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MIDDLE EAST glass MAGAZINE

Glass, Aluminum, U-PVC, Facades, Doors & Windows

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China Glass 2025 (Beijing, China)

Date: May 26 - 29, 2025
Glaston Booth: Hall E1 Stand #300

Open House Glaston Tianjin

Date: Thursday, May 29, 2025

Venue: Glaston Tianjin

Visit highlights:
- IG COMFORT line
- COMFORT TPS® line with COMFORT'SEALER Demo
- CHAMP EVO processing line Demo

› **Register for the visit:** jerry.yin@glaston.net

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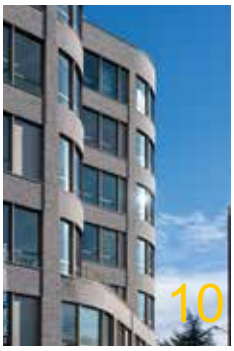

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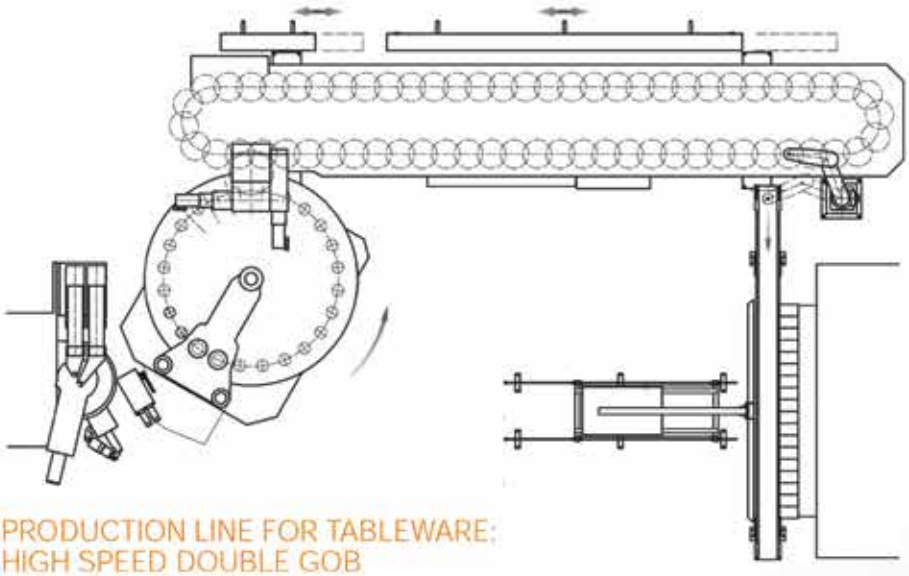

Visit us at one of the following fairs:

GLASSMAN EUROPE 2025
14-15 May 2025, Istanbul, Turkey
Booth C04

CHINA GLASS 2025
26-29 MAY
CHINA INTERNATIONAL EXHIBITION CENTER(SHUNYI HALL)
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More throughput with LSG

Using a laser makes LSG cutting faster: while heating and separating were previously the most time-consuming processes during cutting, these can be significantly accelerated with the new LSR technology. The impact on edge quality is also positive: the surrounding glass remains cold, thus preventing subsequent delamination.

The thicker the film, the more time is saved

In terms of the overall cutting process, the ProLam LSR equipped with the laser achieves at least 20 percent more throughput. “The thicker the film and therefore the overall composite, the more time is saved,” explains HEGLA Managing Director Bernhard Hötger. “We can cut a ten-layer film in ten seconds and maintain the maximum quality of the composite edge, thanks to the gentle use of the laser,” Bernhard Hötger continues. The laser diode heater is positioned above the glass, protecting it from dust, lucite, oil and glass splinters. While the performance of infrared radiators is reduced due to soiling, the performance of laser diodes is maintained for a long time. Another effect results from the localised heat input: the glass only gets warm to the touch so that subsequent cuts can be made without any cooling time.

In combination with another existing or new cutting system, the output can also be significantly increased. “The combination of smart cutting distribution, glass-friendly laser technology and just one operator achieves a throughput that meets the highest demands,” explains Bernhard Hötger.

Compared to conventional heating technology, LSR technology reduces energy consumption. The laser diode is only switched on briefly and, depending on the cutting length, is activated partially or fully.

Fig. 1-3: The laser makes LSG cutting faster: throughput is increased by 20 percent or more, compared to conventional tube heating.

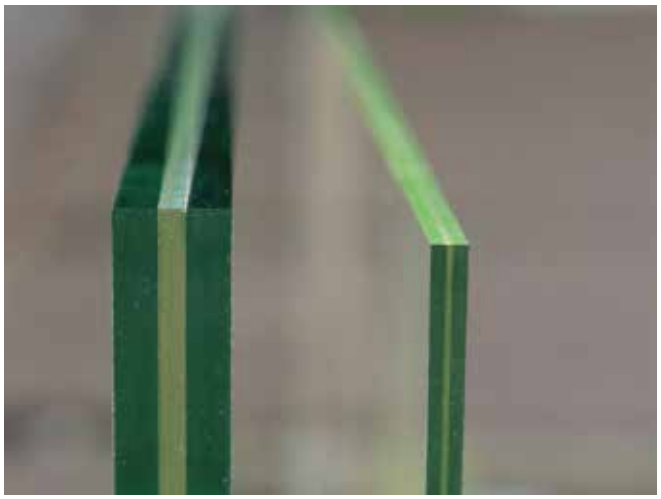


Fig. 4: The laser diode heater heats the scribe contour with pinpoint accuracy. The surrounding glass stays cold, thus preventing delamination at a later stage.

Glaston at China Glass 2025 – Trust the original in glass processing innovations

At China Glass 2025, Glaston once again leads the way with pioneering solutions in glass processing. As the original innovator in the glass processing industry, Glaston continues to set the standard with advanced technology, exceptional reliability – and comprehensive lifecycle support. Explore our latest breakthroughs designed for unmatched efficiency and precision.

Insulating glass manufacturing

Glaston TPS® – the most flexible IG manufacturing

Since the launch of Glaston COMFORT TPS® technology last year, the COMFORT TPS® lines, available exclusively in China, have achieved great success. TPS® simplifies the production of insulating glass units by using only one machine instead of several components. This reduction in complexity leads to faster cycle times and significant energy savings.

TPS® is a modern, flexible and efficient solution for producing insulating glass units and multilayer solar panels. By applying Thermo Plastic Spacer material directly onto the glass plate, TPS® eliminates the need to stock different spacer profiles and connectors. Changes to spacer width can be made during the process without losing time. TPS® has already been installed at over 200 glass processing facilities worldwide.

Glaston COMFORT'SEALER – an automatic sealing robot

Glaston's automatic sealing robot, COMFORT'SEALER, transforms the COMFORT BOX into a fully automated insulating glass production line. With gear pump dosing technology, COMFORT'SEALER offers high material dosing accuracy, precisely determining the sealing depth and width and applying the exact volume of sealing material required.

Glass tempering

Glaston tempering technology facilitates the efficient use of the entire furnace bed during the tempering process. This is crucial for maximizing production capacity and ensuring consistent quality of tempered glass. Glaston intelligent process automation ensures precise heating and cooling cycles. The Glaston Roller Heat Control (RHC) technology minimizes quality issues caused by roller heat disturbances. Maintaining uniform roller temperatures helps in achieving full bed utilization and reduces defects like glass warping.

Glaston TC Series – energy-efficient production

The TC Series tempering furnace utilizes the Chinook circulated air convection system, which reduces energy consumption to an absolute minimum. This ensures faster heat transfer for shorter cycle times, resulting in reduced overall production costs. With automatic process adjustment based on numerous measurements, Chinook minimizes operator input while maintaining high capacity.

Glaston RC Series – easy processing for any glass type and thickness

The Glaston RC Series offers effortless tempering for all glass types, from shower doors to architectural glass. It is easy to operate, requiring minimal effort for smooth processing. The accurate and intelligent heating system maintains impeccable glass quality even at increased production rates. The RC Series boasts high uptime and can be upgraded to meet evolving

future processing needs. It also facilitates easy maintenance and guarantees the best availability of spares and support.

Mobility glass processing

Glaston CHAMP EVO – an evolution in mobility glass pre-processing

Glaston CHAMP EVO represents the latest CHAMP mobility glass pre-processing line generation. The grinding machine boasts higher precision, energy-saving linear drives and a freely moveable glass holding system for shorter changeover times. The line features lighter and better-optimized moving parts, such as the cutting bridge and grinding table.

Glaston MATRIX EVO – the best technology for tomorrow's automotive glass

The new Glaston MATRIX EVO automatic bending furnace revolutionizes the bending of automotive windshields and sunroofs. It offers the best optical quality for applications such as ADAS, HUD and coated glasses with complex shapes. MATRIX EVO is highly modular and available in various chamber sizes and capacity configurations. Active convection enables faster heating, more efficient heat transfer and higher energy efficiency.

Automation and Upgrades

Glaston's automation solutions and lifecycle services help maintain machinery efficiency and extend equipment lifetime. These upgrades ensure that the machinery meets industry demands with the latest technology.

