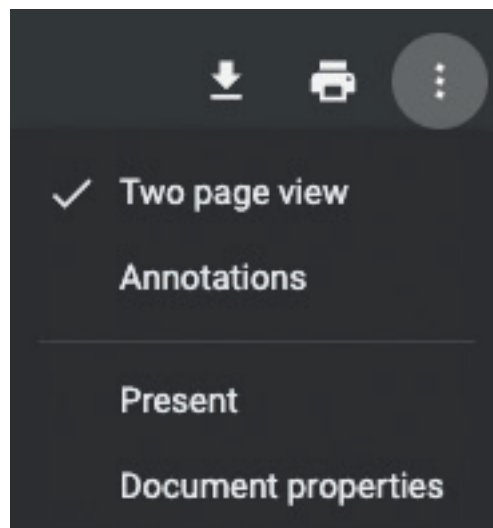


WINDOW + DOOR

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Window + Door!**

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



WINDOW + DOOR

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ESSENTIALS
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PROFILE IN

WINDOWS

Window type, performance and design considerations, and manufacturing and product efficiencies remain top of mind

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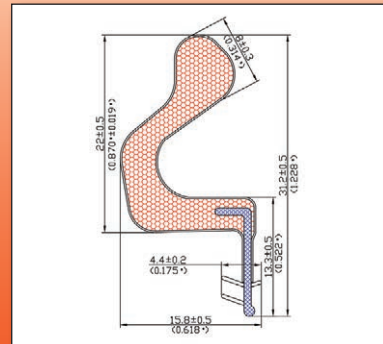
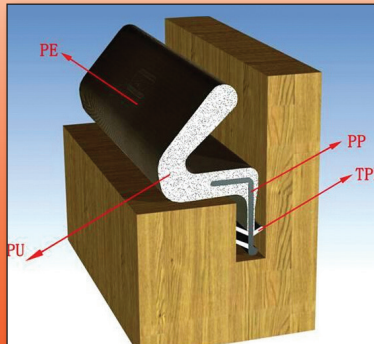
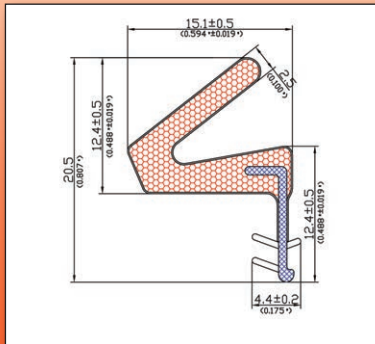


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Residential fenestration coverage, from source to sale // windowanddoor.com // Vol. 32, No. 2 // March/April 2024

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On the Cover: Windows are among the only building products seen on both the interior and exterior of a home. Color, style, sustainability and more must be considered when selecting windows. Photo courtesy of Weather Shield

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Safety First

The industry continues to prioritize safety

BY LAURIE COWIN



As the parent of two young boys, safety is a top priority in my household. Most of my safety reminders are of dangers outside the home in environments I can't control.

We're more relaxed in our own home. The inside of my house is largely kid-proofed and they know the rules. But as my younger one gains more mobility I need to be extra cognizant of the openings in our home. Namely, windows and doors.

Window Safety Week is April 7-12, which makes me think about several aspects of safety in our industry.

1. Window safety

Window opening control devices, or WOCDs, were introduced as a window fall protection device starting with the 2008 version of the ASTM International F2090, Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms. The Window & Door Manufacturers Association and Fenestration and Glazing Industry Alliance released a technical bulletin in March to clarify the definition of a WOCD and promote greater understanding of its function. AAMA/WDMA TB-24-01 is written to "help users understand the important role of WOCDs, and how to tell the difference between them and other window hardware types like vent limiters or night latches, designed for different purposes," says Dan Raap, Amesbury-Truth, co-chair of the FGIA WOCD Update Task Group.

2. Screen safety

My five-year-old recently walked straight into the screen on our sliding door. Rather than walking through the screen, my son bounced off it, looked momentarily startled then opened the door to walk through properly. This, of course, made me think about a screen's integrity.

Adam Wilson, vice president of sales and business development, North American Fenestration, Quanex, recently wrote about how screens can help enhance a company's commitment to safety and security. Today's high-tensile meshes, for example, are known to have a higher resistance to forced-entry methods. This can be a powerful safety feature, especially when paired with other methods such as multi-point locking systems. Read more at windowanddoor.com/blog/safety-security-screens.

3. Manufacturing safety

Window safety starts well before the windows reach a consumer's home. Window manufacturers are taking more notice than ever before of creating a safe manufacturing environment for their employees.

Mike Biffel, vice president of sales and marketing, Sturtz Machinery, told Window + Door in this year's Industry Pulse survey about companies running antiquated equipment that does not meet today's safety standards. "Companies are coming to us to discuss plans to retire the old equipment and modernize their operations while improving overall employee safety." ■

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Window + Door™ (ISSN 1525-1195), Volume 32, Number 2 is published six times annually in January/February, March/April, May/June, July/August, September/October and November/December by the National Glass Association, 344 Maple Ave. West, Unit 272, Vienna, VA 22180; 703/442-4890. There is no charge for subscriptions in the United States for individuals in the trade and/or qualified requestors. All other subscriptions will be charged \$49.95 in the U.S., and \$79.95 outside the U.S. Periodicals postage paid at Vienna, Va., and other mailing offices. POSTMASTER: Send changes of address to Window + Door™, Subscriptions, Box 460, Congers, NY 10920. Canada Post: Publications Mail Agreement #40612608. Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2. For all subscription inquiries, please call 1-800-765-7514. ©2024 National Glass Association. All Rights Reserved. Printed in the U.S.A.

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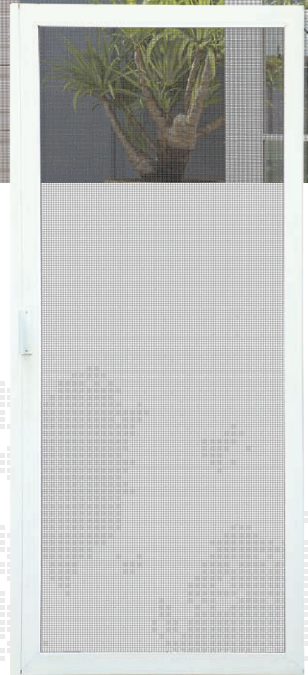
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Owens Corning Acquires Masonite

Owens Corning and Masonite International Corp. entered into a definitive agreement under which Owens Corning will acquire all outstanding shares of Masonite for \$133 per share in cash. The implied transaction value is approximately \$3.9 billion.

Adding Masonite's doors business creates a new growth platform for Owens Corning. Leveraging Owens Corning's commercial capabilities and market model serving contractors, builders and distributors, the company expects to build on Masonite's track record and grow further in the doors market.

U.S. LBM Acquires Old Mission Windows

U.S. LBM has acquired Old Mission Windows in Traverse City, Michigan. Old Mission Windows distributes windows and doors to residential homebuilders and contractors throughout northern Michigan. With this acquisition, U.S. LBM will expand its product offering and reach to support professional builders and remodelers in the northern part of Michigan's lower peninsula, which consists of several growing communities and popular coastal vacation destinations along Lake Michigan.

Screenco Acquires Screens of Mass Construction and Quality Screen Company

Screenco acquired the assets of Screens of Mass Construction and Quality Screen Company, with locations in Dal-

las, Texas, and Las Vegas, Nevada.

This acquisition has grown Screenco to seven locations across North America, and Screenco gains access to expanded manufacturing capabilities and a more extensive product portfolio. Screenco says it is confident that this integration will strengthen its position in the market and allow it to better meet the evolving needs of its customers.

ODL Sells Subsidiary Zabitat to Pease Doors

ODL Inc. and Pease Doors entered into an agreement for Pease Doors to acquire Zabitat, an ODL subsidiary. Zabitat is a direct-to-consumer building materials website. This transaction will broaden the reach and offering of the existing Pease Doors product line.

Glass Dynamics and Davis Window & Door Partner

Dynamic glass manufacturer Glass Dynamics and Davis Window & Door, a window and door distributor in North Carolina and Georgia, announced a partnership for Davis Window & Door to distribute Glass Dynamics' energy-saving dynamic glass solution to the residential market. The partnership aims to fulfill high-volume customer demand and provide modern architectural and energy consumption optimization solutions.

Assa Abloy Plant Closing to Impact Jobs

According to a report by the Winston-Salem Journal, Assa Abloy will be closing a facility in Charlotte, North

Carolina; eliminating 87 jobs. The Assa Abloy Americas Residential Inc. affiliate submitted the notice to the North Carolina Commerce Department. It affects the Spectrum Brands facility at 15040 Choate Circle.

