows; sliding glass doors; impact- and non-impact replacement windows
- Conservation Windows' parent company is Regency Plus

**Product Lines**
- Vinyl windows and sliding patio doors, fiberglass entryways and swing patio doors

**Product Lines**
- Vinyl windows, doors, patio doors, casement windows and patio doors, multi-panel patio doors, sliding doors, sunrooms, swing doors, replacement windows and doors; impact-resistant vinyl windows and patio doors; fiberglass entry doors; security doors; steel doors; storm doors

**Product Lines**
- Aluminum sliding doors, storm doors and windows, and vinyl patio doors, doors and windows

**Product Lines**
- Vinyl casement windows, multi-panel patio doors, replacement doors and windows, and sliding doors
- Subsidiaries include Quality Lineals USA Inc.

**Product Lines**
- Wood edge steel doors; steel edge steel doors, fiberglass door panels; flush glazed door panels

**Product Lines**
- Vinyl casement windows, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows

### $40 Million to $50 Million

<table>
<thead>
<tr>
<th>Company</th>
<th>City, State/Province</th>
<th>Website</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northeast Windows USA Inc.</strong></td>
<td>Merrick, N.Y.</td>
<td>NORTHEASTWINDOWSUSA.COM</td>
<td>516/378-6577</td>
</tr>
<tr>
<td><strong>Tru Tech Doors</strong></td>
<td>Vaughan, Ontario, Canada</td>
<td>TRUTECHDOORS.COM</td>
<td>888/760-0099</td>
</tr>
<tr>
<td><strong>ViWinTech Window &amp; Door Inc.</strong></td>
<td>Paducah, Ky.</td>
<td>VIWINTECH.COM</td>
<td>800/788-1050</td>
</tr>
<tr>
<td><strong>ATI Windows</strong></td>
<td>Riverside, Calif.</td>
<td>VINYLWINDOWS.CO</td>
<td>909/946-3697</td>
</tr>
</tbody>
</table>

**Product Lines**
- Vinyl casement windows, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows
- Subsidiaries include ABC Window Systems
WindowWrap® is a family of self-adhesive, self-sealing waterproofing tapes that bring quality and value to any building application. These advanced flashing solutions are the ultimate defenders against wind, water, insect and sound penetration. The WindowWrap® system of products deliver maximum protection for door and window weather barriers.

WindowWrap®—the system to stick with.

WindowWrap® Flashing Solutions
- Straight flash options
- Flex options for sill pan and curved shapes
- Low-temperature installations
- Commercial or residential

Visit mfmbp.com for a free sample or call 800.882.7663 today.
Centra Windows  
LANGLEY, BRITISH COLUMBIA  
CENTRA.CA  
888/534-3333  
**Product Lines:** Entry doors; and vinyl casement patio doors, casement windows, doors, multi-panel patio doors, patio doors, replacement doors and windows, sliding doors, swing doors and windows  
Subsidiaries include Supreme Windows

International Window Corp.  
CORONA, CALIF.  
INTLWINDOW.COM  
800/477-4032  
**Product Lines:** Acoustic windows; aluminum sliding doors and windows; multi-panel doors; multi-slide pocketing doors; and vinyl sliding doors, swing doors and windows  
Subsidiaries include Precision Screen, International Window Stockton, Northstar

Okna Windows Manufacturing*  
BRISTOL, PA.  
OKNAWINDOWS.COM  
215/788-7000  
**Product Lines:** Vinyl and composite windows and patio doors

Solaris International*  
QUEBEC, CANADA  
SOLARIS-INTL.COM  
800/363-0643  
**Product Lines:** Vinyl windows and patio doors, hybrid windows (aluminum exterior, PVC interior)  
Solaris’ parent company is Solaris Québec Portes et Fenêtres Inc.

The Coeur d’Alene Window Company  
SPOKANE, WASH.  
COEURDALENEWINDOW.COM  
509/340-0705  
**Product Lines:** Patio doors; vinyl multi-panel patio doors, patio doors, replacement doors and windows, sliding doors and windows  
Subsidiaries include McVay Brothers Inc.

