

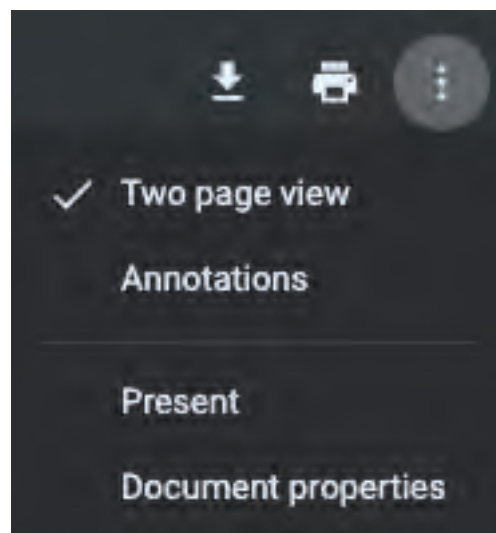
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THE GLASS AND GLAZING AUTHORITY

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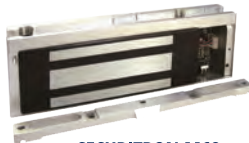
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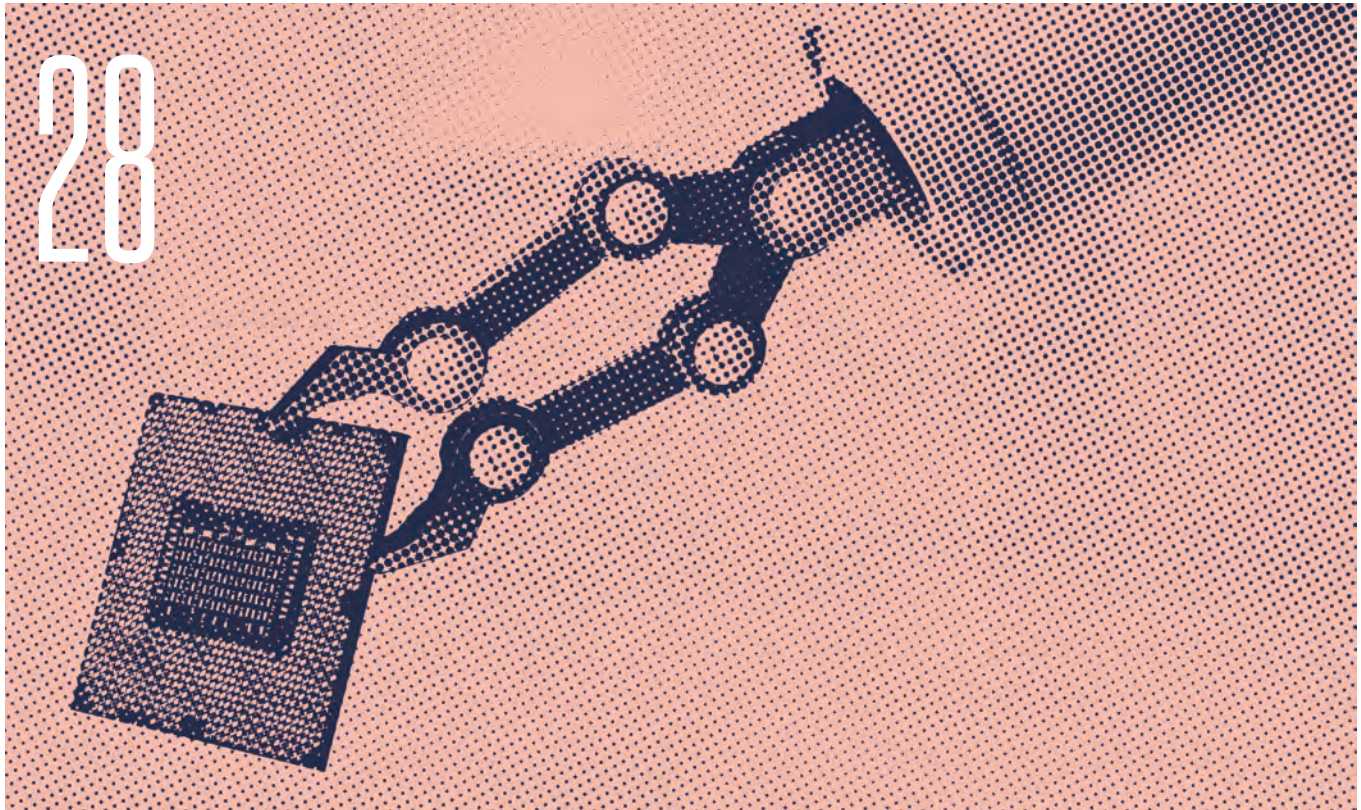
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ON THE COVER: Crowds gather on the GlassBuild America 2022 expo floor. This year's GlassBuild marks the 20th anniversary of the show, which is the largest trade and networking event for the entire glass, window, and door industry in the Western Hemisphere. It will take place Oct. 31-Nov. 2 in Atlanta. Photo by Eric Little Photography.

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By Lisa May, Wausau Window and Wall Systems



TECHNOLOGY Data Mining Your Business

By Chris Kammer, A+W Software North America



ARCHITECTURAL High-Performance Finishes

By Tammy Schroeder, Linetec



PROJECT SHOWCASE

Featured in Glass Magazine Weekly and on GlassMagazine.com. To submit projects or case studies, write Norah Dick, ndick@glass.org. Pictured: Parkland Moody Outpatient Center in Dallas. Large expanses of Solarban 90 Acuity glass by Vitro Architectural Glass don the 484,000-square-foot center, providing transparency, color neutrality, solar control and visible light transmittance, and making it a wise choice for meeting energy code requirements and ensuring comfort within buildings.

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An Underground History of Glass



KATY DEVLIN
Content Director
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kdevlin@glass.org

I've been thinking a lot recently about the history of flat glass in North America as the National Glass Association, Glass Magazine's publisher, celebrates its 75th anniversary—in part by recognizing major milestones for the industry and the association during the previous seven-and-a-half decades. (Read more on page 144). So, in July, with quite a bit of interest, and some healthy trepidation, I ventured 400 feet underground to get a closer look at an impressive piece of North American glassmaking history in Crystal City, Missouri.

My underground adventure was a kayak tour through a now-flooded former silica sand mine that, for more than a century, provided the raw materials for the flat glass plant that sat atop it. According to the Crystal City government, glassmaking began on the site in 1871, with the founding of the American Plate Glass Company. Just six years later, the operation was sold to Crystal Plate Glass Company, which built four gas-

fired plate glass furnaces for the factory. Soon after, the town was named Crystal City to recognize the glass plant's central role in the new community.

The rich history of the mine and plant continues, with Pittsburgh Plate Glass Co. purchasing the site in 1908 and building a new steam-powered factory. At the time, the facility was the largest glass plant in the world, according to Crystal City officials. In 1972, PPG installed float glass production furnaces at the plant, which were in operation until the facility closed in 1990.

The silica sand mine was also decommissioned and abandoned. The pumps that kept water out of the mine were turned off, and eventually, it became completely flooded with water from an underground spring, according to our kayak guides. The near 150-acre operation is now a serene, underground lake.

There is little sign of the former glassmaking operations above ground. Nothing of the plant remains, and while the corporate headquarters still stand, the building is used for other purposes.

Underground, however, from kayaks floating atop the water, one can spot evidence of the former silica sand mining operations. During the two-hour excursion through the labyrinth of the mine, guides pointed out decades-old equipment, machinery, infrastructure and more, all fully submerged and preserved in water. We saw the mine's vibrating rock crusher, the remains of a washer for the trucks that would haul out the silica sand, the munitions shed, and a web of cables running along the ceiling that brought communications and electricity underground.

I have been fortunate to visit dozens of glass industry operations during my tenure at Glass Magazine and the NGA. However, this was my first tour deep underground to get a firsthand look at the raw material extraction.

Thanks to Crystal City Underground for a once-in-a-lifetime look at the vestiges of a century-plus old silica sand mine and for the opportunity to learn about the long glassmaking history in the region. ■



Photo by Mary Froeba.



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NEED-TO-KNOW INFORMATION
FROM THE NGA

Introducing the New NGA Resource Hub

BY SARA NEISWANGER, NGA ASSOCIATE DIRECTOR,
INDUSTRY ENGAGEMENT

For more than 75 years, the National Glass Association has played a pivotal role in bringing together partners and stakeholders among our glass and glazing supply chain to be a resource for our members and the industry to grow successful businesses and champion the benefits of glazing and glass architectural products. NGA views its relationship with its members as a partnership. We need each other to grow and improve our respective businesses, and to strengthen the influence of glass in North America and beyond.

We place great emphasis on gathering member feedback and using it to answer a need. One such need: how do we find all the benefits that are included in membership, and how do we share them? These questions spurred NGA to revisit how it organizes and presents the information that members seek. Our new NGA Resource Hub, at glass.org/nga-resource-hub, provides a more holistic

view of NGA resources. It mirrors the path of the member/stakeholder journey from first considering membership to getting connected, involved and staying informed.

Navigating glass.org can feel like Amazon—"Where do I start?" There are literally hundreds of technical papers, articles and training materials, as well as online education courses, webinars, podcasts and presentations. The NGA Resource Hub is organized to make your first click a clear choice.

The NGA Resource Hub is dedicated to the member experience, and we hope you will navigate these tools at your convenience. Above all, NGA exists for you and because of you. ■



VISIT
THE NGA
RESOURCE
HUB

NEW FIRE-RATED GLAZING TECHNICAL PAPER

NGA published a new Glass Technical Paper, or GTP, "Fire-Rated Glazing 101," a five-page document that addresses both life safety and other design goals, including daylight, privacy and security.

"[This technical paper] is the result of true collaboration between fire-rated manufacturers and suppliers, other glass fabricators, test lab managers, NGA code consultants and NGA staff," says Diana San Diego, Safti First, task group chair. "By providing an understanding of what fire-rated glass is, we hope that building teams can leverage the daylighting, views, security, aesthetics and other performance benefits that this versatile product provides—all while meeting fire and life safety requirements."



DOWNLOAD
THE NEW
GTP AT
GLASS.ORG

NGA ANNOUNCES NEW FRAMELESS SHOWER ENCLOSURE MANUAL

At its NGA Glass Conference: Tacoma, NGA announced the addition of the Frameless Shower Enclosure Design and Installation Manual to its library of resources. This comprehensive manual provides guidance and best practices related to frameless shower enclosures and is

intended to assist both glass professionals and installers in creating safe, functional and aesthetically pleasing enclosures.

"The frameless shower industry has needed a document like the Frameless Shower Enclosure Design and Installation Manual," says

Danny Donahue, task group chair and brand manager, shower hardware at FHC The Glazing Supply Company. "Its purpose is to educate and support glass professionals to ensure safe installations."



LEARN MORE AND
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MANUAL



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PROJECT SHOWCASE

Lincoln Center's David Geffen Hall

New York, NY

The new Lincoln Center David Geffen Hall, designed by Diamond Schmitt and Tod Williams/Billie Tsien Architects, was decades in the works but completed ahead of schedule and under budget since the pandemic forced the closure of the Avery Fisher Hall.

The first priority was to improve and revitalize the acoustics inside the main theater, to make sure it was the best-in-class acoustic experience for the New York Philharmonic. What resulted is a completely new theater inside the building, not just a renovation, creating an intimate and inclusive experience for the audience.

Everything in the building, from door handles to floorboards to railings, feels reassuringly solid. Pulp Studio fabricated over 8,700 square feet of flat and curved, laminated glass railings, using an acid etch glass to meet the design aesthetic and provide an enhanced level of privacy. The bent glass was chemically strengthened for increased surface protection and Pulp Studio's proprietary Precision Edge® technology was used on all the flat glass for a refined and professional look.

Social/Public Spaces: Tod Williams Billie Tsien Architects / Concert Hall: Diamond Schmitt
Photos: Michael Moran Glass: Lafayette Metal & Glass Company – Hauppauge, NY
Owner Rep: CMDC Consulting, LLC / Acoustics: a-ku-stiks/ Theatre: Fisher Dachs Associates
Mechanical/Electrical: Kohler Ronan, LLC

GLASS ADVOCATE

Glass' Contribution to Sustainability, Energy Conservation Emphasized at NGA Glass Conference: Tacoma

Glass and glazing industry technical leaders at the NGA Glass Conference: Tacoma in Tacoma, Washington, focused on how architectural glass can contribute to sustainability and energy conservation. The three-day conference, held July 25–27 and hosted by the National Glass Association, included meetings of the NGA Advocacy, Fabricating and Forming Committees.

Topics on the agenda included sustainability, architectural glass recycling, global warming potential limits set by state programs, daylighting, school security, bird-friendly glazing, workforce development, glass fabrication training through MyGlassFab, and current and future insulating, protective and decorative glass technologies.

Committee Updates

The **Advocacy Committee** gave a follow-up review about NGA's Glass and Glazing Advocacy Days in Washington, D.C., in March, which brought important issues such as sustainability, school security, workforce development and bird-friendly glazing to the attention of government representatives and legislators.

The **Fabricating Committee** included updates about the wide range of activities from its various segments: Decorative, Energy, Fire-rated Glazing, Insulating, Laminated Glazing, Mirror, Protective Glazing and Tempering. For example, attendees learned all about

NGA's new MyGlassFab, launching this fall at GlassBuild America, which will provide consistent, accessible skills training for glass fabrication production personnel with educational courses plus hands-on activities. Also, Spanish translations of NGA's Glass Technical Papers (GTPs) on cleaning installed glass will be available soon, and a new or modified impactor for ANSI Z97.1 is being considered to address concerns with lead shot and other potential improvements.

The **Forming Committee** gave updates about several sustainability initiatives, including global warming potential limits set by the Buy Clean California and Buy Clean Colorado programs. NGA will continue to work with stakeholders on these initiatives. Additionally, NGA's Recycling task group is working on educational tools explaining the math and science promoting recycling of architectural glass, and resources to help overcome roadblocks to recycling.

The **NGA Installing Committee** reported that a new task group was formed to create a benchmark paper on delegated design versus design-build versus design-assist, and a task group is coordinating with MasterSpec to update the Division 08 section specifications. Additionally, the Value Engineering task group is discussing ways to overcome challenges in implementing new high-performance glazing products.

The next meeting of the NGA Installing Committee will be on Oct. 31, 2023, at the Glazing Executives Forum at GlassBuild America in Atlanta.

New resources

NGA's various task groups have been busy creating resources for the industry, available for download and/or purchase in NGA's online store at glass.org/store.

NGA's Installing Committee announced the new Frameless Shower Enclosures Design and Installation Manual, designed to educate and assist glass professionals on designing, measuring and installing safe, functional shower enclosures.

Various NGA task groups are working to update the NGA Laminated Glazing Reference Manual, create a new Mirror Reference Manual, and draft a new Decorative Glazing Reference Manual for 2024 publication. Work will soon begin on a new Wired Glass in Fire-Rated and Safety Glazing Applications resource, guidelines are being drafted on the quality of digitally printed glass and best practices for digital printing, and the VIG task group will draft a new AIA presentation expanding on existing NGA technical papers. Finally, a new Fire-Rated Glazing 101 GTP was published in August, and the Use of Glass in Guardrails (formerly Use of Laminated Glass in Glass Railing Systems) GTP will be published soon.

Next meeting

The next meeting of NGA's Advocacy Fabricating and Forming Committees will be at the NGA Glass Conference: Charleston from Feb. 6–8, 2024, in Isle of Palms, South Carolina. Learn more about the event at glass.org/nga-glass-conference-IOP-2024. ■



GLASS INFORMATIONAL BULLETIN

Top 5 NGA Glass Technical Papers

The committees and task groups of the National Glass Association develop new resources and revise existing publications to address important issues facing the industry. From architectural glass trends and fortified glazing in educational institutions, to understanding the interaction of glazing materials and suggested procedures for essential glass cleaning and the safe removal and replacement of broken glass, these Glass Technical Papers (GTPs) are industry-consensus documents crafted by NGA member volunteers, aiming to provide valuable insights and advancements to the entire glass industry.

The following compilation are excerpts from the top five most-downloaded GTPs in 2023.

Glass in guardrails

Glass railing systems are used in a variety of residential and commercial settings for safety, unobstructed views and the beauty glass adds to a structure. The 2021 International Building Code makes specific reference to glass railings in Section 2407 and refers to them as “guards.” The code requires the use of laminated glass with very few exceptions. Glass types must be fully tempered laminated or heat-strengthened laminated, comply with Cat. II of CPSC



Example of glass guardrail.

16 CFR 1201 or Class B of ANSI Z97.1 and permanently marked as safety glazing.

Fully tempered laminated glass offers a variety of design options. The interlayer can be clear, tinted or custom printed. The glass can be clear, tinted, or decorative; flat or curved; fully supported on 1, 2, 3, or 4 edges; or minimally supported with bolts and/or clamps. Laminated glass offers a benefit over monolithic glass when used in guards; if breakage occurs, glass particles tend to adhere to the laminate interlayer, increasing the likelihood of glass retention in the system.

The code requires an attached top rail (or handrail) for guards with glass balusters. The top rail must be attached to at least three glass balusters, unless it is otherwise supported to remain in place, such as a connection to a wall that has been designed to resist the loads specified, should one baluster fail.

Glass guards must be designed to meet two separate load requirements

as specified by the code: a linear load of 50 pounds per linear foot and a concentrated load of 200 pounds. In addition, glass used in guards must be designed using a factor of safety of four. The safety factor of four applies only to the glass; not to the non-glass materials in the guard system such as metal structural posts or rails.

School security glazing

When deciding what level of protection to specify, consider these factors:

- Direct line of sight to students
- Location and movement of students during an active shooter event
- Distance and time for first responders

Use extensive glazing at the main entrance to enhance visual surveillance of parking lots and pedestrian routes. Install openings or windows in solid walls to make areas adjacent to the school, without a line of sight, visible from the interior. Consider using burglary- and

GLASS INFORMATIONAL BULLETIN—TOP 5 NGA GLASS TECHNICAL PAPERS

ballistic-resistant glazing in high-risk school areas. Consider using steel window frames securely fastened or cement grouted to the surrounding structure.

Forced-entry glazing is designed to increase the amount of time required to gain entry, to allow for the enactment of lock-down protocols. These products may be used in areas with a high risk of prolonged attack or in critical areas such as entry vestibules. Forced-entry-resistant glazing is designed to resist penetration from hand-held or hand-thrown objects such as hammers, crowbars, bats, knives, bricks and rocks. ASTM F3561 Standard Test Method for Forced-Entry-Resistance of Fenestration Systems After Simulated Active Shooter Attack gives a range of performance options.

Cleaning glass products

Interior and exterior glass surfaces should be thoroughly cleaned as dirt and residue appear.

Before proceeding, determine whether the glass is clear, tinted or reflective. Take special care with reflective coatings, as permanent damage to the reflective glass surface may result from coating removal. To test the location of the reflective coating, touch the point of a pencil to the glass surface. If there is a gap between the pencil point and the reflections, the coating is not exposed on that side of the glass.

Avoid cleaning tinted and reflective glass surfaces in direct sunlight, as the surface temperature may be too hot for optimum cleaning. Begin exterior cleaning at the top of the building and continue to the lower levels to reduce the risk of leaving residue and cleaning solution on glass that has already been cleaned. Be sure the wind is not blowing

the cleaning solution and residue onto already-cleaned glass.

Compatibility testing

The ift Rosenheim test method, developed by ift Rosenheim GmbH in Germany, is the most applicable method to directly assess the effects of incompatible glazing materials on polyisobutylene (PIB) primary sealants in insulating glazing units (IGUs).

Potentially incompatible materials coming from the glazing components include plasticizers, volatile vapors, oils, solvents and other organic components commonly used in proximity to, or in contact with, IGUs containing PIB primary sealant.

Several factors can lead to the migration of PIB or an incompatible material beyond the sealant sightline that may have negative effects on the IGU perimeter seal performance. This may include loss of adhesion and/or compromised moisture barrier or gas retention properties as well as negative aesthetic effects. PIB performance during service may be affected by factors such as ultraviolet light, heat, and/or diffusion of incompatible materials throughout the entire glazing system.

Dealing with broken glass

Architectural glass is designed for a low probability of breakage, generally not to exceed the breakage of eight lites out of 1,000 at design loading conditions. When glass breaks, it no longer has the integrity to support the loads for which it was designed, and it needs to be replaced, even if it remains in its frame. Removal of broken glass should be performed by a professional glazier who understands the dangers of handling

Resources



Use of Laminated Glass in Glass Railing Systems (FB33-11)



School Security Glazing (FB71-21)



Proper Procedures for Cleaning Architectural Glass Products (FB01-00)



Compatibility Testing of Insulating Glass PIB Primary Sealant with Respect to Glazing Materials—Joint with FGIA (FB75-23)



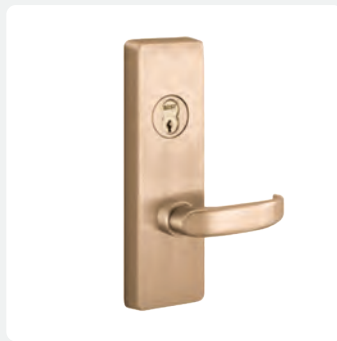
Suggested Procedures for Dealing with Broken Glass (FB09-06)

broken glass and is familiar with the retention of glass in the framing system and the necessary steps needed for its safe removal. Workers should use proper protective equipment such as, but not limited to, gloves and eye protection.

- Advise the building owner, property manager or maintenance department, or work directly with the homeowner.
- Block off the area around the broken glass to prevent glass-related injuries.
- Begin an immediate cleanup and replacement of the broken glass.

When the cause of breakage is in question, it is recommended that photographs be taken to assist in determining the cause of breakage and broken glass fragments are retained for closer examination by glass professionals. ■

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The most-clicked news stories on GlassMagazine.com, brought to you by **GLASS MAGAZINE WEEKLY** *

AmesburyTruth Acquires Lawrence Industries

AmesburyTruth completed the acquisition of Lawrence Industries. The acquisition will further enhance AmesburyTruth's window and door hardware portfolio for the North American market.

Lawrence Industries builds and designs molds and manufactures high-performance composite window hardware for sliding and hung window fabricators. It was founded in 2005, has over 50 employees and operates from a single location in Thomasville, North Carolina. Brandon Lawrence will remain with the company to continue to drive Lawrence forward with a commitment to teamwork, quality, service and design.

Assa Abloy Acquires Sunray Engineering

Assa Abloy acquired Sunray Engineering Group Ltd, a UK designer and manufacturer of high-specification steel and timber security doors, fire doors and louver systems.

"This acquisition delivers on our strategy to strengthen our position in the mature markets adding to our comprehensive offering in the UK and EMEA division as a whole," says Nico Delvaux, president and CEO, Assa Abloy.

Sunray Engineering was established in 1980 and has about 70 employees. The main office is located in Kent, South East England.

Tecnoglass Relocates Global Headquarters to the U.S.

Tecnoglass Inc. announced the relocation of its global headquarters to Miami, Florida, from Barranquilla,

Colombia. The relocation is effective immediately. This move is aimed to further bolster the company's market presence and continued growth in the United States, where it sells the majority of its architectural high-end window, glass and aluminum products. Over the past decade, Tecnoglass has experienced substantial growth in the United States, which currently accounts for more than 95% of its generated revenues.

By moving its global headquarters to the United States, the company believes it will be better positioned to serve its customers, respond swiftly to market dynamics and harness growth opportunities. Additionally, the significant portion of existing sales, marketing and corporate functions already performed in the U.S. will be supported by this move.

Quanex Partners with Advanced Screen Systems

Quanex and Advanced Screen Systems Inc., a wholly owned subsidiary of Unique Home Designs Inc., entered into an exclusive manufacturing agreement for ASSI's screen systems featuring Meshtec technology. Under this partnership, Quanex will fabricate and distribute licensed products from ASSI and develop new applications to capitalize on the growing demand for high-performance window and door screens.

With its traditional insect screens, Quanex is positioned to provide upgraded screen solutions for window and door manufacturers that offer performance and expanded market opportunities. ASSI has established itself in this emerging market with designs and

applications that are now available to Quanex. Together, they will establish a position in the high-performance screen market, say company officials.

Optima Systems Enters U.S. Market as PurOptima

Optima Systems entered the U.S. non-residential building design, construction and real estate development market as PurOptima. The British organization, established across the UK, Australia, Asia and EMEA regions, sees this move as another important step in its journey to becoming a leading choice for glass partitioning solutions globally, say officials.

The company will operate out of the U.S., with Benhar Office Interiors managing new and existing client relationships and installation. Entering into a partnership with PurOptima results from a shared ambition across both companies to introduce the U.S. commercial design and real estate market to high-quality, sustainable glass wall partitions and door solutions.

Epic Glass Recycling and Ace Glass & Plastics Recycling Build Glass Recycling Plant

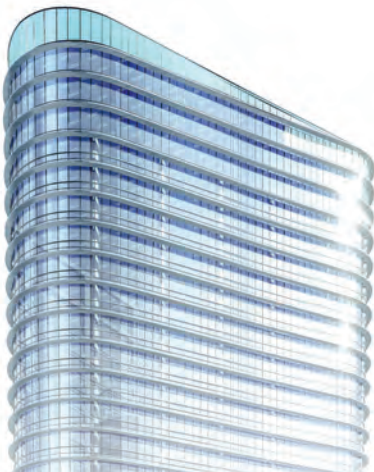
EPIC Glass Recycling, an Arkansas-based 501(c)(3) nonprofit organization, is partnering with ACE Glass and Plastics Recycling, which has plans to build a glass recycling plant in North Little Rock, just east of I-440.

The first phase of the plant, scheduled to be operational in early 2024, will involve the installation of processing equipment to make cullet from collected glass.

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The second phase will include the production of ultra-lightweight foamed glass aggregate that will be used in road construction projects across Arkansas. This product saves weight and cost in road construction products by replacing traditional fill behind retaining walls and over utilities, creating savings on shipping costs for tax-payers and local governments.

A plant in central Arkansas is designed to make glass recycling more cost-effective for communities across the state and surrounding states.

Cyncly to Make Use of AI Technology

To support customers with innovative product features, more immersive experiences and augmented data, Cyncly will add the power of artificial intelligence across its solution portfolio, which covers every stage of the consumer value cycle. AI-based solutions hope to provide consumers access to new services, such as enhanced design inspiration, while delivering capabilities for Cyncly customers to gain greater efficiency and higher margins through improved operations.

Hartung Glass Industries Adds FuseCube Express to Offer DFI Glass Protection

Diamon-Fusion International announced that Hartung Glass Industries is adding Diamon-Fusion protective coating to its product offering across the company's manufacturing facilities in North America. This new launch also includes the Agalite shower and tub glass division.