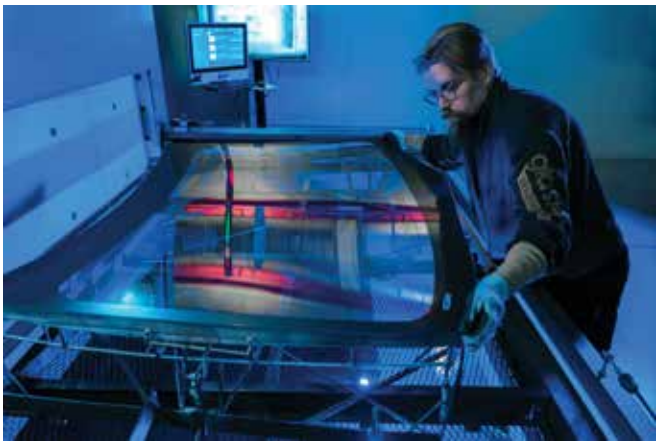
Glaston Tianjin Open House – experience innovation firsthand

We invite you to visit our facilities and see Glaston glass processing technology in action!

Date: Thursday, May 29, 2025
Venue: Glaston Tianjin (80 mins by shuttle bus)
Visit Highlights:

COMFORT BOX IG line
COMFORT TPS® IG line with
COMFORT'SEALER Demo

CHAMP EVO processing line
Demo Register: jerry.yin@glaston.net
Meet us at China Glass 2025, Hall E1, Stand #300



OVERLAP BETWEEN GLASS SOUTH AMERICA AND VITRUM25: GIMAV HIGHLIGHTS CRITICAL ISSUES AND PROMOTES DIALOGUE

Following the announcement by NürnbergMesse Brasil, organizer of the Glass South America trade show, to schedule the 2025 edition from September 3 to 6 — in close proximity to VITRUM25 (scheduled for September 16 to 19, 2025) — the Italian Association of Glass Processing Machinery and Accessories Suppliers, GIMAV, deemed it necessary to initiate a dialogue with the organizational secretariat of Glass South America. The aim is to share reflections on the implications that such a timing overlap might have for industry professionals, with the objective of identifying solutions that foster broad participation and maximize the value of both events.

In light of its responsibility toward its members and the entire Italian supply chain, GIMAV finds itself unable to promote the upcoming edition of Glass South America in Italy or to ensure full participation of Italian companies, given that focus must necessarily remain on the organization and success of VITRUM25. As a longstanding benchmark for the glass industry, VITRUM — also thanks to the ongoing contribution of GIMAV member companies — offers a comprehensive perspective on the trends and development opportunities in the sector.

With a continued commitment to supporting all stakeholders in this virtuous supply chain, GIMAV expresses the hope that, if not for the 2025 edition, future scheduling of Glass South America may fall on more suitable dates, thereby enabling Italian and international companies to participate synergistically in both events.

GIMAV is the Association that represents the Italian manufacturers and suppliers of machines, accessories, facility and special products for glass processing. Founded in 1980, the Association today constitutes a fundamental point of reference for the entire sector in Italy and abroad. Adheres to Confindustria and Federmacchine and has achieved a very high level of representativeness of the entire glass processing chain, playing an irreplaceable role towards all public and private institutions. The turnover of GIMAV Member Companies constitutes, in fact, approximately 80% of the total turnover of the sector and for 77% of the total export of Italian producers of machines, accessories and special products intended for glass processing.

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Holistic sustainability strategy at Edgetech Europe

The construction industry is set to undergo significant changes in the coming years, driven by increasingly stringent environmental regulations, rising energy costs and a growing demand for sustainable buildings. In this environment, component suppliers such as Edgetech Europe, the manufacturer of the flexible spacer system Super Spacer®, must consider ways to go beyond merely developing and marketing 'green' products.

A comprehensive sustainability strategy is becoming essential for achieving long-term success. This strategy must encompass the entire value chain, from resource-saving production and energy-efficient solutions to solutions for the circular economy. Edgetech Europe's Managing Director, Johann Artamonov, and Benjamin Karabulut, the company's European Technical Manager, provide insights into the key milestones for sustainable development.

The use of ESG criteria to drive sustainability in the construction industry

Given that buildings are responsible for almost 40 per cent of global greenhouse gas emissions, the alignment of real estate investments with environmental, social and governance (ESG) standards is becoming increasingly important. The EU Disclosure Regulation and the amended EU Taxonomy have established concrete sustainability standards for the financial and property sectors. These regulations oblige investors to evaluate and classify their investments according to ESG criteria. This has a direct impact on the demand for sustainable buildings and therefore also on the requirements for construction projects and the materials and technologies used.

The importance of green buildings is increasing

For over three decades, green building certification and rating schemes have sought to minimise the environmental impact of buildings, particularly in terms of greenhouse gas emissions, through the adoption of more sustainable design principles. Certifications are increasing year to year at a global level. In 2023, the World Green Building Council network alone, which includes the DGNB and the US Green Building Council with the LEED certification system, will have certified more than 5.4 billion square metres of green

building space worldwide. Investment in sustainably certified buildings is also significant. According to BNP Paribas, €11.2 billion was generated in individual transactions in Germany in 2022, corresponding to a relative share of 30.6 per cent of the investment market.

Edgetech's comprehensive approach to sustainability

Edgetech Europe has aligned the further development of products and processes accordingly. "We do not perceive sustainability as

an isolated measure, but rather as an integral component of a comprehensive, strategic concept that permeates all company divisions. From product development and production to the supply chain, ecological aspects are consistently taken into account. This commitment is further underscored by various initiatives and certifications,' says Benjamin Karabulut.

By providing EPDs and aiming for EcoVadis certification, the company provides its customers with important information that helps them to fulfil ESG requirements and transparently document their sustainability performance. EPDs (Environmental Product Declarations) are standardised documents that provide detailed information about the environmental impact of a product over its entire life cycle. Key factors such as resource consumption, emissions, and waste production are systematically assessed. The EcoVadis certification goes one step further by evaluating not only the environmental performance of a company, but also its social and ethical aspects. EcoVadis is a globally recognised platform for sustainability assessments that assists companies in enhancing their performance in areas such as environmental protection, working conditions, fair business practices and sustainable purchasing. Edgetech Vice President OPS Johann Artamonov emphasises the company's commitment to continuous improvement and transparency in the area of sustainability by participating in EcoVadis.

Another key element of the company's sustainability strategy is the systematic monitoring and reduction of greenhouse gas emissions. Edgetech Europe has already recognised its direct (Scope 1) and indirect (Scope 2) emissions, as well as all other emissions caused in the value chain (Scope 3), in accordance with the Greenhouse Gas Protocol. The company is also

certified in accordance with ISO 14001 for its environmental management system and ISO 50001 for its energy management system. The ISO 9001 certification for the quality management system ensures that Edgetech maintains the highest standards in terms of product quality and customer satisfaction.

'Our sustainability initiatives offer numerous benefits for our customers and partners in the construction sector. We can help them make more sustainable decisions, minimise risks and optimise the environmental impact of their projects. Utilising tools such as EcoVadis and EPD fosters transparency, comparability and continuous improvement in the construction industry, a crucial aspect given the mounting significance of sustainability and increasingly stringent environmental regulations,' adds Benjamin Karabulut.

We specialise in innovative products for sustainable buildings

In the field of minimising energy consumption in buildings, the Super Spacer® system plays a pivotal role for customers in the window and facade construction and architecture sectors. The flexible Super Spacer® system is a highly effective solution for optimising thermal separation between glass panes, thereby significantly reducing heat loss and enhancing energy efficiency. This contributes to enhanced overall energy efficiency and directly reduces CO2 emissions.

The development and production of Super Spacer® is subject to rigorous sustainability criteria. At Edgetech Europe, we prioritise the use of environmentally friendly materials and the minimisation of resource consumption during the manufacturing process. The durability and ease of maintenance of the product also contributes to reducing waste and extending the life of buildings.

'We are continually developing our products to meet the evolving demands of the market and rising environmental standards. We value our close collaboration with partners in the construction industry,' continues Benjamin Karabulut.

Exemplary sustainability project: Kalifornia Malakoff Office in Paris

A current example of such a long-standing partnership is the 'Kalifornia' office complex in the municipality of Malakoff, south of Paris. The

complex's name symbolises the Californian spirit that the design is intended to create. The complex is connected by a 4,500 square metre green lung. Spacious work platforms and terraces encourage a blend of indoor and outdoor work environments.

COOL-LITE® ORAÉ® low-CO2 Saint-Gobain glass was used for the first time in a new commercial construction project in France. Compared to conventional float glass, greenhouse gas emissions are an impressive 40 per cent lower.

The flat and curved facade elements combine Oraé® as the base glass with a Cool-Lite Xtreme 70/33 II coating, achieving an optimum balance between energy efficiency and aesthetic appeal. The flat glass was produced by Sivaq in France, while DOERING GLASS Berlin supplied the curved insulating glass elements with Super Spacer® as a spacer.

By optimising the float process, including the use of green energy and an increased proportion of cullet, it has been possible to significantly reduce the energy required for production, explains DOERING GLASS Sales Manager Martin Lenz and continues: 'Prior to delivery, we conducted comprehensive bending tests with this new type of glass.'