The manufacturer says the first 20 job eliminations would begin on or about March 22 and continue over 14 days. Additional layoffs will take place through July 28.

Kolbe and Luxwall Partner to Offer Residential VIG

Kolbe Windows & Doors announced their partnership with LuxWall Inc. to offer vacuum insulating glass as a new, high-efficiency glass option for designers, builders and homeowners. LuxWall's Entermal VIG product will be available as a glass option in select Kolbe products this spring.

LuxWall's VIG design, called Entermal, reduces heat gain from the sun and heat loss from a warmed interior, decreasing energy consumption and costs. Entermal is thin and light, offering improved acoustic performance.

Cornerstone Building Brands Names Lady A as Project Ambassador

Cornerstone Building Brands named Grammy Award-winning country music trio Lady A as its 2024 Home for Good project ambassador.

The company is renewing its eight-year partnership with the global nonprofit Habitat for Humanity. It pledges to donate building products valued at half a million dollars and facilitate home builds and volunteer

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News

efforts to help build and remodel affordable housing across North America.

By joining forces with Lady A's Dave Haywood, Charles Kelley and Hillary Scott, Cornerstone Building Brands hopes to raise awareness of the affordable housing crisis. The country music industry has steadfastly supported the Home for Good project since its launch, featuring a new country music ambassador every year.

Crystal Windows Employee Demonstrates Trauma Skills in Real Life

Crystal Window & Door Systems had 14 managers, supervisors and production line lead workers at its northeast Pennsylvania plant attend a life-saving skills course to ensure readiness in the event of a serious injury at the factory.

Ben Stine, a leader on the finished product wrapping line, attended the "Stop the Bleed" trauma skills course. The course teaches basic bleeding control principles and tourniquet use until trained emergency providers arrive. Weeks later, while driving out of state, Stine encountered a serious car accident that had just occurred. Using the skills he learned and the equipment kit provided at the course, Stine stabilized the injured accident victim until emergency responders arrived.

To commemorate Stine's actions in saving a life, Geinsinger Education and Outreach Coordinator Kathryn Bommer presented the Geisinger Trauma Team Community Recognition Award and Challenge Coin to Stine at a ceremony held at Crystal's facility. Stine was also nominated for the Civilian Savior Award from the Pennsylvania division of the American Trauma Society.

People

Marvin welcomed *Chris Stith* as vice president of human resources. Stith brings more than two decades of human

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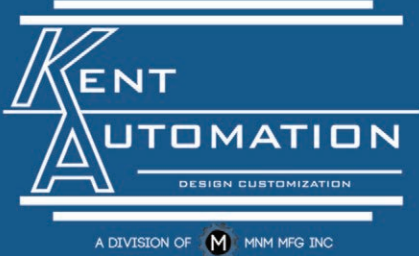
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News



Stith

resources experience to Marvin, most recently having served as a global human resources leader for ChampionX. At Marvin, Stith will identify and implement talent management strategies to ensure a consistent and unified approach to human resources practices across the Marvin enterprise.



Shellard

Fenestration Canada welcomed *Geoff Shellard* to its board of directors. Shellard is the Pacific Northwest architectural design manager for Guardian Glass and has over nine years of service in the fenestration sector.



Perry

GED Integrated Solutions Inc. appointed *Bill Perry* to spearhead machinery sales across the Western U.S. Having worked for over two decades at GED in various capacities, Perry most recently concentrated on broadening the market reach of the company's software offerings. In addition to his ongoing role as the nationwide lead for software sales, Perry will now also shoulder the responsibility of boosting machinery sales in the Western region.



Blush

Guardian Glass announced the appointment of *Jason Blush* as the product manager for vacuum insulating glass. In this role, Blush will spearhead the advancement of VIG and other insulated glass products, driving innovation to meet the market's evolving needs. ■

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Achieve a High-Performance Door

Innovative thermal solutions can enhance U-factor performance in larger doors

BY STEPHEN AKI



THE BOTTOM LINE: By strategically incorporating advanced materials and innovative design, door systems can enhance energy efficiency, contribute to sustainability goals and ensure compliance with the stringent standards set by modern energy codes.

In the changing landscape of residential construction, the evolution of building codes reflects a continuous commitment to enhancing thermal efficiency of homes. For example, the California Green Building Standards Code, Title 24, sets more stringent benchmarks affecting residential buildings, including new requirements for high-performance fenestration products. Title 24 requires windows and doors with a U-factor of 0.30 and a solar heat gain coefficient of 0.23 in most climate zones.

Meeting U-factor performance

This pursuit of lower U-factors aligns with sustainability goals and incentivizes manufacturers to innovate, seeking solutions that provide a competitive advantage and enhance overall system performance. This impacts the specifications for high-end residential homes and the challenges of choosing

high-performance fenestration.

As larger doors become more popular, the challenges to meeting U-factor performance become more difficult. Larger doors require materials that are aesthetically pleasing, structurally sound and thermally efficient. Given the need for structural performance, aluminum is typically the material of choice and is highly conductive. Also, larger doors have larger cavities in the frame, which causes the door system to have lower thermal performance as the larger cavities increase thermal transfer via convection; therefore, manufacturers are exploring strategic modifications to help meet the demands of increasingly stringent building codes.

Foam and thermal efficiency

Foam solutions can effectively enhance insulation and reduce heat transfer in large aluminum doors. Attaching foam

as part of a polyamide thermal break helps to reduce convection by breaking up air pockets within the frame. It also prevents air leaks and improves the overall energy efficiency of doors.

Foam tape is PVC foam adhered to the polyamide thermal break in the framing system. The type of foam used in this solution is most commonly PVC, but many other polymers can be used at additional costs. Foam tape is an easy addition to the framing system that can be useful to make the jump from a good thermal-efficient system to a great thermal-efficient system.

Like all thermal improvements, using foam in a door frame can contribute to a more comfortable indoor environment by maintaining a consistent temperature. When applied to the legs (or sides) of a thermal break, foam tape helps create more thermally efficient doors.

The benefits of foam in a door frame include:

- Low-cost solution
- No changes to assembly or fabrication
- No additional equipment
- Improved U-factor
- Excellent weathering characteristics

Utilizing a diverse range of verified materials, high-performance door systems are within reach. By strategically incorporating advanced materials and innovative design, door systems can enhance energy efficiency, contribute to sustainability goals and ensure compliance with the stringent standards set by modern energy codes. ■

Stephen Aki works for Technoform North America, assisting window and door designers in developing sustainable, energy-efficient, high-performance systems. He has over 10 years of experience in the fenestration industry and is a member of the National Fenestration Rating Council and the Fenestration and Glazing Industry Alliance. Contact him at 971/832-0502 or stephen.aki@technoform.com.

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The 411 on Fenestration Weathering

Weathering and weatherability: Two sides of the same coin

BY RICH RINKA



THE BOTTOM LINE: Testing for both weathering (appearance) and weatherability (performance) is vital for determining the expected life of a fenestration product.

Weathering is a popular topic in fenestration, but it can be misunderstood because, like every coin, it has two sides. One side, weathering, is the ability of a product to maintain a durable and visually appealing surface after exposure to ultraviolet light, heat, time and moisture. The other side of the coin, weatherability, is the ability of a product to maintain its performance over the expected life of the fenestration product.

Weathering

The traditional method of testing weathering involves exposing a surface to the environment and waiting to evaluate the durability through appearance changes and surface defects. Some alternative methods are used to simulate these same exposures in a laboratory, greatly reducing how long it takes to evaluate a product.

Since fenestration products are exposed to external conditions, the Fenestration and Glazing Industry Alliance offers a set of material-neutral finish standards—they are the same no matter the composition of the finishes or how they are applied—that cover both types

of weathering tests. Different standards are available for aluminum, fiberglass and vinyl substrates, which can help manufacturers specify the finishes' minimum performance requirements. Within each of these sets are different requirements for weathering exposure.

- For aluminum: AAMA 2603, AAMA 2604 and AAMA 2605.
- For fiberglass: AAMA 623, AAMA 624 and AAMA 625.
- For vinyl: AAMA 613, AAMA 614 and AAMA 615.

Weatherability

Testing fenestration for weatherability evaluates resistance to environmental factors like wind and rain. Residential windows are designed to help keep out the elements and all windows are tested to evaluate air, water and structural performance. Customers can check with the manufacturer to see if a sample of the window, door or skylight has been tested to determine if it meets industry requirements for water penetration resistance and air infiltration or exfiltration. These requirements are detailed in AAMA/WDMA/CSA 101/IS2/A440, North American Fenestration Standard/Specifi-

cation for windows, doors, and skylights.