The coating will be applied through the glass coating technology of the FuseCube Express at three manufacturing locations. This machine-driven process utilizes a proprietary chemical vapor deposition process that consistently applies the Diamon-Fusion coating onto both sides of the glass. Hartung and Agalite will now also offer the Diamon-Fusion coating on their shower doors and glass railings.

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Smart-Builder Rebrands as Smart Glazier Software

Leadership at Smart-Builder rebranded the company as Smart Glazier Software. “We feel that this rebrand better represents who we are and what we do, providing smart software solutions to glaziers and fabricators in the glass industry,” say company officials.

The company has a history that spans over two decades and offers a suite of software for glaziers, glass fabricators and glass businesses, including Smart-Toolbox, Smart Glazier Connect and a range of Smart-Glass designers.

NSG Group Celebrates 125th Anniversary of Rossford Plant

NSG Group announced that the birthplace of its North American business in Rossford, Ohio, celebrated its 125th anniversary throughout late July.

Glass pioneer Edward Ford founded the community in 1898 and named the city Rossford by combining his last name with that of his wife, Caroline Ross, thus Rossford.

A host of events occurred for the culmination of the 2023 celebration of Rossford’s 125th Anniversary, which NSG Group sponsored. Rossford plant tours took place the afternoon of July 28, and the official grand opening at Rossford High School happened that evening. Events on July 29 included the 125th Anniversary Parade in the morning and concluded with a special 125th Anniversary Riverfest Celebration that evening.

Special Shapes Refractory Company Expands Presence

After attending glasstec and listening to feedback from customers and partners, Special Shapes Refractory Company (SSRC) is responding by expanding its international presence to offer consistent pricing, rapid turnaround and innovative solutions to glass manufacturers in Europe, South America, Mexico, Central America and beyond. To meet the demand for these



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NEWS TO KNOW

services, SSRC has restructured the sales team and promoted Andrew Pea to the role of director of international sales and business development.

Hadley Associates Inc. to Represent Vetrotech in Illinois, Indiana

Vetrotech Saint-Gobain has increased their regional footprint with Hadley Associates Inc. Located in Elgin, Illinois; Hadley Associates Inc. will

represent Vetrotech in Illinois and Indiana.

Since 1982, Hadley Associates Inc. has been a manufacturer's representative and distributor. They offer support from design to installation, specializing in architecturally specified building products.

They commit to enhancing architectural design and supporting construction teams with their expertise.

PEOPLE NEWS



Johnson

Pulp Studios appointed *Kirk Johnson* as chief executive officer. He will be responsible for supervising the overall operations and strategies

of Pulp Studio.

With more than 25 years in the glass industry, Johnson started on the production floor and has worked in every aspect of the business, from cutting, tempering, lamination, insulation, and fabrication to sales and executive roles. Johnson initially joined the Pulp Studio team in 2016 as a consultant, then formally joined the team as executive director of operations in 2018.



Graham

Vitrum Glass Group appointed *John Graham* as vice president of operations for the U.S. With over 30 years of experience, the company says that Graham brings a wealth of expertise, influential relationships and a proven track record of success in the glass industry.



Pierce

Deceuninck North America welcomed *Tim Pierce* as the organization's new vice president of operations at its Monroe, Ohio, headquarters. Pierce brings more than 30 years of professional experience to this role. Most recently, he served as the chief operating officer for Georg Fischer Piping Systems Americas.



Reyes

Vitro Architectural Glass appointed *Matias Reyes* as national architectural manager for the Ontario/Quebec region. Reyes will coordinate and manage large commercial construction projects, supporting architects, facade consultants and engineers through the glass selection process.

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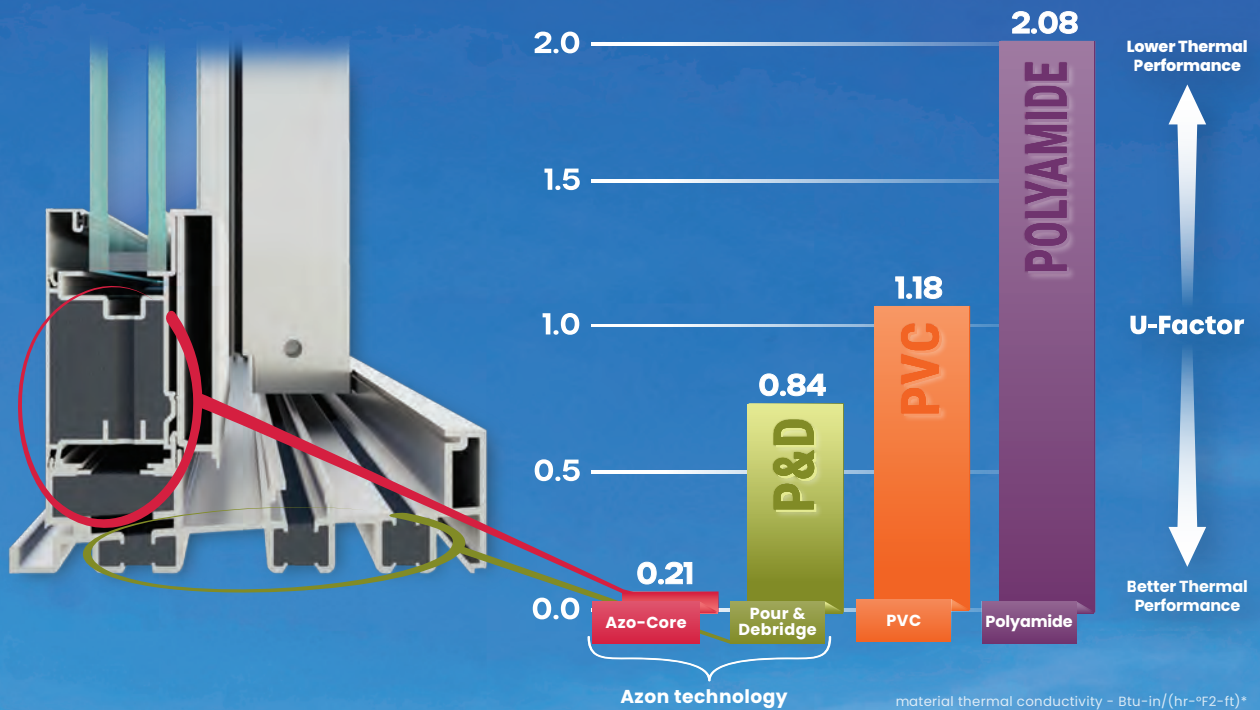
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Kinder

Guardian Glass North America

announced that *Alan Kinder* has been promoted to director, commercial segment, where he will develop and lead strategy in identifying and serving the needs of Guardian Glass fabricator customers. Kinder has more than 11 years of experience at Guardian Glass. After joining the commercial team as territory sales manager, he advanced to architectural design manager, key project manager and regional architectural manager.

Frameless Hardware Company

LLC welcomed *Doug DeRusha* to the position of vice president of sales for the company's Northeastern and Mid-Atlantic regions. Prior to joining FHC, DeRusha served as sales director for C.R. Laurence, where his tenure lasted 39 years, comprising leadership, sales and educational roles driving growth, market



DeRusha



Heflin

share and fostering customer relationships.

FHC also appointed *George Heflin* as vice president of sales for the Southwest Texas region. Before joining FHC, Heflin held several positions throughout his career in the glass and metal industry with PPG, U.S. Aluminum and CRL.

In his new role, Heflin will be responsible for developing and nurturing customer relationships, identifying new business opportunities, and promoting FHC's range of glass and glazing products.



Lafferty

Isoclima Specialty Glass

announced the appointment of *Wynn Lafferty* as sales manager focused on civilian armored glazing and

other specialty markets for the U.S., Canada, and other regions.

Lafferty comes to Isoclima Specialty Glass from Custom Glass Solutions and has been in the specialty vehicle market for over a decade.



Welch

Lauren Welch will be taking on the role of content creator and PR specialist for **The Glass Guru**. In this role, Welch will be

responsible for communication, social media management and providing announcements and related press releases, collaborating closely with the existing team to help drive engagement, boost numbers and get the word out about The Glass Guru. Welch brings over 10 years of experience in journalism, content creation and social media management.



Heydet

Cyncly appointed *Ashley Heydet* as its new senior vice president, sales North America. Heydet has extensive experience building and leading

successful teams, pioneering new markets, and scaling organizations. A vital part of her role will encompass the expansion of Cyncly's North American client portfolio, with a particular emphasis on the Enterprise segment.

IN MEMORIAM

Chillum Metal Works owner *Beth Paolucci* has passed away, according to a statement by the Mid-Atlantic Glass Association. Paolucci and her husband, Bill, own Chillum Metal Works LLC in Bladensburg, Maryland. She was a longtime supporter of the Mid-Atlantic Glass Association and could be found working at the registration table at its Annual Glass Expo every year. ■

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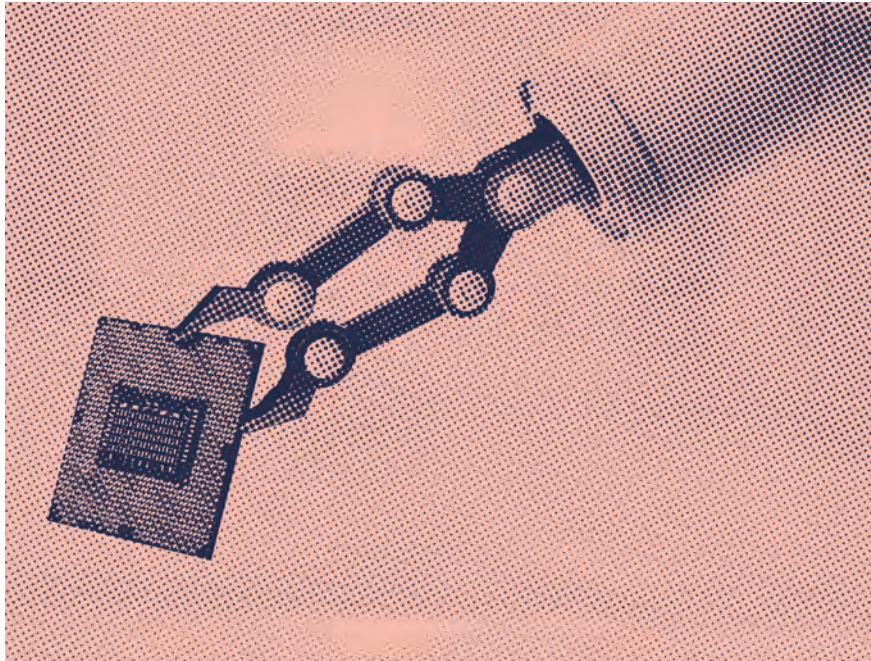
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is a toddler learning that a stove is hot only after touching it the first time or forgetting to start a friendly reminder with “per my last email.” The difference is that computers can process a volume of data points and interactions in seconds, while that same amount would take a human their entire lifetime.

Many core construction functions have a role based on reviewing plan data and then figuring out the best way to bring those plans together. This is true for design, bidding, procurement, safety and scheduling. AI streamlines these functions because, unlike BIM, which tries to model plan interactions, machine learning can potentially use BIM data and the physical building of millions of other prior jobs to model the construction process. AI can also repeat those modeling efforts hundreds or thousands of times, looking for problems and developing preferred schedules well before a permit is pulled or excavation begins.

Facilitating the trades

The construction trades are starting to see AI benefits as well. With market barriers to this technology being lowered to the point where AI is a smartphone app, AI is becoming more accessible. Automation of takeoffs, code compliance reviews, energy efficiency reviews based on a prescriptive path and performance modeling save thousands of hours. AI is beginning to mirror the value that seasoned experts have on jobs: they see the issues before they happen because they’ve encountered them before.

Learning its limits

While valuable, AI is not perfect. Like most technology, the issues and problems with AI do not lie with the technology but with the people using it. For example, a lawyer was recently

LEGAL

HARNESSING THE POWER OF AI

ARTIFICIAL INTELLIGENCE HAS THE POTENTIAL TO STREAMLINE DESIGN, BIDDING, PROCUREMENT, SAFETY AND SCHEDULING
BY MATT JOHNSON



Artificial intelligence (AI) has come to all industries, including construction. And while almost every new technological jump tends to be lauded as “game-changing,” the impact of machine learning and qualitative outputs presented by AI appear to have that potential. But like any tool, the value of AI will be in how companies use and control it.

Accelerating and improving

We are not referring to armies of robot workers putting buildings together when talking about AI. Rather, AI is a broad description of many different computer functions that try to mimic human problem-solving.

Machine learning is the most relevant sector of AI currently being used for construction. In this process, a computer takes vast amounts of data and looks for interrelationships and consequences from how those data points interact. Humans do this regularly. Whether it

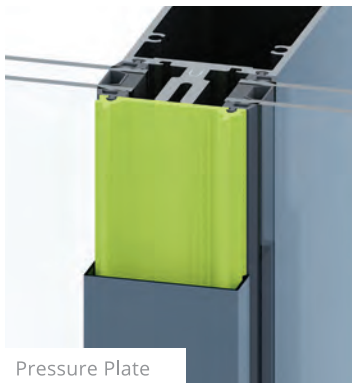
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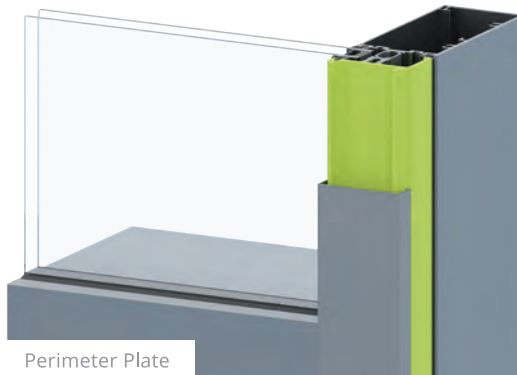
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sanctioned for filing a court document written by AI containing completely fabricated references and arguments. The core failing was not that the machine prepared something incorrectly, but that people failed to ask the right questions to create the proper output, and its results were not validated. Those concerns also rest with construction projects.

Where project-critical decisions are left to artificial means, problems arise without proper oversight. For that reason, it is not unreasonable to foresee scope of work agreements that contain express limitations on the use of AI in certain functions or compel specific datasets be used if AI is a tool being relied on during construction.

Insurance limitations are not far behind this technology as well. While errors and omissions and professional services policies may protect against mistakes made by well-intentioned but erroneous humans, the scope of coverage becomes more complicated

when the error results from bad programming and data input. A developer's use of AI for an RFI review may present coverage problems because the computer conducting the review may not have up-to-date data about the actual job, compromising its ability to respond. The insurance coverage question then becomes whether the cause of the damage was the AI response or failure to maintain the data—with the availability of insurance policy proceeds hanging in the balance.

Also, consider the real potential for injury. Poor sequencing from AI could jeopardize limited safety resources onsite. Improper data could lead to code compliance violations, and the potential failure to properly assess required performance metrics could lead to latent safety hazards.

Using powerful tech safely

Like any tool, AI has benefits and dangers of misuse. So, what are

companies to do?

Start with planning ahead. Consider whether AI is a tool to be introduced or something to steer clear of on projects. If it will be used, what data validation and ongoing update protocols are implemented to ensure the results of AI responses are timely, valid and accurate. Stay current with vendors and their dataset offerings that can be used on jobs. And, perhaps most basically, get to the site. Human intuition and creativity are unlikely to be replaced soon.

Roles may change with AI's use, but that's true with all technological innovations. Getting ahead of the AI curve will allow early adaptive use of this emerging technology. ■

Matt Johnson is a member of The Gary Law Group, a Portland-based firm specializing in legal and risk issues facing manufacturers of glazing products. He can be reached at matt@prgarylaw.com.

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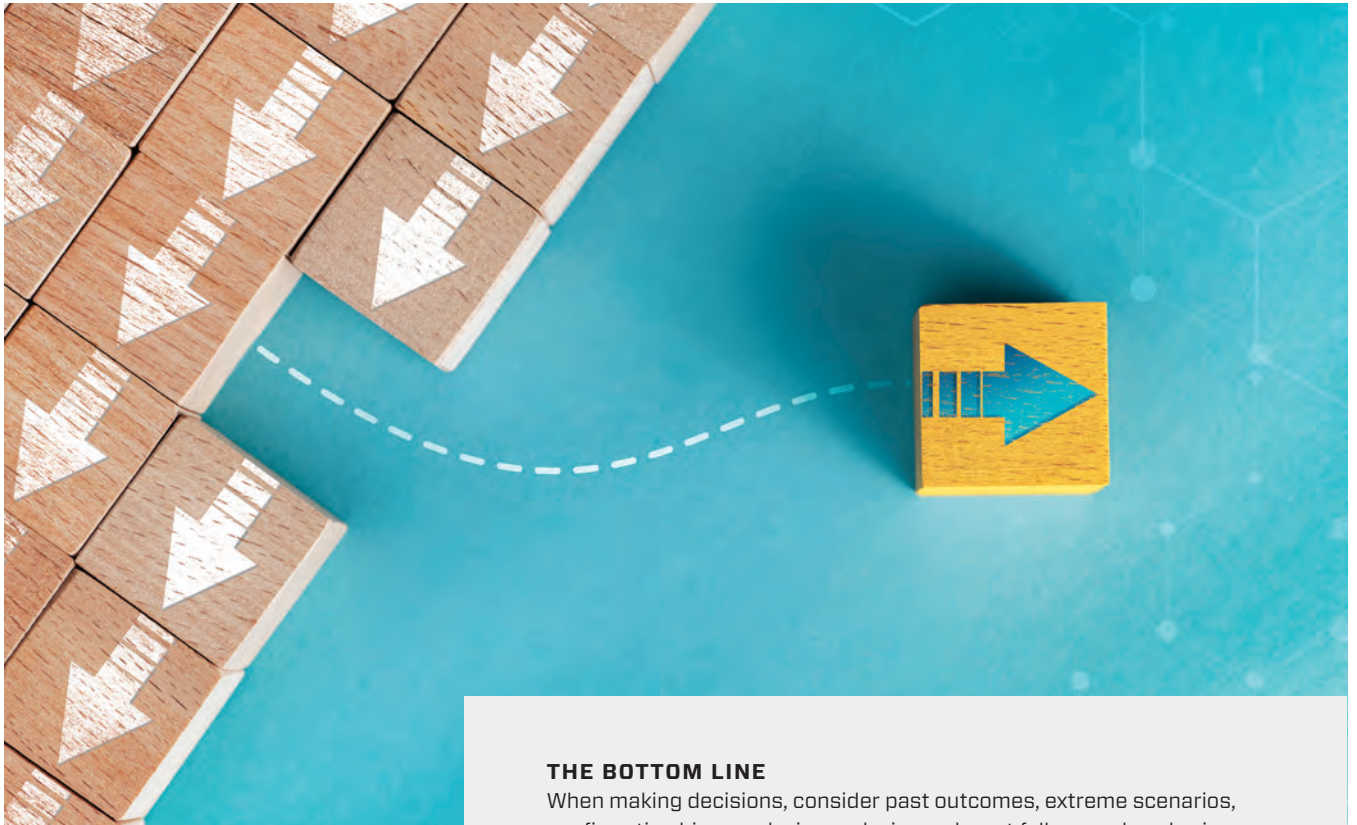
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THE BOTTOM LINE

When making decisions, consider past outcomes, extreme scenarios, confirmation bias, analysis paralysis, sunk cost fallacy and anchoring to evaluate outcomes accurately. Productive use of these concepts will make them second nature and lead to better decisions.

MANAGEMENT

SIX SIMPLE LESSONS TO IMPROVE YOUR DECISIONS

EXECUTIVES CAN IMPROVE THEIR DECISION-MAKING SKILLS BY APPLYING SIMPLE TECHNIQUES AND BECOMING AWARE OF COMMON CHALLENGES **BY MARCO TERRY**



Executives can improve their decision-making skills by applying simple techniques and becoming aware of common challenges. This article covers six lessons I have learned throughout my career. They have helped me make better decisions and evaluate outcomes more accurately. These concepts are simple to use and can help anyone.

01 Never evaluate decisions solely by their results.

As business managers, we usually evaluate decisions based on their results. Good decisions always lead to good outcomes and vice versa. This approach appears reasonable, and we see daily examples of this in the media. In reality, this approach is simplistic and often leads to wrong conclusions.

In the Great Recession (2007–2009), a friend’s construction business in South Florida ran into trouble and, despite his best efforts, ultimately failed. He blamed his decisions unjustly for this outcome. In reality, he did all the right things. The company went bankrupt due to harsh economic conditions beyond his control.

Evaluate past decisions based on the information you had when making the decision. This information includes your situation, market conditions and chances of success. This last point is important. No decision has a 100% chance of success. Seasoned managers know that good decisions sometimes have bad outcomes.

02 Facing a difficult decision? Consider the extremes.

A good way to handle a difficult

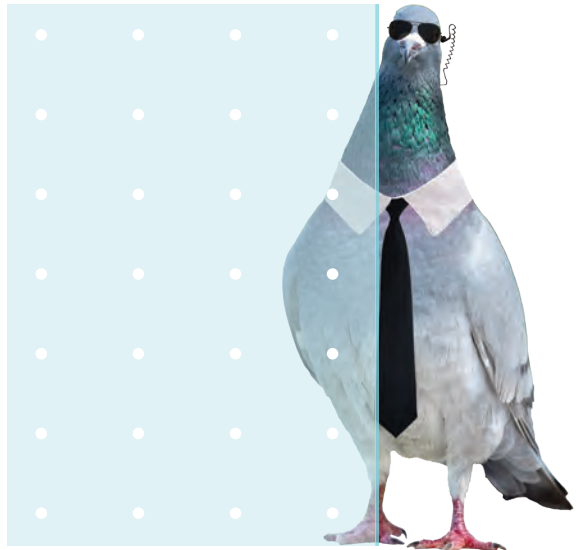
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“ ALWAYS RESEARCH OPPOSING VIEWS, AND SEE HOW THEY COULD BE RIGHT. MAKE A FINAL DECISION ONLY WHEN YOU UNDERSTAND BOTH SIDES WELL.”

decision is to evaluate the extreme cases. Consider the options and outcomes at the extremes. How likely are they? What perspectives do they bring? Looking at the extremes helps you understand the situation better. It also ensures you know the range of consequences of the decision.

The decision to add a new product to our portfolio is complex and time-consuming. We improved our decision-making by evaluating the best- and worst-case scenarios early on. As a result of assessing extremes, we filtered bad options quickly, cut our time to market and deployed only the products with the highest upside.

03 Beware of confirmation bias.

Confirmation bias is the tendency we have to search for and interpret information in a way that confirms our existing beliefs. It’s easy to see how this practice can lead to bad decisions.

This problem is serious when it affects executives making critical decisions for the company. There is no easy way to fix this. Always research opposing views, and see how they could be right. Make a final decision only when you understand both sides well.

04 Information is valuable only if it affects your decision.

Some managers, myself included, like

to get as much information as possible before making an important decision. This strategy seems sensible and should lead to an informed decision.

The problem is that we often over-analyze information before making a decision. This habit is commonly called “paralysis by analysis” and often leads to delays and indecisiveness, not better decisions.

To improve decision-making, I filter out information that appears relevant but doesn’t affect the decision. Ask yourself, “How much would I pay for this information?” The answer tells you its value. This technique helps you focus on relevant facts, which improves decision quality.

05 Beware of the “sunk cost fallacy.”

The sunk cost fallacy affects us when deciding whether to continue or abandon a project. This one is very familiar because I was often guilty of

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St. Petersburg, Florida is renowned for its vibrant art scene, featuring over 600 street murals. GGI contributed to this artistic landscape by fabricating 32 custom glass panels for a new public art display for the SunRunner Bus Rapid Transit system. As part of a \$44 million project to enhance the city, nationally recognized artist Catherine Woods was commissioned to design 16 art installments to be placed in bus shelters across a 10-mile corridor, capturing the essence of the surrounding neighborhoods. **Having worked with GGI on past projects, Woods knew GGI could bring her visions to life with Alice® Direct to Glass Printing.**

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Consider a team that has completed 65% of an important project for your company. However, market conditions change, and the project no longer has the payoff you expected. Should you stop the project or finish it?

Most executives will likely choose to finish the project. After all, the team has already invested substantial time and resources. Stopping the project seems like wasting resources. However, the money, time and effort you have invested are “sunk costs,” which can’t be recovered. Consequently, they should not affect your decision.

The correct course of action is to continue the project only if it makes business sense. If the project no longer makes sense, consider stopping or changing it. Sunk costs should not factor into the decision.

06 Anchoring can work against you.

Most managers have heard of “anchoring” as it applies to sales. Salespeople often start negotiations with a high price to “anchor” it. This strategy supposedly forces clients to negotiate based on an already high price.

However, anchoring is a broader concept, best defined as a desired outcome that has significance only to you. It can lead to tunnel vision. Anchoring is not only related to numbers. Managers often anchor their expectations on specific outcomes. You see this situation when managers focus on achieving unrealistic objectives.

Consider this costly example. Some years ago, a client wanted to sell their construction business. He determined a price he thought was fair and put the business on the market. From his perspective, this price accounted for all his time and effort in building the company. But the price was unrealistically high and did not reflect the market reality. However, the price

was well anchored in his mind as “fair.” The owner declined several reasonable offers below his expected fair price. Meanwhile, the market kept changing. It took him a few years to sell the business. The final sale offer was lower than the initial offers he declined.

Putting these ideas into practice

In my experience, awareness of these concepts is often enough to use them productively. After some use, they become second nature. I never think about these techniques; they just come to mind. For example, whenever I run into a project that drags on, I immediately ask myself if I am facing a sunk cost fallacy, which helps me decide whether to continue. ■

Marco Terry is managing director of Commercial Capital LLC, a factoring company and provider of invoice financing to companies in the glass industry. He can be reached at 877/300-3258.



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STAYING FOCUSED ON FABRICATION ESSENTIALS

THE PERFORMANCE BAR FOR COMMERCIAL GLASS AND GLAZING IS ALWAYS HIGH, AND IT'S VITAL TO MINIMIZE INCONSISTENCY DURING FABRICATION AND INSTALLATION **BY JOE ERB**



Over the last few years, I have heard that commercial fabricators are spending much more time and money on test labs for project-specific mock-up performance testing on commercial systems for large mid-rise development projects. The testing is often required by the project architect or building owner, who wants to ensure some of the fenestration systems (windows and curtainwall) openings would hit specific criteria. These systems are often installed on a test wall in a full-size representation of the proposed exterior wall system. Structural integrity, air tightness and water performance are all validated through the process, helping to grant confidence that the systems will deliver long-term performance.