YKK AP America Inc.  
AUSTELL, GA.  
YKKAP.COM  
866/348-9091  
**Product Lines:** Impact-resistant vinyl patio doors and windows; sliding doors; and vinyl casement windows, doors, patio doors, replacement windows, sliding doors and windows  
Subsidiaries include Erie Architectural Products Inc.  
YKK AP America’s parent company is YKK AP Inc.

$30 Million to $40 Million

All Weather Architectural Aluminum*  
VACAVILLE, CALIF.  
ALLWEATHERAA.COM  
800/680-5800  
**Product Lines:** Aluminum windows and doors

Comfort View Products  
NEWNAN, GA.  
COMFORTVIEWPRODUCTS.COM  
770/251-4050  
**Product Lines:** Patio doors; and vinyl casement windows, patio doors, replacement windows and doors

Frontline Building Products*  
GREEN BAY, WIS.  
FRONTLINEBLDG.COM  
800/760-8941  
**Product Lines:** Aluminum-clad entry system, pre-clad door frame, patio door frame system, oversized direct set (wood/clad), wood/clad geometric windows, commercial doors  
Subsidiaries include Frontline Building Products, Green Bay; Frontline Building Products, Medford; and Frontline Building Products, Merrill  
Frontline’s parent company is Bay Family of Companies

GlassCraft Door Co.  
HOUSTON  
GLASSCRAFT.COM  
713/690-8282  
**Product Lines:** Barn doors, fiberglass entry doors and wood entry doors
SAFETY FIRST
KEEP WORKERS SAFE & SAVE MONEY!!!

2019 Average Cost of a Work Loss Injury, Plus 13 days off work

$42,000 AVERAGE COST

2022 Average Cost of a Famatec Friendly with delivery and installation

$42,000 AVERAGE COST

According to the Bureau of Labor Statistics, the number one most common occupational injury in the industry involving days off work is back injuries. The National Safety Council (NSC) estimates the cost of medically consulted injuries in 2019 to be $42,000, which is the same cost of an installed Famatec Manipulator. Haeco is the exclusive Authorized Sales and Service provider for Famatec for the Glass and Window industry with the safest and most ergonomically effective solution for handling glass. Be safe, save money, and call Haeco today for a proposal for a Famatec Friendly configured specifically for your application. Data source: https://injuryfacts.nsc.org/work/costs/work-injury-costs/

CALL: [800] 852-3522 ONLINE: HAECO.US

LOVELAND, OHIO
CUSTOMERSERVICE@HAECO.US
**Madero**
SASKATOON, CALGARY, WINNIPEG
MADERO.CA
800/667-6977

**Product Lines:** Wood, composite and steel entry doors; interior doors; commercial doors

Subsidiaries include Penner Doors & Hardware, Security Building Supplies, Two Six Creative and West Four Distribution

Madero’s parent company is the Westfour Group of Companies

---

**Vector Windows & Doors**
FERGUS FALLS, MINN.
VECTORWINDOWS.COM
800/739-9899

**Product Lines:** Vinyl casement windows, patio doors, replacement windows, sliding doors and windows

---

**Everlast Group of Companies**
ETOBICOKE, ONTARIO, CANADA
EVERLASTPRODUCTS.CA
800/897-5118

**Product Lines:** Aluminum patio doors, porch enclosures, sliding doors, storm doors and windows, sunrooms and windows; aluminum-clad windows; architectural windows; bi-fold doors and windows; composite entry doors; curtain wall; door glass; entry doors; fiberglass entry doors; hybrid aluminum/vinyl doors and windows; insulating glass units; multi-panel doors; patio doors; pivot doors; porch and patio enclosure; prehung doors; sliding doors; steel doors; storm doors and windows; sunrooms; vinyl casement windows, patio doors, replacement windows, sliding doors, windows; vinyl-clad windows; and wood entry doors and interior doors

Subsidiaries include Napa Valley Doors by Everlast and Alberta Vinyl Windows and Doors

---

**Moss Supply Co.**
CHARLOTTE, N.C.
MOSSSUPPLY.COM
704/596-8717

**Product Lines:** Vinyl casement windows, doors, replacement windows and doors, and windows

---

**Sun Windows Inc.**
OWENSBORO, KY.
SUNWINDOWS.COM
270/684-0691

**Product Lines:** Bi-fold doors and windows; hybrid aluminum/vinyl windows; multi-panel doors; patio doors; vinyl casement windows and windows; window wall; and wood-clad doors and windows