Air infiltration testing. Although there are exceptions, in general, products must not allow more than 0.1 to 0.3 cubic feet per minute of air to pass through every square foot of the opening the manufactured product fills, under prescribed pressure differences, depending on product type and performance class. This testing is performed with a product sample subjected to constant air pressure to simulate a specified wind pressure, representing a time-averaged weather condition. Note that performance results from a test laboratory may differ from an installed performance level due to variances in installation practices, handling and the degree to which routine maintenance may have been performed.

Water penetration testing. Conducted in much the same manner as air infiltration testing, water penetration resistance testing adds a calibrated spray rack that applies water to the surface of the test specimen product at a rate of 5 gallons per hour per square foot, exceeding any rainfall rate of a typical natural storm. However, this high application rate is intended only to maintain a film of water over the product's entire surface. It is the air pressure differential, simulating wind pressure, that will force water through any potential leakage points at seals or operating joints of the window.

Depending on the performance class being sought as described in NAFS, the air pressure differential across the product varies from 15% to 20% of the design pressure associated with the product's performance grade. In the U.S., this pressure is capped at 12 pounds per square foot. The way in which the differential air pressure is applied varies with the performance class. ■

Rich Rinka is the technical manager of fenestration standards and U.S. industry affairs at the Fenestration and Glazing Industry Alliance. He can be reached by email at rrinka@fgiaonline.org.

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Windows of Opportunity in 2024

Macroeconomic conditions become more favorable and with it comes predicted demand growth for the window and door industry

BY CHRIS BEARD



THE BOTTOM LINE: Expect year-over-year volume and dollar growth for the residential fenestration industry in 2024, thanks to a rise in single-family starts, aging housing stock leading to remodeling, and a large intergenerational wealth transfer.

After more than three years of high demand and long backlogs for residential window and door products, the fenestration industry caught a breather to end 2023. Our third- and fourth-quarter Window and Door Market Survey, in partnership with Window + Door Magazine, showed a clear deceleration of growth. Our latest survey, which captured approximately 40% of the industry manufacturer volume, showed backlogs coming down as 56% of respondents reported lower volumes versus fourth-quarter 2022.

For context, manufacturers carried backlogs into early 2023, even as new orders began to decline.

As the market slowed in 2023 from interest rates and affordability concerns, the question on everybody's mind is:

how will 2024 shape up?

Interest rates are still at high levels compared to early 2022, but macroeconomic conditions are turning more favorable due to:

- improvements in inflation,
- the Fed signaling rate cuts this year, and
- robust employment with continued growth in jobs and wages.

Economists are increasingly optimistic that the U.S. will achieve the soft landing that was hoped for.

Cautious optimism to start 2024

At John Burns Research and Consulting, we survey industry participants with “skin in the game” to give us real-time insights into current and fu-

ture demand conditions. Homeowners, builders, remodeling contractors and building products dealers inform our thesis on where we think the market is heading. Here are some examples that inform our forecast:

- Our monthly Builder Survey, which captures approximately 20% of all new home sales in the U.S., shows single-family new home sales and starts above seasonal norms since the fall. Builder optimism is fueled by mortgage rate buydowns, which are driving demand from homebuyers.
- Our monthly survey of building materials dealers has shown year-over-year growth for the past four months across most building products categories.
- Our latest U.S. Remodeling Index (surveying nearly 700 professional remodelers) and Kitchen and Bath Market Index (surveying nearly 500 firms specializing in kitchen and bath remodels) shows cautious optimism about 2024 growth. Both surveys note continued demand strength from more affluent homeowners.
- Our survey of custom residential architects showed that 38% of custom home architects are specifying more window openings per home, and 35% reported designing for larger window units.

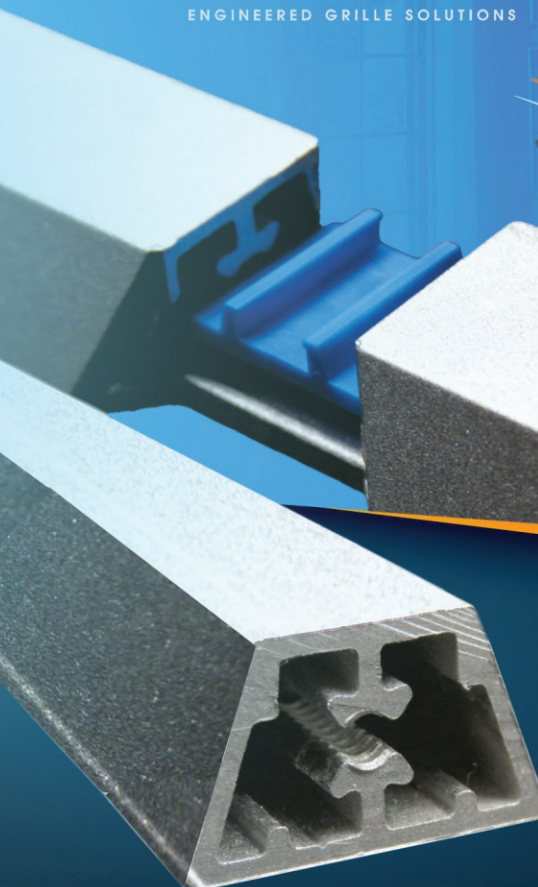
These results point to an upbeat outlook for the industry in 2024. The fourth-quarter Window and Door Market Survey also showed companies were able to increase their revenue by 4% year-over-year to close out 2023.



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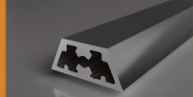
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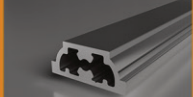
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GR5



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GR6



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GR7



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GR8



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FRAMES

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FS-026

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While many signs point to demand recovery for the fenestration industry in 2024, there are some clouds on the horizon that can't be ignored:

- Interest rates remain elevated, and persistent inflation above the Fed's 2% target likely pushes the planned rate cuts out to later this

year. That means for big-ticket remodeling projects such as whole home window and door replacements, borrowing costs will remain elevated for longer. This will likely leave many homeowners on the sidelines.

- Conflicts in the Middle East are disrupting cargo shipments from Asia, causing a spike to time in tran-

sit and shipping costs. This poses further risk of inflation and supply shortages for manufacturers.

At JBREC, we expect demand growth for windows and doors in 2024 for a few reasons:

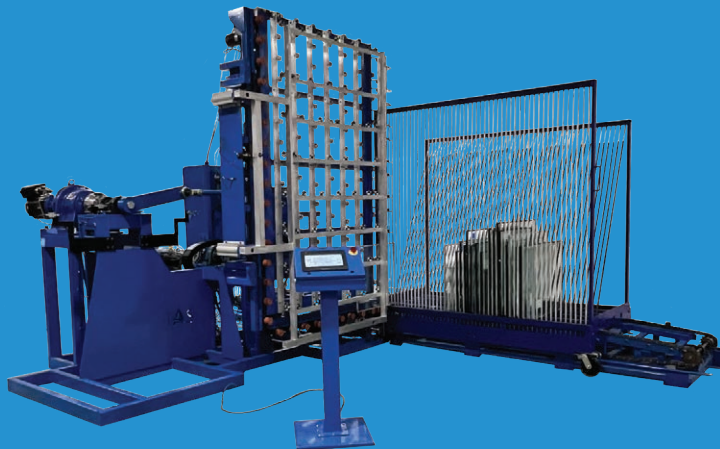
- Builders are expecting continued use of rate buydowns to continue to drive new home sales. We project single-family starts to rise 3% versus 2023.
- Nearly half of all existing homes in the U.S. are at least 43 years old. This aging housing stock leads to more homes in prime aging housing stock years, requiring window replacements.
- Interest rates are expected to fall, easing affordability concerns for funding remodeling projects and new home purchases.
- We are in the midst of the largest intergenerational wealth transfer in U.S. history. Trillions of dollars of wealth among households born in the 1940s and 1950s are being transferred to younger generations. This will also help younger generations with down payments for purchases of new homes.

The combination of these factors leads us to expect year-over-year volume and dollar growth for the residential fenestration industry in 2024. Our proprietary Building Products Demand Meter projects installed volume growth for 2024.

Feel free to reach out to me to learn more about our Demand Meter forecasts for installed volume growth for windows, doors and 16 other building products categories. ■

Chris Beard is the director of building products research for John Burns Research and Consulting. He can be reached at 419/215-1881 or chrisbeard@jbrec.com.

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Window Covering Safety

Recent rules underscore the heightened importance and awareness around safety for window coverings

BY MELANIE SCHERER



THE BOTTOM LINE: Attention on window covering safety continues to grow with industry standards requirements.

Safety considerations are essential and inevitable in the window industry. This typically means there will be clearly defined rules and standards requiring compliance. Window coverings are no exception. While no one would question the need for reasonable protections surrounding window coverings to prevent strangulation hazards, a recent legal scuffle unfolded over window covering safety requirements at the industry and government levels. Court intervention resolved the challenge, but this signals an increasing awareness about window covering safety in general and, therefore, compliance with industry standards and any future rules that may be enacted.