This observation illustrates the increasing rigor with which commercial glass and glazing applications are being tested in today's environment. For today's projects, you may be certifying your products in a lab for thermal, air, water and structural



performance, but building owners and other stakeholders are also paying for field testing to validate those performance test reports.

Meanwhile, increasingly stringent building codes continue to require that commercial glass and glazing professionals enhance the thermal performance of our products. This means more sophisticated glass systems, incorporating new technologies, and the need to put it all together seamlessly and without error.

With all of this in mind, fabricators must not lose sight of the importance of good fabrication fundamentals. Here are some things to think about.

Cross-training matters

Commercial glass professionals are familiar with labor challenges, but those challenges can ebb and flow. For example, when workers are more likely to use vacation time in the summer months, it's not atypical to see production lines struggling to keep enough personnel on the line, even before we had the labor crunch. In many

cases, you see supervisors or managers covering for vacancies, which puts extra strain on the business and may allow other things to slip through the cracks.

Summer also coincides with heightened demand. In such a scenario, a well-rounded staff should be able to pick up the slack with minimal interruptions to expected production. Ideally, workers have been trained in more than one work function and can take up the tasks left behind by one or more vacationers. Production workers with more limited skill sets, though, cannot reliably cover absent positions. Output can suffer and quality can be compromised, which is unacceptable considering the stakes for today's commercial glass and glazing professionals.

For these reasons, cross-training on your plant floor is critical. It shouldn't derail your entire production process if you're short on staff for the day, whether because of someone taking time off or any other reason, but it requires you to invest in broadening the skill sets of all your workers.

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Staying on top of preventive maintenance

Everyone knows that maintenance is an important part of maintaining quality. But even the little things can lead to major consequences, and it's worth proactive evaluation throughout your production process.

For example, modern fenestration manufacturing is an exacting, precise process. As we increasingly implement automated processes and technologies into our operations, ensuring that all equipment is properly calibrated is critically important. Accurate notching and cutting of insulating glass spacers are important for your units' overall performance. Your spacer applicator (manual or fully automated) must function as intended to make that happen. Look closely at your settings and ensure they're properly adjusted and notching cleanly. Dull blades or incorrect settings have the potential

to impact unit performance. Make adjustments as necessary.

Elsewhere, consider your glass washing station. If you make your own IG, it's one of the most critical components of your production line. Dirty glass can lead to performance issues like seal failures, not to mention aesthetic imperfections. Ensuring that water quality and temperature are consistent is an everyday task. Once a week, it's recommended that glass washing machines be power washed. And once per month, the machine should be taken apart and thoroughly cleaned. It can be easy to lose sight of these preventive maintenance tasks when other problems arise on the shop floor, but they should remain priorities.

Always look for new ways to improve

Maintenance and upkeep should be something you're pursuing year-round. It's a process of continuous

improvement—and it's just as important as any other on your shop floor.

Every so often, take the time to evaluate your established best practices and procedures. Have these processes been working well? Are they being followed reliably by your staff? Is everyone on your floor following the maintenance schedule you've established? Does that schedule need adjusting? Make the appropriate changes based on your answers to these questions.

Maintaining the levels of quality required for success in today's commercial fenestration market, all while pushing the boundaries of glass performance, isn't easy. But staying focused on the fabrication fundamentals can go a long way toward maintaining consistent, high-quality, high-performance glass and glazing products. ■

Joe Erb is national account manager for Quanex.

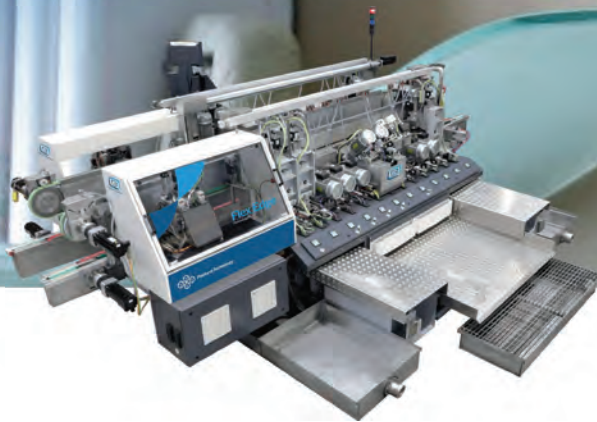



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Multi-cavity IGU with thin glass interior lites. Photo courtesy of Alpen High Performance Products.

ADVANCED WINDOW TECHNOLOGIES: THE LATEST ON THIN GLASS

INTEREST IN THIN GLASS AND “SKINNY TRIPLES” IS PICKING UP AND DRAWING THE ATTENTION OF COMMERCIAL BUILDERS EAGER TO INSTALL ENERGY-EFFICIENT PRODUCTS
BY TARA LUKASIK

The National Glass Association recently closed out its successful NGA Glass Conference: Tacoma with a presentation from Robert Hart, principal scientific engineering associate, Energy Technologies Area, Lawrence Berkeley National Laboratory, on emerging high-performance technologies—specifically thin triples, and how there are more thin glass products entering the market, with multiple manufacturers and component and equipment suppliers.

“Why are we looking at thin glass and thin glass triples? As we look at various alternative technologies to achieve high performance, we don’t want to rely on just one technology,” Hart told attendees. “We want to look at what other options there are, and thin glass is one of several technologies that can get us to these higher performance goals.”

While thin glass and interest in “skinny triples” is picking up and drawing the attention of both commercial and residential builders eager to install

LEARN MORE FROM THE NGA ON THIN GLASS AND TRIPLE-PANE IGUS



ARTICLE: Next-Level Performance—Thin Glass



WEBINAR: Thirsty Thursday—New IGU Technologies



ARTICLE: Triple Glazing & Embodied Energy

energy-efficient products in line with updated building energy codes and standards, there are roadblocks for thin triples, according to Hart. Namely, technical concerns (such as safe handling and compatibility with existing fabrication equipment), code and regulatory questions (mainly related to safety and building code applicability), and cost.

Addressing industry challenges

Some of these concerns were also raised among a wide cross-section of industry, building professionals, practitioners, academics, researchers, and decision makers during the first virtual meeting of the Thin Glass Technical Advisory Group on May 17, hosted by LBNL. The group is focused on the utilization of thin glass (1.6 millimeters or less) in fenestration systems and will provide guidance and recommendations for U.S. Department of Energy and California Energy Commission funded projects.

Participants called out what they feel are obstacles to utilizing thin-glass in high-volume production, and many of the concerns revolved around cost and price points, including the cost per square foot of the glass, costs compared to other types of materials, cost of triple panes and low-e coatings while taking energy codes into consideration, price point comparisons in both new and retrofit installations, handling and processing by fabrications (whether purchasing new equipment or modifying), krypton gas,



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While cost concerns are front and center, others argue that thin glass today is readily available and affordable, thanks to the market created for thin glass by smartphones and flat-screen televisions. “There is a whole industry out there that knows how to make, cut and transport thin glass. It’s a pretty fast learning curve to bring this to industry,” says Stephen Selkowitz, principal of Stephen Selkowitz Consultants and affiliate at Lawrence Berkeley National Laboratory, in a presentation in January 2023 at the NGA Glass Conference: Miramar Beach.

“Thin triples are at niche volume now, but [the technology] has the potential to be more mainstream,” says Selkowitz. “From the technology side, there is nothing to hold it back. The price is fine. The handling is fine. What’s needed is the market pull side.”

“I did a poll from the [2021] NFRC Certified Product Databases and 44% of the manufacturers in the database had a certified window or vertical slider that had three panes of 2.3-millimeter glass or smaller. So nearly half of manufacturers already have a version of thin triple certified,” Hart told attendees of the NGA Glass Conference: Tacoma. “There are multiple manufacturers now with products on the market; component and equipment suppliers are out there. Sales of triple panes are 1% to 2% of the actual market, so most manufacturers are not actually building this, but they technically can, and they have it certified.”

Other concerns expressed during the technical advisory group revolved pressure equalization, glass strength and thermal stress in triples. Participants also reviewed deflection and handling, including size limits, operation handling and automation equipment compatibility with thin triple products, as well as safety glazing applications, optical polarity and the interaction of glazing, coating limitations, and whether low-e coatings can be used on thin glazing. And codes, standards and certification discussion included



Guidelines for Determining the Load Resistance of Thin-Glass Triple-Pane Insulating Glass Unit Configurations

Source: LBNL

ANSI Z97.1 Safety Glazing Materials Used in Buildings, hitting the energy and greenhouse gas targets of energy codes, designation and certification marking of thin triples, and the lack of standards and testing regarding safety, impact and load bearing.

Related questions included:

- How will energy flow be calculated in thin triples?
- Can internal grids be used in thin triples?
- How can borosilicate glass be evaluated along with soda lime thin glass?
- What edge treatment will be required for thin glass breakage reduction?
- How will waviness/movement due to wind loads in IG be handled, particularly as IG gets larger?

Better understanding thin glass

Advisory group members decided that more research is needed to understand the use of thin glass in safety glazing. The breakage requirements of thin glass when tested per ANSI Z97.1 were raised as well as the need to better understand the mechanical behavior (edge conditions) for thin glass IGUs, the availability and durability of safety films, deflection limitation testing and resistance to thermal stress, increased understanding of how thin triple units break as an assemble (not just monolithic), the possible limits of lamination paired to thin glass to still be considered safety glazing, and more. ■



Custom vertical mullions were added in a veneer concept to the OBE Reliance™ StormMax® High Performance 10-foot system that could be attached directly to the structural steel building framing. Photo credit: Nic Lehoux.

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INCLUSIVITY SHAPES THE CULTURE AT GLASSFAB

CREATING A CONSIDERATE ATMOSPHERE ALLOWS EMPLOYEES TO BRING THEIR TRUE SELVES TO WORK AND FOCUS ON PERFORMING AT A HIGH LEVEL FOR CUSTOMERS

BY TARA LUKASIK
MANAGING EDITOR

Company culture, customer relationships and workforce diversity are interconnected aspects of a successful and thriving organization with several commonalities. They contribute to employee satisfaction, customer loyalty and organizational performance, while emphasizing shared values, effective communication and continuous improvement.

With an experienced generation of glass industry leaders moving towards retirement and a new generation of glass professionals stepping into this growing industry, it's vital for organizations to foster a diverse workplace that champions inclusivity and allocates resources and training to help promote engagement and a sense

of ownership among company team members.

Glassfab has grown tremendously over its 17-year history, starting as an eight-person shop in 2006 to a company employing over 300 people across four manufacturing facilities. That kind of growth is attributable to the company's focus on the best for its employees, which then filters down to its vendors and customers. I recently sat down with Patrick Tuttle, chief operating officer, to discuss Glassfab's approach to shaping a culture that attracts and retains employees and builds a sense of belonging in the workplace.

How would you describe the overall company culture at Glassfab?

Inclusive. We consider and include our

suppliers, employees and customers in our decisions as we conduct our business.

When addressing the culture at Glassfab, it is important to remember our start back in 2006. We are a company founded by a diverse group of industry leaders that recognized *None of us are as smart as all of us, all of us need each one of us*. There is an importance of putting egos on the shelf and consistently acting in a manner of what's best for our employees, vendors and customers.

Everyone is treated with respect and kindness, and it creates a safe atmosphere where employees can bring their true self to work and focus on performing at a high level for our customers. This also enables them to feel open to share ideas for improvement.

Our team members understand the important role they play in helping our customers succeed. We share the financial rewards of those successes.

In what ways does this foundation of respect, trust and inclusivity help foster a diverse workforce?

We are a large extended family. Thinking, looking and acting differently allows us to seek out the best ways to think, look and act. We are blessed to have team members from many diverse countries.

Diversity has been in Glassfab's DNA since day one. Our culture values and creates an atmosphere of varied points of view at all levels of our business. This ultimately leads to high performance in the business. Diversity in thought is as equally important as cultural diversity.

Glassfab defines itself as a company of people that genuinely care. What does this look like in action with your customers?

We only succeed when our customers succeed. Our genuine care shows when

we do what our customers ask us to do so they can be successful.

To be a great company, we need to help and support great customers over the long run. We are constantly looking for ways to improve our service to customers, such as through shorter lead times, better quality, speed to market, new equipment, new products or even expanding to other geographies as needed. We listen closely to the voice of our customers and value them as long-term partners.

And these relationships impact our long-term success. We can depend on each other. Our customers have been there for us, and we will be there for them. At the end of the day, we are ultimately selling our glazing partners' products that they can buy from any number of competitors. We sell a commodity product. But relationships are paramount in our business. These relationships develop by solving problems and being a resource for them over the long run. We are a solutions provider.

How do you measure the success of your diversity and inclusion efforts?

Our key indicators of performance tell us how we are doing. Repeat business tells us how we are doing. Growth and development indicate how successful we are. Many of our newly hired employees come from referrals. We love that people want to work with us. We are very fortunate to not be constrained by labor.

Valuing diversity of thought also helps us improve further. We are intentional about creating an environment where employees can give feedback for improvement in all areas of our business, whether it is HR policy or process flow improvements. This comes naturally to us and is not something we need to force through initiatives. We make diversity a way of being instead of a check the box exercise to show compliance.

You have invested a large amount of time in the next generation of leaders. How are they ready to support your customers and help them grow their businesses?

Glassfab is here for the long game. Our next generation of leaders are incredibly bright, fearless and amazingly creative. We will continue to invest in their future and expect they will do the same for the generation after them. Yes, we have invested much into the future leadership of Glassfab. The experience they are currently soaking up will allow them to grow customer and supplier relationships for years to come.

They are doing it today with guidance from the broader team. In a lot of ways, they have taught us how to use technology to refine our process and improve our business. They have also led the charge with intentional cross-training and development at all levels.

Company culture, customer relationships and workforce diversity all require ongoing efforts and a commitment to continuous improvement. How does Glassfab ensure that its culture is consistently communicated and reinforced throughout the organization?

Our culture is made up by how we act and do things every day. It is a concentrated focus on working on what is important now. With a great amount of collaboration, we are left with an amazing group of thriving team members who genuinely care about our customers and suppliers. We are blessed to be able to do what we do every day. ■

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THE TRADITION



GLASSBUILD 2023 CONTINUES

OCT. 31–NOV. 2 IN ATLANTA

BY NORAH DICK

T

he tradition continues at this year's GlassBuild America: The Glass, Window & Door Expo, held Oct. 31–Nov. 2 in Atlanta. The tradition of 20 years of the longest-running glass industry trade show, where glass, window and door industries meet. And the tradition of 75 years for show organizer the National Glass Association, which advocates for a future in which glass is the material of choice to enhance spaces where people live, play, learn, work and heal.

"GlassBuild is more than a trade show, it's a connection point," says Molly Grenn, NGA's vice president of event logistics. "You should step away from your day-to-day work and join us in Atlanta to refresh your mind and gain some new perspective. Come celebrate 20 years of GlassBuild with us as the tradition continues."

GlassBuild 2023 in Atlanta will welcome over 70 first-time exhibitors out of 450-plus exhibitors. Visitors and exhibitors will enjoy 180,000 square feet of space at the Georgia World Congress Center. Over 150 international exhibitors from 23 countries will exhibit their products and services.

MEET THE INDUSTRY

While companies continue to return to trade shows and in-person events post-Covid, glass industry leaders stressed how valuable they find in-person interactions on a personal and professional level.

"While we've all learned that it's possible for many people to function

“GLASSBUILD IS THE PLACE TO BE IF YOU’RE LOOKING TO MEET WITH THE TOP COMPANIES, MANUFACTURERS AND SUPPLIERS TO THE GLASS INDUSTRY, ALL IN ONE PLACE.”

— Paul M. Daniels, architectural business development, Frameless Hardware Co.

remotely in their jobs, you just can’t beat the feeling you get from sitting down with each other and really connecting,” says Kim Schultz, product marketing specialist, Magid.

“You run into an old friend on the trade show floor. You meet a customer for dinner. You wander into an interesting booth and create a new contact. That can’t happen when you’re sitting in your office,” says Alan Kinder, director, commercial segment and technical services, Guardian Glass North America.

Face-to-face interactions with customers and industry members allow company representatives to connect meaningfully with their customer base, and the industry as a whole. “Whether it’s from customers and partners we’ve worked with for decades, or someone we meet for the very first time, the information we pick up at the show informs product development and provides in-the-field insights, allowing us to optimally support our customers,” says Crista Tekstra, vice president of brand and product marketing, C.R. Laurence.

GlassBuild also offers a space for companies to gather crucial information on current, and future, market trends. “These events offer a platform for industry professionals to stay updated on the latest trends, innovations and market developments, which can help businesses adapt and thrive

in a competitive landscape,” says Diane Hansbury, marketing manager, Deceuninck North America.

Labor shortage drives automation and modularization

Industry leaders say they expect to see, and are interested in learning more about, solutions to the labor shortage at GlassBuild, including further automation and labor-saving possibilities.

“Fabricators and glaziers must employ automation to meet the needs of their customers,” says Chris Kammer, marketing lead, A+W Software North America. “I’m curious to see which companies are employing automation to meet their customer’s needs.”

“We’re seeing a move to modular solutions,” says CRL’s Tekstra. “A move to a modular strategy empowers glaziers to better manage the installation process and reduce delays.”

“Automation and smart home integration are becoming more prevalent, so we anticipate exhibitors showcasing products that allow for remote control and monitoring of windows and glass features,” says Decuninck’s Hansbury.

Meet NGA at the Industry Pavilion

While mingling with the industry, attendees can also meet the show organizers. As founding association sponsors of GlassBuild America, the National Glass Association and the

Fenestration & Glazing Industry Alliance have been together at GlassBuild for the past two decades, helping their members find the solutions they need to elevate their businesses. Visitors to the show can learn how these associations can help them by stopping by the Industry Pavilion, Booth #1303.

NETWORKING, EDUCATION AND INSIGHTS

In addition to offering shared space for industry conversation, GlassBuild will again offer a full slate of educational and business-oriented programming provided by industry experts.

Glazing Executives Forum

Now in its 17th edition, the Glazing Executives Forum returns on Oct. 31 as the premier networking, education and business problem-solving event for glazing company leaders. Attendees will come away with key strategies to improve their businesses and prepare for the challenges ahead. The event is once again highlighted with an industry forecast presentation.

Programming will include Vic McConnell, partner, Smith Cashion & Orr PLC, who will offer insights on how glazing contractors can manage contract risks in the face of today’s top challenges. Programming also includes a panel discussion on ongoing labor and training

SCHEDULE AT A GLANCE

Monday, Oct 30

9:00 a.m. – 5:00 p.m.
REGISTRATION OPEN

Tuesday, Oct. 31

7:30 a.m. – 5:00 p.m.
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8:00 a.m. – 8:45 a.m.
NGA INSTALLING COMMITTEE
MEETING

(open to all installing companies)

9:00 a.m. – 5:00 p.m.
GLAZING EXECUTIVES FORUM*

10:00 a.m. – 5:00 p.m.
TRADE SHOW OPEN

10:30 a.m. – 4:00 p.m.
GLASSBUILD MAIN STAGE
PROGRAMMING

Wednesday, Nov. 1

9:00 a.m. – 5:00 p.m.
REGISTRATION OPEN

10:00 a.m. – 5:00 p.m.
TRADE SHOW OPEN

10:30 a.m. – 4:30 p.m.
GLASSBUILD MAIN STAGE
PROGRAMMING

Thursday, Nov. 2

9:00 a.m. – 1:00 p.m.
REGISTRATION OPEN

9:00 a.m. – 1:00 p.m.
TRADE SHOW OPEN

9:30 a.m. – 11:00 a.m.
GLASSBUILD MAIN STAGE
PROGRAMMING

1:00 p.m. – 2:30 p.m.
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**Separate registration required*

issues, breakout sessions for peer networking and solution shares, and an afternoon reception on the GlassBuild show floor.

The Main Stage

The Main Stage returns to GlassBuild America this year with three days of exciting industry programming designed to inform industry leaders of need-to-know topics and provide opportunities to build community within the glass and fenestration industries. Main Stage sessions are open to all GlassBuild America attendees and can be found at Booth #1303.

In commemoration of its 75th anniversary, NGA will present leading economist Connor Lokar of ITR Economics on the GlassBuild America Main Stage on Tuesday, Oct. 31 at 2:45 p.m. EDT (subject to change; please refer to schedule onsite at GlassBuild). Lokar will provide an in-depth look at the state of the economy and what's to come for glass companies. This presentation is open to all attendees; NGA's Glazing Executives Forum registrants will receive priority seating.

Additional Main Stage programming includes a closer look at top products and technology trends in glass and fenestration; a keynote panel on issues of diversity, equity and inclusion; a Women in Glass and Fenestration meetup; and the 2023 Glass

Magazine Awards presentation. Visit GlassBuildAmerica.com for the most up-to-date schedule.

The Rodeo

As GlassBuild's 2023 edition winds down on Thursday, we'll giddyup for GlassBuild's new 2024 location in Dallas with an actual rodeo. Glass industry members are invited to an afternoon of bull-riding, calf-wrangling, games, and food and drink. This bookend to the show is a chance for exhibitors and attendees to network and engage in a fun, non-competitive setting.

Registration is required. Check GlassBuildAmerica.com for more information.

MOVING INDUSTRY FORWARD

The last few years have been turbulent,

as significant challenges like supply chain and material shortages combined most recently with inflation and interest rates. GlassBuild offers a shared space for industry members to discuss and troubleshoot these challenges.

"The real value [of trade shows] comes in how they create common spaces to facilitate important conversations about the most pertinent issues facing our industry today. This is crucial as we continue to develop solutions and, ultimately, move the industry forward," says Steve Schohan, marketing communications manager, YKK AP America Inc.

"These gatherings bring together industry leaders and are more vital than ever. They provide so many opportunities to learn and share, and these collaborations and discussions often lead to great progress," says Robert Struble, director of brand and innovation, Vitro Architectural Glass. ■

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CAPITAL INVESTMENT

Glass industry companies continue to invest in equipment and machinery, based on market surveys compiled from the Top Glass Fabricators and Top 50 Glaziers reports. Here are some takeaways:

67%

of Top 50 Glaziers invested in fabrication equipment in 2022, 63% invested in handling equipment

81%

of Top Fabricators say they planned to invest in equipment in 2023

87%

of Top Fabricators added production capacity in 2022

66%

of Top Fabricators plan to automate manufacturing processes in 2023

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01

TRENDING NOW:

- Speed and efficiency
- Smaller footprint
- Easy-to-use machines

Pictured: Cable drag chain from Tsubaki – KabelSchlepp.

MACHINERY + EQUIPMENT

► GlassBuild America continues to be the place to find machinery and equipment solutions for the glass industry. Exhibitor products demonstrate the need for machinery, tools and software to help the industry do more with less: less labor, time and factory space. In response, exhibitors are showcasing machinery and equipment that is faster, more efficient, has a smaller footprint and is easier to use.

Automation continues to be a trend, helping manufacturers meet demand with fewer workers. “Due to the worker shortage, fabricators and glaziers must employ automation to meet the needs of their customers,” says Chris Kammer, marketing lead, A+W Software North America. “When strategically employed, automation can increase accuracy, efficiency and reliability of your products and services.”

As always, GlassBuild offers the opportunity for customers and potential leads to see machinery and equipment in real life. “The excitement of seeing the machine up close and being able to speak with other machine customers can only happen at GlassBuild,” says Syndi Sim, vice president, marketing and business development, Diamon-Fusion International.

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IG Systems

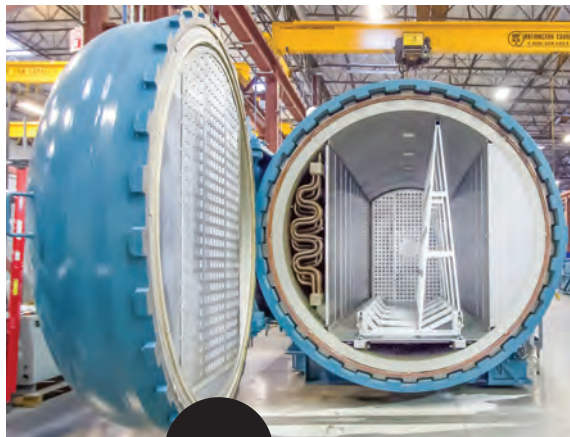
Software

Window Systems

01

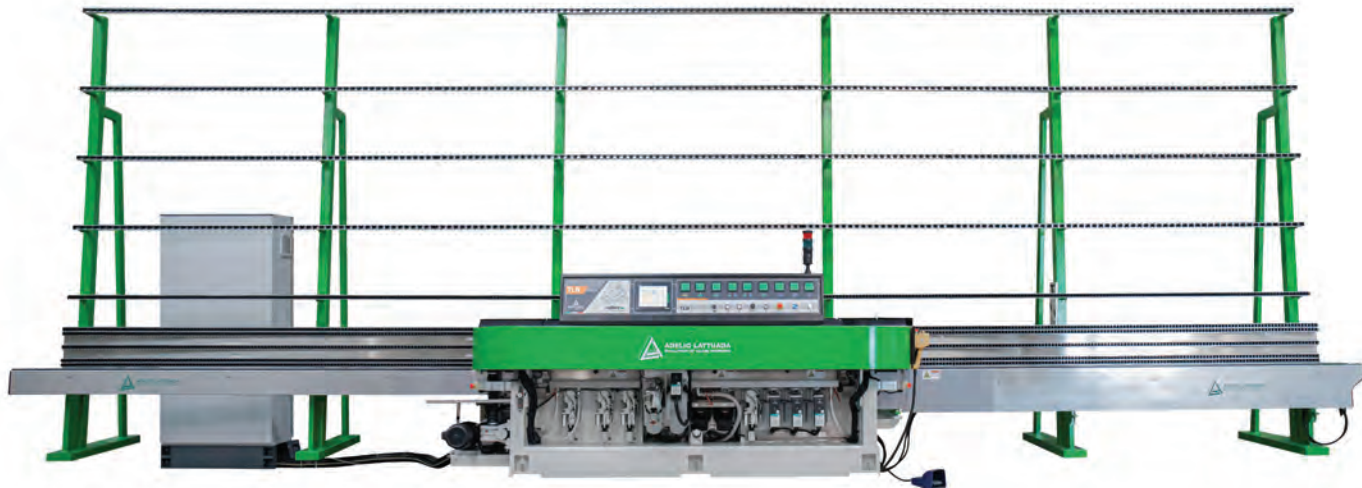


03



New

02



01

ACM Machinery Ltd.