---

**Vinyl Kraft Inc.**
NEW BOSTON, OHIO
VINYLKRAFT.COM
740/456-4949

**Product Lines:** Vinyl windows and patio doors

---

**Winchester Industries**
SALTBURG, PA.
WINCHESTERWINDOWS.NET
724/639-3551

**Product Lines:** Patio doors; security windows; sliding doors; and vinyl casement windows, patio doors and replacement windows and doors
Manufacturer of Custom Extruded Plastics and Rubber Profiles

QUALITY PARTS FOR QUALITY PRODUCTS

INDUSTRY RELATED EXTRUSION
- Silicone & Rubber Custom Extrusions
- Weatherstrip Bulbs
- Co-Extruded Weatherstrips
- Glazing Gaskets
- Screw Covers | Setting Blocks
- Storefront Glass Stop Clips
- Screen Spline

OUR SERVICES
- Engineering Design Assistance
- Rapid Proto-Type Samples
- High / Low Volume Production

Additional Services
- Stamping, Cutting, Notching, and more

WINDOW AND DOOR HARDWARE DISTRIBUTOR
- Commercial / Residential Door Hinges
- Sliding Glass Door Wheels and Handle Pulls
- Mortise Locks and Keepers
- Commercial Door Push / Pull Bars

Contact Us: Sales@MelpointPlastics.com

Operating for 22 years
$15 Million to $20 Million

**Assura Windows and Doors***
POMPANO BEACH, FLA.
ASSURAWINDOWS.COM 954/781-4430
*Product Lines: Aluminum impact and non-impact windows and doors
  Assura Windows and Doors’ parent company is Amberley AWP Finance LLC

**Kensington HPP Inc.**
VANDERGRIFT, PA.
KENSINGTONHPP.COM 724/845-5300
*Product Lines: Acoustic windows and vinyl patio doors and replacement windows

**Upstate Door**
WARSAW, N.Y.
UPSTATEDOOR.COM 585/786-3880
*Product Lines: Architectural windows; barn doors; bi-fold doors and windows; entry doors; fire-rated doors; impact-resistant doors; interior doors; multi-panel doors; multi-slide pocketing doors; patio doors; pivot doors; prehung doors; sliding doors; storm doors; and wood entry doors, interior doors, patio doors and windows

**Euro-Vinyl Windows**
WOODBRIDGE, ONTARIO, CANADA
EVV.CA 905/851-9711
*Product Lines: Vinyl windows and aluminum patio doors

**Glass-Rite**
ALBUQUERQUE, N.M.
GLASS-RITE.COM 505/764-9899
*Product Lines: Vinyl windows and vinyl thermal break windows

**Glo Windows and Doors**
MISSOULA, MONT.
GLOWINDOWS.COM 406/721-2741
*Product Lines: Aluminum windows and doors; wood-aluminum windows and doors; curtain wall windows; multi-panel lift-and-slide doors; aluminum entry doors; pivot doors

**Seaway Mfg. Corp.**
ERIE, PA.
SEAWAYMFG.COM 814/899-9900
*Product Lines: Aluminum patio doors, porch enclosures, sunrooms and windows; impact-resistant vinyl windows; patio doors; porch and patio enclosures; sunrooms; and vinyl casement windows, patio doors, replacement windows, sunrooms and windows

**Solar Innovations***
PINE GROVE, PA.
SOLARINNOVATIONS.COM 570/915-1500
*Product Lines: Vinyl, wood and aluminum windows; clad windows; vinyl, wood and aluminum doors; vinyl, wood and aluminum operable walls; aluminum fixed and operable skylights; wood skylights; wood curtain walls; aluminum curtain walls
  Solar Innovations’ parent company is Fortune Home Brands & Security

**Stewart Brannen Millworks**
REGISTER, GA.
BRANNENMILLWORK.COM 912/488-2397
*Product Lines: Impact-resistant doors and windows; and wood entry doors, interior doors, patio doors and windows

**Van Isle Windows Ltd.**
VICTORIA, BRITISH COLUMBIA
VANISLEWINDOWS.COM 250/383-7128
*Product Lines: Vinyl windows, sliding patio doors, entry doors and skylights
FULLY ENCLOSED
Fast Q&A testing. Pneumatic cylinders sealing the glass enclosure, all it needs is a small gasket applied around the perimeter of the window and its ready for a test.