Malakoff represents a significant milestone for the company based in Berlin in that it is the first project for which the greenhouse gas emissions of the curved DoeringGreen glass have been analysed. 'We receive the data for the production of the glass from Saint Gobain. As we are energy-certified, we can determine how much additional energy was consumed by our production process and our supply chain. We were able to verify 100 per cent of Scope 1 and 2, and around 90 per cent of Scope 3', continues Martin Lenz.

On average, the curved glass for Malakoff produces greenhouse gas emissions of 23.50 kg CO_2e/m^2 for the base glass and 78.50 kg CO_2e/m^2 for the end product (including Scope 1 and Scope 2). The specialist for curved glass compensated for the remaining, unavoidable carbon footprint of 11 tonnes of CO_2 equivalents by supporting a climate forest project. This contributes to the project's overall zero-carbon footprint. The curved glazing therefore makes a significant contribution to the project's zero carbon footprint.

Conclusions and outlook

'The future of construction will be characterised by sustainability and energy efficiency. With our forward-looking strategy and ongoing commitment to research and development, we are ideally positioned to master these challenges and penetrate new markets. Projects such as Kalifornia demonstrate that sustainable construction can be both ecologically sound and aesthetically pleasing, while also offering economic benefits', concludes Johann Artamonov.

About Edgetech Europe GmbH, A Part of Something Bigger

Edgetech Europe GmbH, located in Heinsberg, Germany, is a fully owned subsidiary of Quanex Building Products Corporation, (NYSE: NX) a global, publicly traded manufacturing company primarily serving OEMs in the fenestration, cabinetry, solar, refrigeration and outdoor products markets. Edgetech Europe GmbH services markets in continental Europe with a total of 490 employees and 17 extruders. We are "A Part of Something Bigger" by improving the performance and aesthetics of end products through continuous innovation, helping customers achieve greater production efficiencies, and giving back to communities where we operate. Visit quanex.com for more information.

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DRYDOCKS WORLD SECURES FPSO BAOBAB IVOIRIEN REFURBISHMENT AND LIFE EXTENSION PROJECT

Once refurbished, the vessel will operate for 15 more years, continuing to support energy production in West Africa.

Drydocks World has been awarded the contract for the refurbishment and life extension of the FPSO BAOBAB IVOIRIEN, by MODEC Management Services Pte. Ltd., further strengthening its position as a global leader in complex offshore asset upgrades.

Set to commence in May 2025, the eight-month expedited project on the Floating Production Storage and Offloading (FPSO) vessel will involve extensive structural enhancements, including 1,000 tonnes of steel renewal, 250,000 square meters of tank coating, and 11,500 meters of new piping.

The scope also covers enhancements to crew living quarters and integration of advanced technologies to boost its efficiency and reliability. Upon completion, the vessel's lifespan will be extended by 15 years, ensuring sustained energy production for West Africa.

Drydocks World, a DP World company, has a proven track record in vessel refurbishments, life extensions and conversions, having successfully completed over 50 similar projects, including more than 30 FPSO upgrades. This latest contract underscores its unmatched expertise in offshore engineering and life extension solutions while reaffirming its commitment to delivering tailored solutions that meet the unique operational needs of its clients.

The FPSO BAOBAB IVOIRIEN plays a crucial role in West Africa's offshore production, with a processing capacity of 70,000 barrels of oil per day (bpd) and 75 million cubic feet of natural gas. It can also inject 100,000 bpd of water and store up to two million barrels of crude oil. The vessel, currently operating at the Baobab oil field, 25 km off the coast of Côte d'Ivoire, will relocate to Drydocks World's Dubai facility for its eight-month refurbishment.

The contract signing ceremony, held at Drydocks World, was attended by Rado Antolovic, CEO of Drydocks World, and Gary Kennedy, President of MODEC Management Services Pte. Ltd.

Capt. Rado Antolovic PhD, CEO of Drydocks World, said: "Signing this agreement with MODEC highlights our expertise in complex FPSO refurbishment and life extension projects. Our proven track record in executing large-scale offshore engineering works positions us as the ideal partner to enhance the vessel's longevity, efficiency, and operational safety. We are proud to

support MODEC in ensuring the long-term efficiency and reliability of its FPSO."

Gary Kennedy, President, MODEC Management Services Pte. Ltd., said: "This contract award is the result of a rigorous selection process to find the best partner for this critical project. Drydocks World's extensive experience in FPSO upgrades and their commitment to quality and safety made them the ideal choice. The vessel's deepwater operations demand precise refurbishment and life-extension measures to overcome complex engineering and operational challenges, while ensuring efficiency and long-term safety.

"We look forward to working closely with Drydocks World to deliver a revitalised vessel that will continue to play a key role in Côte d'Ivoire's offshore production."

Originally converted in 2003 from an Ultra Large Crude Carrier (ULCC), FPSO BAOBAB IVOIRIEN was designed with expandable topsides to maximize offshore production capacity. FPSOs like this are essential in deepwater operations, enabling crude oil and gas processing at sea before transferring resources to tankers or pipelines.

Drydocks World remains at the forefront of offshore innovation, delivering world-class engineering solutions that enhance asset performance, longevity, and sustainability in the global energy sector.

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About Drydocks World
Over the past 40 years, Drydocks World, a DP World Company, has become a leading provider of marine and offshore services to the shipping, oil, gas, and renewable energy sectors. Conceived as an ambitious project under the guidance of H.H. Sheikh Rashid Bin Saeed Al Maktoum the late Ruler of Dubai, the yard is

strategically located in a rapidly developing region of the world.

Drydocks World completes over 300 projects a year on average, with a record of handling 42 refurbishment projects simultaneously. Located next to Dubai's Port Rashed, the yard is spread over 200 hectares and includes three graving docks and a floating dock, as well as more than 3,700m of berth space. It also boasts an in-house-built floating crane, which can lift 2,000 metric tonnes, including the weight of lifting gear for all types of heavy lift operations.

The facilities have allowed Drydocks World to break records in constructing some of the largest new build offshore fabrications in the world.

Drydocks World aims to consistently deliver excellence and achieve further success for the UAE's maritime industry, positioning Drydocks World as an international yard of choice.

About DP World
DP World is reshaping the future of global trade to improve lives everywhere. Operating across six continents with a team of over 100,000 employees, we combine global infrastructure and local expertise to deliver seamless supply chain solutions. From Ports and Terminals to Marine Services, Logistics and Technology, we leverage innovation to create better ways to trade, minimising disruptions from the factory floor to the customer's door.

WE MAKE TRADE FLOW

175 Years of Leybold – Vacuum Pioneer Celebrates Company Anniversary

Innovative Vacuum Solutions for Research and Industry

Innovative companies often have an interesting history. One tradition-conscious market leader is the German vacuum specialist Leybold. Founded by Ernst Leybold in Cologne in 1850, the company has achieved numerous pioneering milestones and product developments. Now, in 2025, the renowned manufacturer is celebrating its 175th anniversary.

Important Role in Many Areas

Leybold's core competencies include developing and manufacturing standardized, individual solutions for vacuum generation and process gas conveying, as well as customer-specific vacuum systems. The vacuum pioneer's components, systems, and services play an important role in many areas worldwide, such as industrial coating, analysis, and research and development processes.

Dynamic Markets, High Demands

With its comprehensive application expertise and the quality of its products and services, Leybold has a significant influence on the efficiency of processes and value chains. This is particularly important at the moment because the market dynamics and global challenges, such as climate change, are especially great.

Areas of Application Undergoing Structural Change

The currently relevant applications of vacuum technology in structural change include metallurgy, the automotive and coating industries, solar, display and food applications, analytics and processes for the production of lithium-ion batteries for electromobility.

Continuation of the Leybold Name

The entrepreneur Ernst Leybold laid the foundations for the company when he moved from Bavaria to the Rhineland in 1850. By registering the company in Cologne, Leybold became the founder of industrial vacuum technology. Even after the sale of the company in 1870, which continued to operate under the name "E. Leybold's Nachfolger', his vision remained intact.

Collaboration with Dr. Wolfgang Gaede

His successors achieved a breakthrough in vacuum technology in 1906 in collaboration with Dr. Wolfgang Gaede: for example, with the basic principle of the turbomolecular pump (1911) and the application of the diffusion pump (1913), both of which are still in use today. The gas ballast device for pumping out vapors, patented in 1935, is also still in use.

Industrial Utilization of the Vacuum

Vacuum metallurgy began in 1913: Dr. Wilhelm Rohn, head of the physical testing laboratory at W.C. Heraeus GmbH, developed a process for melting high-purity metals in a vacuum in Hanau, which was patented in 1918. In 1931, Wilhelm Carl Heraeus succeeded in vaporizing metals on glass, thus paving the way for vacuum coating technology. Subsequently, vacuum technology was increasingly used in process engineering.

Important Brand with Great Appeal

In September 2016, the Swedish company Atlas Copco AB, based in Stockholm, acquired 100 percent of Oerlikon Leybold Vacuum, which is now part of Atlas Copco's Vacuum Technique division. In the multi-brand group with around 53,000 employees and customers in over 180 countries, Leybold is a major brand that plays an important role with its great tradition and reputation.