The C4 4-meter vertical machining center with 11 tool changer is a computer numerically controlled vertical router for aluminum, PVC, fiberglass and steel capable of working on three sides of the profile. Features include a pneumatic tilting working table: +90/0/-90 degrees, and intermediate angles are obtained by mechanical stops; optional CNC-controlled electronic rotation is available upon request. Spindle speed adjustment from 2,800 to 18,000 revolutions per minute is controlled by a frequency inverter. Booth #3943. 905/542-2055, acm-machinery.com

02

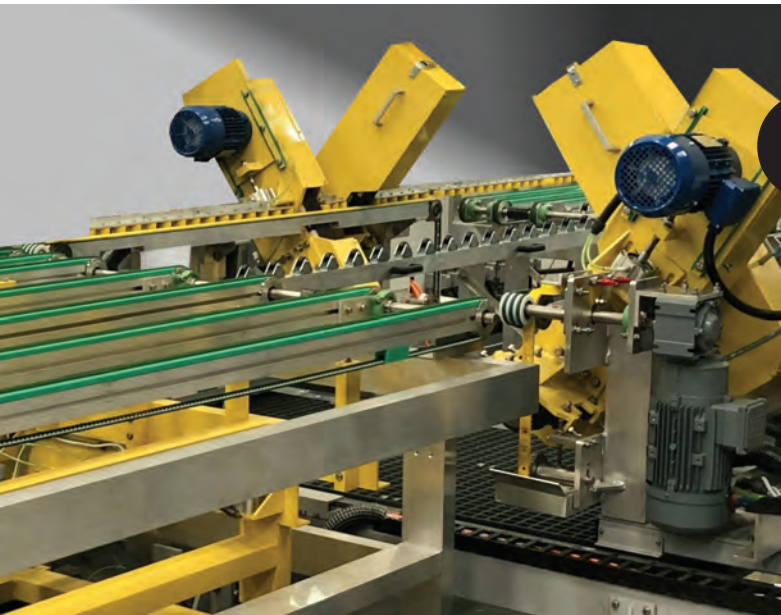
Adelio Lattuada – Lattuada North America

The TLR 11 PC H60, a fully automatic 11-wheel flat polisher, is equipped with an A-WR System, diamond and resin wheels automatic presetting plus polishing wheels automatic wear recovery, and i-AL: automatic adjustment of the machine's parameters based on the glass thickness. The polisher also features a motorized adjustable infeed conveyor, digital ammeters and an automatic alert system for the polishing wheels wear, as well as teleservice. Booth #239. +(39) 0331-8327-13, adeliolattuada.com

03

ASC Process Systems

ASC, the manufacturer of the glass laminating Econoclave and CPC controls systems, has become the world's top producer of autoclaves, ovens and controls for the aerospace composites, curing and glass laminating industries since 1988. Visit the company and discover why other businesses have selected ASC for bonding systems. Booth #3257. 818/833-0088, aschome.com



04

New



06

New



05

04

Ashton Industrial

The SeamMaXX Pro MKII has been designed to follow Ashton Industrial's SeamMaXX Pro range of seaming lines, acknowledged as the highest output fully automatic seaming lines worldwide. Up to six or seven random sized lites per minute, seamed top and bottom on all four edges in thicknesses from 3 to 12 millimeters. The fastest, most compact L-shape lines require the smallest footprint of any seaming system and can be fed direct from breakout, adjusting fully automatically to each lite's dimensions. Booth #3845. + (44) 0127-9624-810, ashton-industrial.com

05

Billco Manufacturing Inc.

Billco Manufacturing will showcase its high-performance glass cleaning system focused on the bottom line with intelligent maintenance features and high-level process control. The Z-Series is engineered to sustain an optimum level of cleaning over years of continuous use, with easy access to internal components for cleaning and maintenance for minimum downtime. The Z series is offered in working widths of 70, 96, 110 and 132 inches for customer convenience. Booth #1541. 724/453-2309, billco-mfg.com

06

BVC Group Inc.

BVC Group is proud to debut an all-new size vacuum cup to add to the SS Series. Measuring in at 100 by 100 millimeters, this Better Vacuum Cup is great for small pieces of glass. Just like all the others in the SS Series, this BVC does not require a foam gasket and has the legendary holding power BVC has become known for. Faster set up times are accomplished with a lightweight yet heavy-duty internal web design. Booth #3447. 909/606-0140, greenbvc.com

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Casso-Solar Technologies LLC

Casso-Solar Technologies has worked together with Kuraray to develop a system to trim excess SentryGlas after lamination is completed. This equipment eliminates the need to use hot knives to clean up assemblies by using an infrared heater to heat the excess interlayer along an entire edge and allowing it to be trimmed with a standard razor blade. For ¼- over ¼-inch assemblies, this process takes about 20 to 30 seconds per edge, reducing the time it takes to produce a quality finished product. Booth #2723. 845/354-2010, cassosolartechnologies.com

02

Custom Conveyor

Cullet handling systems by Custom Conveyor can improve cutting table throughput, reduce operator fatigue and minimize injury risk in the customer’s facility. These systems are tailored to work directly with customers’ existing processing equipment. The breakers receive scrap glass from manual breakout tables or automated axis breakers and convert it into cullet, which is easily transportable by Custom Conveyor’s bulk conveying systems. Cullet handling systems may be used with existing production lines or designed for incorporation into new lines. Booth #2947. 319/249-5464, customconveyor.com

03

Diamon-Fusion International

The FuseCube Express is an automated coating machine that applies Diamon-Fusion onto both sides of the glass. The coating is applied through a proprietary chemical vapor deposition, or CVD, process, transforming ordinary glass into a high-performing, water-repellent surface. Unique to its class, the FuseCube Express can treat one to five lites in under 10 minutes, with a minimal footprint—5 by 6 feet—that can meet the demands of small and larger-sized fabricators. The machine also includes a touchscreen monitor, built-in evacuation system, multi-run cartridge system, real-time monitoring and backup systems, making it simple, reliable and easy to use. Booth #1231. 949/529-3029, dfsolutions.com

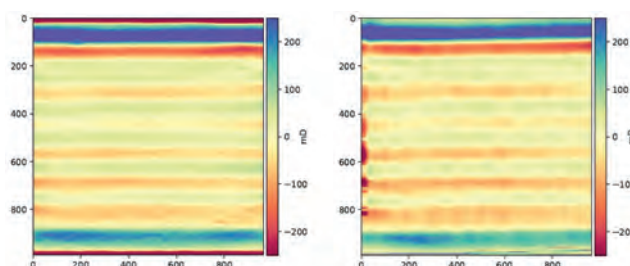


TEMPER SCANNER 5D - THE NEW MILESTONE

Viprotron is proud to add a **new innovation** to its product range. Our strong focus on defect detection in insulated glass, has steadily expanded over the years to include cutting, fabrication, lamination and finally tempering.

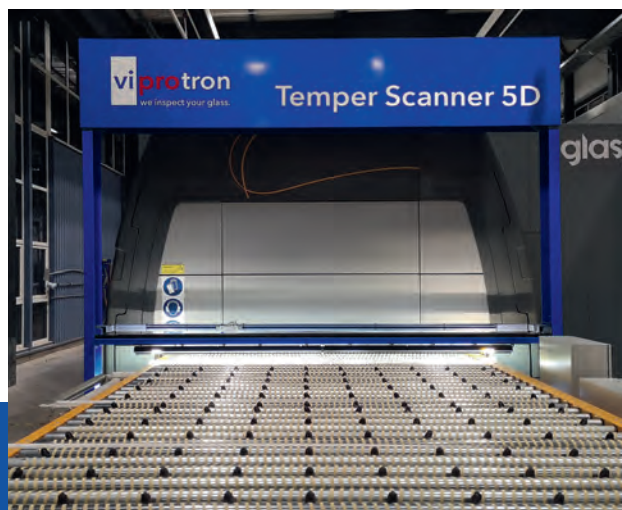
Now we are introducing new, advanced technology for improving tempering defect detection. We will enhance our award-winning Anisotropy + Haze Scanner by adding a **Roller Wave** and **Edge Kink Scanner** to our system. All five functions (Roller Wave/ Edge Kink, Anisotropy, Haze, Brightfield & Reflection Channel for optical defects) are available in one complete package or as individual scanners.

Our new, innovative and patented technology is producing excellent results when compared to actual tactile measurements of Rollerwave and Kink distortion.



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Viprotron North America Inc.
Cell: (313) 384 3855
Mail: ric.schmidt@viprotron.com
www.viprotron.com

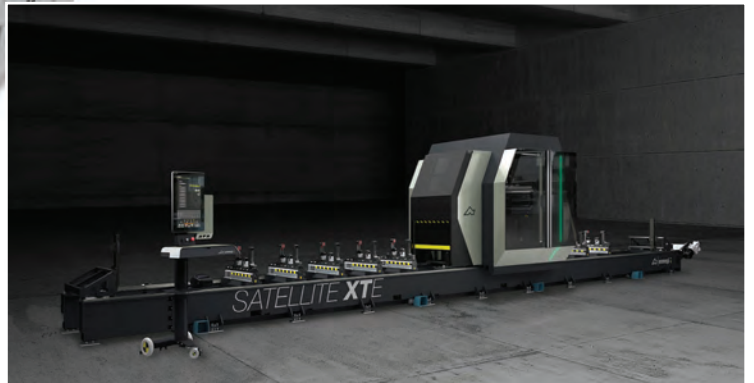
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Dip Tech Machinery

Dip Tech's DX-3 is the latest and most advanced digital printing machine design for printing ceramic ink on flat glass. The machine caters to the printing and/or coating applications of all glass sectors, including architectural interior and exterior, and specialty glass. Booth #222.
585/924-2186, kerajet.com

02

Duespohl Maschinenbau GmbH

MultiWrap is a highly efficient and productive profile wrapper for PVC and aluminum profiles. Each line will be configured individually to optimally meet the project's requirements. The high-quality basic equipment will be completed by a large choice of optional components to ensure constant quality, lower set-up times and easy operation of the line. Duespohl manufactures the foiling line, including premelter and glue application system with a patented slot nozzle that provides an absolutely homogeneous application of adhesive and prevents burnings or impurities. Booth #2946.
+(49) 5207-9291-0, duespohl.com

03

Emmegi USA Inc.

Satellite XTE is a five-axis CNC mobile gantry machining center, designed to run milling, drilling, threading and cutting processes on large bars in aluminum, PVC, light alloys and steel. The mobile part of the machine mainly consists of a gantry equipped with a precision motorization rack. The high-power electrospindle, 15 kilowatts in S1, with HSK-63F tool connection, allows even heavy-duty machining to be run with excellent speed and accurate results. The new local safety cab was designed to combine top functionality, accessibility, soundproofing and light with safety and ergonomic requirements. Booth #2231.
201/935-0200, emmegi.com



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BOOTH 239

01



New

01

Erdman Automation Corp. / FlexScreen

Erdman Automation has partnered with FlexScreen to create an exclusive, automated, high-efficiency line that can allow window manufacturers to produce FlexScreen for less than they can make standard aluminum window screens. Live machine demonstrations will be taking place in the company's booth. Booth #1331.

763/389-9475, erdmanautomation.com

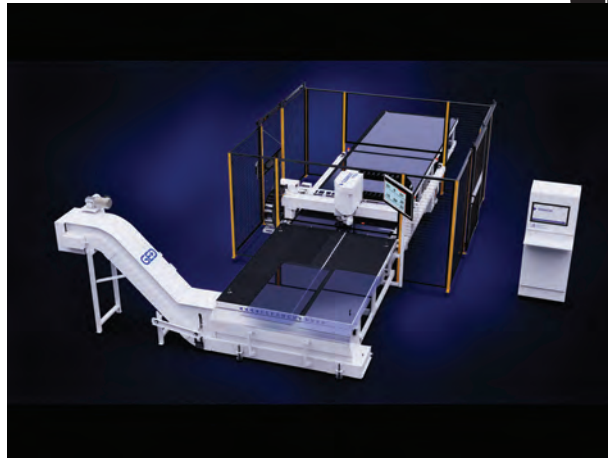
02

GED Integrated Solutions Inc.

Unleash maximum efficiency with the Clean-Cut 1800 Series glass cutting and deletion system. Engineered for enhanced speed and increased throughput, it can handle glass sheet sizes up to 96 by 130 inches, maintaining precision with cutting accuracy of plus or minus 1/64 -inch non-accumulative. Powered by GED Software, the 1800 Series offers on-screen diagnostics and ethernet connectivity for rapid fault detection and remote diagnostics. Its unique design allows for a short cutting-head travel path, facilitating greater throughput and productivity. Additionally, an easily accessible cutting fluid reservoir ensures maximum score quality while preventing downtime. The integrated high-efficiency particulate air vacuum filter and change indicator ensures safe, regulatory-compliant workspaces. Booth #330.

330/963-5401, gedusa.com

02



New

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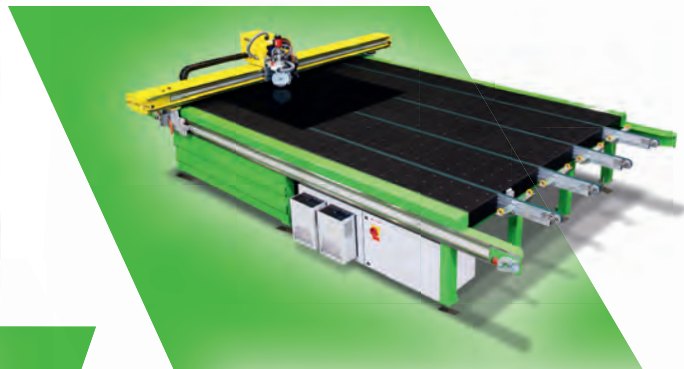
HAECO

HAECO's Pro-Glaze 8400 continues to utilize the proven and inherently safe linear drive system preferred in the 2100 and 4200 models. Updated features include a new linear bearing design and hardened metal-to-metal exterior mechanical surfaces designed to roll over vinyl dust and dirt. Internal bearing

surfaces are permanently sealed and are impervious to dust and dirt infiltration in this model, and free running bearings support higher running motor speeds. The 8400 can work in line with the ProSet for glass lay-in solutions. Booth #3155.

513/722-1030, haeco.us

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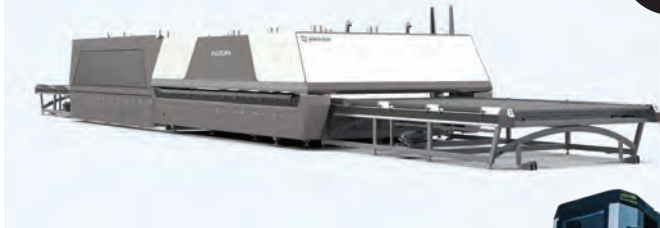
23GBAEXH

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01

New



02



03



01

Hangzhou Jinggong Machinery Co.

The fourth-generation jet-convection furnace from Jinglass, Vulcan will become the basis of industrial 4.0 in glass processing because of its smart iTemper system. Meanwhile, users of Vulcan will benefit from its much higher tempering quality, efficiency and lower running costs. At the same time, its smart systems reduce the need to rely on skilled workers. Booth #1040.
 +(86) 5718-8777-108, en.jinglass.com

02

HHH Equipment Resources

HHH Equipment Resources will showcase the Denver Advance Elite, an all-in-one modern alternative to the horizontal CNC work center. This vertical CNC machine offers the advantage of integrated opposing drilling, and reduced overall dimensions, along with standard horizontal CNC machining capabilities. It turns glass coming from the cutting table into finished product, handling all processing steps without need for operator intervention. This zero-set-up machine has 100% uptime with its optional continuous “flow” configuration and is capable of edging, notching, countersinking and optional polishing. Booth #1931.
 336/766-1104, hhhglassequipment.com

03

Jinan Wondec Machinery Co.

This is necessary equipment for producing jumbo-size insulating glass units with aluminum spacers. Fully automatic equipment integrates glass washing, drying, spacer application, assembly, panel pressing, argon inflation and IGU output. The vertical structure occupies less space and has high glass-processing efficiency, very suitable for jumbo glass processing. Other features include PLC control and touch-screen operation. The double press station can process glass with a maximum size of 3,300 by 6,000 millimeters; bigger sizes such as 3,300 by 9,000 millimeters can be customized. Booth #1042.
 +(86) 5316-8820-622, wondecmachine.com

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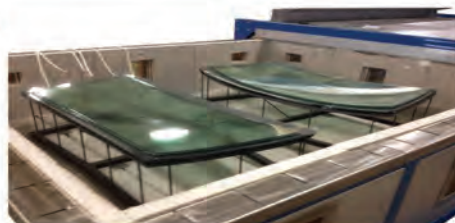
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New



01

02

03

Keraglass Srl

Vision 900 is the super innovative tempering furnace for flat glass. Equipped with a pre-heating convective chamber, it successfully passed the testing of the Stazione Sperimentale del Vetro, complying with all the requirements of UNI standards. Achievements include tempering low-emissivity glass of the latest generation up to E = 0.01, increase in production capacity, increase in quality of tempered glass and significant reduction in energy consumption. This is the ideal machine for medium and large companies with high quality standards. Booth #3131. +(39) 0522-9930-27, keraglass.com

Lisec America Inc.

The Lisec TPA is a fully automatic system for applying thermoplastic spacers directly to the glass sheet. It allows the highest flexibility by seamlessly switching between different dimensions of the glass. The stepless width adjustment allows switching between different spacer widths without the requirement for a waiting time. The thermoplastic spacer system provides a warm edge in the insulating glass due to its high thermal insulation. Operation of the insulating glass line is greatly simplified by eliminating conventional frame production. Rather than requiring numerous consumables such as bar material, desiccant and butyl, the system only requires the thermoplastic material in the form of a drum. Booth #2831. 651/686-9080, lisec.com

LiteSentry – Softsolution

Discover the incredible BowScanner, a groundbreaking product from LiteSentry – Softsolution. This machine is designed for customers tired of facing unexpected setbacks and extra costs due to bowed or bi-stable glass pieces. Customers can say goodbye to those troubles with an advanced, automated, inline, real-time BowScanner. Users can take control of processes, whether it is an insulating glass unit or lamination line, storage or a logistics line. Improve process throughput and safety concerns with a BowScanner to avoid glass jams and breakage. Booth #3221. 507/645-2600, glassquality.com



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01



02



03

03

01

OZ Machine

Garnet Mini is a numeric-controlled compact machining center with parametric program templates developed to perform various drilling and milling operations on aluminum and vinyl, or PVC, profiles. Its user-friendly interface allows users to choose templates easily and apply them on the selected surface. With three independent spindle motors on the top, bottom and back, the operator doesn't need to rotate the profile through the process. Booth #2639.
833/390-0060, ozmachineusa.com

02

Salem Fabrication Supplies

Salem Fabrication Supplies has brought back its premium core drill line, the Thunder Cut. Feel the power of the storm with these new and improved high-speed core drills, part of Salem's Storm Series of products. The Thunder Cut line of drills offer self-dressing capabilities and have an increased feed rate of up to 1.8 millimeters per second. These drills are designed for heavy industrial use on CNC and Forvet machinery and are available in both 75-mm and 95-mm overall lengths. Thunder Cut drills boast significantly reduced cycle times, and their specific bond design has achieved three to four times the life expectancy of standard core drills, all resulting in reduced maintenance and replacement costs. Booth #1931.
336/766-1104, salemftg.com

03

Shanghai Refine Machinery Co.

Shanghai Refine Machinery Co. will exhibit its third-generation convection glass tempering system. This new system is used for tempering soft low-emissivity glass at high capacity and quality. Size can be customized. Booth #3660.
+(86) 2134-6351-76, refineglass.com

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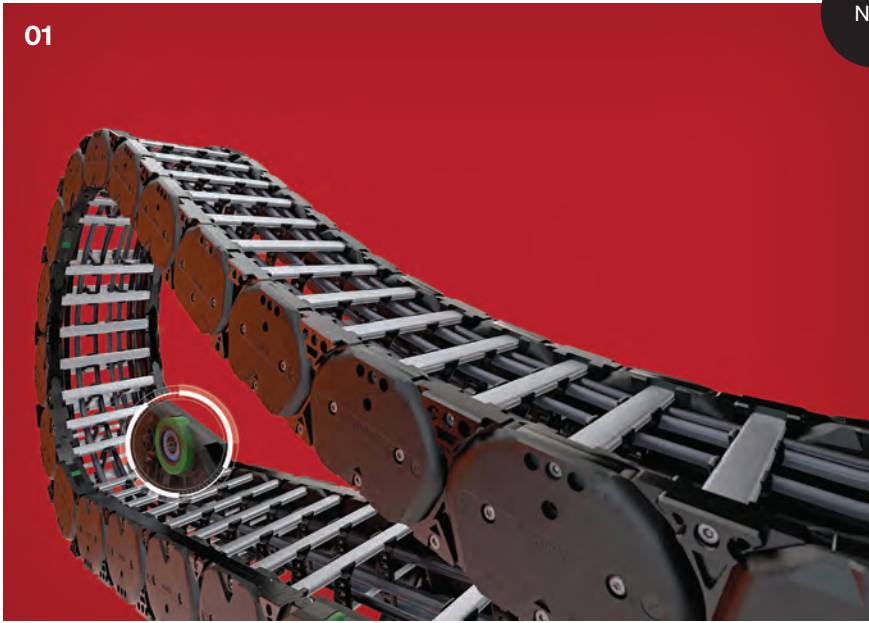
BENTELER Maschinenbau GmbH

www.benteler-glass.com

glass-processing@benteler.com

New

01



01

Tsubaki – KabelSchlepp

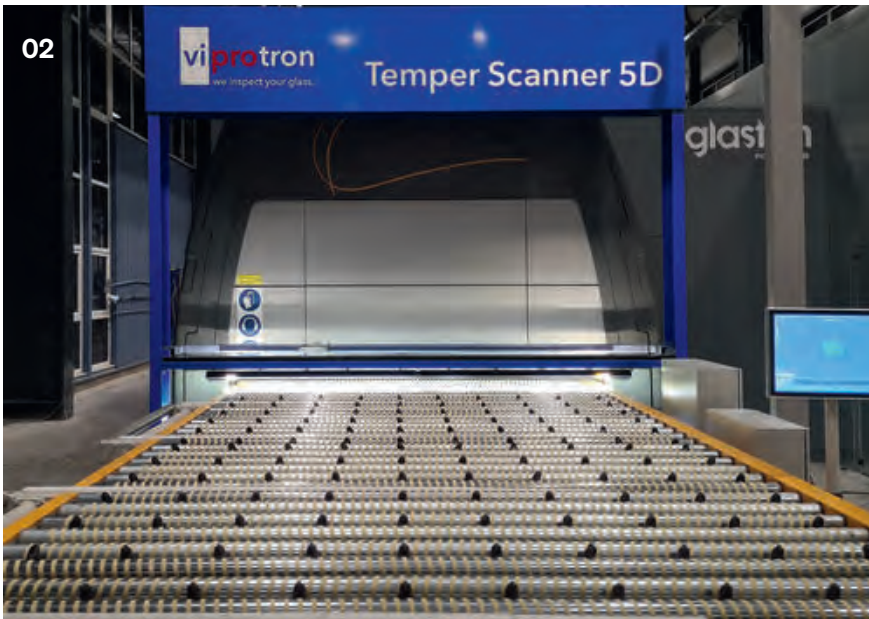
The new TKHD85-R cable drag chain from Tsubaki – KabelSchlepp is designed to ensure customers get maximum life out of their cable and hose package in dynamic applications. With the TKHD85-R's heavy duty design features that include integrated rollers and aluminum crossbars, customers can rest assured that this dynamic cable track can protect the cable and hose package in the harshest of applications. Booth #2109. 847/459-9500, ustsubaki.com

02

Viprotron North America Inc.

Viprotron is proud to present its latest innovation, the Temper Scanner 5D. The company's strong focus on defect detection in insulating glass has steadily expanded over the years to include cutting, fabrication, lamination and finally tempering. Viprotron's highly advanced and very precise technology for detecting roller wave and edge kink distortions will enhance its award-winning anisotropy and haze scanner by adding them together in one system. There are a total of five functions—roller wave/edge kink, anisotropy, haze, brightfield and reflection channel for optical defects—which are available in one complete package, a first in the industry. And, they can be installed as individual scanners, or combined in any configuration as one scanner to suit the needs of clients. Booth #3041. 313/384-3855, viprotron.com

02



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New



01



New

01

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 832/304-8212, advantagedrafting.com

02



New

03

02

A+W Software

A+W Smart Companion – Stock, is the company's latest extension designed to enhance shop floor operations. With this intuitive smartphone app, users can easily manage digital stock, ensuring accurate information and minimizing errors, such as double bookings. Say goodbye to tedious paperwork and unnecessary legwork as users can record incoming goods and stock transactions instantly. For inventory, the Stock module's inventory function provides useful filters, checklists and dashboards, including a to-do list and various charts. Employees can trace precisely what has already been taken care of and what remains to be inventoried. Booth #2321.
 847/220-5237, a-w.com

03

Business Pilot

Business Pilot is a software system built for installers and contractors in the window, door and glass industries to help manage leads, sales and operations more efficiently. Business Pilot has all the tools needed to manage an entire company, including features like website enquiry to lead integration, purchase control, delivery schedules and more. It is completely cloud-based, with an app version that's perfect for installers and contractors to use on-site. Personalized dashboards give an overview of daily stats. Booth #4004.
 +(44) 3330-5075-06, businesspilot.co.uk






Dashboard

Agenda

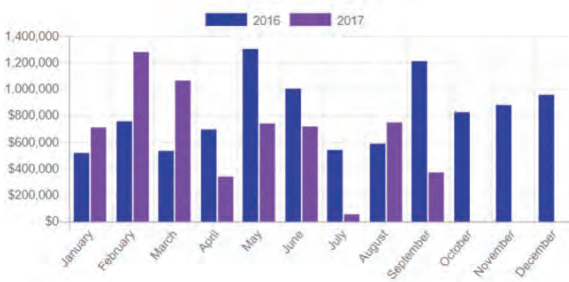
< > today Sep 10 – 16, 2017

Tuesday	September 12, 2017
12:30pm - 1:30pm	Lunch During Glass Build Show
Wednesday	September 13, 2017
12:30pm - 1:30pm	Lunch at Glass Build Show
2:00pm - 3:00pm	Elevation Review
Thursday	September 14, 2017
10:00am - 11:00am	Review new glass packages
11:00am - 12:00pm	Proposal Review for Purgert Estates
Friday	September 15, 2017
2:00pm - 4:00pm	Review 8000 Series Product Offering

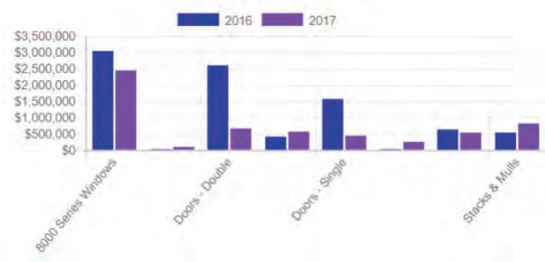
What's New

-  Review new series
Review new series created.
-  Create elevation templates for White Acres
Complete date changed to '9/18/2017 12:00:00 AM'.
-  Proposal Review for Purgert Estates
Proposal Review for Purgert Estates created.
-  Review new glass packages
Review new glass packages created.
-  Lunch During Glass Build

YTD Total Sales



YTD Sales by Product



NOT PICTURED

04

NEW — NOT PICTURED

CAD-PLAN North America Inc.