ADDITIONAL TESTS
- Structural
- Air leakage
- Hurricane

FULLY AUTOMATED
- With preloaded test selection
- Printable full reports

TEKTON
INNOVATION STARTS HERE

CONTACT
Tel: 1-877-720-8325  E-mail: info@tkni.ca
Web: tkni.ca
Tekton Innovations Ltd. 100 311 Mt. Lehman Rd., Abbotsford, BC V4X 0C2

WINDOW TESTING UNITS
FENESTRATION FINDS

Products

FIND MORE PRODUCTS ONLINE // See all the latest products and trends online at WindowandDoor.com

01 / Norfield
The 2400 ASR Auto Double-Prep Strike Router machines strike jambs and ball catch head jambs on residential doors. It can prepare a double strike jamb every three to four minutes or a single strike jamb every four to five minutes. The strike plate can have full lip, no lip or a T-strike, and the machine can accommodate a strike plate from ½ to 8 inches. The system can hold a 70- to 96-inch jamb with a width of 2 ½ to 10 ½ inches and jamb thickness can be ¾ to 1 ½ inches. 800/824-6242 | NORFIELD.COM

02 / All Weather Architectural Aluminum
The Series 9200 is a top hung thermally broken bifold door system that features a 2 ¼-inch stile and rail profile, 2 3/8-inch-thick panels, a pinch-proof design and is thermally broken with 1-inch OA insulated dual glazed units. Configuration options include an unlimited number of panels, TDL and SDL options, multiple threshold and handle hardware options, a maximum panel size of 42 by 144 inches, and anodized effect powder coating and Class I anodized finishes. 800/680-5800 | ALLWEATHERAA.COM

03 / ODL Inc.
ODL Large Format Blink Blinds + Glass are available up to 8 by 8 feet. Available in tempered or annealed glass with single- or dual-operator design, the blinds have matching components in six colors and nine different low-emissivity coatings. Custom sizes range from 8 to 63 inches wide by 30 to 90 inches tall. The EasyGlide Operator is designed to reduce operating effort while raising, lowering and tilting blinds. 800/253-3900 | ODL.COM
Low Profile Lock Handle // Roto North America

Challenge

Roto North America spotted a trend in the market for a lock handle on casement and awning windows that could meet several aesthetic design criteria to influence a positive user experience, in particular, a lower profile housing coming off the window frame.

Solution

Roto North America will introduce the Low Profile Lock Handle this summer, a line extension to its X-DRIVE casement and awning program. The handle is designed to have stylish features and will be available in multi- and single-point versions. Finish options will include several powder coat colors and architectural brushed nickel.

The “low profile” refers to the handle being about 50 percent lower to the frame versus existing lock handles. The flared lever on the bottom of the handle is also designed to allow for easier functionality by end-users.

Roto cites “overwhelmingly positive” responses to the handle design from several window manufacturers.

Other products in the X-DRIVE hardware family include operators, locking systems and hinges.
01 / Johnson Hardware

Available in residential and commercial grades, the 111MD Multi-Pass Pocket Door Hardware supports doors up to 150 pounds, the 100MD handles up to 200-pound doors and the 200MD can hold doors up to 400 pounds per individual door. The hardware is available with extruded aluminum I-beam tracks with four-wheel ball bearing hangers or aluminum box shape tracks with convex rails and three-wheel ball-bearing. Up to 192 inches of custom tracks can be created.

574/293-5664 | JOHNSONHARDWARE.COM

02 / Cornerstone Building Brands

The Simonton Reflections 5500 line is Missile C impact-resistant certified. Windows and patio doors with SafePoint impact-resistant laminated glass are appropriate for inland coastal areas where Missile D certification is not required and wind speeds are less than 140 mph. SafePoint glass is crafted from a durable interlayer sealed between two layers of glass. To pass certification, glass must resist breaking when hit by a four-pound, 4-foot-long, two-by-four piece of lumber shot at 40 feet per second (27 mph).

800/746-6686 | SIMONTON.COM

03 / Andersen Windows

The expanded 400 Series casement now includes a contemporary profile option. Available on all 400 Series casements, awning and picture windows, the contemporary stop option features an updated contemporary stop, grille profile and hardware design.