175 YEARS

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The history of Belgian glass continues with FINEO by AGC

When Brussels Art Nouveau meets vacuum insulation glass, original Georgian bar windows are revitalized for energy efficiency

Despite its elegant splendour, any building constructed at the beginning of the 20th century inevitably involves the problem of insulation that does not comply with the thermal requirements of today's buildings. These requirements are inseparable from requirements in terms of comfort, energy consumption and maintenance costs. This predicament was encountered by a family in Brussels who, in 2021, acquired an Art Nouveau villa with the intention of renovating it in a manner that would both respect their personal preferences and adhere to contemporary energy regulations and standards. A pivotal element of the renovation and insulation involved the replacement of the original wooden Georgian bar windows with approximately thirty windows with 86 vacuum-insulated glass units from the Belgian glass expert FINEO by AGC.

FINEO vacuum-formed glass fits perfectly into the restricted space of original wooden frames

Brussels is renowned for its abundance of Art Nouveau architecture, boasting a thousand or so buildings in this style. The city is home to several UNESCO World Heritage sites, while other private residences are discreetly tucked away from the tourist trail.

In contrast to the opulent and renowned edifices, the renovation initiative in the commune of Uccle, situated to the south of Brussels, employs a limited array of architectural elements from the Art Nouveau style. These include the arched windows, the floral embellishments, and the decorative accents on the openings and facades. The roundness of the 'Bull's eye' windows and the openwork motifs of the balustrades around the terraces and balconies are more closely related to other stylistic periods. The charming hipped roof is covered with natural slate, a building material often used in the Brussels region due to its proximity to Ardennes slate quarries.

The Art Nouveau heritage villa is notable for its Georgian bar windows, which blend in with the building's discreet sobriety. The ground floor is distinguished by double-sash arched windows, each comprising eight glazing bars, a horizontal transom, and a double arch. These elements infuse the facade with visual dynamism, with the exception of the dressed stonework that defines the corners. This aesthetic is replicated in the sculpted overhangs and frames that adorn the rectangular mullion windows on the first floor. The building's distinctive historic character and unique aesthetic are further accentuated by the presence of original espagnolette locks and handles.

In addition, given the excellent condition of the wooden frames, the owners were seeking an

energy-efficient replacement for the existing single glazing that met the highest insulation standards and values. Due to the narrow width of the frames, traditional double glazing was not a viable option. Consequently, the decision was made to utilise FINEO vacuum insulated glazing, a solution that offered a natural progression in addressing the specific requirements of the project.

'FINEO's innovative structure offers this unprecedented potential. The secret lies in two glass panes separated by a super-thin vacuum of just 0.1mm ', explains Stefan Lips Sales Manager Europe for FINEO by AGC. 'This minimal gap acts as a highly effective thermal insulator, as it almost completely eliminates heat transfer by conduction and convection, in contrast to traditional thicker and heavier double or triple glazing, which uses gases such as argon or krypton in the glazing space', continues Stefan Lips. This innovation enables FINEO to deliver thermal insulation equivalent to triple glazing, while maintaining unparalleled thinness ranging from 6.7 millimetres to 11.7 millimetres. In the villa in Uccle, the Ug value was reduced from 5.8 to 0.7 W/(m2K).'

Renovating windows by simply replacing the glass: a new market opportunity and new prospects for installers

This innovative glass manufacturing process was even more revolutionary than Art Nouveau, enabling Belgium to make its mark on the architectural landscape. By 1880, Belgium had become the world's leading supplier of glass. In 1902, the Belgian engineer Emile Fourcault developed the first mechanical glass production system. This vertical glass-drawing system gradually replaced the traditional mouth-blowing method, which had been used to make window glass until then. This development firmly established Belgium as a pivotal player in the global glass industry, shaping its future and cementing its lasting legacy.

'With our vacuum insulating glass, which we produce exclusively in Belgium, in Lodelinsart, we have added a new and innovative chapter to the historic heritage of glass in our country', Stefan Lips continues. 'Unlike traditional insulating glass units, the space between the panes is not filled with inert gas, but with a vacuum. Each FINEO pane is custom-made to ensure optimal performance, allowing for the creation of a wide variety of shapes, including the arched and circular designs showcased here for 'Bull's eye' windows.'

RenoWindow, which is in charge of the renovation work and one of FINEO's-approved installers in Belgium, recognised the market opportunities in the renovation sector very early on.

Since its establishment in 2019, the RenoWindow team has built a reputation for excellence in the refurbishment of windows, a significant proportion of which have incorporated FINEO vacuum insulation glass. The Managing Director recognises significant benefits in this approach, particularly in the context of restoring old windows:

'In Uccle, we exclusively worked on existing frames. This approach ensured minimal disruption to the family's daily life and was more cost-effective than replacing heritage windows, which would have necessitated bespoke manufacturing and extensive manual labour. In instances where the wooden frames do not require renovation or repainting, a day's work on site is sufficient.

The first phase of the Uccle project involved the removal of the existing single glazing and its accompanying mullion bars. This was followed by the precise milling of the wooden sash by approximately 2 to 3 millimetres to allow for the straightforward fitting of the slightly thicker FINEO glazing. The final step in the process entailed the reattachment of new sash bars to provide a secure and complete finish.

When renovating windows in listed buildings of cultural and historical importance, FINEO's Heritage range of glazing can be combined with Fourcault glass to create the look of restoration glass. This allows the historic character of the facade to be preserved.

'Facing the strict requirements for protecting historic monuments, FINEO glass can be produced in smaller sizes for insertion into existing glazing bars that require preservation,' states Clément Lemoine, Head of Product Management for FINEO by AGC, emphasising that, 'however, this approach comes with a certain degree of heat loss. Consequently, uniform glazing remains the optimal choice from energy and economic perspectives, as it allows for the integration of new glazing bars.'

Quality and durability, an inseparable duo

FINEO vacuum insulating glass units are made entirely from organic materials, making them suitable for recycling at the end of their useful life. This eliminates the need for tedious and costly dismantling, ensuring a straightforward and cost-effective process. 'The lifespan of our FINEO glass is impressive,' says Clément Lemoine. 'According to tests carried out by an independent laboratory, FINEO retains its high energy and sound insulation values for at least 60 years. This exceptional performance is backed by a 20-year product guarantee, providing customers with peace of mind and assurance of quality'.

FINEO by AGC is a company that is synonymous with quality. This is underlined by the fact that it was the first and only manufacturer to obtain CE marking for its vacuum insulation glass in 2024.

The company is thus taking a new step forward by introducing its innovative technology to the market. The recognition of this quality label will help to democratise FINEO vacuum glazing among building contractors, ensuring a high level of quality, reliability and safety for its product range.

About AGC Glass Europe, a European leader in flat glass
AGC Glass Europe produces, processes and

markets flat glass for the construction industry (external glazing and interior decoration), the automotive industry (OEM and replacement glass) and other industrial sectors (transport, solar power and high-tech). It is the European branch of AGC, a world leader in flat glass. It has over 100 sites throughout Europe and employs around 13,000 employees.

More information on www.agc-glass.eu (corporate site), www.agc-yourglass.com (glass for the construction industry) and www.agc-automotive.com (for the automotive industry).

About FINEO
FINEO is the new generation of insulating glass. This vacuum glazing, with its unrivalled thinness, provides optimum thermal and acoustic comfort, meeting the expectations of joinery professionals concerned about sustainability and energy efficiency.

Under the aegis of AGC Glass Europe, FINEO is produced in Belgium and benefits from a revolutionary production method compared with glazing for buildings. Its incomparable thinness in no way detracts from its technical prowess, in terms of both thermal and acoustic insulation.

For more information: ***www.fineoglass.eu***

Guangdong Zhongrong Glass & LiSEC: Making a breakthrough on the Chinese market

To stay ahead in a highly competitive industry, Guangdong Zhongrong Glass is investing in cutting-edge LiSEC technology.

Guangdong Zhongrong Glass Technology Co Ltd. (ZRG) is a modern Chinese glass processing company with its sights firmly set on the future. The company recently invested in a new insulating glass line from LiSEC with the aim of positioning itself successfully on the market and meeting future trends and developments at the highest level of quality. How to be most successful on the Chinese market and what priorities need to be emphasised are explained by Managing Director Gao Jiang and Marketing Director Wu Lin during a discussion at China Glass in Shanghai.

ZRG: Focus on quality and customer satisfaction

ZRG boasts a total annual production capacity of around 890,000 units, 70% of which are distributed across the Chinese market. ZRG caters to various product requirements within the Chinese market. Their product portfolio extends from insulating glass through digitally printed and fire-resistant glass to tempered and laminated glass.

There are two factors that are particularly important in order to position yourself successfully with Chinese customers: exceptional quality and flexibility in planning. Customer satisfaction is therefore a clear focus for the company. This means that the company's service activities are geared towards ensuring that customers can retrieve all information regarding the schedule and traceability of ordered sheets at any time, thanks to an expanded monitoring system.

Partnership based on quality and trust: ZRG and LiSEC

Gao Jiang, Managing Director of ZRG, and Qiao Chi, LiSEC Head of HUB Region China, enjoy a long-standing business relationship centred on trust and the development of joint solutions. The Chinese company has been reaping the benefits of LiSEC machines since its first investment in a LiSEC machine in 2018.

The higher level of development and superior quality that LiSEC's machines produce in the individual process steps was the decisive factor in our partnership with LiSEC, says Gao Jiang.