ATHENA automates tedious daily routines, supports professional design workflow, on time and without errors, and takes a lot of work off the designer's hands by using a parts library, enabling use with any manufacturer profile systems in 2D and 3D, free semi-finished profiles and sheet metals. Booth #913.

303/205-6394, cad-plan.com

Cyncly

contractERP will exhibit its latest release, an ERP software for distributors, manufacturers and service organizations as well as glass fabricators and window and door manufacturers. FeneTech will be presenting the latest release of FeneVision ERP software (pictured) for glass fabricators and window and door manufacturers. Soft Tech will be exhibiting its latest release of V6 and Web (Dealer) module, a software solution for glass fabricators and window and door manufacturers worldwide. Booth #1919.

330/954-7530, events.cyncly.com

Florence One Srl

The SAP Business One application offers an affordable way to manage an entire business—from accounting and financials, purchasing, inventory, sales and customer relationships, and project management, to operations and human resources. SAP Business One helps companies to streamline processes, gaining a greater insight into the business, so that they can act fast and make decisions based on real-time information to help drive profitable growth. Booth #353.

+(39) 0573-1935-507, florence-one.us



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GDS Estimating

WinBidPro v16 is an estimating software for the commercial glass industry. This software is designed to easily create takeoffs and all related reports for estimating, as well as detailed CAD shop drawings and optimized cut lists for fabrication. WinBidPro v16 leverages the web for all catalog and job information, along with the MS Windows desktop for power and ease-of-use. Shops with multiple users and locations will appreciate this new cloud capability. Booth #2308. 858/538-4375, gdsestimating.com

02
GlassManager Software

GlassManager is an innovative software solution designed specifically for glass companies. Unlike other software, its robust and user-friendly platform offers an all-in-one solution with features that streamline operations, enhance productivity, reduce costs and improve profitability. Features include job management, quotes and estimates, field team management, vendors and purchase orders, materials management, invoicing and payments, and accounting integration. Booth #3006. 403/770-3089, glassmanager.com

03
Glazier Software

Glazier Software is a software solution that empowers glazing contractors to increase revenue while saving time and reducing costs by streamlining operational workflows and running every aspect of a job in one platform. Manage service work, residential jobs and commercial jobs from the same spot. Stay on top of ongoing jobs with automated follow-ups and win more bids with the automated quote creation feature. Manage customers, create quotes, send purchase orders, track materials, schedule crews and more, all from one platform. Booth #4015. 203/273-6820, glaziersoftware.com

A+W Software

for Glass, Windows & Doors



Scanning Takes a Giant Leap Forward

A+W Smart Companion's revolutionary scanning app is an info terminal running on smart devices with greater computing power and outstanding graphics. This app for flat glass, window, and door fabricators benefits users, saving time and money, by making processes quicker and mobile.

See us at GlassBuild America, booth 2321.

www.a-w.com/us



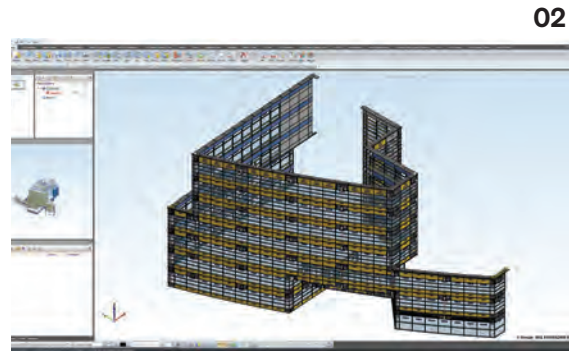
A+W Smart Companion serves as your scanning device moving items from station to station; it also:

- Works as a mobile info terminal
- Securely and accurately scans barcodes individually or in continuous mode
- Increases employee productivity by displaying critical information, while also sending and receiving data to your ERP

SOFTWARE + SERVICES



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Hegla Corp.

With Cut+, Hegla-Hanic introduced completely reprogrammed software, HMI, for cutting table organization over the past year. At GlassBuild, the company will give visitors insight into the next generation of the ERP system that can integrate all processes: from digital order collection, storage and individual machines to delivery at the construction site. Standard OPC UA, digitalization and an increasing level of automation all motivated the company to make its ERP even more open with the Dynamics 365 development platform from Microsoft, say company officials. Booth #1047.

419/335-2244, hegla.com

02

ISD Group USA Inc.

HiCAD is the 2D/3D CAD software for all-rounders and specialists in the field of engineering and development. The software is adaptable to the needs and size of a company. With HiCAD, in addition to industry-relevant functions, both 2D and 3D can be used in a single interface. The use of multiple CAD solutions is a thing of the past. With HiCAD, drawings can be transferred directly to the machine, production or manufacturing. Booth #3211.

704/519-2498, isdgroup.us

03

Mappi America Inc.

Mappi has always been attentive to the security of its customers and has decided to invest its research in edge computing. Edge computing is an emerging computing paradigm that refers to a range of networks and devices at or near the user. Edge is about processing data closer to where it is generated, enabling processing at higher speeds and volumes, leading to greater action-driven results in real time, and allowing users to have data in-house, therefore with greater security. This does not preclude, however, the possibility of using all or part of the data in the cloud so that it can be exchanged with other systems or ERPs. Booth #2731.

336/257-9651, mappi.it



New look. New vision. Same great team.

FeneTech is part of the Cyncly group. We've joined forces with other leading brands in the glass fabrication and window & door industries—contractERP and Soft Tech—to create the ultimate connected platform to bring spaces to life and life to spaces.

From start to finish, Cyncly equips you with software solutions that transform your visions into reality. Our goal? Making it easy to be your best every step of the way.

Look for the Cyncly logo to find us at GlassBuild, booth 1919.



Learn more



Learn about our brands:

fenetech.com

contracterp.com

softtech.com

Learn about the group:

cyncly.com



01

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North American Contractor Certification

Professional installation of glass and glazing systems is crucial for today's building performance needs. North American Contractor Certification is North America's only ANSI-accredited, third-party credential for glazing contractors. NACC offers proof of each certified glazing contractor's documented quality management procedures to ensure safe, correct, quality installations that reduce risk to owners, construction managers, general contractors and building occupants. Booth #3413.

315/646-2234, naccprogram.com

02

Orgadata USA Inc.

LogiKal is the configurator for the most successful commercial glaziers. Maximize profits, streamline jobs and exceed customers' expectations. Booth #913.

800/746-0641, orgadata.com



02



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Prodim USA

The Proliner Architectural Glass package is a complete digital templating solution for glass fabricators. The package includes the Proliner 8X CS Series, which is capable of measuring both 2D and 3D geometry for glass constructs, along with industry-specific accessories for scenarios glass fabricators will face. Prodim's dedicated measuring apps onboard the Proliner to check, edit, draw and finish measurements on-site. The package also comes with Prodim's Factory Fabricator Software to edit, design and create files.

Booth #3140.

772/465-4000, prodim-systems.com

04

Siteline

Siteline is a pay app management tool for subcontractors. With Siteline, generate pay apps precisely to GC's specifications, centralize and manage all pay apps in one spot, automate and manage lien waiver collection, track compliance requirements, monitor A/R health with visual reports, and forecast billing to identify dips in backlog. Siteline even integrates with ERP and GC payment portals to prevent double entry and streamline A/R workflow. Users can take control of A/R and maximize cash flow with Siteline. Booth #3704.

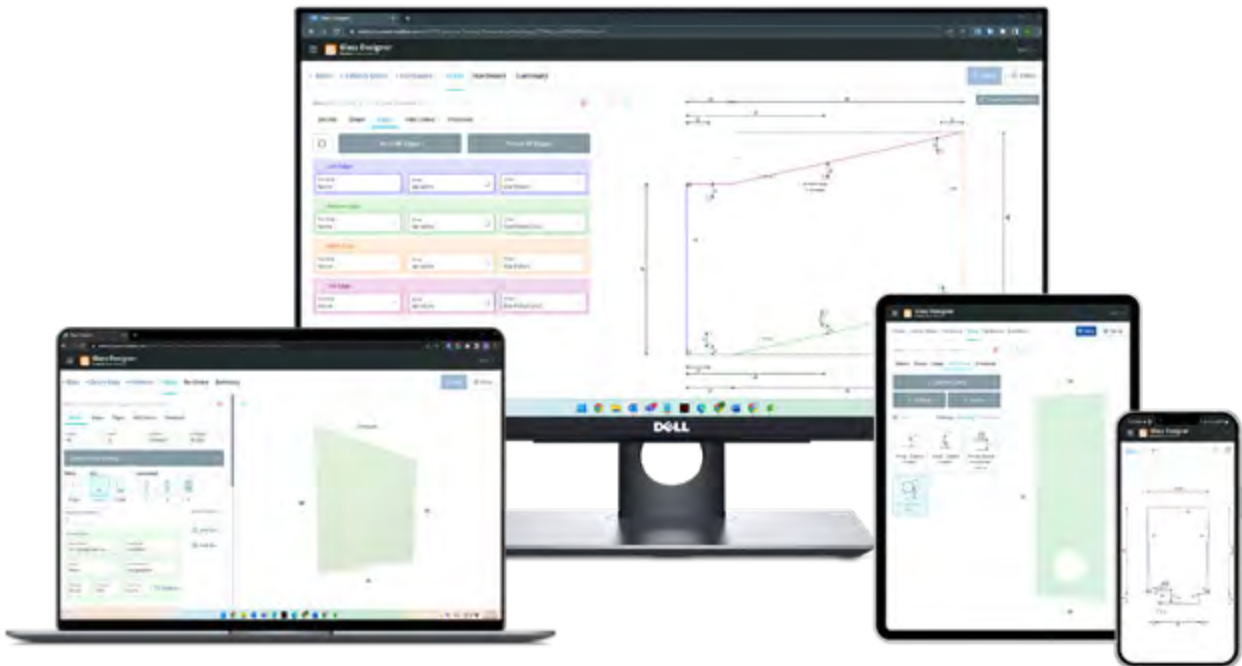
419/215-6096, siteline.com

Smart Glazier Connect

Are you ready to move your glass fabrication business into the **digital age**?

Connect your customers to your cutting table with the world's leading

FLAT GLASS E-COMMERCE PLATFORM



Visit us at GlassBuild - Booth 1813

Smart Glazier Connect is a brand-new, browser-based, online ordering portal.

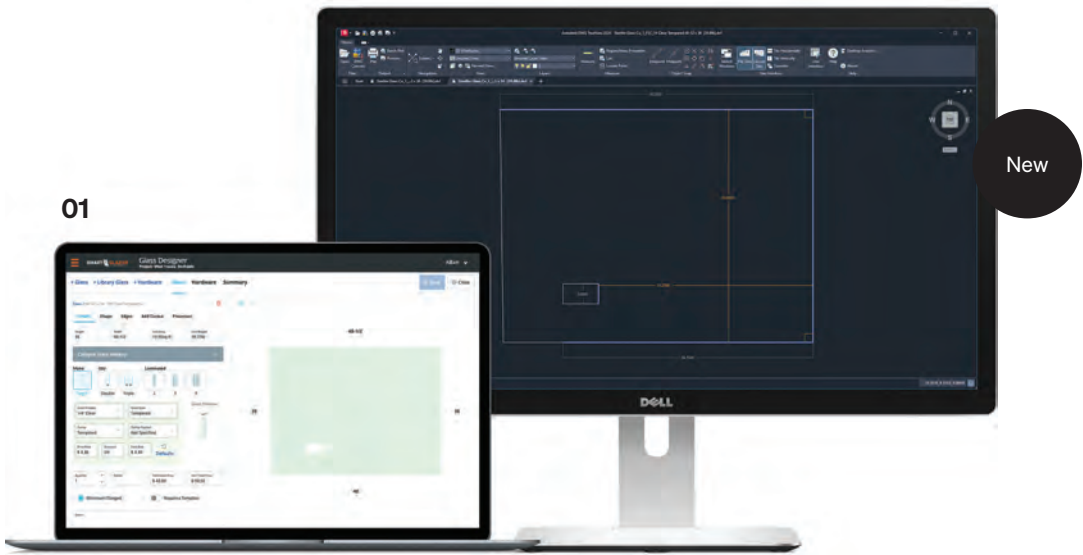
Get electronic orders from your customers for heavy glass through to custom laminates & IG units, sent from the site or office, using mobile, tablet, or any PC/Mac.



✉ sales@smartglazier.com

🖱 smartglazier.com/fabricators





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New



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Smart Glazier Software

Smart Glazier Connect is a new, innovative e-commerce platform designed to seamlessly integrate with existing glass fabrication software. This intuitive product provides fabricators with a user-friendly platform that makes it easy for glaziers to send orders. Users can receive online orders for various glass types, from insulating glass units to custom tempered glass, through the system's intuitive portal, supported by built-in alerts to intercept potential errors. Users can convert hand-drawn fabrication orders and import DXF/DWG profiles for efficient processing. Connect is fully browser-based, and compatible with mobile, tablet and laptop devices. Users can export to popular fabrication software, such as A+W, Optima, Lisec and Glasstrax. Booth #1813. 628/226-2017, smartglazier.com

02

SMART Logistics

Reusable transportation racks are a supply chain nightmare. They leave the facility and disappear forever. They can be out of stock, causing production or shipping holds. SMART uses IoT technology to track racks anywhere in North America, with location and inventory data accessible on any device. The system is easily implemented and cost efficient. Major glass companies have experienced a 500% increase in ROI in the first year of using the SMART system. Booth #2602. 612/875-3463, smartlogisticsinc.com

03

TRUE Contractor Software

TRUE is a web-based, all-inclusive ERP software solution designed for subcontractors in glass and glazing. For residential/ service work or commercial contract work, TRUE provides tools like sales lead tracking, proposal generation with eSign, full project management, scheduling, work orders, time-keeping, procurement, inventory control, job costing, invoicing, pay apps, accounting and more. TRUE's integrations with other leading software vendors in Division 8 help make TRUE truly the best fit to help run operations. Booth #2804. 844/362-8979, constructtrue.com



Learn more at GlassBuild America, booth 1303.

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TOOLS + SUPPLIES

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EDTM Inc.

EDTM's Glass-Chek Elite GC3200 measures a window's glass and air space thickness, and identifies the surface location and type of low-emissivity coating. The ELITE can also identify laminated glass and measure the inner-layer thickness of the lamination. The graphical display illustrates the window profile, labeling each glass surface, and simplifying the window construction and low-e location. The GC3200's ability to store recent measurements in its memory saves time in the field. If users replace any windows in the field, the GC3200 can eliminate thickness mistakes, and it helps to ensure users are replacing the window with the same type of low-e coating that is being removed. Booth #1208.

419/861-1030, edtm.com

02

Fletcher Business Group

Atlas Saw & Tool Technology provides customers with high-quality saw blades and sharpening services, specializing in cutting tools for the plastics, wood, metal and paper industries. Atlas also designs and manufactures custom saw blades to unique performance specifications. Its saw blade portfolio includes a variety of sizes for woodworking and for several types of mechanical plastics, acrylic, phenolic and foam board. Sharpening services and blade management programs are available to prevent production downtime. Booth #2357.

800/843-3826, fletcher-terry.com

03

Guilin Champion Union Diamond Co.

Champion Union's new Ultra Drill features two to three times the tool life versus standard core drill bits, and its better wear curve results in cleaner, high-quality holes throughout the life of the drill bit. No dressing is required for the life of the drill bit as well. And measurable payback and reduced production costs as well as longer life, less maintenance and downtime, and consistent quality are additional key features. Booth #3455.

+(86) 7735-8393-40, championunion.com

04



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Magid

Glass work gear is usually bulky, cumbersome and hot, but Magid's new PPE innovations for glass handling offer high levels of protection with unmatched comfort and range of motion. Its M-GARD breathable garments are up to 30% lighter than competitive products and deliver ANSI Cut Level A5-A9 protection. Featuring AeroDex technology with integrated fibers and yarn-wrapping techniques, these garments provide lighter-weight garments that won't trap heat. The new mesh back version aids in heat dissipation. AeroDex offers the highest levels of cut protection with unmatched comfort and breathability. Booth #1411. 708/629-5919, magidglove.com

05



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Smith Case Inc.

Adding to its foam insert cavity-labeling capabilities, Smith Case's EVA foam overlay offers a cleaner, more durable application with numerous possibilities. For custom foam inserts designed around presentation tools, integrated overlays can be printed and bonded to the top of the foam insert prior to processing. Each part cavity can be labeled, and usable QR codes, tagline information and more can be printed. A charcoal base color is standard, but additional color options are available. Booth #2213. 336/774-7974, smithcase.com

HANDLING + TRANSPORTATION

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New



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New



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Aim Transportation Solutions

Aim Transportation Solutions offers a wide variety of commercial transportation solutions for businesses in all industries, including glass manufacturers and distributors. It offers dedicated fleet service, where Aim takes care of hiring and retaining drivers as well as dispatching, payroll, compliance and everything that goes into a transportation operation. Aim also offers full-service leasing and award-winning 24/7, 365 Road Rescue service. Beyond that, Aim can offer rentals, maintenance programs, freight brokerage and used truck sales. Booth #3510. aimntls.com

02

MyGlassTruck

MyGlassTruck exterior racks are available in single or double-sided configurations for pickup trucks and vans in a range of standard lengths and heights to fit most models. Each rack can carry 1,000 pounds per side of the vehicle. Features include fully padded posts and slats, a ledge with rubber pads and Adjust-A-Poles with fully adjustable black triangle cleats. A tall, front stop prevents glass from sliding. Glass racks can be installed at MyGlassTruck's locations or shipped for self-installation. Booth #2223. 800/254-3643, myglasstruck.com

03

Quattrolifts USA

The OMNI 1800 glazes at elevated heights using a telehandler or off-road forklift. It can be used inside and outside a building envelope to allow for glazing of glass and windows weighing up to 1,800 pounds. It has a fully integrated and independent power supply to drive electric actuators and vacuum pumps. It is operated with a convenient wireless remote, which controls six degrees of precise movement for better managing precision glazing. Booth #1531. +(61) 4115-9180-7, quattrolifts.com

Old-World Craftsmanship...



for Today's Modern Glass



The F. Barkow Inc. commitment to quality and workmanship began in 1879 and continues today. Handcrafted welding is done by skilled craftsmen to build the highest-quality glass racks on the market today. Each fully-welded glass rack is custom-made in your choice of aluminum, stainless steel or high-tensile steel.

Barkow glass racks come equipped with Barkleats™, Barpads® and Baseplate Pads for added protection while transporting your fragile cargo. Our product line of glass racks ranges from cargo vans and pickup trucks all the way up to semi-trucks and trailers. Trust F. Barkow Inc. for quality, innovation and service.

- Fully-Welded
- Aluminum, Stainless Steel or High-Tensile Steel
- 24" Splash Panel Protection
- Stake-Loc® Self-Locking Stakes

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FOR MORE THAN A CENTURY

See us at GlassBuild America,
booth 1215.

(800) 558-5580



WWW.BARKOW.COM

HANDLING + TRANSPORTATION

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02



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01

Smartlift US Inc.

Smartlift glass-lifting equipment will make work faster and safer and minimize the risk of injuries from heavy lifting, indoors and outdoors. Use the remote control for quick and precise mounting. In high-rise projects, there will be considerable savings compared to using a large crane. Simply optimize logistics by placing the glass on each floor during initial construction and then installing from the inside. Every component in a Smartlift is carefully selected to ensure maximum precision, reliability and usability. Booth #1831. 646/877-6455, smartlift.com

02

Spider by BrandSafway

Spider's Dual Monorail System is a complete solution for challenging curtain wall applications, providing continuous, horizontal mobility for swing stages and material hoists around a structure's perimeter. Configurable as a single or double monorail, the Dual Monorail System is easy to assemble with rotating, pinned connections between each monorail beam and outriggers. Universal 6-inch by 8-inch I-beams support up to 3,000 pounds and are used for both the monorail and outrigger support, eliminating the need for special parts. Booth #2013. 206/577-0133, spiderstaging.com

03

UFP Packaging

Easy-3 crates by UFP Packaging are three pre-assembled pieces that come together by using the provided hardware. No need for nail guns/staples guns, so the team can safely construct the Easy-3 crate in minutes. This packaging solution lowers costs on inbound shipping, reduces inventory space and increases operational efficiencies. Easy-3 crates are the ideal solution for shipping fragile items like glass, stone, tile and counters in an upright position. Booth #612. 616/365-1559, ufpackaging.com



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GM 2000-26
Lift 2000 lbs.
26 feet high

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SKYHOOK WPI
Crane attached manipulator

Lift 2800 lbs. or more

GM 2000-16
Lift 2000 lbs.
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GM 2000-12
Lift 2000 lbs.
12 feet high

GM 800
Lift 800 lbs.
10 feet high

GM 2000-16 WITH WINCH
Lift 2000 lbs.
16 feet high
2 ways!

GM 4000-12
Lift 4000 lbs.
12 feet high

GM 1200
Lift 1200 lbs.
10 feet high

THOM 2200
Fork-mounted manipulator

Lift 2200 lbs.

PL 1000
Lift 1000 lbs.
12 feet high

THOM 4000
Lifts 4000 lbs.

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In the Factory or on the Job Site

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HANDLING + TRANSPORTATION

Winlet

The Winlet 1265 is a self-propelled vacuum lifter with a lifting capacity of 1,265 pounds and a reach of up to 11 feet, 10 inches. Equipped with features like a gyroscope, hydraulic controls and remote control, it ensures safe and efficient handling of glass, steel, concrete and more. From installing windows to moving heavy materials, it offers versatility and reduces the risk of injury. Booth #1753.

281/358-7088, winletusa.com



Wood's Powr-Grip

The MRPT411LAC3S vacuum lifter from Wood's Powr-Grip is the first AC-powered rotator/tilter model that includes the company's exclusive Intelli-Grip Technology. Benefits of Intelli-Grip include on-board diagnostics, connectivity with the WPG Intelli-Grip App, safety enhancements such as load monitoring and a vacuum-loss warning buzzer, among others. Other premium options added as standard features on this lifter include: high-duty actuator, tilt speed controller, articulating control handles, other ergonomic controls, vacuum pad shutoff valves, and vacuum line quick connectors. Booth #3023.

406/628-8231, wpg.com



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02

TRENDING NOW:

- Ease of installation
- Safety
- Energy performance

Pictured: Dreamwalls by Gardner Glass.

GLASS + COMPONENTS

Glass trends continue towards higher performance—including fire-rating, safety and security, thermal performance, and energy efficiency—all while maintaining modern aesthetics and sightlines, say exhibitors.

Interest in solar and vacuum insulating glass continues to grow. “We’re...interested

in learning how glaziers and those processes may adapt should the landscape change as the demand for solar and like products expand,” says Robert Struble, director of brand and innovation, Vitro Architectural Glass.

“We continue to see high demand and much conversation about bird-friendly

and low-iron products, and the conversation also continues regarding operational carbon and embodied carbon,” says Alan Kinder, director, commercial segment and technical services, Guardian Glass North America.

INTRODUCING
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RESIDENTIAL GLASS



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firsthand at GlassBuild
Booth 905.

Next generation performance now.

Meet the double-silver coating that delivers triple-silver performance. ClimaGuard 55 is ideal for Southern, South-Central and North-Central regions. Plenty of daylight. Powerful solar control. Reduced heat and glare. Switch today and you lead the way – ahead of ENERGY STAR® V7 criteria.

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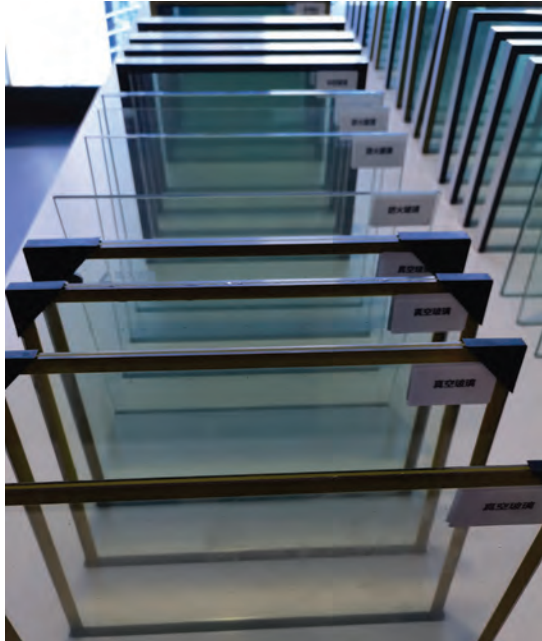


Learn more at
guardianglass.com

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Images are artistic renderings
intended to represent the reflected
and transmitted color of the glass in real
use conditions. Actual results may vary.

 **GUARDIAN
GLASS**
See what's possible™



01



03



01

China Warm Edge Technology (Nanjing) Co.

China Warm Edge Technology offers vacuum insulating glass with a gap between the two pieces of glass of 0.3 to 0.5 millimeters. This glass is low carbon and energy-saving, has thermal insulation, sound insulation, noise reduction, anti-fog, anti-dew, wind load resistance and long service life. Applications in the construction industry include energy-saving doors and windows, and curtain walls. Booth #4212.

warmedge.com.cn

02

Citadel Architectural Products

GlazeGuard 1000 WR+ is a composite panel with textured or smooth aluminum skins, polypropylene stabilizers and an EPS or ISO foam core. GlazeGuard 1000 WR+ is installed in aluminum glazing or storefront channels and sealed using gaskets. Typical applications include glazing infill, modesty screens, spandrel panels and railing inserts. It fits standard 1-inch glazing systems. Booth #508.

800/446-8828, citadelap.com

03

Creative Millwork

Creative Millwork has a new high-quality black bar offering. The company has limitless potential for black profile offerings that have gone through rigorous testing to create high head qualifiers paired with high-quality standards. The core of the company's product is black in comparison to the white core that is the standard in the industry, so if a customer's paint is chipped, it is not a problem. The fade rate is formulated for interior and exterior use and designed for high-heat applications. Booth #2105.