The Consumer Product Safety Commission's recent efforts to enact rules addressing window covering safety requirements sent a ripple through the industry, leaving manufacturers scrambling to figure out how to meet more stringent requirements with a fast-approaching deadline. The CPSC rule, A Safety Standard for Operating Cords on Custom Windows, was quickly followed by a lawsuit brought by the Window Covering Manufacturers Association, landing the dispute in the U.S. Court of Appeals for the D.C.

Circuit for review. In response to the multiple challenges the WCMA raised, the Court vacated the CPSC rule and remanded (in other words, sent it back) to the CPSC to re-work it.

Separate from the CPSC rule enactment, a voluntary standard applicable to window coverings, ANSI/WCMA A100.1-2022, was revised in 2022 with a compliance deadline of June 1, 2024. This standard eliminates the use of free-hanging operating cords, free-hanging tilt cords and multiple cord connectors on all custom window covering products, and prohibits continuous cord loops and bead chains on all horizontal slatted custom products. The addition of custom products to the revised standard is significant.

The ANSI/WCMA standard requires stock products to be cordless or, if cords are used, the cords must be inaccessible or short. An added requirement addresses both stock and custom products. According to the WCMA, these changes will result in required compliance in over 95% of all window covering products sold in the U.S.

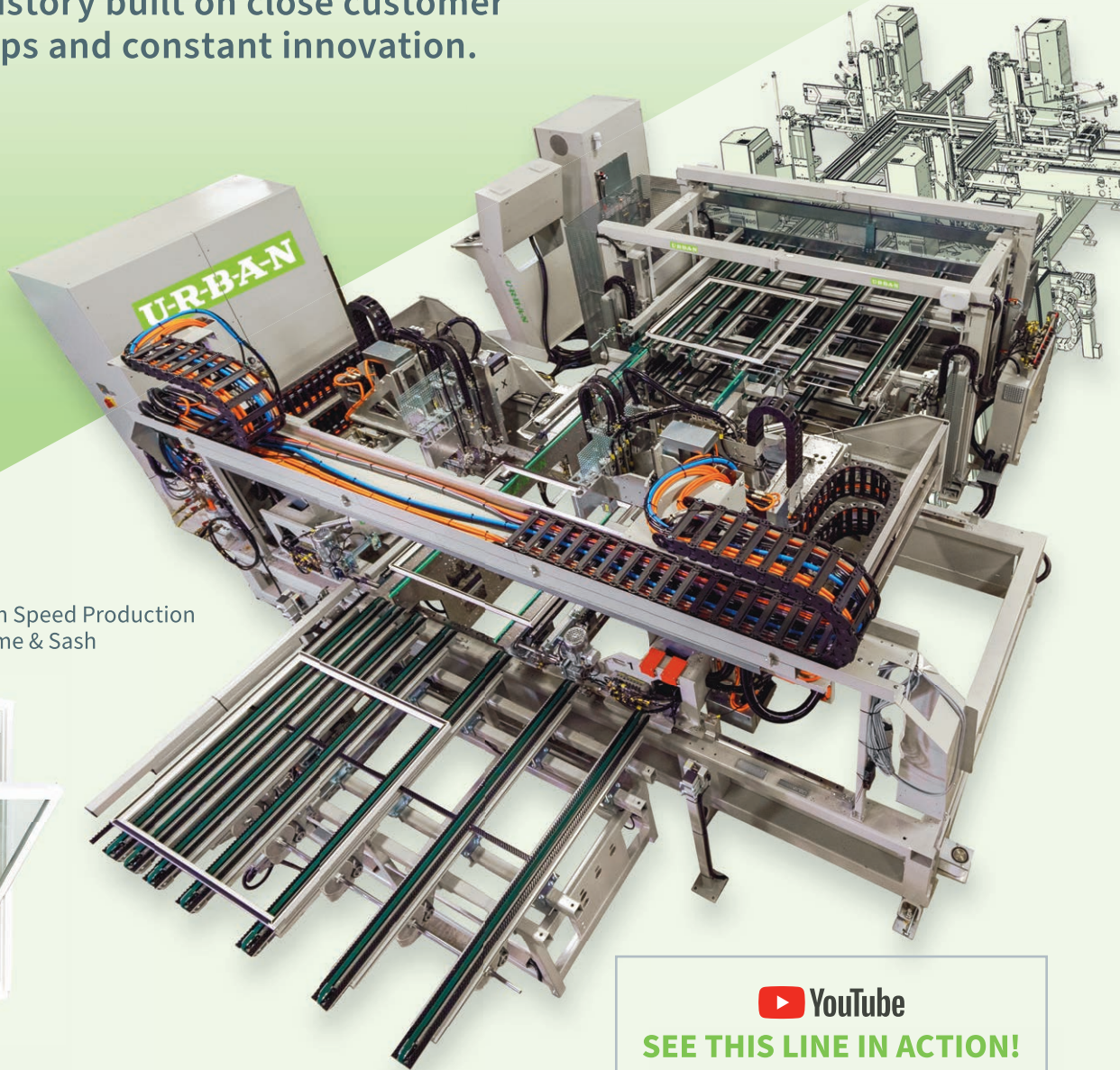
While the CPSC rule was more stringent, the ANSI/WCMA revisions represent a substantial step in the industry's commitment to window covering safety. And even though the CPSC rule is now vacated, its actions underscore a heightened focus on window covering safety. Whether the CPSC will pursue further action is unknown. Regardless, attention on window covering safety continues to grow with formalized requirements. Compliance with existing voluntary rules is essential, as the ever-evolving safety standards are subject to future revisions and more attention is given to these standards and rules. ■

Melanie Scherer is an attorney with The Gary Law Group, a law firm based in Portland, Oregon, that focuses on legal issues facing window and door manufacturers. Contact her at 503/620-6615 or melanie@prgarylaw.com.

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Next-Gen Construction

How prioritizing career development creates a competitive workforce

BY LAURIE COWIN

THE BOTTOM LINE: The changing workforce prioritizes career development above nearly all else. Investing in your employees and implementing technology are two notable ways to give your business a competitive edge.

An estimated 75% of the workforce will be millennials by next year, says Stefanie Couch, founder of Build Women. With the changing workforce, companies must change how they approach employee recruitment and retention. Two of the biggest ways to do this, says Couch, are through technology and professional development.

Prioritize career development for next-gen employees

Couch encourages companies to have a strategic plan for recruitment and retention. Millennials and Gen Z prioritize career development, even over salary sometimes. “Show people why your company is a great place to work, the work value and a career trajectory,” she advises. “Gen Z knows if they develop amazing skills, the salary will automatically increase.”

Soft skills like programming will retain employees once you get them in the door. “Retain them with development, show them you care and are vested in their success and your company’s success,” Couch says. “That’s how we’re going to change the industry. We must prioritize things they care about. We must think about the work style and lifestyle they want.

It’s not perfect; you’ll never change the whole industry to be the perfect job for everyone, but we need to shift those views from what baby boomers and Gen X thought were acceptable, as they might not work for the next generation.”

Win the talent war by retaining employees

Although younger generations have a reputation for job hopping, it’s often for the sake of pursuing professional development opportunities. If a current employer can’t offer development, an employee will seek one that can. “It’s really scary to leave a job you know,” says Couch. “The unknown and change is scary. Think about how important development is for someone to take that leap. If we can prioritize developing people internally, have a healthy culture, and a job someone enjoys and can keep doing, they will stay.”

She believes that as companies prioritize professional development,

more millennials and Gen Z will stay. “They’ll be winning the talent war,” she says. “The talent war is your competitive edge. You can win on two fronts in business. Number one is technology. Number two is your people. If you have an amazing technology base, a competitive workforce and you’re developing them, you’re almost unstoppable.”

AI’s role in business

Speaking at the NGA’s BEC Conference in Nashville in March, Couch discussed the importance and power of artificial intelligence and how it can “change the fate of your business.”

Couch says that AI can help alleviate the daily, more tedious business tasks and aid in the ongoing labor shortage. She walked attendees through using ChatGPT, an AI tool that can write text for the user, including formulating interview questions, writing jokes, creating content for speeches, and providing links to peer-reviewed research.

Relationship building

The window and door industry is very much a relationship industry. Women represent only about 10% of the construction industry, which drops to about 2% to 4% in the trades. Build Women creates a network of individuals from across the entire industry to ask questions, look for jobs and use as a resource.