"There is also a competent team on site, something that shouldn't be underestimated. In the same way that we have to respond flexibly to customer requests - sometimes even after planning has been finalised - to satisfy our customers, we also expect the same from our suppliers. Throughout the years of our collaboration, LiSEC has convinced us that they are always on hand with help and advice for service requests and take our problems seriously. We recognise how hard the LiSEC team works to resolve all our concerns and the level of seriousness and focus with which they approach the matter."

Drawing on more than 25 years of experience, ZRG has clear goals for the future and has secured the right partner in LiSEC. "We as the LiSEC team have made every effort to fulfil the wishes and visions of ZRG and have certainly taken the production halls to a new level with our

machines. In terms of successfully expanding its market position in particular, ZRG now certainly enjoys an optimal starting point," says Zheng Pengcheng, LiSEC Technical Sales support Hub COS (China / Oceania / South East Asia region).

Competitive benefits through flexibility and quality: ZRG relies on LiSEC technology

The Chinese market is extremely sensitive to price and highly competitive. Two key competitive advantages in addition to quality are short delivery times plus the aforementioned flexibility in planning. If you have the ability to change plans at short notice to suit the customer thanks to your own production facilities and can offer both short delivery times and exceptional quality, you are one step ahead. This also means, however, that the low price elasticity on the Chinese market requires expensive investments such as a LiSEC machine to run stably and efficiently to ensure that the costs incurred pay off.

Managing Director Gao Jiang at LiSEC is convinced of this return on investment: "We took a close look at the machines and the manufacturing process in advance, not just at trade fairs in Düsseldorf, but also directly at the Austrian plant and even live with other customers. The LiSEC machines certainly deliver what they promise. The fact that LiSEC is able to supply everything from a single source and that you only have one point of contact naturally also makes LiSEC interesting in the future which was one of the factors that prompted us to invest in a new LiSEC machine this year: An insulating glass line for thermoplastic spacers. LiSEC also maintains a good reputation in our market, meaning that our customers also see processing on LiSEC machines as a major USP!"

Marketing Manager Wu Lin anticipates a future trend in the constantly improving quality of the sheets on offer in the low price segment. Good finishing of the sheets is becoming increasingly important. The LiSEC TPA insulating glass line will continue to safeguard the company's positioning, the gentlemen at ZRG agree.

Insights into the production at ZRG

As a modern glass processing company boasting production facilities meeting the highest technical standards and covering a total area of more than 100,000 square metres, ZRG has four production sites, of which three are situated in Guangdong Province (two in Foshan, one in Zhaoqing) and the fourth in Hainan Province (Haikou), with approximately 360 employees.

A LiSEC PKL glass storage unit and a LiSEC SBL are used in production. The unique feature of this glass storage unit lies in the design of the glass supports, which allows two sheets to be lifted down at the same time using the suction bridge. This means that not only jumbo sheets can be fed into the LiSEC ATL, but in particular split sizes, since these are very frequently used on the Chinese market.

There is also a LiSEC GFB as well as a manual breakout table in the production halls of ZRG: this is where an operator breaks out the sheets, then pushes them over an air cushion table onto a positioning table and finally on to the LiSEC KSR+KSV seaming system (belt seaming) in the direction of the tilting table.

Following the LiSEC KSR and KSV, the sheets are washed by a LiSEC VHW and are then conveyed to a compact ASM sorting system with input and output transport shuttle and 4-slot storage magazine (4 boxes). A tempering oven is connected after outfeed from the sorting. The sheets come out of the sorting process in hardening sequence and are moved from the vertical to the horizontal position with a tilting table. After the tilting table, an operator removes the sheets from two air cushion tables with belts and transports them to the tempering oven infeed.

There is also a flexible sorting and buffer system at the start of the 2.50 m x 2 m insulating glass line for the fully automatic storage and retrieval of glass sheets (BFS). The sheets are placed in the inlet, the storage unit moves and the loaded sheets are retrieved from the insulating glass line in a sequence optimised for production as soon as the storage unit is fully loaded.

The insulating glass line for rigid spacers has a LiSEC VHW washing machine, a LiSEC frame mounting station, a LiSEC FPS-U 2 press and a LiSEC VL-1N sealer.

The new investment: a LiSEC TPA insulating glass line

ZRG has invested in a new 6.5 metre long LiSEC insulating glass line for thermoplastic spacers as a supplement to its insulating glass line for rigid spacers. This takes the fed-in sheets to the LiSEC washing machine. An inspection zone then follows, which could also be used as a frame mounting station for frames with a maximum dimension of up to 3.80 metres. The screen is normally inspected for quality in the inspection zone. Following this inspection station is the TPA applicator with corner seal and the LiSEC FPS-A press as well as a calibration unit for the TPA units, allowing the overpressure in the sheet to escape. The sheets are then sealed with LiSEC VFL 1F sealant for max. 6.5 m sheets.

Verallia restarts French glass furnace

Verallia France said Furnace Number 1 at its Chalon-sur-Saône glass facility was operating at 100% capacity after its recent investment.

Verallia France has restarted the glass furnace at its Chalon-sur-Saône plant, which is operating at 100% of its production capacity to serve all its customers.

It said renovation work on furnace No. 1 had been completed and it had returned to service.

The completion of the investment is part of the group's industrial modernisation and decarbonisation strategy, to strengthen the plant's sustainability performance and regional presence.

Following the partial renovation of Furnace 3 in 2022, the complete renovation of furnace No. 1 is a key step in the modernisation plan for plant.

Specialising in the production of clear glass, Furnace No. 1 produces iconic bottles from the Burgundy and Bordeaux regions, as well as speciality products for the spirits, still wine, and food markets, distributed locally, nationally and internationally.

The furnace has 'super-boosted' technology to increase the share of electricity in its energy mix.

This has increased to 25%, thus reducing natural gas consumption to 75%. This development has allowed the site to reduce its CO_2 emissions by 11%, while increasing its electrical melting power.

Johanna Lascaux, Director of the Chalon-sur-Saône plant, said: "The complete renovation and restart of Furnace No. 1 embodies our commitment to sustainably modernize our industrial facilities while accelerating our energy transition.

"This restart marks our commitment to reducing the environmental impact of our production, while ensuring the competitiveness and sustainability of our historic site."

Built in 1912, the Chalon-sur-Saône site is now the Verallia Group's largest plant. With its 500 employees and three furnaces, the plant produces nearly a billion bottles each year.

Recognized for its expertise in white glass, it produces the famous "dead leaf" colour characteristic of Burgundy wines.

The site houses Verallia France's glassmaking training centre and the group's technical centres, where 150 experts work on future technological challenges, particularly those related to reducing CO_2 emissions and developing tomorrow's industrial glassmaking solutions.

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Unfair costs threaten the future of glass packaging in Wales

UK policy means glass will be subject to more fees in Wales - which is in contrast to the rest of the United Kingdom.

The approach to glass packaging policy costs is creating an unjust financial burden on businesses in Wales, states the British Glass association.

It threatens the viability of glass as a sustainable packaging choice, it said.

Under the current legislative framework, glass beverage packaging in Wales will be subject to both Extended Producer Responsibility (pEPR) fees and the Deposit Return Scheme (DRS) setup costs and subsequent DRS operating costs, while metal and plastic packaging will not incur pEPR fees.

This is in contrast to the rest of the UK, where all glass packaging is exempt from DRS costs, meaning that glass placed on the market in Wales is at a disadvantage from its competing materials.

This discrepancy unfairly penalises glass, despite its status as a healthy and infinitely recyclable packaging material.

Packaging for the Welsh market has already been sold under the current policy fee structure, meaning these new costs will further distort the market, and add to inflationary pressure.

By making glass packaging more expensive to use in Wales, the policy risks driving towards less sustainable packaging options.

Industry leaders are calling for urgent changes to ensure fair application of the pEPR regulations across all four nations. The proposed solution is to:

Exclude glass from pEPR costs in Wales with immediate effect – this would align glass with its competing beverage materials, preventing unnecessary financial burdens and protecting glass as a viable, sustainable packaging choice.
Nick Kirk, Technical Director at British Glass said: "The EPR policy should be applied equally across all four nations.

"However, in Wales, glass beverage packaging is included in both pEPR and DRS, whilst in the other three nations, packaging included in the DRS, is exempt from pEPR.

"This inconsistency increases the policy costs of glass beverage packaging and encourages the switch away from recyclable glass packaging to less recyclable alternatives."

"We urge the Welsh Government to reconsider and ensure that the pEPR regulations are applied as they are in the other three UK nations."

It is critical that UK policies support packaging materials that are recyclable and are ideal for any future reuse schemes.

Aligning glass packaging costs across the UK will protect businesses, promote sustainability, provide equal choice of food and beverage products for consumers and encourage consumers to make environmentally responsible choices.

SORG Group Builds Third Furnace for Rubin, Bulgaria

Is there a better sign of customer satisfaction than ordering a second furnace? There is – when the customer orders a third one!

The SORG Group is proud to announce the construction of a third furnace for Rubin at its factory in Pleven, Bulgaria. This latest order follows the successful delivery of the two previous furnaces in recent years.

The furnace is a gas-fired regenerative endport furnace with SORG Deep Refiner. The system has a melting area of approx. 92 m² and is designed to produce soda-lime glass containers in the glass colours flint, amber, and green. The glass conditioning system consists of a distribution channel of type SORG STW and four forehearths of type SORG STF, whereby the two outer forehearths are equipped with alcoves.