888/759-7121, creativemillwork.com



04

05



New

04

Dreamwalls by Gardner Glass

Dreamwalls Laminated Glass is used in architectural and decorative applications. The product utilizes a myriad of glass and interlayer combinations to create beautifully finished panels that can be used in interior and exterior applications. Interlayer options include PVB, EVA and SGP. Lamination possibilities include fully tempered glass or mirror, magnetic, fabric, metallic mesh, printed glass, organic material, digitally printed PET, and any products from the Dreamwalls portfolio. Booth #4023. 336/651-9300, dreamwalls.com

NEW — NOT PICTURED

Guardian Glass

Debuting at GlassBuild, Guardian Glass' new SunGuard SNX 70+ coated glass helps meet the architectural community's desire for glass that combines high visible light transmission, a neutral aesthetic and strong thermal performance. The newest addition to Guardian Glass North America's commercial range of triple-silver-coated glass, SNX 70+ has a visible light transmission of 69% and a solar heat gain coefficient of 0.28 on UltraClear low-iron glass to help buildings improve energy performance. Booth #905. 866/482-7374, guardianglass.com

05

GGI | General Glass International

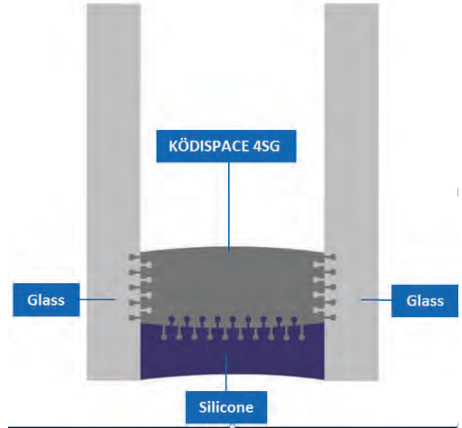
GGI has added multiple new low-iron textured patterns to its decorative glass range: Reeded, Micro Ribbed, Flemish, Stream Ribbed and Stylos S. Each design offers a unique aesthetic and level of privacy with up to 90% visible light transmission—ideal for daylighting and the sharing of light between spaces. The ultra-clear, low-iron substrate yields a truer color rendering that designers prefer for shower enclosures, door and cabinet inserts, and glass partitions. Booth #1523. 201/553-1850, generalglass.com

01

New



02



New

01

Glassworks Industry LLC

Glassworks Industry will be exhibiting several products, including its insulating glass, vacuum sealed glass, laminated and fire-resistant glass, as well as its tempered and laminated glass products. Booth #3956. 973/540-1818, glassworksindustry.com

02

H.B. Fuller

H.B. Fuller's Ködispace 4SG Warm Edge Spacer System is a reactive thermoplastic spacer system characterized by high energy efficiency, superior gas retention, and an automated process resulting in more precise spacer placement. The invisible thermoplastic spacer system ultimately results in a more visually appealing insulating glass, creating a harmonious connection between glass and frame. Additionally, the auto-adjusting application provides unparalleled flexible design freedom and triple-glazing manufacturing precision. Booth #613. 651/236-1645, hbfuller.com

03

ISOCLIMA

CHILDGARD security glazing was developed to meet the needs of the educational institution market and its desire to improve security. CHILDGARD is laminated glass constructed with a proprietary security interlayer built to withstand extensive physical attack during a forced-entry scenario. It provides the aesthetics and daylighting advantages of glass, with an additional level of security. It can be installed in industry-standard doors, framing and window systems; utilizes low-emissivity and energy-efficient products; and works for retrofit or new construction. Booth #1013. 724/712-4555, isoclimasg.com

03



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TODAY AND

BOOTH 605

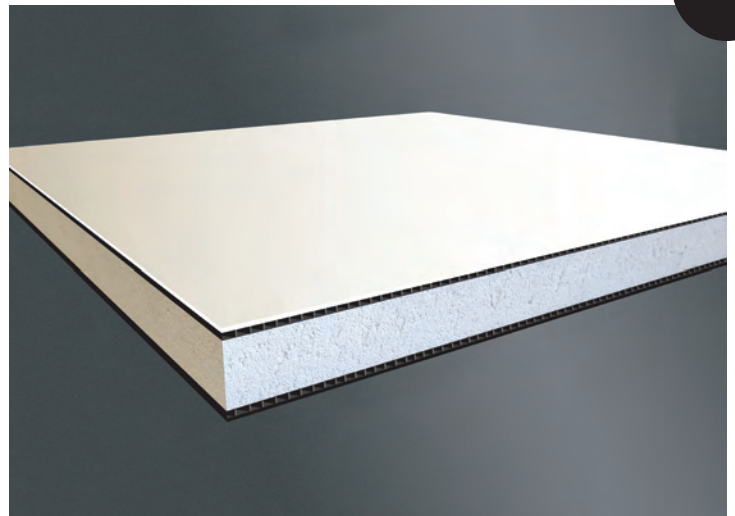
TOMORROW



01

02

New



New

01

HANS Building Material Technology Co.

The Blinds Between Glass from HANS is a renovation product widely used in doors and windows as an energy-efficient replacement for insulating glass. Compared with traditional insulating glass and window blinds, BBG products combine glass and blinds perfectly as one. Install the aluminum mini blinds inside the sealed insulating glass. There are two kinds of operating systems available for windows or doors: manual or motorized operating to control the blinds. Booth #3015. 501/505-0810, solarhans.com

02

Laminators Inc.

InfernoShield is a non-combustible, insulated glazing panel designed to provide superior fire performance when installed in window, glazing and curtain wall systems. InfernoShield panels create a decorative and durable surface. InfernoShield panels are constructed of a calcium silicate core sandwiched between extruded profile stabilizers with a finished aluminum sheet on each face. The finished product has a 1-inch overall thickness, provides an R-value of 2.14 per inch, and weighs 2.77 pounds per square foot. Booth #3514. 215/703-5124, laminatorsinc.com

03

Meteor Creative/Sealing Systems

Meteor Creative is offering custom extruded and injection-molded sealing solutions in EPDM, TPE, TPV, PVC and TPO, among other products. The company offers co-extrusion with different resins as well as co-extrusion with roll form steel or wire for structural and thermal control. Other products include secondary fabrication, including welding, notching, punching, taping and inserts. Booth #3048. 800/273-1535, meteor-creative.com

04



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06



04

PDS IG Equipment LLC

PDS IG Equipment launched a new and innovative product to address ever-tightening energy code requirements. The T17 spacer is a flexible, thin, stainless-steel spacer offering insulating glass fabricators a simple and cost-effective alternative to producing traditional triple-pane insulating glass units. The T17 offers the performance of a traditional triple-pane unit with only a single spacer. Booth #2141.
608/644-8000, pdsigequipment.com

05

Qingdao Migo Glass Co.

Qingdao Migo Glass offers shower glass, glass shower doors, obscure shower glass, fluted shower glass, frosted shower glass and acid-etched shower glass. It is available in sizes of 26-28 inches by 76-78 inches as well as customized sizes and thickness of 3/8 inch. Glass types include tempered, laminated, clear/low iron, frosted, obscure, and fluted/reeded. Applications include sliding doors, hinged doors, walk-in screens, fixed panels, bathtub panels and more. Booth #3560.
+(86) 1866-9889-690, migoglass.com

06

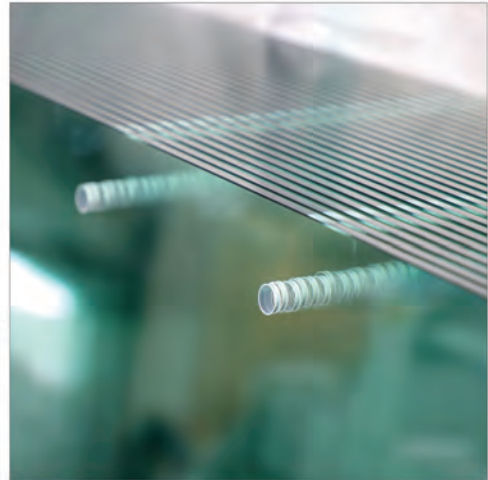
Novofactor Technology Co.

NEXNOVO Glass LED NE Series use high-density industrial tempered glass as the base material to combine with the company's patented integrated-IC technology and its Nano film circuits. It can be installed indoors directly behind the windows of building facades and store fronts or be used as a construction component. NEXNOVO Glass LED will transform any glass surface into a high resolution, high transparency and high efficiency display. Applications include building facades, architectural lighting, retail windows, and elevator facades, among others. Booth #25.
novofactor.com

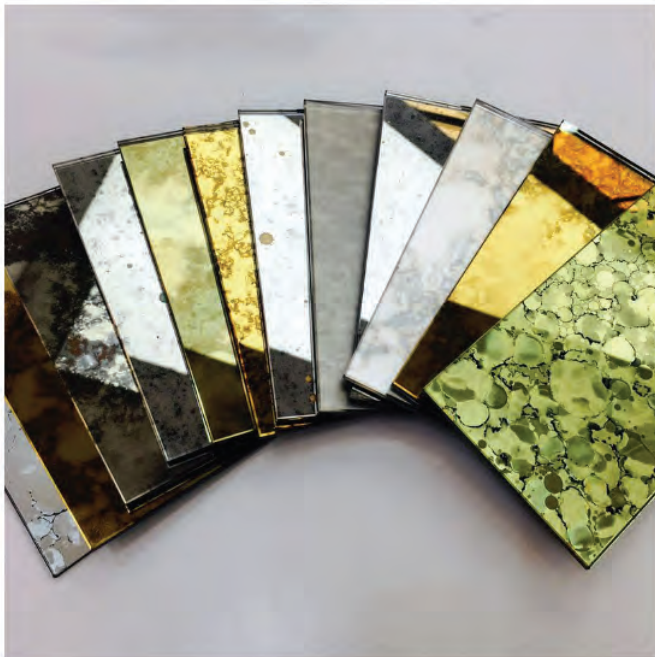
01



New



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Reed Rubber Products

Reed Rubber Products' 5000 Series Window Kerf Seals include 5001, which is a co-extruded kerf seal with a 0.23-inch foam bulb. 5002 is a co-extruded kerf seal with a semi-hollow 0.30-inch bulb for optimal compression. These products are ideal for residential and light-commercial compression-sealed window applications. Both parts feature anti-stretch rigid stems with flexible fins for easy installation. UV stabilized TPV offers excellent resistance to weathering, chemicals and compression-set. Booth #405. 314/450-4785, reedrubberproducts.com

02

Rider Glass Co.

Antique mirror is one kind of silver mirror whose pattern is of different chemical composition, not printed. Sizes include 72 by 96 inches, 130 by 96 inches, etc. The product is available in thicknesses such as 3, 4, 5, 6, 8 and 10 millimeters. The mirror is used in hotels, places of entertainment like KTV, light decoration, antique furniture, picture frames and many others. Booth #812. +(86) 5328-3873-000, riderglass.com

03

Rizhao Huaye Glass Co.

Rizhao Huaye Glass offers tempered glass. The formation of uniform compressive stress on the surface of tempered glass and internal tensile stress effectively enhances the release of bending and impact. Applications include pool fencing glass, door glass, window glass, balcony glass, canopy glass, facade glass, balustrade glass, staircase glass, tabletop glass, backsplash glass, fireplace glass, countertops, glass shelves, shower glass, shower enclosures and shower screens, among others. Booth #816. +(86) 6337-7998-99, huayeglass.com

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The Hub at Prairie Shores, Chicago, IL

GlassBuild booth 2217

walkerglass.com

01



02



New

01

Safti First Fire Rated Glazing Solutions

SuperClear 45-HS-LI is the first and only patented, U.S.-made, non-wired, tint-free, monolithic, fire-protective glazing product for all 45-minute doors, sidelites, transoms and openings. Listed and labeled by both UL and Intertek, SuperClear 45-HS-LI is available in large sizes and meets NFPA 252/257 and UL 9/10C with hose stream and CPSC Cat. II Impact Safety without the need for films or laminates. Booth #1410. 415/230-6758, safti.com

02

Sphinx Glass

Solarlite glass can be glazed with the reflective coating positioned on either the first or second surface. The glass has improved performance and higher exterior visible reflectivity with a metallic sheen when installed with the coating on the first surface. Combined in insulating glass units with clear glass, Solarlite glass offers an expansive palette of appearance and performance options with solar heat gain coefficients ranging from 0.34 to 0.14 and exterior reflectance of up to 37%. Booth #3905. +(20) 4826-2522-0, sphinxglass.com

03

TBP Converting Inc.

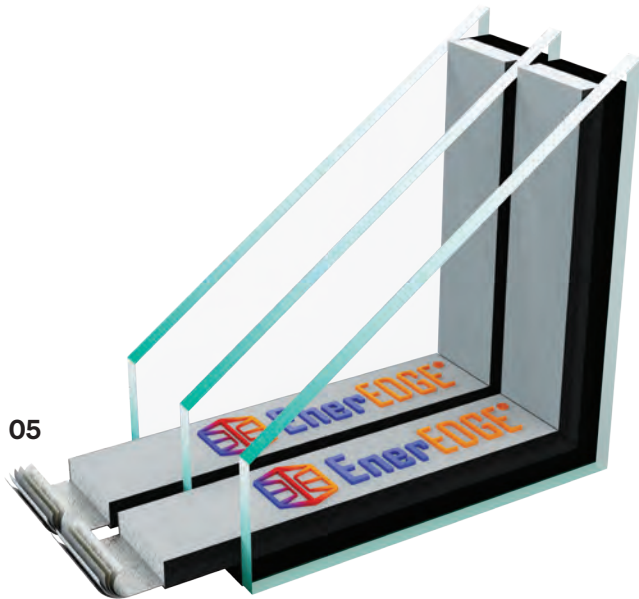
Zialoc Silicone Boot or Zialoc Silicone Strip, is a customizable sheet rubber that is used in curtain wall and window wall systems. This product is perfect for internal applications and acts as a barrier against air and water infiltration. This product was introduced by TBP Converting as an efficient way to span gaps between curtain wall openings and their adjacent air and vapor barrier systems. The product quickly found uses in many other scenarios such as test walls, curtain wall splices and general transition gaps. Booth #2715. 215/272-5537, tbpconverting.com



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Tengzhou Yichuang Commercial Trading Co.

Acid-etched glass can generally be tempered, laminated, drilled, cut, notched, polished and beveled in a similar fashion to regular float glass. Sizes include 96 by 144 inches, 84 by 144 inches, 84 by 12.9 inches, 88.6 by 12.9 inches, and 72 by 96 inches. Thicknesses include 3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 15 mm and 19mm. Acid-etched glass can be used in many applications, including doors, furniture, insulating glass units, partitions and store fixtures. Booth #3669.

+(86) 0632-2657-888, techhighglass.com

05

Tremco Construction Products Group

EnerEDGE is a pre-desiccated, ready-to-apply, cellular silicone warm-edge spacer that is suitable for a wide range of insulating glass constructions in fenestration applications. Booth #3123.

440/292-6522, tremcosealants.com

06

Unitex Glass (Chengdu) Co.

Unitex Glass offers tempered glass. Tempered glass can be four to five times stronger than normal glass. Tempering eliminates the danger of sharp edges because the glass will shatter into small particles when broken. Tempered glass is used when strength, thermal resistance and safety are important considerations, like in shower doors, patio doors, store fixtures and other applications that could be dangerous in the case of human impact. Booth #24.

+(86) 5926-0503-71, intexglass.com

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Photo by Tom Kessler

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Vibrantz Technologies

Vibrantz will be exhibiting ceramic inks and enamel pastes for inkjet and screenprinting. The company serves the architectural and automotive flat glass industries. Booth #453. 401/396-3025, vibrantz.com

02

Vitro Architectural Glass

Starphire Ultra-Clear Glass by Vitro is a low-iron glass for interiors, exteriors and heavy and safety glass applications in thicknesses up to ¾ inch. The design options are endless. Whether companies want to showcase intricate patterns, vibrant colors or no color at all, Starphire Ultra-Clear low-iron glass is the ultimate blank slate, featuring 87% less green than ordinary clear glass and an azure blue edge. Booth #1419. 412/820-8138, vitroglazings.com

03

Walker Glass Co.

Walker Textures Velour Mirror is slightly more matte than Satin mirror, yet glossier than Opaque. Velour mirror is an adaptable all-around solution. It is available in a standard size of 96 by 130 inches, as well as larger stock sheets of 100 by 144 inches for clear and low-iron options. It comes in four signature colors: bronze for a touch of warmth; gray for a cooler, more industrial look; classic clear glass; and ultra-clear low-iron glass. Booth #2217. 514/352-3030, walkerglass.com

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03

TRENDING NOW:

- Adjustability
- Lightweight systems
- Impact-rated

Pictured: CRL DRX Modular Door Rail System.

METALS, SYSTEMS + HARDWARE

As mentioned previously, exhibitors expect modular building, unitization and prefabrication of systems to become a trend this year. In response to the labor shortage, manufacturers and suppliers are creating lightweight systems that

are easier for a less-skilled workforce to install, and that are adjustable for further customization by the end user.

As code requirements increase, metals and systems continue to respond, as demonstrated by this year's

offerings. Products demonstrate higher performance in terms of energy efficiency, thermal efficiency and impact rating, all while maintaining minimal sightlines and maximizing daylight.



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RotoNorthAmerica.com

See us at GlassBuild America, booth 2123.

New



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Boton Aluminum Co.

The Push Bar and Pull Handle by Boton Aluminum is a popular product for both commercial and residential doors. Dimensions can be customized and it comes in aluminum or stainless steel. Booth #3605. 390/642-0409, aluminiumcn.cn

02

C.R. Laurence Co.

The new CRL DRX Modular Door Rail System deconstructs a standard door rail into independent parts giving glass temperers and glaziers greater control over when, where and how door rails are installed, adjusted and updated. Unlike standard door rails, the DRX system features independent side covers and end caps that can be easily installed or replaced without having to remove the door from the pivot. The system also features 10 ½-inch-length rail bodies that can be moved along the glass to accommodate standard or custom door lengths. Because of this, they can be stocked to virtually eliminate lead times for installing custom glass doors. Booth #1621. 323/588-1281, crlaurence.com



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Deceuninck North America

The Innergy Architectural Products line of fiber-reinforced polymer parts from Deceuninck North America is designed for windows, doors, and curtain wall and storefront systems. Innergy AP components fit into existing commercial fenestration hardware systems, deliver structural strength with low conductivity for excellent thermal performance, and come in a variety of options, including pressure plates, structural thermal struts, reinforcements and other curtain wall components. Booth #1603. 513/539-5505, deceuninckna.com

04

DeSCo Architectural Inc.

The i85h Historical Replication Series is the newest addition to DeSCo's lineup of custom AW-100 thermally broken aluminum windows. The i85h is an energy-efficient aluminum window with an advanced thermal break and a sightline that duplicates the look of a historic window. Combining the look of yesterday's windows with tomorrow's technology, the i85h includes a 3 ¾-inch frame depth, water resistance of 15 per square foot and 1-inch glazing. Available in fixed and simulated double-hung styles with an anodized or painted finish. Booth #3411. 800/952-5534, descoarc.com

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Door Controls USA

Whether customers need a single- or double-door solution, the aluminum storefront doors of Door Controls USA come in a variety of standard sizes and finishes, so customers can choose the perfect match for their business. Comes in color options of clear, bronze or powder coated and with additional options such as DCM full continuous hinge, DCM push paddle handle and DCM 6000 Premium Series Door Closer. With easy online ordering, it's never been easier to upgrade storefronts or boost curb appeal. Booth #2203. 800/437-3667, doorcontrolsusa.com

06

FHC Frameless Hardware Company

FHC's patented Achieve frameless glass railing system is the latest progression in installer-friendly dry glaze railing systems. The base shoe system is designed and engineered for heavy glass railings, guardrails and windscreens incorporating monolithic and laminated glass ranging from ½ - to 1 1/16 -inch thickness. A new, thoughtful design delivers a traditional base shoe profile that is 40% lighter and incorporates

an innovative raceway design that allows glaziers to pre-load exterior, fall side gaskets. Securing glass panels has been significantly expedited with Achieve's proprietary installation tool and unique pre-assembled FHC Achieved shims for fast and easy installation without the need for messy, wet cement. Booth #1205. 888/295-4531, fhc-usa.com

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FrontLine Building Products Inc.

FrontLine Bldg. Products Inc., a 40-plus year veteran in the grille business, has the solution for storefront grilles. The company's Aluminum Surround grille has a robust construction using a double corner key design and a 1-3/8-inch depth that screws into customers' new or existing storefront frame. The Glaze-In Surround grille attaches at the time of the frame installation. For both surround grilles, the intermediate grille profile is screwed to the surround profile for additional durability. Silicone discs eliminate rattle and allow for easier spray-cleaning. Booth #212. 920/393-1340, frontlinebldg.com

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Gang Gwo Industrial Ltd.

The company's Q type shower door hinges can reach a seamless and even surface to avoid leaking water in showers while still providing an elegant look. Folding hinges can have 360-degree rotation to meet different installation scenarios. Magnetic locks can eliminate the annoying noise from traditional patch locks when closing the door. Gang Gwo does both original equipment manufacturing and original design manufacturing and can develop any custom-made fittings. Booth #316. +(86) 8860-8755-6651, gangwo.com

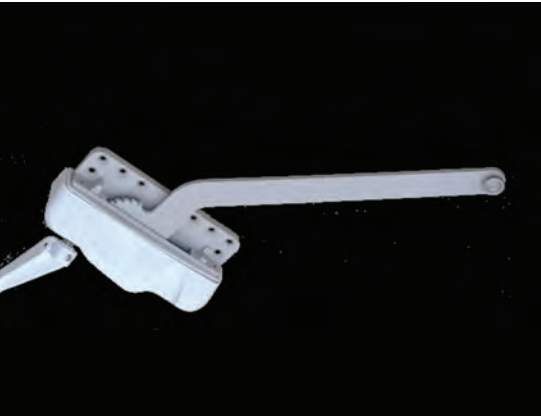
03

Glass Vice USA LLC

Clearline Glass Railing is Glass Vice USA's hidden-side fixing option. The system is not a base shoe and is easy to install with the double-friction system. The individual fixings are hidden behind an aluminum fascia, which can be powder coated in any color or hidden behind timber or suitable cladding. Lightweight compared to heavy base shoes, with no shims required, it's fully adjustable with grub screws that allow up to 4 inches of tilting and lifting the glass from below. Booth #3208. +(64) 9414-6565, glassvice.com

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Hangzhou Wintek Building Products Co.

Hangzhou Wintek Building Products Co. will be exhibiting its window operator, available in 7.5-, 9.5- and 13.5-inch sizes. The product is a single arm operator body, which is high-pressure and die-casting, with a powder coat finish. The gear arm is manufactured with hardened carbon steel, electroplating and powder coating. Stainless steel is an option for coastal climates. Available colors include white, tan, brown, polished brass, stained nickel and gold, as well as customized options. Booth #27.

+(86) 0571-5626-0873, wintekco.com

05

Jiangmen Yijie Glass Bathroom Co.

G22N11 is a beautiful frameless sliding shower door, crafted with SGCC-certified tempered glass, with anti-explosion film applied. The product also uses durable 304 stainless-steel hardware. Smooth rollers allow air-gliding opening and closure. The glass door supports right and left opening installation and provides a 4-inch adjustment in width. Booth #3559.

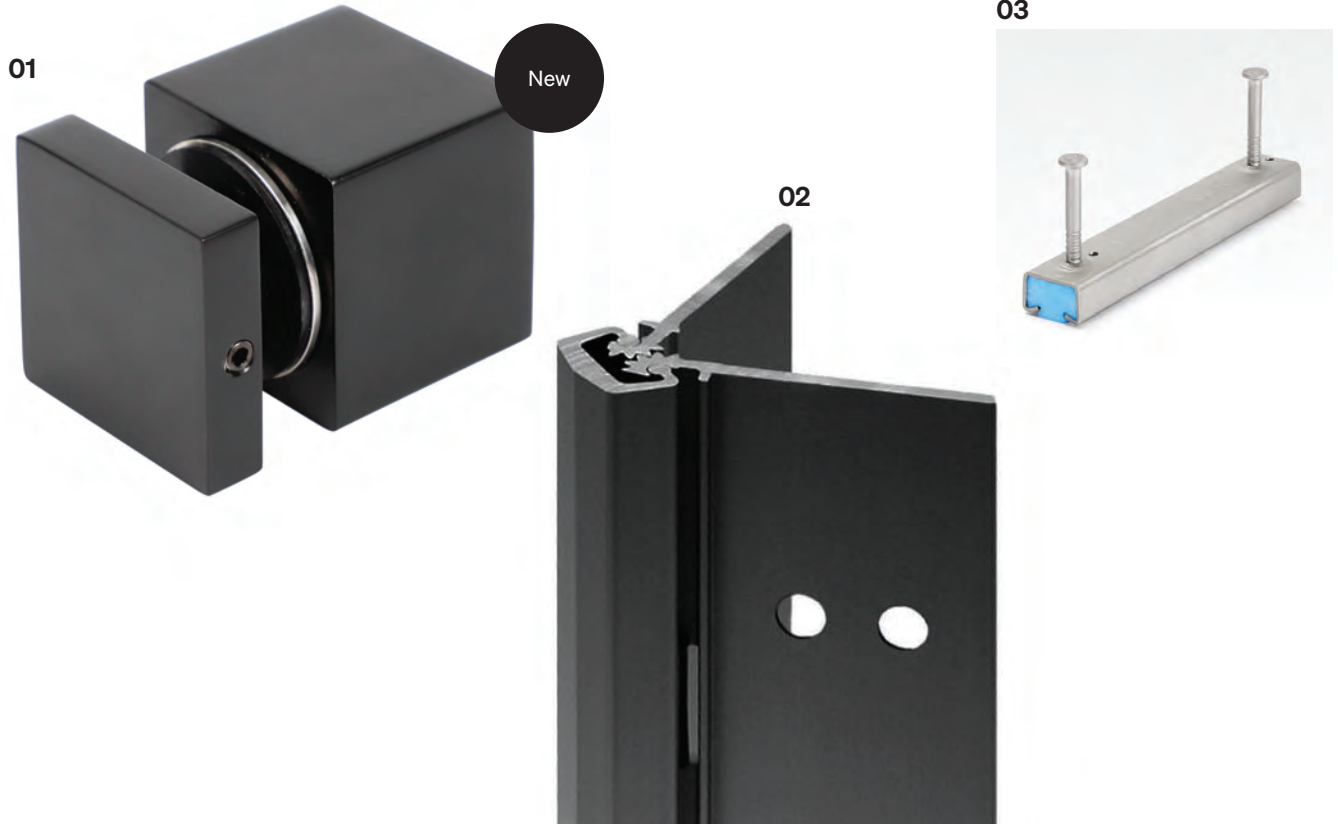
+(86) 0750-3779-992, easebathchina.com

06

Interglass

Thanks to the use of frameless glass, the balustrades of the Garda System guarantee clean lines in both internal and external new commercial and residential construction, renovation, and restoration projects. Available with or without cap rails, the Garda system, tested in certified laboratories, is made up of different elements (profile, fixing system, casing, laminated and tempered glass) and is designed to guarantee an easy and rapid assembly and an aesthetic result ideal for contemporary architecture. Booth #2309.