Couch also speaks to women working hard to build trust in their construction careers. Early in her career, she recalls male clients who preferred speaking with a man over a woman. Once that woman established trust and forged a connection, those same male clients wouldn’t talk to anyone else. “Once you get that loyalty, these clients have a true bond and know you really care about them and have their best interest at heart.” ■

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Advancing Home Security Innovation

The era of high-performance window and door screens for residential safety, security and durability has arrived

BY TARA LUKASIK

Last year, Quanex partnered with Advanced Screen Systems Inc. and debuted its security screen door with Meshtec technology, capitalizing on the growing demand for high-performance window and door screens that provide safety, security and durability in residential buildings. Adam Wilson, vice president of strategic sales of North American fenestration at Quanex, took the time to sit down with Window + Door to discuss its approach to innovation, its design and development process, and meeting trends in fenestration.

Window+Door: A surge in demand for safety and security-oriented fenestration products is predicted for 2024. Are you seeing an

increase in requests for these types of products from your customers?

Adam Wilson: Yes, we definitely realize that security and protection have become a priority with consumers. Our customers were asking for innovation. With the industry's mature insect screen product, which hasn't had many changes in several decades, we saw a great opportunity for innovation. We took what is sometimes an afterthought and turned it into a product with a lot more use and that ensures safety and peace of mind.

It's not just keeping insects out. The Quanex security screen systems using Meshtec technology actually create a security system for your patio door. And

for homeowners prioritizing security, the mesh, when combined with the multi-point locking system, meets the highest international standards for knife shear, impact and pry tests. It's important to note that according to statistics, the patio screen door is the most vulnerable point for intruders to gain access to your home. It's often the easiest and most accessible way for intruders to enter, especially when the main home door is left open for the screen door to allow fresh air into the living space.

WD: What was the design and development process behind integrating Meshtec technology into your products?

AW: There's extensive research and



A VULNERABLE ENTRY INTO THE HOME

Research shows that 55.7% of burglaries are forced break-ins, and a majority, 22%, come in through patio doors, which are located at the back of a home, are out of view and are easier for criminals to access without being seen.

development that went into this product. We had a company approach us about a mesh product, very unique in the industry, which has been utilized to great success for several decades in Australia. More than 70% of homes in Australia already have these security screens, doors and windows, which add an extra layer of protection against intruders, as well as help deflect embers from the country's perennial wildfires from entering a home.

Last year, we partnered with Advanced Screen Systems, which has some exclusivity to distribute and use Meshtec technology in North America. As a leading manufacturer working with many in the fenestration market, we looked at how we could utilize this with windows and doors, and how to take this out to the market.

WD: What performance metrics or testing procedures were used to ensure the quality and durability?

AW: It's been put through a lot of stringent testing, including to high-level international standards. We've had an impact test where a 92-pound ball is repeatedly slammed against the screen,

simulating someone trying to run their shoulder into it. Another one is what they call a 'Jimmy test' where a pry bar is used in several locations around the door to try to pull it off. The last one is a knife shear test, which simulates attack by a heavy-duty knife, numerous times, under a constant force of 350 Newtons in both directions to try and cut the screen. It's been subjected to salt spray, solar heat, LUX intensity and aerodynamic testing. And that's just the mesh. The multi-point locking system and frame used in this design is so strong that it can withstand even the toughest of impacts. And that's not all, it also prevents the door from lifting off of the track, ensuring maximum safety.

WD: What specific features or technologies differentiate it from existing products in the market?

AW: This particular woven, high-tensile, stainless-steel mesh comes to us flat, rather than in rolls, free from the defects normally caused by weaving high-tensile steel wire. And it's not just any type of stainless steel, but high-end recycled stainless steel; continuously spooled, run through looms, stretched to make

it rigid, and then uniquely powder coated to protect the final architectural finish from corrosion and weathering. Aesthetically, it looks like any other insect screen that you would find on a window or door, which is what you want.

And then there are the unique features on the locking side with a multi-point locking system, locking in five locations along the wall where you would normally have a single-point locking system. You can't see that from the outside, it takes place in the insect track. On the passive side, we have an interlock for an additional level of continuous security from top to bottom, creating a really robust security door.

WD: What is the focus for you moving forward, what is your overall product strategy?

AW: Well, other security-type products are unsightly or have bars to prevent entry. We don't want homeowners to settle for a basic patio screen when they can have a premium product that provides built-in protection and adds value and safety to their home space. There's not really a competitive mesh out there yet, and this technology can do things that really transform it into its own product category. We're hoping to bring over a lot of this knowledge and understanding of what these screens can do to the U.S. marketplace. We're continuing to look at how we can make this product better and easier to manufacture. We're in the early stages of that, but we have a lot of great ideas about how to make that happen. Ultimately, once the U.S. market learns about the advantages of the Meshtec mesh and security screens, Quanex plans to launch additional innovative products into the market over the next few years. ■

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A PROFILE IN

WINDOW



DOUBLE-HUNG WINDOWS REPRESENT THE LION'S SHARE OF THE MARKET. TILT AND TURNS GAIN MORE AWARENESS. MANUFACTURING AND PRODUCT EFFICIENCIES REMAIN TOP OF MIND.

BY LAURIE COWIN

WINDOWS

W



indows encompass many roles in a home. They provide a view of the outside, protect against the elements and help maintain a home's interior comfort. They contribute in no small way to a home's design aesthetic. A homeowner may not notice a great window every day, but they surely will notice every day if windows aren't meeting their expectations.

Window type, performance and design attributes, and other considerations factor into the equation of what window is right for a home.

A double-hung market

"The U.S. is still predominantly a double-hung market; that's the workhorse of the American window manufacturing companies," says Patrick Goodrich, chief operating officer, Seaway Manufacturing Corp. "It's a great design that offers the homeowner a lot of flexibility with how they can interact with the product, ventilate their home and make cleaning easier."

A similar aesthetic, single-hungs often go into new construction because of the product's lower price point (the exception being design-build projects, says Goodrich. Homeowners looking to replace windows generally transition to double-hung products and frequently consider casement windows for over the kitchen sink, says Goodrich.



Tilt-and-turn windows, already popular in Europe and gaining recognition in North America, are energy efficient thanks to compression sealing and multi-point locks. Photo courtesy of Deceuninck North America



Previous: Marvin's Connected Home platform allows homeowners to operate skylights, windows and doors through a smart home platform. Product lines offering this technology include Modern Automated Awning and Casement windows (pictured), Awaken skylights and the Modern Automated Multi-Slide door. Photo courtesy of Marvin Windows & Doors

Most replacement window customers replace like for like, observes Goodrich. “Mostly people have a good interaction or bad interaction with a type of product,” he says. “We typically see changes when the homeowner is changing all of the windows. But if someone is going to do just five windows per year in their 20-window house, they really can’t make changes and jump product type.”

Michael Wandschneider, director of product development at Marvin, agrees. “Most homeowners choose the same window types as what they are replacing. In some circumstances, fixed windows will be added in place of operating windows. In other instances, ergonomic or accessibility considerations will impact the selection of window types,” he says.

What's old is new again

Design constantly fluctuates, whether it be European or traditional American colonial millwork. “Old becomes new again,” says Goodrich. “What was hot in the 1980s seems to be coming back around now.” Color, of course, is a continuing part of window design and can be co-extruded, laminated or painted. See the sidebar on p. 35 for a dive into finishes for aluminum-framed systems.

Wandschneider says home design drives window types more than the region. “Double-hung and single-hung windows skew more traditional; casements, awnings and gliders lean more contemporary,” he says. “Broadly speaking, larger direct-glaze and picture windows are growing in popularity across all market segments.”



Window manufacturers also must be cognizant of performance requirements across the country. Erie, Pennsylvania-based Seaway, for example, services as far west as Wisconsin, and along the eastern seaboard from Massachusetts down to Alligator Alley in Florida. “Inside those areas, there are different structural requirements and variability in the thermal requirements. Focusing on the design of the products first allows us to participate in those markets and give the homeowner the most tailored solution for their area,” says Goodrich.

“Fixed windows—direct-glaze or picture—are generally most efficient. However, they cannot open and do not provide fresh air. For operating windows, casement and awnings outperform hung

windows and gliders,” says Wandschneider, noting every window type has nuances to maximize efficiency and comfort.

Tilt and turns

European products are gaining more share in the U.S. In this year’s Industry Pulse report, Greg Koch, vice president of sales and marketing, Deceuninck North America, shared, “We see an increase in demand for high-performance European platforms for commercial applications, such as our tilt-and-turn windows. In fact, European manufacturers are now importing to the U.S., focusing on the East Coast. These products are moving out of the niche category in the U.S. and becoming much more visible and sought after.”

Above: Double-hung windows are the “workhorse” of American window manufacturing companies thanks to their design flexibility and ability to meet homeowner needs. Photo courtesy of Seaway Manufacturing Corp.