Nikolaus SORG was responsible for the furnace design and engineering. In addition to the fossil heating system, the scope of supply includes the complete electrical heating system consisting of a melting booster, barrier booster and throat booster, the waste gas system, other furnace equipment and the SCADA system. The installation of the equipment and its commissioning were carried out by Nikolaus SORG specialists.

EME provided the engineering for the batch-related equipment, including the delivery and supervision of the installation. Two EME-NEND 2® Batch Chargers are used to feed the batch.

The steel and refractory construction, heating up, anchoring and full melting of the furnace were carried out by SKS company.

The SORG Group would like to thank Rubin for their renewed trust in the performance of the SORG Group and wishes them a successful furnace campaign.

Verallia set to launch two glass furnaces in 2025

Verallia is set to launch a glass production furnace at its Campo Bom site in Brazil in Quarter 2 this year. Pic credit Fabiano Ferrari

Container glass manufacturer Verallia said it expects to launch two furnaces this year – with a third set to open after a rebuild.

The first oven, in Campo Bom, Brazil, could launch as early as next month, while the second in Pescia, Italy, will open by the end of the year.

The Italian furnace will be dedicated to the food segment with production of jars.

A third furnace, in Ukraine, is currently shut for maintenance but will restart before the summer

Patrice Lucas, Verallia, CEO, said the company had enjoyed good volumes in Brazil, particularly in the beer and wine markets.

The furnace at Campo Bom is scheduled to launch in Quarter 2 this year, so sometime between April and July.

He said the market in Latin America was completely opposite to other geographical markets which had slumped in 2024.

Overall the group's income dropped nearly 50% compared to 2023 to €239 million, a reduction of 49.8%.

He said: “Market conditions in 2024 were not as good as the expected ones at the beginning of 2024.

“Consumption in Europe was soft through the year, and recovery through destocking was much slower than initial assumptions.

“Destocking was at play for most of the year. In our view, still active in spirits and on some other products, significantly exposed to export share.”

Outlook for 2025

In his outlook for 2025 he said the positive momentum seen in Latin America will continue, while the rest of the market will normalise.

“The keywords are demand normalising, stable consumer environment, uncertainty; some are even removing their mid-term guidance due to lack of predictability.

“Therefore, for 2025, we expect consumption and glass demand to normalise in most segments, but end demand still soft, and a potential negative effect impact from tariffs for the export-orientated market.

“Beyond 2025, we see consumption recovering as fundamentals are still positive. We foresee spread being neutral as inflation normalises and intra-year price variations end.

“And with installed capacity being adapted, we expect business to gradually get back to full capacity usage.

"In other words, solid fundamentals for glass packaging are still on.”

Industry needs to decarbonise - but at what cost?

Pictured: Sisecam's Sustainability Director Gozde Morkoc, and Dr Bassam Fattouh, Director at the Oxford Institute for Energy Studies in the UK, discuss the challenges faced by hard-to-abate industrial sectors to decarbonise their processes.

The challenges and urgencies on the glass industry's pathway to decarbonisation were discussed at Sisecam's 39th annual conference.

Opening the second day, the fireside chat between Sisecam's Sustainability Director Gozde Morkoc, and Dr Bassam Fattouh, Director at the Oxford Institute for Energy Studies, UK, highlighted how difficult it will be for hard to abate sectors to decarbonise.

Dr Fattouh warned that while decarbonisation is a must, it will cost industrial companies financially.

They must be prepared to seek government subsidies in order to pay for the transition or pass the costs onto the supply chain and customer

Likewise, they must also ensure they retain a profit at a time when margins are thin otherwise they are at risk of going bust.

It was followed by a panel discussion from Steve Whettingsteel of Krysteline Technologies and Malte Sander of Glass Service (CZ).

They outlined how a combined industrial and scientific approach was required if the glass industry is to achieve its decarbonisation aims.

In it they challenged the plastic industry's claims about its recyclability values.

Only 9% of global plastic is recycled they said, with many of the plastic industry's marketing claims obscuring the real facts.

They suggested a combined approach from the glass sector, which includes better communications with governments, to give a more accurate picture of the whole lifecycle of glass.

Organisations such as the International Commission of Glass (ICG) should be utilised to help achieve these aims.

The event in Venice, Italy continues today with a series of technical presentations on the glass production process. Speakers include technology suppliers such as Iris Inspection, Sorg, Horn and Stara Glass as well as glass manufacturer Ardagh Glass.

Pictured above: Steve Whettingsteel (l) and Malte Sander (r) described how a combined glass industry and scientific approach is vital if the sector is to decarbonise.

HORN Glass Update on the "ZeroCO2Glas" Project: Progress Toward CO_2-Neutral Glass Melting

HORN Glass Industries is proud to share the latest progress on its involvement in the groundbreaking "ZeroCO2Glas" project.

In November 2024, HORN Glass Industries reported its participation as an industrial partner in the "ZeroCO2Glas" project. Together with project partners IPGR, RWTH Aachen, and Wiegand-Glas, the initiative aims to develop a CO_2-neutral melting process for container glass.

As part of its contribution, HORN supplied the complete equipment for the new 2.4 t/d hybrid furnace, including the combustion and process control system, as well as handling the full construction work for the refractory lining and steel structure. The furnace, installed in Aachen, is designed as a hybrid system capable of operating with either hydrogen oxy-firing or natural gas oxy-firing, supported by a variable electric boosting share. The forehearth is also designed to run on both natural gas/O_2 and hydrogen/O_2.

With the necessary peripheral systems in place, the setup replicates a complete container glass production process. Within the scope of the project, various operating states are being systematically initiated and thoroughly analyzed to understand their impact on the glass melting process, furnace atmosphere-refractory interactions, forming process, and product quality.

The first glass was achieved on October 28, 2024. At the beginning of 2025, the first defined operating condition was successfully launched and stabilized, enabling an extensive series of measurements. This initial dataset will serve as the reference case for evaluating future operating conditions. Key parameters under investigation include combustion characteristics, batch coverage, temperature profiles, and energy consumption. In terms of the forming process, metrics such as gob weight and temperature, cutting frequency, and wall thickness distribution of bottles are being recorded. Product quality is being assessed based on dimensional accuracy, glass defects, blistering, and bubble formation. This collected data is currently undergoing detailed analysis.

Meanwhile, preparations are underway to initiate the next operating condition, which will include variations in the electric boosting share. Subsequent phases will explore alternative modes such as hydrogen/oxygen firing.

HORN Glass Industries remains fully committed to advancing this pioneering project and looks forward to continued collaboration with its esteemed partners.

International Partners in Glass Research (IPGR) e.V.

Vitrum 2025: where the future of glass is being designed

The great return of Italian excellence in the world of glass

The organizational machine is in motion and anticipation is growing: VITRUM 2025 is preparing to be an international benchmark event for the entire glass industry. The 24th edition of the historic exhibition, to be held in Milan from September 16 to 19, promises to be a turning point, capable of combining tradition and future, innovation and concreteness.

An appointment the industry has been waiting for
VITRUM is not just a trade fair: it is a meeting point for the global glass supply chain, an opportunity for comparison, updating and business that for decades has accompanied the evolution of a strategic sector for Italian and European manufacturing.

A distinctive feature of the event is the opportunity to see plants and machinery at work up close, to touch technological innovation and to observe in operation state-of-the-art solutions for glass processing, transformation and treatment.

Exhibiting companies bring production lines, automated systems and the latest technologies to the fair: a true immersive experience designed for those who want to understand, test, compare.

Two halls already largely occupied, a growing number of exhibitors and a strong focus of foreign markets: VITRUM 2025 promises to be a rich, dynamic and above all relevant edition.

Focus on two Italian excellences: hollow glass and flat glass
Italy is confirmed among the main European players in the industrial glass sector.
In hollow glass, our country is the leading manufacturer in Europe, while in flat glass it occupies the second position. VITRUM 2025 celebrates and enhances these excellences, offering a unique opportunity to explore their potential and engage with the main players in the sector.

Technology, innovation and vision: a fair that looks to the future
VITRUM 2025 stands out for its ability to look ahead, anticipating the transformations that are sweeping the industry.
Prominent among the main thematic areas are:

Technologies 4.0 for glass processing
Artificial intelligence applied to manufacturing
Robotics and automation for industrial efficiency
Sustainability as a lever of innovation
New materials and green solutions
A rich program of conferences and insights will bring together experts, companies and institutions to analyze the future challenges of manufacturing and identify growth opportunities for the entire supply chain.

Glass Group, MADE Expo and Milano Building Alliance: synergies that multiply value
In addition to the renewed collaboration with Glass Group, which will bring to the fair its highly anticipated Open Day dedicated to flat glass transformation and sustainable solutions, VITRUM 2025 strengthens synergies with MADE Expo and Milano Building Alliance.

A strategic alliance that gives continuity to the Building as green as glass project launched in 2024, bringing the worlds of production, transformation and sustainable building into dialogue.

A shared space where architecture, construction and the glass industry meet, generating new opportunities for contamination and growth.

Exhibiting at Vitrum 2025 means being there, counting, driving change.