305/409-8921, interglasscorp.com



01

Jinfer Railing

The Arc Lock adjustable glass standoff is independently designed by Jinfer Railing to adapt to uneven surfaces. Used mainly to build indoor or outdoor glass railing systems, the Arc Lock adjustable glass standoff is suitable for 3/8- to 27/32-inch glass, and satin, mirror polish and matte black finishes are available. The unique arc design makes the glass align more easily without the addition of shims or washers. Its simple design makes the glass railing system lighter, and suitable for various architectural decorative styles. Booth #18.

+(86) 5328-3860-958, jinferailing.com

02

JLM Wholesale Inc.

The Select SL11 SD standard-duty, concealed, geared, continuous hinge by JLM Wholesale puts an end to costly hinge failure problems. Available in 83-, 85-, 95- and 120-inch lengths for nominal door heights, custom lengths and a heavy-duty hinge are also available. The hinges are tested to BHMA standards for up to 200-pound doors (high-frequency) and up to 400-pound doors (medium-frequency) without frame or door reinforcement, as well as up to 600-pound doors (low-frequency) with the use of rivnuts in the frame and door. Booth #1903.

248/572-9006, jlmwholesale.com

03

Jordahl USA Inc.

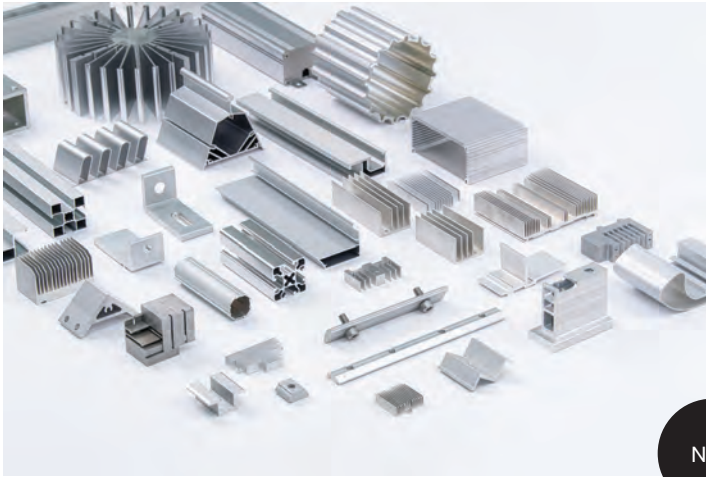
Jordahl produces a complete range of hot-rolled and cold-formed anchor channels for adjustable, fast and low-cost connections for curtain walls and other facade installations. T-bolts, accessories and custom components such as corner pieces, channel pairs, radius profiles and welded rebar configurations are also available. Components are available in zinc-plated, hot-dipped galvanized and stainless steel to meet all corrosion-resistance requirements. Jordahl offers experienced engineering design support for planning and calculating connection solutions. Booth #2511.

866/332-6687, jordahlusa.com

04



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New

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Kenwa Trading Corp.

The NSC-G Series sliding door closer is an innovative solution to add a self-closing feature to glass sliding doors. Utilizing a durable pull spring device, the NSC-G Series offers all-section, self-closing functionality. The door closes automatically to a completely closed position, from any position hands are released from the door. The rotary gear damper provides smooth soft-close motion before the door hits the jamb. This is a non-electric mechanical system (no hot work/power supply required) and is easy to install. Booth #3212.

516/933-6016, kenwa-america.com

05

Kimsen Industrial Corp.

Aluminum extrusions serve as frames for various structures, ranging from residential houses to multi-story buildings because of the material's high environmental strength and stability, malleability, and lack of required maintenance or repair during the service period. Meeting international product standards and technical regulations, Kimsen Industrial's aluminum extrusions are effective solutions for several construction field applications, including window and door systems; building façades, such as curtain wall systems; and furniture such as interior partitions, sun louvers, curtains and ceilings. Booth #3611.

562/353-3259, kimsen.us

06

Lamatek

Setting blocks are small in size but not in importance. SmartBlox 2.0 setting blocks for glazing shim applications are compatible with various glazing sealants and systems. Unlike rigid setting blocks, 85 durometer SmartBlox 2.0 material provides a flexible cushion for insulating glass units, protects the glass from impacts and stress cracks by allowing for thermal expansion and contraction, promotes drainage and protects the IG seal from any water that might enter the glazing pocket, and supports dead load. Booth #3711.

800/526-2835, lamatek.com

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Linkan North America LLC

Linkan’s Glass Door hardware for commercial and residential applications is made to the highest industrial standards, using the highest quality materials currently available on the market, yet still at competitive prices. It can meet various loading requirements and is available with different finishes, including custom finishes. Booth #2610. 852/917-1252, linkan-group.com

02

Loire Hardware Co.

Loire Hardware Co.’s shower hinges are of solid forged brass construction. Color options are chrome, matt black, orb, satin brushed and gold polish, among others. The hinge’s dimensions are 3 35/64- by 1 1/64-inches. Appropriate for glass thicknesses of 5/16 inch or 3/8 inch and a maximum door weight of 99.2 pounds. Booth #28. +(86) 7578-6309-661, loire-hardware.com

02



03

Nana Wall Systems Inc.

Generation 4 Folding Glass Walls is a platform of eight different systems designed to meet requirements for a wide array of project types—all with similar aesthetics, features and performance—for both commercial and residential applications, interior or exterior. Now, choice is made easier as specifiers use the system base that best fits the project. Being a customizable

product family, Generation 4 offers multiple sill and hardware choices, and flexibility through customized configurations—all in three material choices—aluminum, solid wood or clad. Technology developments include a multifunctional thermal break design offering the slimmest, most energy-efficient bi-fold door available. Booth #2906. 866/208-5745, nanawall.com



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Quality Enclosures Inc.

The Caribbean Series shower enclosure by Quality Enclosures is the company's most recent addition to its product line. The Caribbean uniquely combines the ease-of-installation features and clean, seamless presentation of other products while maintaining the quality and reliability the company's products are known for. Booth #3503.

941/378-0051, qualityenclosures.com

05

Orchard Lock Distributors

The PE80 Series is the next generation of exit devices. Designed with innovation in mind, the powerful and exquisite exit device introduces new and enhanced features. Ideal for environments that require maximum strength and durable security solutions, all configurations—rim, mortise, surface vertical and concealed vertical rod—exceed ANSI/BHMA Grade 1 requirements. Booth #1103.

203/865-8106, orchardlock.com

06

Polaris Soft Close Hinge

Polaris 125 Series Soft Close Hinges are a revolution in glass hinge technology, completely redesigned specifically for exterior use on glass gates such as pool fences, security gates, and pedestrian and child access gates. Improvements in overall function, longevity, installation and maintenance were all key in the design process. In-house tested to over 500,000 cycles, the 125 Series now features a QUIK-ADJUST ratchet cap for fast and easy speed adjustment. The soft close dampers can also be removed and upgraded. Booth #2515.

+(61) 2875-3024-4, polarishinge.com



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New

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Qingdao Panda Railing International Trading Co.

Frameless glass pool fencing is designed to provide an unencumbered view of the pool and surroundings. Panda Railing’s stainless steel spigots in square and round shapes are designed to meet different commercial and residential requirements. Comes in AISI 304, AISI 316 and Duplex 2205 stainless steel in popular satin and black colors. Booth #16. +(86) 0532-8082-9766, panda-railing.com

02

Riot Glass

For smash-and-grab protection, Riot Glass’ popular ArmorPlast Gen II overglaze standard-duty storefront retrofit system is an incredibly strong and lightweight system that provides exceptional security at an affordable price. Riot Glass has designed the ArmorPlast Gen II Standard Series security framing to offer extreme durability with a smaller footprint than its larger models. It is compatible with ¼- or ⅜-inch ArmorPlast security or ballistic infill panels, and the extrusion assemblies come standard with setting blocks, gaskets and fasteners. Booth #1909.

714/904-1030, riotglass.com

03

Roto North America

Roto Patio Inowa’s sealing hardware elevates living spaces with its slim, modern design and components. This hardware for aluminum, vinyl, wood and composite sliding systems supports sash weights up to 882 pounds and dimensions up to 9.8 feet wide and 11.8 feet high. The Roto Patio Inowa operates with ease due to its innovative closing movement and soft close and soft open functions, which protect the sliding element by mechanically braking the sash to prevent it from slamming against the frame. Highly customizable and tested to the highest quality standards, the tightly sealed system provides sound insulation, burglar inhibition and harsh weather deterrence. Booth #2123. 860/526-4996, rotonorthamerica.com

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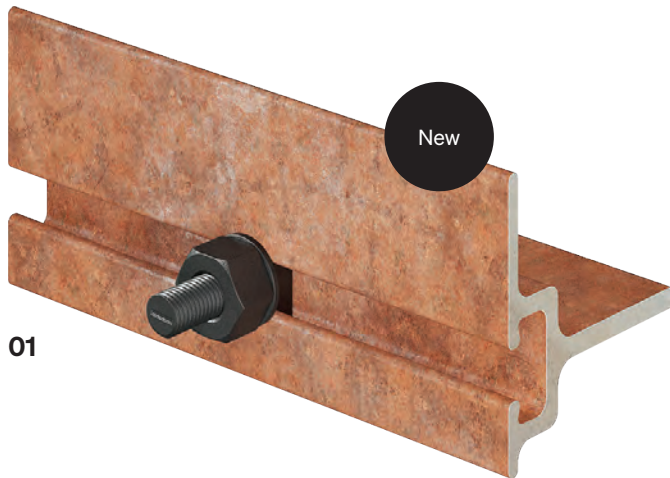
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New



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New



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01

Simpson Strong-Tie

Connect cladding or curtain walls faster and easier with the Edge-Tie system from Simpson Strong-Tie. The company’s system uses a unique extruded steel beam shape and pour-stop combination. It provides higher strength than typical bent plates and fits any steel building with no height limitations. An innovative continuous channel minimizes anchor attachment planning and simplifies installation or adjustment of cladding connections. The Edge-Tie system uses a bolted facade connection, which requires no field welding and allows for fast installation with less labor. Booth #3316. 925/560-9081, strongtie.com

02

Stretch Solutions LLC

Stretch Solutions provides various commercial and residential metal forming solutions, including stretch forming, roll forming, hydro forming, bump forming and bending for aluminum, steel, stainless steel, copper, brass and bronze for use in storefronts, curtain wall, brake metal, column covers, handrails (flat and spiral), fabrication, machining, water jet, CNC and welding. Booth #510. 951/356-3600, stretchsolutions.us

03

Sun Design Plus Ltd.

Hydraulic hinges by Sun Design Plus come in sizes of 4 ½ by 3 inches and fit 8- to 12-millimeter glass. A paired set includes one spring hinge and one hydraulic hinge. The hydraulic hinge should be placed as the bottom hinge, with the adjustment screws facing up. The spring hinge needs to be placed in the top position. The hinges come in hold-open for high-traffic areas or non-hold-open options to help keep certain areas closed off for added privacy and security. Booth #912. +(86) 7503-2226-07, sd-plus.com



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01

U.S. Bullet Proofing

U.S. Bullet Proofing's new USAW700 aluminum frame window system is tested to FEMA 361-21 requirements to withstand violent weather conditions, including hurricanes and tornadoes. The window system can provide simultaneous protection from blasts, forced entry and a protective ballistic rating of UL 752 Level 5. The system is designed to meet all of today's architectural requirements including a full 1-inch thermal break to ensure optimal levels of energy conservation. Booth #2611.

301/218-7920, usbpc.com

02

YKK AP America

Providing a clean aesthetic with a narrow sightline, the T Series Entrance Systems offer design versatility and thermal performance, exceeding U-factor requirements—with values as low as 0.43/0.45/0.48—for high-performing buildings, meeting stringent energy codes, and withstanding demanding conditions. The 25T (small)/35T (medium)/50T (wide) entrance doors are thermally broken with 6/6 nylon polyamide glass fiber reinforced bars, and a 1-inch insulating glass unit standard (up to 1 ¼-inch). Other features include 2-inch door leaf thickness, door

corners that are mechanically joined/welded together, 10-inch bottom rails, seven options for mid-rails, and glazing options. Booth #1805.

678/838-6000, ykkap.com

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Opening Solutions

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EXHIBITOR LIST

Exhibitor list as of Aug. 17. Visit GlassBuildAmerica.com for the most up-to-date listings.

Booth No.	Company Name	Booth No.	Company Name	Booth No.	Company Name
2321	A+W Software	3046	Akarmak	3361	Arcadia Products LLC
2604	ABC Hardware	3671	All Glass (SuQian) Holding Co.	3408	Archie Hardware North America
2504	Accurate Lock and Hardware Co.	2510	Alloy Fasteners Inc.	1841	Argon Filling Systems Inc.
3362	Acer Industrial Ltd.	514	AllYourHardware.com	3106	Argotec (formerly SWM)
3943	ACM Machinery Ltd.	3315	Alpha Solar Tech	1713	Arizona Shower Door Inc.
2704	ADDEV Materials	3803	Alum Fab	512	Arkema Inc.
239	Adelio Lattuada – Lattuada North America	2204	Alumax Bath Enclosures / Hydro Extrusion USA LLC	2851	Artifex Dr. Lohmann GmbH & Co. KG
3053	Adfast	2648	Aluro	3715	Asaş Alüminyum Sanayi Ve Ticaret AŞ
3550	Adhesives Research Inc.	4218	American Architectural Coatings	3257	ASC Process Systems
2523	ADISrL	1505	American Renolit Corp.	451	Ascentium Capital
2507	Advanced Screen Systems Inc.	1223	AmesburyTruth	3845	Ashton Industrial
3310	Advantage Drafting	2823	Anthony Innovations LLC	3404	Aspire
3510	Aim Transportation Solutions	4007	Apex Construction Supplies LLC		



LAMILUX SKYLIGHTS

INNOVATIONS USING NATURAL LIGHT

Booth No.	Company Name
802	Assa Abloy
1003	Assa Abloy Opening Solutions
4216	Astro Plastics
2853	Athmer
3215	AutoMAK Assembly Inc.
3959	Automated Systems Engineering Group Inc.
3360	Avant Glass
2345	Bailey Specialty Cranes & Aerials
3508	Banner Solutions
3341	Barberán SA
3631	Bavelloni America
941	Beijing HanJiang Automatic Glass Machine Equipments Co.

Booth No.	Company Name
912	Beijing Lead-Top International Fair Co.
3254	Beijing MGM Glass Machinery Co.
522	Benteler Maschinenbau GmbH
2904	Best Print Solution
1541	Billco Manufacturing Inc.
1650	BINAR (a Schmalz Company)
3915	Bisam Facade Inc. / Facade 41 LLC
4013	BizDog Payments
3857	Blackwater Technical Services Inc.
1823	Blink blinds + glass by ODL
3506	Blutec Glass Fabrication
414	Bohle Portals

Booth No.	Company Name
3605	Boton Aluminum Co. (Qingdao)
2633	Bottero Flat Glass Inc.
631	Bovone North America
4118	Bridgeport Worldwide
3331	Bromer Inc.
1241	Burkle North America Inc.
4004	Business Pilot
3447	BVC Group Inc. (Better Vacuum Cups Inc.)
1621	C.R. Laurence Co.
64	C2A Longterm Inc.
913	CAD-Plan North America Inc.
3409	Cardinal Paint & Powder Inc.
2723	Casso-Solar Technologies LLC



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EXHIBITOR LIST

Booth No.	Company Name	Booth No.	Company Name	Booth No.	Company Name
4209	Certified Enameling	3250	Cooltemper USA	2431	DeGorter Inc.
2003	Chelsea Building Products	1913	Cooper Standard ISG	4031	DeMichele Group
4212	China Warm Edge Technology (Nanjing) Co.	240	Coroplast Tape	3411	DeSCo Architectural Inc.
508	Citadel Architectural Products	3458	cove.tool	2605	Deslauriers
219	ClearShield Technologies	4157	Creation Classic Americas	1231	Diamon-Fusion International
641	CMS North America Inc.	2105	Creative Millwork	222	Dip Tech Machinery
15	CNBM International Corp.	3309	Crimsafe North America	3009	Door & Window Market (DWM) Magazine
217	Coda Products Inc.	3405	Cuhadaroglu Metal San. Ve Paz. AS	2203	Door Controls USA
3710	Colour Alliance Inc.	2947	Custom Conveyor	2315	dormakaba USA Inc.
3259	Combilift	347	CWI – ColorWrap Inc.	2711	DraftAid
3410	CompanyCam	1919	Cyncly	4023	Dreamwalls by Gardner Glass
622	Continental	2855	Daubert Chemical Co.	2946	Duespohl Maschinenbau GmbH
3504	Continental Group	1603	Deceuninck North America	3650	Edda Pack



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A large industrial machine, the LiSEC TPA, is shown in a factory setting. The machine is primarily white with a prominent red vertical stripe on its side. It is enclosed in a black metal safety cage. The machine is positioned on a concrete floor with a yellow safety line. In the background, other industrial equipment and a large window are visible.

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431	Elumatec North America Inc.	2537	Faraone	1945	Forel SpA / Forel North America
2231	Emmegi USA Inc.	2543	Fascan International	416	Fornax Door and Window Accessories
4123	EnduroShield	3108	Faulkner Fabricating Inc.	3558	Foshan Addtech Glass Machinery Co.
3462	Engineered Custom Coatings	4116	Fenestration Canada	2734	Fratelli Pezza SrL
2806	Ensinger – insulbar North America	3814	Fenzi-North America	2321	Friedman Corp.
1331	Erdman Automation Corp. / FlexScreen	1303	FGIA – Fenestration and Glazing Industry Alliance	212	FrontLine Bldg. Products Inc.
923	Ergo Robotic Solutions	1205	FHC Frameless Hardware Co.	3561	Fujian Baineng CNC Equipment Co.
3551	Ervin Sales Group	550	Filtertech / US Centrifuge Systems	316	Gang Gwo Industrial Ltd.
503	ES	2741	Filtraglass	2953	GCV Glass Machinery
2606	eSUB Construction Software	2357	Fletcher Business Group	2308	GDS Estimating
3460	Excel Engineering	1412	Flexijet North America	2631	GE.MA.TA SpA
1215	F. Barkow Inc.	353	Florence One SrL	330	GED Integrated Solutions Inc.




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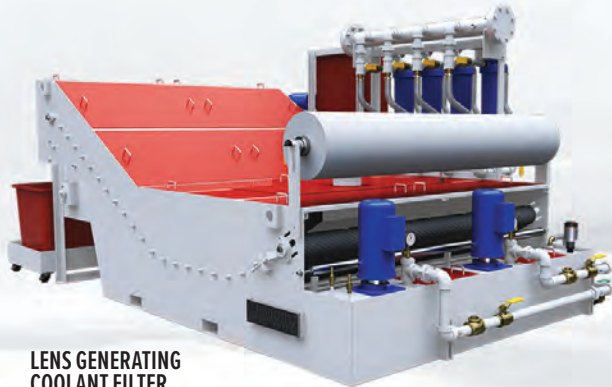
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1523	GGI General Glass International	3014	GlassTrax & Glaziers Online	3768	Guangdong Golive Machinery Technology Co.
3861	glascad LLC	3956	Glassworks Industry LLC	905	Guardian Glass
2621	Glass Co.	4049	Glaston America Inc.	3455	Guilin Champion Union Diamond Co.
2503	Glass Coatings and Concepts	3415	GlasWeld Systems Inc.	22	Guizhou Golden Ocean Trading Co.
4109	Glass Inc.	3706	Glazier Nation LLC	3110	Gulf Rubber Industries LLC
3049	Glass Machinery Direct	4015	Glazier Software	2702	Gunther Mirror Mastics
1303	Glass Magazine	713	Goldstar Co.	2912	Gutmann North America
1841	Glass Pro Inc.	3703	Gonzato Group	613	H.B. Fuller
3208	Glass Vice USA LLC	413	GPI Group	3155	HAECO
1551	Glassline	2706	Grabo	1631	Haffner Machinery
3006	GlassManager Software	443	GRAF Industries Inc.	815	Haining Lijialong Pile Weather Strip Co.
1113	Glassopolis	411	Griffin Glass and Metal Werks	1040	Hangzhou Jinggong Machinery Co.
4114	glasstec 2024 / Messe Dusseldorf	4058	Grove Shims		
4112	Glass-Technology International	1317	Groves Inc.		

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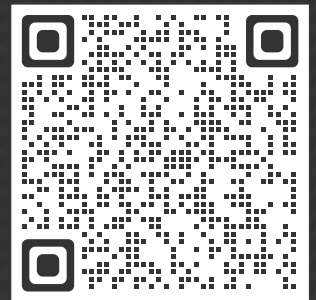
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27	Hangzhou Wintek Building Products Co.	2006	Hygrade Components	1013	Isoclima
3015	HANS Building Material Technology Co.	4213	Hyundai L&C Bodaq Exterior	2425	Italcarrelli SrL
3107	Hardware and Glass Group Ltd.	3419	IGE Glass Technologies Inc.	2623	Italian Trade Agency (ITA)
3012	Hardware Everywhere	3144	IGK North America Inc.	452	Jansen America Inc.
3359	Hawaii Hinges	3356	Inagas Ltd.	3314	JEI Structural Engineering Design Calculations
1047	Hegla Corp.	1303	Industry Pavilion	2813	Jeske Hardware Distributors
1108	Hilti Inc.	415	iNOEX LLC	3559	Jiangmen Yijie Glass Bathroom Co.
2709	HMI	2131	Integrated Automation Systems	3770	Jinan Glasino Glass Technology Co.
3353	Hot Melt Technologies Inc.	2309	Interglass	1042	Jinan Wondec Machinery Co.
3557	Howden	3622	Interlayer Solutions Inc.	18	Jinfer Railing
2115	HP3 Software Inc.	3431	Intermac America / Biesse America	1903	JLM Wholesale Inc.
2805	Hub Industrial – Specialized PPE – Inventory Management	3406	International Union of Painters and Allied Trades	1653	Joe's Refrigeration Inc. / Clean Room Solutions
2603	Hydro Extrusion North America	3211	ISD Group USA Inc.	2511	Jordahl USA Inc.

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EXHIBITOR LIST

Booth No.	Company Name
2741	Jordon Glass Machinery
831	Joseph Machine Co.
3448	Jowat Corp.
419	Jura Films North America LLC
3212	Kenwa Trading Corp.
3131	Keraglass SrL
2907	Keystone Certifications Inc.
2609	Kich Architectural Product Pvt Ltd.
3611	Kimsen Industrial Corp.
21	Kingtom Glass Co.
1946	Kleiberit Adhesives USA Inc.
3011	KMR Research
3954	Koja USA Inc.
307	Komsta Windows and Doors

Booth No.	Company Name
3217	L.M. dei F.lli Monticelli SrL – Gruppo Montifin
3711	Lamatek
3514	Laminators Inc.
3323	LandGlass Technology Co. / IGE
2411	Larson Engineering Inc.
323	Leading Edge Distribution
3802	Lexington Manufacturing Inc.
3561	Liaoning Alger Building Material Industrial Co.
4008	Lien Yeu Glasstech (M) Sdn Bhd
3663	Lindenbridge Lechitrading Inc.
4208	Link Industrial
2610	Linkan North America LLC
2831	Lisec America Inc.

Booth No.	Company Name
3221	LiteSentry – Softsolution
3051	Logical Glass Technologies
28	Loire Hardware Co.
2809	LTC USA LLC
3667	Luoyang Aotu Machinery Co.
448	M.J Energy Wall System Inc.
2817	M3 Glass Technologies
943	MAC Glastech & Automation Co.
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1109	Mainstreet
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2310	Maxest Industrial Inc. / McThermo LLC
3760	Mazzaroppi Engineering Srl
61	McGrory Glass
1907	McKeegan Equipment
3831	Mecal USA Inc.
3048	Meteor Creative / Sealing Systems
2303	Millet Glass Industry
3515	Moderno Porcelain Works
2730	Mole Moreschi Srl
1303	MyGlassClass.com
2223	MyGlassTruck
2906	Nana Wall Systems Inc.
1303	National Glass Association (NGA)
3413	North American Contractor Certification (NACC)
3349	North American Specialty Laminations
947	Nova Plastech Inc.
1311	Novagard Solutions
3951	Novatech Group
25	Novofactor Technology Co.
1615	NuCoat North America LLC
1847	Oemme SpA
1009	Omni Cubed Inc.
3808	OmniGlass SCT
2524	OmniDecor Srl
2636	Optima Srl
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1112	Palmer Product Corp.	3305	Privacy Glass Solutions	1017	Quanex
3855	Panther Pro Tools	3512	Process Label Systems Inc.	1531	Quattrolifts USA
2209	Paradigm	3140	Prodim USA	409	RA Workshop Software
3811	Paramount Extrusions	2351	Pujol	3414	Raco Interiors
3031	Pat Mooney Saws	20	Qingdao ChinaStar Holding Co.	405	Reed Rubber Products
2141	PDS IG Equipment LLC	3658	Qingdao Dinganda Glass Technology Co.	3908	Reliable Products / Ruskin
3839	Perfect Score Technologies	23	Qingdao Haisen Glass Co.	4217	Resource Recovery LLC
2561	Pertici Industries SpA	17	Qingdao Laurel Glass Technology Co.	211	Richelieu
3923	PH Tech Inc.	3560	Qingdao Migo Glass Co.	812	Rider Glass Co.
3867	Philadelphia Hardware Group	16	Qingdao Panda Railing International Trading Co.	1909	Riot Glass
2321	PMC Software	947	Qingdao Sea Nova Building Profiles Products Co.	2208	RiteScreen
3010	Podium	1513	Q-railing – North America	816	Rizhao Huaye Glass Co.
2515	Polaris Soft Close Hinge			513	Rockwell Security Inc.