866/760-2857 | ANDERSENWINDOWS.COM
Simulated Divided Panels are newly available for select Signet Fiberglass Fir entry doors. The 3- and 5-inch-wide fiberglass grids are available on 8-foot-tall or shorter doors and are applied directly to the skin of a solid door or to the surface of a full lite of glass. Available in numerous geometric configurations, the doors can be finished from a selection of seven stain colors, seven glazed finishes or solid color paint. 800/669-4711 | PROVIA.COM

**THIS IS ROGER. HE DOESN’T CARE THAT YOU HAD THAT LITTLE PROBLEM ON YOUR ASSEMBLY LINE DELAYING HIS INSTALL DATE.**

He loves your product. His customer loves your product. And neither one of them care that you had a little problem spot on your assembly line that caused you sleepless nights and cost over-runs.

But we do.

We fix problem spots in the assembly lines of big and small companies in the fenestration industry. Period.

We do it with smartly designed products that fit seamlessly into your existing assembly line.

Atte Kuusisto has been chosen to succeed Jukka Manner as CEO of Sparklike. Manner served as CEO for two years. He will continue working on a strategic development project for the company to explore the possibility of offering insulating glass measurement solutions as a service to various operators in the construction industry. Kuusisto has experience in sales and sales management roles, as well as profitable business growth. 

GED Integrated Solutions Inc. appointed Ashraf “Ash” Hussein to the position of product marketing manager – IG. Hussein joined GED in 2017 as an IG technology engineer. In his new role, Hussein will manage all commercial activities for GED IG products and manage marketing efforts surrounding product development as well as ongoing sales and customer support programs. Additionally, this position is responsible for supporting efficient, effective and quality IG manufacturing use among customers.

James “Jim” Pelletier has joined Masonite International Corp. as senior vice president, general counsel and corporate secretary, replacing Robert “Bob” E. Lewis. Pelletier joins Masonite from Barnes Group Inc., where he served as senior vice president, general counsel and secretary. He previously held corporate counsel positions as associate counsel with Pratt & Whitney and as compliance counsel for GE Aviation.

YKK AP America Inc. hired Peter Mocker as the director of its technology and business solutions group where he will lead strategy development, execution and planning of the information technology future of YKK AP. Mocker comes to YKK AP with more than 19 years of experience in the technology industry. In his role, Mocker will strengthen customer, employee and peer-to-peer connectivity and interaction as well as system solutions, according to the company.

Milgard Windows & Doors’ Patrick Heninger, who joined the company in 1999, has been promoted to plant manager at the company’s Simi Valley facility. In his most recent role as plant manager, he manages nearly 400 team members.

A+W Software hired Loren Powell as project manager where he supports A+W Cantor and A+W Clarity. Powell will communicate with stakeholders, map out timelines, assess project risks and opportunities, and execute on each project life cycle phase.

The company also welcomed back Renaud Schmitt, an A+W veteran returning to the North American Cantor window and door division team as a customer support specialist. He worked for A+W for 14 years, from 2005 to 2019. In his new position, Schmitt will support A+W’s growing North American customer base, implement upgrades or new software solutions, and troubleshoot any opportunities that arise.

ODL Inc. has named Dan Volkema vice president of finance. Volkema comes to ODL from Whirlpool Corp., where he spent the past six years in commercial reporting and analytics, sales channel finance, and managing financial operations for 14 North American manufacturing locations.

Jeld-Wen Holding Inc. announced the resignation of CFO John Linker to pursue another CFO opportunity in a different industry. He transitioned his responsibility to David Guernsey, currently EVP and president of Jeld-Wen Europe, who will serve as acting CFO while the company conducts a search for a permanent replacement. As part of a previously planned transition, William (Bill) Christensen joined Jeld-Wen as EVP and president of Jeld-Wen Europe on April 1.

Quanex Building Products promoted several team members in support of its service for North American Fenestration customers. Irish Rubright was promoted from customer service manager to inside sales manager. In her new position, she will...
direct the development of standardized processes across IG Systems. She will continue to manage the customer service team.

Tonya Edwards was promoted from senior customer service representative to customer service supervisor, where she will be responsible for supervising the customer service team throughout IG Systems to develop rapport, communication and relationships with internal and external customers.