Mark on the agenda: Milan, September 16-19, 2025

Glassworks relies on Glaston and HEGLA partnership

Caption: From the left: Christoph Sedtke from HEGLA, Kimmo Kuusela & Sasu Koivumäki from Glaston, Peter Schiavello, Michael Kruger & Michael Gleeson from Glassworks, Jochen H. Hesslebach from HEGLA and Sandro Ianni from Glaston (Elegant IG)

Glaston and HEGLA will supply Glassworks with Glaston's TPS® insulating glass line and HEGLA's glass sorting equipment, supporting the company in increasing automation and meeting the tighter construction quality standards locally.

The deal was signed between Glaston, HEGLA and Glassworks in late 2024. In the first stage, HEGLA will supply a sorting system with harp racks to enable the automated and optimized loading and unloading of the processor's existing FC Series tempering line and double-glazing equipment, with delivery scheduled for July 2025.

The second stage will be the delivery of a new TPS® insulating glass line from Glaston, complete with an automated loading solution.

Glassworks' investment decision primarily focused on increasing the level of automation in its operations. "Automation is the future," says Kimmo Kuusela, Senior VP of Sales & Service at Glaston. "Australia and New Zealand are among the most highly automated regions in the world when it comes to glass processing factories. Automation enables glass processors to reduce their costs and remakes significantly, which is crucial in optimizing business growth in the region."

When evaluating options, Michael Gleeson, Executive Director at Glassworks, traveled to other parts of the world to see various solutions available. The combination of Glaston and HEGLA seemed best suited to meet his company's needs.

"The machinery's robustness, our confidence in both European brands and Glaston's local service and spare parts support were key factors in the decision," Gleeson says.

"This investment further improves our quality and service offering, particularly with the 7-star regulations and demand for higher performing soft-coats IGUs. It adds capacity and redundancy to our operation to ensure that we continue to be a reliable supplier to our customers," says Michael Kruger, General Manager at Glassworks.

Another important consideration was having a single point of contact for the combined Glaston and HEGLA offerings. Since starting the exclusive partnership covering the entire Asia-Pacific region, excluding Japan, South Korea, and China, HEGLA's sales and distribution activities in the area will draw upon the resources and network of the Glaston Group.

"We're providing turnkey solutions by combining HEGLA's glass logistics and handling solutions and Glaston's glass processing capabilities for insulating glass units and tempering. It's a perfect combination for increased automation and outstanding efficiency," Kuusela says.

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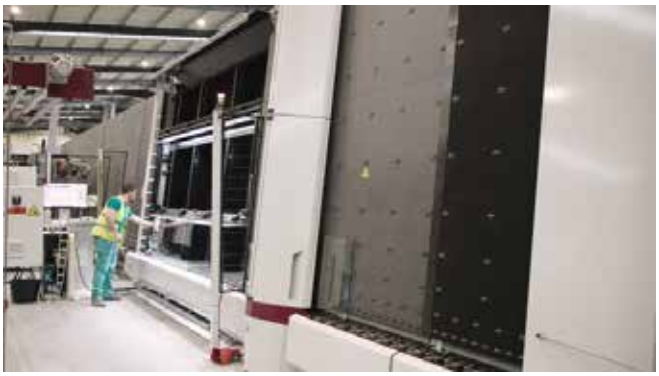
VITROCHAVES presents the new fully automatic LiSEC production line

One year after installing its advanced LiSEC system, VITROCHAVES highlights the power of full glass processing automation.

Since early 2024, we have been reporting on VITROCHAVES, one of the leading glass processing company on the Iberian peninsular, which was just about to start-up a new, fully automatic LiSEC system comprising a glass storage, glass cutting and insulating glass line. 12 months later, Mr Chaves, managing director at VITROCHAVES, is taking part in a video interview about the project process and giving exciting insights into the new production hall.

The high degree of automation at VITROCHAVES is possible due to a sorting buffer system that is coordinated by the GPS.autofab software solution. GPS.autofab aims to supply all connected machines with an optimised amount of glass. The buffer can save 4 - 6 hours of production. This also enables wastage-optimised glass cutting to be used to also consider sheet sizes for later production processes. The sheets are stored temporarily in the buffer and retrieved for further processing during the respective production batch, e.g. insulating glass production, etc. In this way, the various production processes are smoothed out and continuous production is maintained.



This ultra-modern system marks an important step in the development of VITROCHAVES and underlines its position ad one of the leading providers of flat glass for the Iberian peninsular. The fully automatic factory enables efficient production and high quality end products, from which the VITROCHAVES customers benefit.

Mr Chaves, managing director at VITROCHAVES, is talking about the project process and giving exciting insights into the new production hall.

VakefiGlass and Forel: A Partnership Driving Glass Innovation in the Balkans

A story of vision, tenacity, and excellence

Albania's economic growth over the last decade was initially driven by the expanding tourism sector and the resulting demand for accommodation. This growth subsequently fueled demand for new housing and public infrastructure, including hospitals, roads, schools, airports, and essential facilities for emerging urban settlements.

VakefiGlass is a story of vision, tenacity, and the relentless pursuit of excellence. In 1995, Shpëtim Protoduari, known as "Cimi," embarked on his entrepreneurial adventure with the purchase of the first glass panes in Bulgaria. Since then, he has transformed a small trading business in the region between Albania, Kosovo, and North Macedonia into a family-run company. Today, VakefiGlass employs approximately eighty people and is a benchmark in the trade and processing of flat glass in the Balkans.

After establishing a strong client base in Albania and neighboring countries, Protoduari recognized the opportunities in glass processing. In 1998, he opened a small factory in Berat, enabling the company to begin its initial cutting and grinding operations.

As turnover increased, so did the complexity of orders and processes. To accommodate this growth, Cimi expanded the production site and invested in a more structured machine park. Production was moved to the outskirts of the city, and after a decade, these investments became even more substantial.

In 2018, VakefiGlass reached a turning point with the construction of a 10,000 sqm production area in the Durrës region. Located strategically on the road connecting the coastal city and Tirana, this facility has been progressively equipped with cutting-edge machinery for processing high-quality glass panes.

TECHNOLOGY AND PASSION: THE FORMULA FOR SUCCESS

In this phase, Protoduari expanded ambitiously, investing in the latest machinery to offer customers comprehensive glass processing services—from tempering and lamination to digital printing. The company enhanced its capabilities with the Forel DM drill-milling machine and the new Forel High Tech Jumbo line, which processes panels up to 6,000 x 3,300 mm in size.

This new plant allows VakefiGlass to produce large format insulated glass with double, triple, or quadruple glass units, create staggered / stepped glass solutions, and manufacture large custom designed glass panels, fully supporting both residential and commercial construction projects.

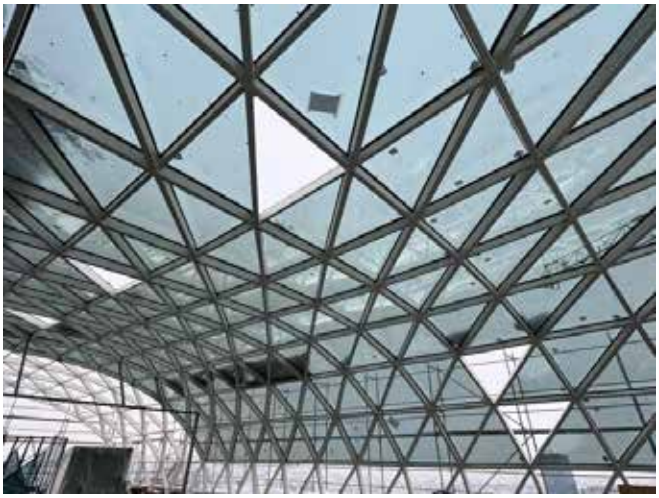
VakefiGlass's success is rooted in a corporate culture that prioritizes problem-solving and provides robust support for customers facing critical challenges.

As the CEO of VakefiGlass notes: "We must always be at the service of the market. When

customers face challenges in managing structured projects, we see it as an opportunity to provide innovative products and services through our commitment and technology."

"Work organization and production planning present our biggest challenges. It's not just about the machines; our people are key to production," Protoduari notes.

He emphasizes that market feedback serves as our fundamental guideline: Introducing a successful product requires leveraging advanced technology, developed from the challenges others have faced. Machine design embodies a wealth of experiences, solved problems, and insights that materialize into technology, solutions, and patents."

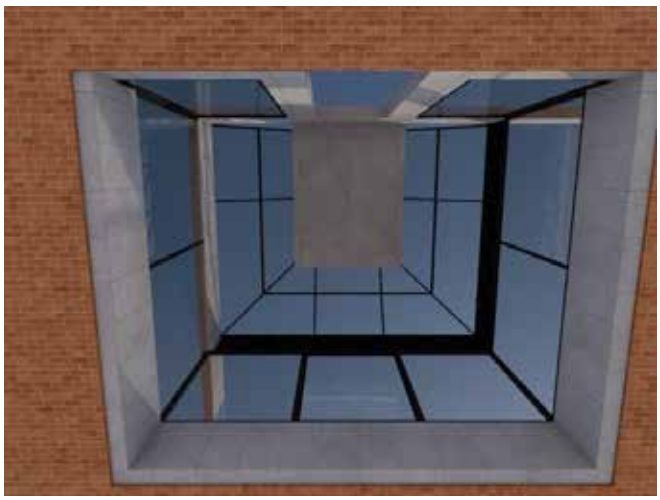


VakefiGlass has built its reputation on delivering quality products through a combination of technology and teamwork.