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3465	Rotox USA Inc.	4210	Shandong Jinjing Science & Technology Stock Co.	3646	Skyreach Equipment
406	SAF – Southern Aluminum Finishing Co.	717	Shandong Paneu Glass Co.	1813	Smart Glazier Software
1410	Safti First Fire Rated Glazing Solutions	3660	Shanghai Refine Machinery Co.	2602	Smart Logistics
1931	Salem Fabrication Technologies Group Inc. – Salem Fabrication Supplies / HHH Equipment Resources	13	Shanghai YY Windows Pty	3547	SmartGroup America
3148	Satinal SpA	2710	Sherwin-Williams	1831	Smartlift US Inc.
3709	Saw Trax Mfg.	3552	Shijiazhuang ASA International Trading Corp.	2213	Smith Case Inc.
2913	SBMS Group Inc.	3459	ShiXing Glass (Fujian) Co.	3312	Soundproof Windows Inc.
2431	Schiatti Angelo Srl	3206	Sika Corp.	3766	South Glass Technology Co.
2705	Schilling Inc.	403	SilGuard by Inverge	2715	SPH Global / Protectapeel
2415	Screenco Mfg.	3316	Simpson Strong-Tie Edge-TieSystem	3905	Sphinx Glass
412	SEM Specialty Products	3704	Siteline	2013	Spider by BrandSafway
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517	Strybuc Industries	62	Tedee smart locks	2804	True Contractor Software
3639	Sturtz Machinery Inc.	3457	Tengzhou Fenghua Glass Co.	2807	Trust Seal
317	Sullivan Hardware	3669	Tengzhou Yichuang Commercial Trading Co.	2109	Tsubaki – Kabelschlepp
912	Sun Design Plus Ltd.	1247	Tenon (Beijing) Equipment Co. / TSS – Sales	502	Tuff-N-Lite
3113	Sunbelt Business Advisors and True North M&A	3648	TexMan LLC	605	TurkishGlass
813	Sunny Glass Hardware Factory Co.	216	The Architect's Newspaper	2611	U.S. Bullet Proofing / Quikserv
417	Swisspacer	3552	The WeaveX Co.	612	UFP Packaging
2847	SynergX Technologies Inc.	318	Top Notch Distributors	2123	Ultrafab Inc.
2849	Taconic	3859	Torreced USA LLC	2405	Unelko Corp. – Invisible Shield
3761	TAKA-WPR	2909	Total Security Solutions	2615	Unikoo Glass & Hardware
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2919	Unruh Fab Inc.	3450	Walco powered by Novacel	3023	Wood's Powr-Grip Co.
2449	Urban Machinery	2217	Walker Glass Co.	313	Wurth Construction Services
3007	USGlass Magazine	446	Walter A Wood Supply	715	Xiamen Tider Import & Export Corp.
721	Veka North America	3546	Water Treatment Solutions	3045	Xinglass America
1752	Vesuvius	851	WEGOMA	551	Yilmaz Machine
453	Vibrantz Technologies	916	Welland Hardware Manufacturing Co.	1805	YKK AP America
1202	Vicone High Performance Rubber Inc.	3205	Westlake Royal Building Products	2409	YourRadar
3041	Viprotron North America Inc.	2608	Wieland Metal Services	4156	Yuntong Americas
3111	Virginia Glass & Mirror	1303	Window + Door	3251	Yuntong Glass Mech-Electro Technology Co.
931	Vision Hardware Inc.	4017	Windowmaker Software	19	Zhengzhou Zhongyuan Silande High Technology Co.
2908	Visionar Window Systems	1753	Winlet	3607	Zone Import Inc.
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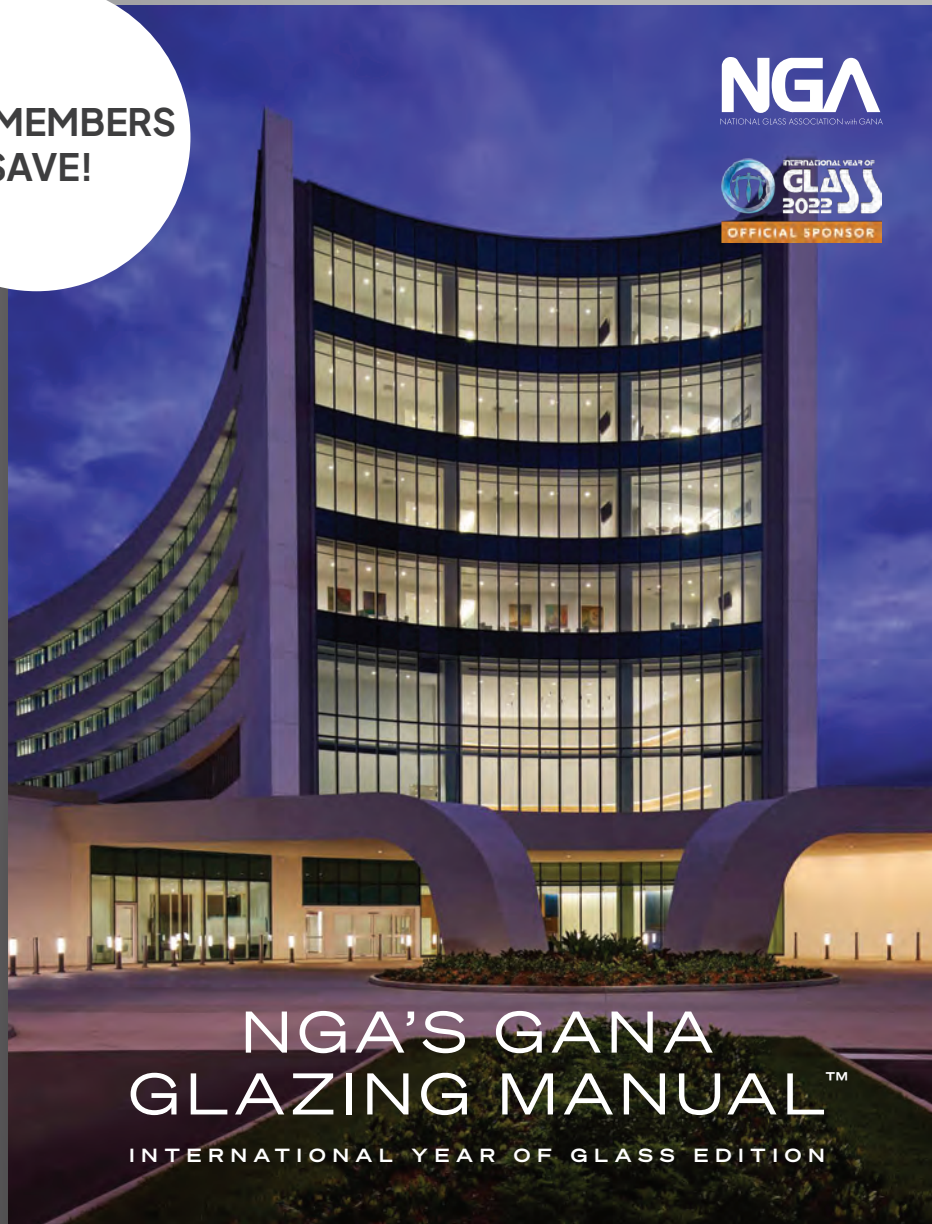
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NGA 75th Anniversary

Growth and evolution throughout decades of change in the North American glass industry



At left, the National Glass Dealers Association at the 16th Annual Convention and Trade Show in New York, 1966. At right, the show floor for the NGA's 2022 GlassBuild America: The Glass, Window & Door Expo at the Las Vegas Convention Center.

In 1948, Israel was founded, and President Harry S. Truman was re-elected in a surprise defeat over Thomas E. Dewey. Cleveland won the World Series and baseball great Babe Ruth died. New York City's JFK Airport, initially called Idlewild Airport, opened.

In 1948, U.S. non-agricultural employment reached roughly 45 million, compared to more than 156 million non-farm workers today. In 1948, the unadjusted median home value was \$12,328, and total new construction averaged \$1.5 billion per month, compared to nearly \$1.9 trillion spending rate in June 2023, according to data from the U.S. Federal Reserve. And in 1948, the National Glass Association was founded.

“The NGA has moved ... to [become] a powerhouse industry educator and advocate. Collectively, the NGA allows the industry to focus our attention on items that matter and can benefit all involved, so it’s great to see the development”



Originally known as the National Glass Dealers Association, the group held its first meeting in Dayton, Ohio, with 18 glass dealer members. In 1984, the association changed its name to officially become the National Glass Association.

In the 75 years following the NGA’s founding, the organization became the largest trade association serving the architectural glass and metals industry. The NGA merged with the Glass Association of North America in 2018 and now includes more than 1,800 member companies representing contract glaziers, full-service glass companies, fabricators, manufacturers, suppliers and more. “Since the merger with GANA, the NGA has evolved to be the dominant voice and advocate for the fenestration industry,” says Bill Sullivan, president/CEO, Brin Glass Co.

75 years of change

The global glass industry has transformed in the previous 75 years, marked by numerous step changes in product and process development that have shaped the industry into what it is today, and the NGA has evolved along with it. “History teaches us the industry has constantly changed and evolved over decades, and so, too, have our trade associations,” said Rod Van Buskirk, now-retired president of Bacon & Van Buskirk, at the time of the NGA’s merger with GANA.

Several notable industry developments since 1948:

- **Float glass.** The NGA was founded four years before Sir Alastair Pilkington invented the modern float glass process, and more than 10 years before float glass production would be put into practice. In 1948, glass manufacturers continued to use a rolled glass process, in which molten glass was fed through continuous rollers, grinders and polishers. Glass made through this process supplied glass for the iconic skyscrapers of the early 20th century.
- **Unitized curtain wall.** A significant development in the evolution of curtain wall technology is the contemporary unitized systems, which are modular

prefabricated systems, and have become increasingly common since their development in the 1960s. They are highly sophisticated building assemblies, often custom-designed for the application. They are engineered to accommodate demanding loading conditions that include complex building movements, high wind speeds, missile impacts, seismic movements, blast events and load transfer to the building structure.

- **Sealed insulating glass.** The oil crisis of the 1970s resulted in building energy-efficiency requirements, including demand for sealed double-pane insulating glazing units. The technology was first patented in the 1930s. Further energy efficiency can be realized with coatings such as low-emissivity coatings.
- **Multifunctional systems.** Today’s curtain walls must support themselves and transfer any imposed loads to the structure; handle thermal expansion and contraction; provide air and water resistance; insulate to reduce heating, ventilating and air-conditioning requirements; and adjust to building frame movements due to wind load or seismic events.
- **Performance drivers.** Building energy-efficiency concerns bring a sharper focus on facade thermal performance, air infiltration, solar control and the lifecycle considerations of embodied energy. Acoustic performance is a major concern as residential glass towers propagate in dense urban environments. Climate change and the escalation of storm frequency and magnitude introduced the concept of resilience to the building dialogue.
- **Geometric complexity.** The expansive planar orthogonal surfaces of modernist architecture have given way to undulating freeform curves and gemlike facets. Materials that better accommodate these forms—for example, fiber-reinforced polymers, glass fiber-reinforced concrete, and cast and stamped metals—are finding broader use in façade construction.

Recognizing 75 Years

NGA started the year with a rebranded logo. It has continued celebrating its milestone anniversary with pop-up celebrations at NGA events, exclusive content looking back at the glass industry's past 75 years, and special offers for NGA member companies and the industry each quarter.

Quarterly gifts to members and industry

- **NGA's GANA Glazing Manual:** Published in January, NGA's GANA Glazing Manual is widely recognized as the definitive resource in the glass and glazing field. As a thank you to members, NGA offered a free copy to each member company.
- **Educational Webinar:** NGA held a special edition of its Thirsty Thursday webinar series, 10 Industry Metrics You Should be Watching, presented as part of the 75th Anniversary celebration, recognizing the association's long-time advocacy and educational efforts for the glass and glazing industry.
- **Connor Lokar Presentation:** An in-depth economic forecast will be presented to all attendees during GlassBuild America in Atlanta.
- **NGA plans an exclusive benchmarking report** as the last quarterly gift at the end of 2023.

Future of glass discussion at AIA A'23

To commemorate the anniversary, NGA hosted a panel presentation of glazing and design industry representatives discussing the future of glass in design in relation to energy performance and sustainability in June during AIA A'23.

Photo memories and prize giveaway

NGA members were invited to share historic photos and memories to help the association create the glass industry's "Then and Now," a photo and memory look at the past 75 years. Members who responded by June 30 were automatically entered into a randomly selected drawing for gifts, including a GlassBuild 2023 giveaway—free round-trip airfare to Atlanta (value up to \$400) and a two-night hotel stay.

An evolving mission

Over the years, the NGA has continued to shift its mission to meet the changing needs of the industry. Today, the association is dedicated to elevating the image of glass as a safe, healthy, sustainable and inspiring building product, while also advancing the industry as a viable, thriving and exciting career path. Its four strategic goals: educate, promote, advocate and workforce development.

"The NGA has moved ... to [become] a powerhouse industry educator and advocate. Collectively, the NGA allows the industry to focus our attention on items that matter and can benefit all involved, so it's great to see the development," says Kyle Sword, business development manager, NSG Group.

To meet the industry's evolving demands, the NGA has stepped up its education and advocacy activities, particularly in recent years. The association launched Glass and Glazing Advocacy Days in 2022, a two-day annual event that brings NGA and industry leaders to Capitol Hill to meet with congressional members and government agency officials. The NGA was a pivotal voice in the United Nation's 2022 International Year of Glass, a year-long celebration of glass' essential role in society, culminating in a program at UN headquarters in New York City. And the association has continued to develop technical materials and resources to educate the industry on best practices in glass.

"We are a complex industry and explaining the nuances of how our product is made, is used, and how we create value is extremely important," says Sword.

"The NGA is such a wealth of knowledge and an amazingly collaborative space," says Lori Ann Benish, general manager, Enclosures Unlimited Glass Co. "It gives a voice to the industry as a whole, representing all the various niches equally. Being a part of the NGA helps to bring legitimacy to your business and gives tools such as training and technical resources to stand behind your products. It is an invaluable resource in today's educated consumer market." ■

Timeline: NGA and the North American glass industry

1948

National Association of Glass Dealers holds first meeting in Dayton, Ohio, with 18 glass dealer members.

1949

The National Glass Distributors Association changes name to the Flat Glass Jobbers Association, the predecessor of GANA, which focused exclusively on the independent auto and flat glass distributor.

1959

Pilkington introduces the revolutionary float glass process in England.

1963

PPG opens first U.S. float line in Cumberland, Maryland.

1968

Harmon Glass acquires Wausau Metals Corp. and establishes Apogee Enterprises to oversee diverse holdings.

1968

Harmon Glass acquires Wausau Metals Corp. and establishes Apogee Enterprises to oversee diverse holdings.

Apogee begins Viracon glass fabrication operation.

Guardian Industries enters float glass market.

1973

Safety Glazing Bill adopted by 26 states, affecting more than 147 million people.

PPG closes its last plate glass operation, in Cumberland, Maryland.

1992

Glass Magazine publishes first Top 50 Glaziers report.

1993

Dade County issues first of many code changes in response to damage from Hurricane Andrew: immediate effects on curtain wall and residential glass.

1994

FGMA, GTA and LSGA vote to consolidate their three associations to create the Glass Association of North America (GANA).

1998

GANA introduces the BEC Conference.

2000

GANA and NGA form the GANA/NGA Alliance and team up to exhibit at AIA expos in coming years to promote the many qualities of glass to architects.

2003

The NGA Show expands and changes name to GlassBuild America: The Glass, Window & Door Expo. Baseball's "The Iron Man" Cal Ripken Jr., just-retired shortstop and third baseman from the Baltimore Orioles, welcomed crowds to the new event.

2006

NGA launches the Glazing Executives Forum at GlassBuild America.

NGA launches MyGlassClass.com, with legendary NASCAR driver Rusty Wallace as the spokesperson.

2008

Wall Street announces worst year since the Great Depression on Dec. 31. The credit crunch and a hike in prices for glass raw materials hurts the industry.

2010

GANA voices industry objections to ASHRAE 90.1 Committee.

2018

NGA and GANA combine to form the largest trade association serving the architectural glass and glazing supply chain.

1975

With a focus on solar innovations and the energy crisis, more than 2,000 attend the annual NGDA meeting and view more than 100 exhibitors' booths.

1976

FGMA joins with the Flat Glass Energy Conservation Committee and AAMA to form the National Fenestration Council.

1977

NGDA produces Consumer Product Safety Standard for Architectural Glazing Materials. Magnusson-Moss Warranty Act affects glass dealer guarantees and follow-through.

1980

Consumer Product Safety Commission implements field inspection program for architectural glazing materials.

1982

FGMA joins the NGDA to form the Glazing Industry Code Committee (GICC)

1984

NGDA becomes the National Glass Association; The Glass Dealer becomes Glass Magazine.

1985

FGMA, GTA and LSGA hold joint meeting, which becomes Glass Week 1987.

1989

NGA holds first Glass Management Institute to capacity attendance.

Controversial new federal and local standards promise to limit percentage of glass in most residential buildings; GANA and NGA fight back.

Asahi buys AFG Industries.

Cardinal IG enters float glass manufacturing.

2019

NGA announces Utah Glass Association (UGA) as its newest affiliated Chapter. Also, IGMA holds its Hands-On Workshop: Forensic Investigation of Insulating Glass Units at GlassBuild America.

2020

COVID-19 pandemic impacts global glass and glazing industry companies. To help companies come out stronger after the COVID-19 crisis, NGA partners with the Friese Foundation to offer all MyGlassClass.com courses to the entire industry for free in May 2020.

Colorado Glazing Contractors Association (CGCA) joins the line up of NGA affiliated chapters.

2022

NGA leads activities and promotion for the International Year of Glass in the United States; hosts its first Glass & Glazing Advocacy Days in Washington, D.C.

2023

NGA celebrates 5 years since its combination with GANA, and 75 years since its founding.

The California Glass Association (CGA) makes a comeback under new leadership and becomes reinstated as an NGA affiliated Chapter.



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01



02



03



04

01. Privacy glass

Cardinal IG's CLiC is an on-demand privacy glass. Featuring a proprietary construction for commercial and residential applications, CLiC provides instant privacy with light transmission in privacy mode and views from any angle in clear mode. It is available in two configurations: one as a monolithic design for interior applications, and one integrated with Cardinal IG and low-emissivity coatings to meet thermal and solar performance requirements. 952/229-2600 | CARDINALCORP.COM

02. Fire-rated systems

Tecfire released a 12-foot-high swing pivot glazed door, glazed butt joint solution fixed partition, as well as an automatic sliding door. The pivot glazed door ensures fire protection while also offering sightlines. Similarly, the butt joint solution fixed partition enhances spatial aesthetics with a slim 4-millimeter-wide silicon joint in transparent, light gray or black colors, creating the impression of full transparency while meeting fire-rated requirements. 833/833-3473 | TECFIRES.COM

03. Acid-etched glass

Pulp Studio's DermaAR is an acid-etched, ultra-thin architectural material for exterior facades and interior applications. DermaAR, with a thickness of 1.3 millimeters, is a low-iron glass offered in sizes up to 58 inches by 118 inches. It is a scratch-resistant material that can be used with Pulp Studio's Pintura, a water-based, back-painted, or laminated with printed graphic interlayer. It is suitable for both architectural and elevator cab applications. 310/815-4999 | PULPSTUDIO.COM

04. Aluminum railing

The SLAT Railing System by Viva Railings is an aluminum railing for commercial applications that features vertical slats installed at varying rotational angles, creating an interplay of light and shadow. The design consists of a series of aluminum slats arranged linearly. It's available in various finishes, including powder-coated colors, and can be customized to meet specific design requirements. It's suitable for use in both indoor and outdoor spaces. 972/353-8482 | VIVARAILINGS.COM

PRODUCTS



01



02



03



04

01. Hinge

FritsJurgens' System One pivot hinge is meant for architects, designers, builders, operators and door manufacturers. The System One offers a slim, narrow pivot hinge that enables free swing to pivot doors. It can be used in single- or double-acting doors and incorporates all required pivot door components: the pivot system, floor plate, ceiling plate and top pivot. [+\(31\) 5983-4341-0](tel:+131359834341) | FRITSJURGENS.COM

02. Sustainable aluminum

Hydro Circal is a new brand of sustainable aluminum made with a minimum of 75% recycled post-consumer scrap. Recycling aluminum requires just 5% of the energy needed to produce primary aluminum, reducing the required energy. This benefit is passed onto PurOptima's glass wall partitions and doors, reducing their embodied carbon. [443/687-7173](tel:+14436877173) | PUROPTIMA.COM

03. Skylights

Kingspan Light + Air's KlearSky metal-framed glass skylights allow architects to integrate natural daylight into buildings to create visual aesthetics while still achieving building performance. KlearSky offers a wide range of options, including standard configurations and fully customizable shapes. A varied array of UV-stable, glass glazing options are also available. The extensive range of frame finish options includes powder coat, anodized finishes or fluoropolymer paint, in standard and custom colors. [800/759-6985](tel:+18007596985) | KINGSPAN.COM

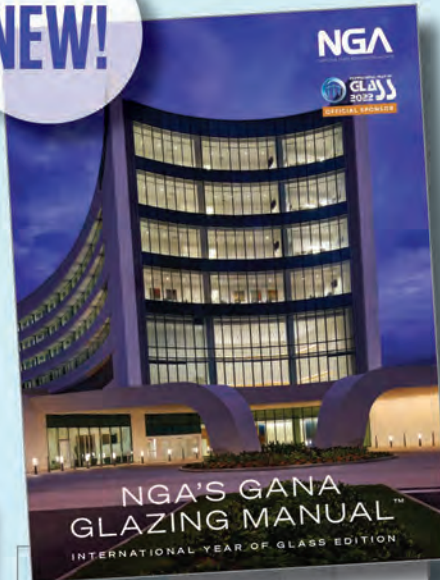
04. Glass catalog

Vitro Architectural Glass' glass catalog includes product details, performance data and project photography. New Vitro products include VacuMax Vacuum Insulating Glass and the Solarvolt Building Integrated Photovoltaic Glass System. Also featured for the first time in the catalog are new names for several low-emissivity glass products, including Solarban R67 glass (formerly Solarban 67 glass). [412/820-8500](tel:+14128208500) | VITROGLAZINGS.COM

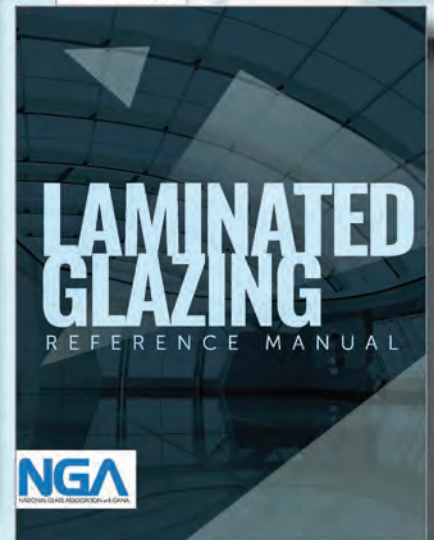
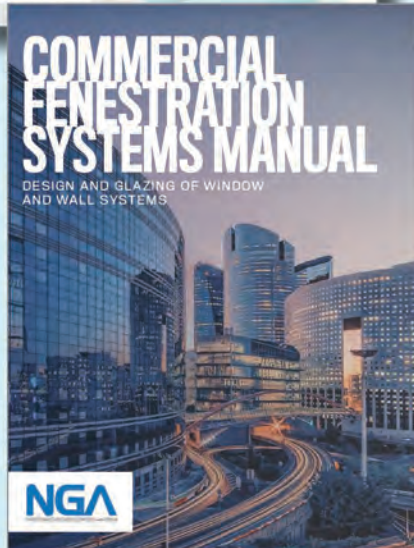
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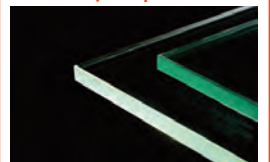
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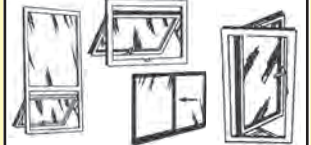
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Companies from all parts of the glass and glazing industry have implemented innovative, out-of-the-box ideas to improve business from the ground up. Here's an Idea showcases these sometimes small behind-the-scenes ideas that can make a big impact on a company's bottom line. If you have an idea that you would like to share, contact Norah Dick, ndick@glass.org.

RECRUITING AND RETAINING GEN Z

BY RACHEL VITELLO

As companies nationwide continue to struggle with being understaffed and finding skilled labor, it is more important than ever for company leaders to recruit and retain young professionals, which now includes Gen Z.

Who are Gen Z?

Depending on the source, there are different definitions for who makes up Gen Z, ranging from those born between 1997 and 2021, or anyone born after 1995.

According to the U.S. Census Bureau, Gen Z currently makes up 20.3% of the U.S. population. Globally, Gen Z has surpassed millennials as the largest generation, making up 32% of the global population, according to a report by Bloomberg.

As of 2022, Gen Z makes up 19.1% of the worker population, according to a report from Paychex. Since 2018, Gen Z has increased its employment share by at least 2% each year, while all other generations have decreased.

Priorities for a Gen Z workforce

In his webinar for the National Association of Home Builders titled "A Generational Crossroads: Talent Attraction & Workforce Retention in 2023 & Beyond," Steve Bench, founder of Generational Consulting, discusses what Gen Z young professionals prioritize in their life and work. Bench, whose consulting firm focuses on engagement strategies for different generations of workers, says primary necessities for a Gen Z demographic are mental health and wellness and a work-life balance.



"All of our jobs [as employers] have gotten a little more difficult because we're not just competing against other employers for those talented employees, we're also directly competing against that employee's lifestyle," Bench says in the presentation. "We have to show them this is a job that will fit and complement your lifestyle, not compete against it."

Gen Z's workplace expectations also include diverse representation, social responsibility, inclusion and an understanding of "cancel culture." Employers who don't meet these characteristics will have a harder time recruiting and retaining a Gen Z workforce. According to Bench, turnover rates are high amongst this generation of workers because they are quicker to leave a job that doesn't meet the things that are important to them. Due to the current robust job market, Gen Z can explore its work options. The current national unemployment rate is 3.5%, according to the U.S. Bureau of Labor Statistics.

"There are now more jobs available than people to work them, which means as young professionals, we get to be very

picky about where we choose to work. We don't have to conform and pick a job that wouldn't be our first choice," Bench says. "In 2023, I have almost unlimited options, which means I can be quick to quit if it's not a good fit for my lifestyle, which comes first."

To manage Gen Z talent, employers should focus on building their trust by finding common ground and showing vulnerability, says Bench. Gen Z tends to appreciate authenticity and transparency in their workplace, as well as control over their work and access to people, information and opportunities. This is why mentorship opportunities, benefits, recognitions and more frequent milestones throughout their tenure are ways to retain Gen Z workers, Bench explains. Gen Z is less "future focused" than Gen X or baby boomers. They want the benefits now, or they will go somewhere else.

Bench offered Gen Z engagement ideas, including monthly nights out as a team, staff appreciation events, subscription covers, employee resource groups and more. ■

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