Sarah Swigert was promoted to import/export compliance manager for NAF. In her new position, she will be responsible for the development of import and export compliance programs across the NAF locations.

Weather Shield Windows and Doors founder, Edward “Lee” Schield, passed away at 88 years old. “Lee’s passion for this industry and his entrepreneurial spirit are what has made Weather Shield the great company it is today,” said a company statement. “He was most comfortable and in his element when he was touring his manufacturing facilities. Lee loved to talk windows and doors with anyone who would listen.” Lee is survived by his loving wife of 68 years, Clarice, and his three sons, Brian, Kevin and Mark.
<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Page</th>
<th>Phone</th>
<th>Website or email address</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllView</td>
<td>11</td>
<td>323/717-4072</td>
<td>email: <a href="mailto:jdobel@uspolymersinc.com">jdobel@uspolymersinc.com</a></td>
</tr>
<tr>
<td>AmesburyTruth</td>
<td>15</td>
<td></td>
<td>email: <a href="mailto:q-lon@amesburytruth.com">q-lon@amesburytruth.com</a></td>
</tr>
<tr>
<td>Blink Blinds + Glass</td>
<td>23</td>
<td></td>
<td>blinkblinds.com</td>
</tr>
<tr>
<td>Bromer Inc.</td>
<td>53</td>
<td>450/477-6682</td>
<td>bromerinc.com</td>
</tr>
<tr>
<td>Creative Millwork</td>
<td>19</td>
<td>630/762-0002</td>
<td>creativemillwork.com</td>
</tr>
<tr>
<td>Eko Okna</td>
<td>7</td>
<td></td>
<td>ekookna.us</td>
</tr>
<tr>
<td>Erdman Automation</td>
<td>72</td>
<td>763/389-9475</td>
<td>erdmanautomation.com</td>
</tr>
<tr>
<td>Fehr Warehouse Solutions</td>
<td>49</td>
<td>704/666-8448</td>
<td>email: <a href="mailto:info@fehrusa.com">info@fehrusa.com</a></td>
</tr>
<tr>
<td>FeneTech Inc.</td>
<td>2</td>
<td>330/995-2830</td>
<td>fenetech.com</td>
</tr>
<tr>
<td>GED</td>
<td>33</td>
<td>330/963-5401</td>
<td>gedusa.com</td>
</tr>
<tr>
<td>GlassBuild America</td>
<td>69</td>
<td>703/442-4890 ext. 142</td>
<td>glassbuild.com</td>
</tr>
<tr>
<td>HAECO</td>
<td>57</td>
<td>800/852-3522</td>
<td>haeco.us</td>
</tr>
<tr>
<td>Kent Automation</td>
<td>67</td>
<td>330/678-6343</td>
<td>kentautomation.com</td>
</tr>
<tr>
<td>Lawrence Industries</td>
<td>25</td>
<td></td>
<td>lawrenceindustriesinc.com</td>
</tr>
<tr>
<td>Magid</td>
<td>17</td>
<td>800/203-9540</td>
<td>magidglove.com/windowanddoor</td>
</tr>
<tr>
<td>Meltpoint Plastics International Inc.</td>
<td>59</td>
<td>305/887-8020</td>
<td>meltpointplastics.com</td>
</tr>
<tr>
<td>Merit Aluminum Products</td>
<td>9</td>
<td>951/735-1770</td>
<td>meritaluminumproducts.com</td>
</tr>
<tr>
<td>MFM Building Products</td>
<td>55</td>
<td>800/882-7663</td>
<td>mfmbp.com</td>
</tr>
<tr>
<td>Panda Windows &amp; Doors</td>
<td>12–13</td>
<td>888/246-1651</td>
<td>panda-windows.com</td>
</tr>
<tr>
<td>Pro-Line Automation Systems</td>
<td>47</td>
<td>888/PRO-WELD</td>
<td>prolineautomation.com</td>
</tr>
<tr>
<td>Quanex</td>
<td>5, 35–38</td>
<td></td>
<td>quanex.com</td>
</tr>
<tr>
<td>Roto North America</td>
<td>3</td>
<td>800/243-0893</td>
<td>rotonorthamerica.com</td>
</tr>
<tr>
<td>Scotchman Industries</td>
<td>67</td>
<td>605/859-2542</td>
<td>scotchman.com</td>
</tr>
<tr>
<td>Smith Case</td>
<td>18</td>
<td>855/774-7974</td>
<td>smithcase.com</td>
</tr>
<tr>
<td>Stürtz Machinery</td>
<td>71</td>
<td>330/405-0444</td>
<td>email: <a href="mailto:info@sturtz.com">info@sturtz.com</a></td>
</tr>
<tr>
<td>Tekton Innovations</td>
<td>61</td>
<td>877/720-8325</td>
<td>tkni.ca</td>
</tr>
<tr>
<td>Vision Hardware</td>
<td>21</td>
<td>800/220-4756</td>
<td>visionhardware.com</td>
</tr>
<tr>
<td>Wakefield Equipment</td>
<td>65</td>
<td>440/899-5658</td>
<td>wakefieldequipment.com</td>
</tr>
</tbody>
</table>
SEE EVERYTHING
PEOPLE — PRODUCTS — INNOVATION