Koch further explained the increasing awareness of tilt and turn windows in North America, largely driven by the profile's energy-efficiency attributes due to its compression sealing and multi-point locking. "It's virtually impossible to beat that kind of performance," he says.

As market awareness has increased, some eastern European countries with lower manufacturing costs have distributed windows to the U.S. at what Koch calls a "competitive price," ultimately opening the market more. Importing products, however, brings the challenges of a long supply chain. That all has led to some U.S. manufacturers adopting tilt and turns, which Koch describes as a "big win" for customers. "Your lead times can be lower and your service can be better if something arrives broken at the jobsite," he explains.

Koch shares a bit about Deceuninck's process of bringing the product to the U.S.—a process its European roots have helped with. Deceuninck began with its Revolution product, an Americanized tilt-and-turn platform, which it then enhanced and evolved into the RevolutionXL. "That was based on European design, where we North Americanized the application," he says. The North American frame is 3 ¼ inches deep and has an integral nailing fin and installation strap groove.

Energy efficiency really drives the tilt and turn market. Deceuninck's Elegant platform, which uses ThermoFibra technology that embeds a fiberglass bar into the PVC extrusion for structural reinforcement and thermal efficiency, is piquing customer interest, says Koch. Such technology takes an already high-end product to the next level, further appealing to customers.

Despite the industry's increasing awareness of tilt and turns, it remains a super-niche product. Koch estimates it represents maybe a percentage point of the entire market. "The market is growing faster than the general window market, but it's still small," he says.

Tilt and turn generally appeals more to the North American commercial market, too, for several reasons, including the price point and functionality. Because tilt and turns open to the inside, it complicates residential window treatments. European wall thickness is substantially deeper than in North America; when the window tilts in, it still stays inside the wall cavity. Here, however, the wall depth is shallower, causing the window to hit shades, drapery or other window treatments. Insect screens also complicate it. "Generally, these products aren't designed with screens in mind," Koch says.

Manufacturing considerations

Although the popularity of double-hung products remains relatively static, the manufacturing process continues to evolve. Goodrich shares that Seaway has invested in new equipment to enhance its existing capabilities and increase efficiencies. "Many of our design processes are much more millwork-like with a lot of curves and features that were traditionally hard to clean," he says. "We've brought in automation that allows us to have a repeatable, effective process."

"Marvin's use of automation is primarily focused on the safety of our teams," says Wandschneider. "As windows and doors continue to increase in size and scale, we leverage automation to make manufacturing and handling increasingly safe. We also look at how automation can simplify processes with technology and data, pairing its impact with Marvin's product offerings."

The general process of cutting, welding and cleaning remains the same through manufacturing window profiles, says Goodrich. The variability comes into play when addressing aesthetics, performance values and the different stations needed to transform raw material into the specified product. Seaway trains its staff in similar processes on different lines. For example, similar saws can perform cutting among the different production lines, and operators are trained to move back and forth between the saws in case someone is out. "We build in that flexibility and focus on training our people and the quality drive so everybody knows every step in the process," he says.

Tilt and turns comprise three elements that ease manufacturing: the frame, sash and glazing bead. "They're all easy to weld, easy to work with, and process and create the drainage and other functionality you need in the system," explains Koch. "With hardware, the European groove is designed so the hardware is almost self-locating and easy to install, which takes a lot of the error and quality risk out of the product."

As the trend of large windows continues, tilt and turns' size is limited only by the functionality of hardware and how much weight they can handle. Further considerations for size include whether the unit is double- or triple-glazed, the hardware, and the glass package. "There are different size sashes and reinforcements you can bring to a tilt-turn, so there are many variables," says Koch.

Automated hardware is another opportunity for tilt and turn products. They're easier to automate compared to hungs or sliders, according to Koch. "With the tilt-turns, it's fairly simple in that the same mechanism can tilt the sash, open it, bring it back together again and close it," he explains. ■

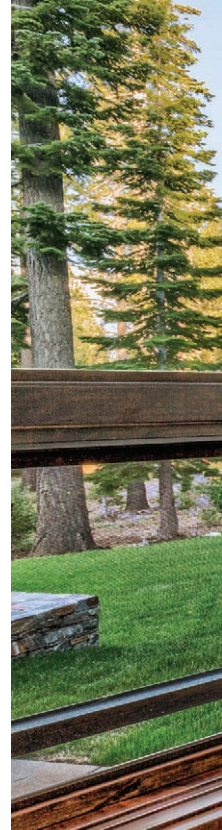




Photo courtesy of Weather Shield.

Fabricators' Choice:

FINISHING FOR FENESTRATION
BY TAMMY SCHROEDER

Windows, doors and other fenestration products can provide natural light, fresh air, outdoor views and connections to our surrounding community. They are among the only building products seen on both the exterior and interior. Their shape, size and exterior color may need to blend with a neighborhood's aesthetic guidelines, enhance a particular architectural style or display a unique self-expression. Homeowners want to personalize their interiors to match their decorating preferences, and often assume this includes their windows and doors.

Color choice

For aluminum-framed windows and doors, manufacturers and fabricators can offer homeowners color choices in anodize or paint. Depending on the finishing service provider, different colors can be selected for the exterior and interior surfaces. Specified and applied properly, both paint and anodize finishing can provide durable, high performance for a long-lasting appearance with minimal maintenance.

Painted finishes can provide a nearly unlimited color range. Specialty coatings can include

micas and metallics for extra shimmer and sparkle, and textured wood grain or terracotta finishes. Because anodized finishes are integral to the aluminum, they are available in metallic tones ranging from clear and champagne to extra-dark bronze and black. To achieve the desired finish color, use the assigned paint code provided by either the coatings system manufacturer or the finishing applicator.

Style choice

Fenestration products' color

and shape define a home's architectural style. Modern minimalist and contemporary styles feature large openings with crisp corners, clean lines and narrow frames typically finished in stark white, black or silver. Traditional architectural styles may showcase earthy browns, forest greens, deep blues or wood-look finishes on tall muntin-gridded openings, narrow eyebrow windows or arched entrances.

For best results on curved shapes, form the metal and then paint or anodize it. Some

finishing service providers may provide a single-source solution for stretch forming and finishing, ensuring a full warranty without worry.

Spec choice

The highest-performance finishes on aluminum fenestration are specified to meet AAMA 611 for anodize and AAMA 2605 for architectural paint coatings. Both industry standards are published by the Fenestration and Glazing Industry Alliance. If the interior framing is out of reach, such as on a clerestory window, a lower-performance finish may be considered. For example, wood-look finishes on room-side framing may be specified to meet AAMA 2604.

Sustainability choices

Environmentally responsible finishers can support and extend sustainability goals. The volatile organic compounds, or VOCs, associated with solvents used with liquid paint coatings can be carefully captured and safely destroyed during the quality-controlled application process. Anodize contains no VOCs and is inert, non-combustible and poses no health risks. Anodized aluminum is also recognized for its sustainable advantages, including Declare Label as Living Building Challenge Red List Free. ■

Tammy Schroeder, LEED Green Associate, is the director of marketing at Linetec, Tubelite and Alumicor brands. With over 20 years of experience in the finishing industry, she serves as an industry educator on high-quality, high-performance architectural finishing and services. She can be reached at tammy.schroeder@apog.com.

THE
IMPORTANCE
OF

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A

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D

IN
WINDOW
AND
DOOR
EFFICIENCY

ASSA ABLOY DOOR HANDLE

BY RACHEL VITELLO

W A R E

H

ardware is the “glue” that holds our windows and doors together. It’s important to make sure your hardware is as high quality as your fenestration and meets the same requirements in terms of efficiency, reliability and sustainability. Components and hardware need to be able to meet, or even increase, a window and door’s efficiency.

What customers want in hardware

Assa Abloy Director of Business Development, Glass and Aluminum Solutions, Tyler Baker, says security and convenience are two important factors in hardware that customers seek. “We also see a high demand for aesthetically cohesive decorative hardware, including customization of designs, finishes and colors,” says Baker.

VBH Marketing Manager Gary Gleeson says the company’s greenteQ hardware products undergo testing. “Our testing shows that products in our door handle range, for example, can achieve well over 1,000 hours in a salt spray test environment without degradation. The accepted norms in the UK are 240 hours or, in extremes, 480 hours,” says Gleeson.

ROTO'S 990 SLIDING
PATIO DOOR HANDLE



VBH'S VELOCITY
DOOR HINGE

The manufacturing process for hardware and how it's changed and improved

When it comes to manufacturing hardware, Amy Musanti, director of sustainable building solutions, Assa Abloy, says the company is always looking for ways to continuously improve its manufacturing processes and offerings to meet customer needs. Long term, Musanti says transparency has become more important to customers; companies have to be willing to share manufacturing processes, materials used, and more with customers.