GlassBuild AMERICA
THE GLASS, WINDOW & DOOR EXPO

THE ENTIRE GLASS & FENESTRATION SUPPLY CHAIN
ALL UNDER ONE ROOF
THE BIGGEST EVENT IN NORTH AMERICA RETURNS

PRESENTED BY
NGA
NATIONAL GLASS ASSOCIATION WITH GANA
Vinyl, Wood Windows Among Top Projects for ROI

Vinyl window replacement, wood window replacement and steel entry door replacement were among the top 10 projects for high ROI for homeowners, at 67 percent, 66 percent and 64 percent, respectively, according to Zonda Media’s 35th annual Cost Vs. Value Report. These findings are the latest in a multi-year streak of exterior replacement projects delivering the best ROI.

Doors and Molding Growth

- 7.5% compound annual growth rate in doors and molding is expected for the professional market between 2022 and 2026. Source: Home Improvement Research Institute

Builder Confidence

- 69 Builder confidence for newly built-single family homes fell in May for the fifth straight month and marked the lowest reading since June 2020. Source: National Association of Home Builders/Wells Fargo Housing Market Index

Single-family Home Sales

- 8.6% decline in the sales of newly built, single-family homes in March. Source: U.S. Department of Housing and Urban Development and the U.S. Census Bureau

<table>
<thead>
<tr>
<th></th>
<th>April 2022 window and door stock decrease</th>
<th>-1.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>April 2022 S&amp;P 500 decrease</td>
<td>-9.1%</td>
</tr>
<tr>
<td></td>
<td>12-month window and door return</td>
<td>-7.5%</td>
</tr>
<tr>
<td></td>
<td>12-month S&amp;P 500 return</td>
<td>-1.5%</td>
</tr>
</tbody>
</table>

Building products stocks and the broader market continue to be negatively impacted by volatility created from the expectation of restrictive central bank policy, continued escalation with Russia/Ukraine, supply chain stress and persistently high levels of inflation. The combination of these factors have weighed on market participants. However, despite the volatility and uncertainty with the macro economy, building products companies continue to generate record results given the number of homes sold with construction underway and acceleration in repair and remodel activity given the aging housing stock and lock-in effect from higher mortgage rates. Source: Lincoln Financial
A PASSION FOR INNOVATION

WE ARE YOUR STRATEGIC PARTNERS IN FENESTRATION MANUFACTURING

We approach every project as a partner in your success.

OUR ROBUST RANGE OF PRODUCTS AND SERVICES PROVIDE:

- Fully automated and stand-alone production machinery
- North American expertise and support
- Local project management
- Labor saving ideas while improving quality & safety

To speak to our sales team, please call our U.S. office or email via our website @ www.sturtz.com
WE NEVER WANT TO BE JUST A VENDOR.

WE WANT TO BE A PARTNER.

Erdman is your local partner in robotics and automation. We will work with you to innovate and reduce your labor requirements to provide a safer environment at your facility as well as a significant cost savings.

Erdman is unique in that we focus on all facets of window manufacturing and can help you integrate your departments and create a safer, more efficient flow through automation.

For 29 years we have concentrated completely on the North American market. We started small, service focused, nimble and innovative. We continue that focus today even as we are big enough to handle the largest of projects.

Visit www.erdmanautomation.com or call 763-389-9475 for more information.