“We listen carefully to our customers, recognize pain points, identify needs and develop the best solutions to address them. Our sustainability initiatives also positively affect our manufacturing processes,” adds Musanti. “We’re a firm believer in manufacturing at our facilities here in the U.S. All the raw materials we receive are put through the machining, finishing and assembly processes across many of our facilities here in the states.”

Gleeson says VBH’s manufacturing has both changed and stayed the same. “We have always ensured our range meets the highest quality processes, and products go through at least three quality control checks before they leave VBH (GB),” he says. “Our adjustment has been to focus more and more on high-end products, such as the

introduction of a 316-grade stainless steel range of products in 2024.”

Currently, all VBH products are designed in the UK, using a variety of specialist manufacturing facilities across the world that work in partnership with VBH (GB). An example of this process can be seen in how the Alpha and Aspire handle ranges can have up to six layered coatings of copper, nickel and chrome if the base material and color finishes require it.

Gleeson adds that over the past five years, automation has assisted in the ongoing labor shortage.

Roto Frank Market Product Manager Chad Hackman agrees that automation has helped Roto be more efficient as business grows. Hackman says the company has made small adjustments to its “already lean process,” which has increased the amount of recycled materials and decreased outbound packaging. Automation has assisted this as well.

Roto’s current process is zinc die-casting completed on semi-automated machines. Parts are powder-coat finished before being custom packaged to meet customer requirements. This in-house production ensures a controlled supply and allows for greater levels of customization.

New hardware to meet efficiency/performance goals

Companies are prioritizing the efficiency of their hardware for both customers and installers. For example, VBH’s Sigma Velocity fast-fit fabrication door hinge is designed to save time and labor in the door manufacturing process. VBH also recognized the growing trend of smart security products in the market. A few years ago, VBH launched its Q-Smart electronic door handle that allows domestic entrance doors to be locked and unlocked without a key, using fingerprint recognition, a mobile phone app or contact tag.

Gleeson says the reaction to both products has been incredibly positive.

Similarly, Baker says Assa Abloy has recently released wireless locksets, motor-driven exit devices and thermal break entrance solutions.

“Customers see the value in our products that make openings much more energy efficient and a lot more functional and practical for today’s security needs versus products that have been in the market for years that didn’t focus on such concerns,” says Baker. “We continue to invest in solutions that help make buildings more energy efficient and that will continue to reduce the footprint our manufacturing locations and operations have on the planet.”

Roto’s Inowa system was developed to be efficient with air and water resistance. New one-piece handles with extended screw supports decrease installation time and ensure optimal seal when used with handle gaskets.

Hackman says the response has been positive to these products and there is value in further expanding these lines. “More gasket options are being developed,” he says. “Our sliding door roller offerings are expanding to fill gaps and add additional wheel material options.” ■

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THIS PAGE: SERIES 7665 PASS-THROUGH WINDOW BY WESTERN WINDOW SYSTEMS.
OPPOSITE: MASONITE M-PROTECT ENTRY DOOR WITH MULTI-POINT LOCKING SYSTEM BY ENDURA.



THE
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LEARN WHICH FENESTRATION FEATURES AND TREND SHIFTS WE SAW AT IBS 2024 **BY TARA LUKASIK**

You can glean much about fenestration trends by looking at The New American Home 2024 that debuted at this year's International Builders' Show in Las Vegas, Nevada. The architectural touches that make this one-level, 7,722-square-foot home stand out for attendees also set the tone for the year ahead. From dramatic pivot doors, functional sliders, modern folding glass walls and flexible window systems, to high-end integrated security door locks, lighting and hardware, this year's show can be summed up in one word: innovation. →



Energy innovation

With Energy Star 7.0 going into effect late last year, Energy Star windows remain at the top of home buyers' wish lists (83% according to NAHB's 2024 What Home Buyers Really Want survey). A majority of window and door offerings throughout the show sported the ubiquitous blue Energy Star-certified product logo. "We're offering a broad line of Energy Star-certified products ... because we believe that's important and something we can offer to consumers to meet their needs," says Matt Bereda with Cornerstone Building Brands, which represents more than a dozen different brands under the company umbrella. "We focus on the things they're looking for, and that helps us to kind of evolve [our offerings]."

A lot of thought is also going into ventilation and dehumidification to help tighten homes and enhance energy efficiency. Masonite showcased its "show-stopper water and air stopper" high-performance door systems with its Endura z-articulating cap sill and

weatherstripping that keep out air and water and provide enhanced sound insulation. And newcomer VanAir offered a "ventilation system designed as a door," which ditches the transfer vents, door grilles and undercuts for a sleeker appearance. Using an acoustical engineering concept called impulse resonating to channel air through slots and absorptive materials in the door's core, it provides enhanced airflow and 85% more sound privacy.

Bertrand Windows & Doors utilized the power of electromagnetic technology and double or triple glazing to heat up glass on the inside (while keeping the outside pane cool to the touch) with its Infratherm heating window system, snagging them a Best of IBS 2024 Award for best home technology.

Sustainable innovation

Sustainability is still a hot trend in fenestration, with companies showing circular strategies and innovative materials options to help keep things earth-friendly. Masonite's solid-core interior doors offer a wheat straw filling

that "offers 70% more sound-dampening material than our standard hollow doors," says Jennifer Renaud, Masonite's senior vice president and chief marketing officer, "and are green at heart as wheat straw is a renewable resource."

Cornerstone's Bereda talked about the circular lifespan of the vinyl used in its windows and doors. While consumer demand for vinyl continues to grow and "it will continue to steal market share from wood because of its durability," the company will continue "to utilize it in as sustainable a way as possible." This includes reusing their vinyl. "We regrind all of our vinyl ... actually extrude it and then use that to produce our frames. We're also moving away from using any kind of paint over an extruded product so the windows last longer, and it helps to protect the environment."

Social innovation

Immense pivot doors, and glass multi-sliders and folding walls at heights of 10, 12 and 14 feet, are pairing off with large windows to create



CLOCKWISE: PELLA STEADY SET INTERIOR INSTALLATION SYSTEM FOR NEW CONSTRUCTION. BERTRAND'S INFRATHERM HEATED GLASS FOR WINDOWS AND DOORS. VANAIR'S VENTILATED INTERIOR VANAIR DOOR.

immersive openings for connection to the environment and with outdoor entertainment spaces. But the quiet crowd-draw surprise came in the form of awning windows or pass-through windows that creatively unify indoor and outdoor living spaces.

Attendees were fixated on flip-up, small folding and awning-style windows from BasikWall, Panoramic Doors, Western Window Systems and others that served as small creative pass-throughs that transitioned between indoor and outdoor spaces such as kitchens and patio bars. The Series 7665 pass-through window by Western Window, in particular, was very easy to open and close with a continuous hinge and pressurized gas struts.

“We always receive requests where people are trying to connect an indoor kitchen to an outdoor entertainment space,” says Brian Leizerowicz of Western Window Systems. “The usual bar-top multi-slide window that pockets in the walls or bi-fold window is tricky to install. But an awning window on gas struts that just pops

open with or without a sill stretches boundaries a bit.”

Connected innovation

Accessible technology in fully integrated exterior doors is bringing convenience to another level through smartphone-controlled technology, built-in power, LED welcome lighting and smart keypad hardware. Masonite’s performance door platform “brings power to the door,” says Masonite’s Renaud. “Controlled on an app, you have the ability to light the entire system. The lock and camera are inside the door. There’s a built-in backup battery. The goal is to bring power and operation to the entire door exterior, and be able to easily replace components as necessary.”

In the realm of door hardware, Schlage’s Encode Plus smart Wi-Fi deadbolt and the Kwikset Halo Touch debuted at the show. A Wi-Fi smart lock with a small footprint and instant fingerprint reader for secure one-touch encoded access, the Kwikset Halo smart lock opens up transformative

discussions about the future of smart door security. “Everything is going to be connected; everything is going to be smart,” says Jeff Sandoval with Kwikset. “Biometrics is really just the beginning of the journey. [Other countries] have recognition authentication in residential, and we’re going to get there in the U.S. market, but it’ll take longer.”

Secure innovation

A surge in production innovation happened on two different fronts: safety from natural disasters and security from human factors and crime. “As we’re continuing to see more severe weather events, there’s a big market for impact-resistant products,” says Cornerstone’s Bereda. “Along the Gulf Coast and further up the East Coast, hurricane-rated products are needed to withstand increasingly extreme weather.”

Masonite’s acquisition of Endura Products last year resulted in new, M-Protect entry doors by Masonite incorporating a new, multi-point

locking system by Endura for added security. To demonstrate the strength of its locks, Masonite repeatedly swung 45-pound weights against the latching edge of its doors—doors with single-point locks broke away quickly, while the M-Protect door held strong after numerous daily demonstrations.

“We don’t want to just stress hurricane-rated-impact resistance,” adds Bereda. “We want to stress that it is more security. [Impact-resistant glass] is also an awesome way to protect against someone trying to get into your home.”

Emerging innovation

Window installation simplified. Ralph Waldo Emerson famously said, “Build a better mousetrap, and the world will beat a path to your door.” Well, Pella did exactly that with its Pella Steady Set interior installation system for new construction, which also garnered them this year’s Best of IBS distinction for **Best Window & Door Product**. The installer-centric design offers easy-



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to-learn, pre-attached components to help ensure repeatable and reliable window installation. Pella spent four years looking at how installers work in the field, then created a system for installing windows from inside the home, eliminating work performed from a ladder and the need for an extra person—one installer can handle the entire process. And it's fast. Pella held demonstrations of its new system, with time trials for attendees brave enough to give it a go. Most finished in under two minutes.

Smart glass hits the residential market. With Cardinal Glass partnering with Kolbe Windows & Doors to incorporate its CLiC switchable privacy glass in products, it's no surprise that smart glass showed up big at the show, making appearances in products from BasikWall, Eko Okna, Fleetwood Windows and Doors, PGT Innovations' iLab, Sierra Pacific and Weather Shield. Switchable glass in windows and pivot doors drew scores of interested

homebuilders despite its high price point, signaling a significant market shift.

Lightweight, impact-resistant, ultra-thin. There was a lot of emphasis on light, thin and impact-resistant glass that meets stringent testing standards for protection against hurricane-force winds, intruders and noise pollution, especially for the super-sized pivot doors, larger-size folding and sliding panel doors, and windows. A stop at PGT Innovations' booth satisfied all three trends in its Diamond Glass product offerings, featuring Corning Architectural Technical Glass, which takes about 45% of the weight out of laminated glass. In particular, Anlin Windows Catalina single-hung window was on display, featuring ULite thin-triple glass—with an ultra-thin pane of Corning ATG at the center—that complies with all Energy Star zones.

Pivoting to prototypes. PGTI's "product incubator" iLab had many prototype products on display, including an ultra-thin laminate (two 0.5

millimeter lites of Corning ATG with PVB interlayer), a multi-layer laminate for thinner and lightweight ballistic solutions, and its smart panel that allows homeowners to adjust the level of dynamic tint and control the amount of daylight entering a home. And the prototype Maglev sliding glass door has some 700 pounds of impact-resistant glass that floats effortlessly along the track thanks to magnets—no lift and slide, roller system or anything touching down below the track is necessary.

"It's really interesting. Products are getting bigger and heavier, with more and more glass. You really don't need automation, but technology to [make the glass] lighter, easier to handle and safer," says Dean Ruark with PGTI. "As you think about this thin glass and what you can do with it, then it starts to kind of shift the paradigm. Companies should be consistently innovating products to meet evolving needs." ■

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01



02



03

01. Pella

Pella Steady Set interior installation system is an interior installation system for new construction. Created with an installer-centric design, Steady Set features pre-attached components to help ensure a repeatable and reliable window installation. It provides builders with fast, labor-efficient wood window installation. The Steady Set installation system takes a two-person install crew down to one and reduces crew exposure to outside elements.

888/847-3552 | [PELLA.COM](https://www.pella.com)

02. Masonite

The Masonite Performance Door System with M-Protect Multipoint Security Lock is an exterior door system with four times more impact resistance than standard deadbolt locks, according to the company. It is compatible with a wide array of handle sets and off-the-shelf hardware, including electronic deadbolts from many brands. M-Protect serves as a security enhancement to the Masonite Performance Door System. The system is an option available with all Masonite exterior fiberglass doors.

800/663-3667 | [MASONITE.COM](https://www.masonite.com)

03. Anlin Windows and Doors

Anlin Windows & Doors' capstock coextrusion technology ensures 100% molecular bonding between the black acrylic and the vinyl substrate, which the company says contributes to durability and scratch resistance. It is also available in the company's new designer black finish option.

800/287-7996 | [ANLIN.COM](https://www.anlin.com)

04



06



07



05

06. Western Window Systems

Western Window Systems launched the water management sill, designed to provide a more seamless indoor-outdoor transition. The flush design allows continuous flooring between tracks to eliminate the bulky look of a traditional floor-level sill. The sill is available as an option for the Series 7600 Multi-Slide Door and will roll out to other Western Window Systems products in the future.

877/268-1300 | WESTERNWINDOWS.COM

04. ES Windows

ES Windows' Legacy Line features thermally enhanced aluminum products with a U-factor of 0.30 on all products. With standard low-emissivity, argon-filled, double-pane glass, the line offers energy efficiency as well as narrow sightlines and track depths for residential applications. The flagship product of the Legacy Line is the 850 Multislide door, available in stacking, 90-degree, bi-parting and pocketing configurations, with maximum panel sizes of 8 feet wide by 12 feet tall.

754/900-2300 | ESWINDOWS.COM

05. ODL

Developed as an alternative to traditional blinds, ODL Blinds + Glass XL aligns with consumer trends for more connection to the outdoors via bigger doors and windows. The new XL insulated glass product is meant for applications like patio doors and bathroom windows where more light and privacy control are desired for applications up to 90 inches high.

616/772-9111 | BLINKODL.COM

07. Martin Door

The Keystone garage door by Martin Door features a streamlined profile and allows for customization to fit any home aesthetic. Its ribless style offers taller stamps and grooves, is dent-resistant and has new back stile technology for support.

385/853-5898 | MARTINDOOR.COM

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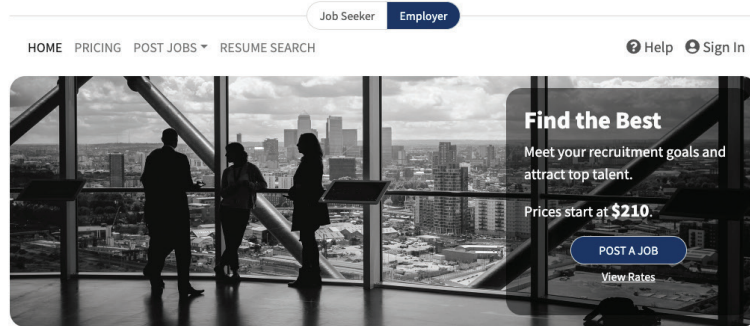
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Destigmatizing Mental Health Discussions

By Norah Dick

Suicide is a complex and serious issue that disproportionately affects construction workers. To address this critical health crisis, 2023 GlassBuild America's Main Stage presented an educational panel about mental health awareness and suicide prevention. Hosted by Richard Bright, CEO of the American Subcontractors Association, the session welcomed Kristen Petillo, area director for the Georgia Chapter American Foundation for Suicide Prevention; Cal Beyer, national leader and consultant for workplace mental health and suicide prevention; and Bob Swanson, retired president of contracting firm Swanson & Youngdale Inc.

Construction has the second-highest suicide rate among U.S. industries, second to mining. Beyer says since he started his career in 1995, he's seen overall construction fatalities decrease from 1,500 per year to 1,100. But five times more people die of suicide in construction than other construction occupational fatalities combined.

Substance use disorders and alcohol can also be major contributing factors to worsening mental health and suicide risk. Beyer explained that more than one-third of construction workers have a musculoskeletal injury, which is a "gateway to opioid use."



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Description: Indow founder and CEO Sam Pardue's classic 1906 Portland Craftsman house had a historical structure and original architectural features; however, its single-

pane glass windows were leaky, boosting his gas bill and wasting energy.

Extreme temperatures caused the acrylic to expand and contract, says Pardue. "We needed compression tubing that not only consistently stayed tight but did so even as the edges of the window thermally expanded and contracted."

After researching multiple materials, Pardue

concluded that silicone was the best material because of its compression set and temperature resiliency. Pardue selected Cooper Standard ISG because their engineers specialize in designing silicone seals from scratch, he says.

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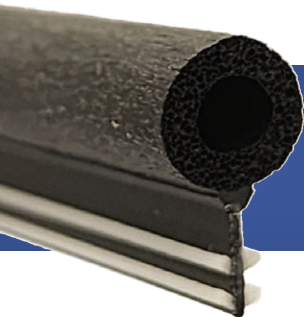
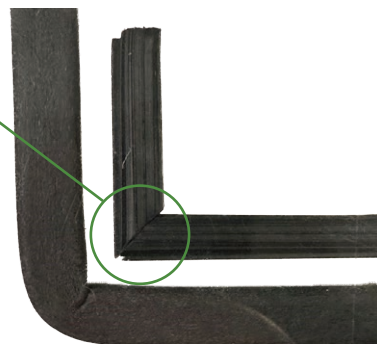
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