Protoduari explains, “We chose Forel because we were familiar with the brand and their machines have a proven track record in European and international markets. Forel creates its machines by listening to customers, integrating expertise, engineering, and customization. When selecting a plant, we recommend focusing on its potential capabilities rather than solely on the initial investment cost.”

THE COMPETITIVE ADVANTAGE WITH FOREL

VakefiGlass’s new Forel High Tech Jumbo insulated glass line is enabling ambitious, cutting-edge architectural projects. The Marigona Tower in Pristina exemplifies this potential and is set to become one of Kosovars urban landmark.



The twenty-four-story skyscraper incorporates insulated glass panels with a 30 mm sealing depth, manufactured at the VakefiGlass plant, reflecting an architectural focus on glass and energy efficiency. These advanced solutions deliver exceptional thermal insulation, substantially decreasing the building's overall energy consumption.

The outstanding quality of VakefiGlass is showcased again in the Skylight Marriot building in Pristina, where uniquely shaped glass produced on the Forel insulated glass production line has been installed. Additionally, VakefiGlass have several significant projects underway in Albania and the United Kingdom, featuring large glass panels and innovative designs, including staggered/stepped glass and triple-pane units.

In today's rapidly evolving economic landscape, this company is proving that they are not just keeping up with market trends, but actively shaping them. They're focused on continuous innovation, technological advancement, and sustainable growth, which are essential to becoming a leader in both the Balkans and the broader European market.

Maximizing Space and Productivity: Over the Mountain's Experience with TUROMAS

Over the Mountain Glass updates its glass storage system with TUROMAS.

With a focus on customization and a product range from heavy glass showers to railings and beveled mirrors, the company has been able to adapt to market demands.

With two locations in Alabama and more than 50 employees, Over the Mountain Glass has been able to optimize its production using TUROMAS solutions.

In this interview, Cavan Metcalf, from OTM, shares his experience with TUROMAS.

The need to modernize its facilities arose when OTM realized that its limited work space represented a challenge to its growth. The solution came from TUROMAS, who presented an automated loading and storage system that not only solved the space problem, but also offered the possibility of increasing production capacity without compromising efficiency.

An SR-03 shuttle rack storage system has been installed together with an LR-03 with 26 positions,

capable of storing up to 208 tons of glass.

In collaboration with IGE, TUROMAS' US distributor, a tailor-made project was developed to meet all OTM requirements. We were able to implement a solution that optimizes the available space to the maximum, allowing the company to improve its efficiency and storage capacity.

Discover more details of this collaborative process and the results achieved below:

Who is Over the mountain? Please tell us about your company history, location, number of employees.

Otm is a full-service glass fabrication plant. We specialize in heavy glass showers and custom railing. We provide a range of products from insulated glass to beveled mirrors. We currently have 2 locations noth in Alabama.we have over 50 employees.

What products and services does Over the mountain offer? What production processes can be found in the factory?

Tempering, custom CNC, edging, beveling, insulated glass, back painted.

How did the need for the new cutting machines from TUROMAS arise?

We had a tight area and we had to maximize our storage capabilities. Heinz presented us with a great solution with the turomas loader and shuttle system. This system we were able to triple our glass storage capabilities and keep more glass in production with have 3 packs of glass in each rack.

Why TUROMAS?
After researching through multiple options and brands turomas came in as the number one because how versitile the machine was and how heavy duty it was made. We belived in turomas support and the producto they had. The Price of the machine also came in lower then the competitors but doesnt lack any features.

Which TUROMAS machine models have been installed? Why are these machines the best for Over the mountain? What would you highlight about them?

The highlight for us is the simple easy to use interface. The system was very easy for our guys to learn and train on. In total it took about 8 days to install the whole system and two full days of training and we felt confident in our ability to run it.

The tech support we have received after install has also been top notch. Turomas has been very responsive with any issues we have come upon to help answer our questions and give us a better understanding of the machine.

This was the best fit for OTM because how fast the machine could be in here and installed. We felt very confident in turomas ability to provide these services and we loved the heavy duty built of the machine we knew this machine would last for years and years to come.

WICONA's TEmotion NG: Advancing Façade Technology with Water-Filled Glass for Superior Energy Efficiency

WICONA is revolutionizing façade technology with TEmotion NG, a groundbreaking solution developed with Water-Filled Glass Ltd.

WICONA is redefining the future of façade technology and setting new standards. As a pacesetter in the construction industry, the company is constantly driving innovation forward under the motto 'Technology for ideas'. Together with Water-Filled Glass Ltd, WICONA has developed TEmotion NG, a revolutionary façade solution, as a project study and presented it to the public for the first time at BAU 2025. This sets new standards in energy efficiency and sustainability - further proof of WICONA's innovative strength.

Up to 72% energy savings thanks to innovative concept

TEmotion NG combines several advanced technologies to realize CO2-neutral or even climate-positive façades. The centrepiece is insulating glazing with a circulating water layer that has a positive influence on thermal radiation. 'TEmotion NG not only insulates, but also absorbs the radiant heat, which accounts for two thirds of the transferred energy,' explains Prof. Dr Matyas Gutai, co-founder of Water-Filled Glass Ltd. The energy efficiency of the system is supported by an intelligent storage function: In summer, excess energy can be used elsewhere in the building, while in winter the heat escaping through the glass is absorbed. The energy gained in this way can be reused for heating and hot water. Compared to conventional double glazing, up to 72 % energy can be saved. Additional benefits include improved acoustics (up to 15 % more sound insulation) and optimized use of daylight for maximum thermal comfort and better indoor air quality. Optionally, the opaque façade elements can be combined with building-integrated photovoltaics (BIPV) to create an energy-positive building envelope.

Efficient retrofit solution for existing buildings

TEmotion NG offers an advantageous option not only for new builds, but also especially for time and cost-efficient construction in existing buildings: as an intelligent retrofit solution, the system can be installed 'minimally invasively' from the inside by the metal construction company in the form of a second skin - leaving the existing façade untouched. Marco Theisinger, project manager at WICONA: 'This saves up to 30 % of the replacement costs, as no time-consuming dismantling work, scaffolding or permits are required. Work can also be carried out during ongoing operations - without any tenant relocations.'

Driving decarbonization - up to 66 kg less CO2 per m² of façade

Last but not least, WICONA is driving decarbonization in the construction industry with TEmotion NG. The façade elements are made of the aluminum alloy Hydro CIRCAL with an end-of-life aluminum content of up to 100 %. Ideally, the glazing should also be made from CO2-reduced glass and the seals and insulating bars should also be made from recycled materials. This choice of material significantly reduces the CO2 footprint right from the production stage. Compared to standard double glazing, up to 66 kg of CO2 can be saved per m² of façade surface.

Significant contribution to the realization of climate targets

Following its successful premiere at BAU 2025, the system is currently being further optimized so that it can be flexibly adapted to different project requirements. Marco Theisinger emphasizes: 'The response at BAU was overwhelming. We are now looking for strategic pilot projects to successfully establish TEmotion NG on the market.'

First LiSEC laminating glass line in Bulgaria installed at Baros Vision

Baros Vision has grown from a local railing installer to a global player in glass systems—driven by innovation, quality, and a strong partnership with LiSEC.

Baros Vision is a leading manufacturer of glass railing systems with its headquarters in Plovdiv, Bulgaria. The company currently has 60 employees on company premises of 6000 square metres. Thanks to continuous innovation and high quality standards, Baros Vision has gained an excellent reputation and has been won several awards. The customer base spans 29 countries including important European markets, as well as Dubai and Algeria. The main target groups are building and installation companies. The wide range of customers includes building companies, distributors, architects and investors. Baros Vision is proud to have received worldwide recognition for its high quality products and excellent service. In order to continue to be able to offer this quality, an investment was made in a new LiSEC laminated glass line.

The path to in-house production

The story of Baros Vision began in 2009 with the production of railing systems. Today's owner, Dzhamal Aliman, was part of the railing installation team for a long time and was therefore able to gain valuable knowledge and experience, as well as uncovering innovation potential. In 2013, he decided to found a wholesale warehouse for Aluminium and glass railing systems. Along with this important milestone, he developed his own patented aluminium profile that solved many problems that he had experienced himself in practice during installation. This product enables 30-40 % faster installation, is more robust and visually more appealing than the competition.

Baros Vision initially purchased glass from external companies to manufacture this system. Due to larger tolerances with these glass deliveries, managing director Dzhamal Aliman was inspired to make initial contact with LiSEC. In 2019, he contacted LiSEC with the aim of developing expertise in glass processing in addition to being the market leader in the aluminium sector. The positive results of numerous product tests and the good feeling brought about by the cooperation reinforced his decision. After multiple meetings and a visit to Austria, the high quality of LiSEC's products was the ultimate convincing factor. “Right from the first meetings, we had a good feeling about the cooperation and we were absolutely convinced as to why LiSEC is the market leader in the sector”, said Dzhamal Aliman, managing director of Baros. This partnership enabled Baros Vision to optimise its production processes further and to increase

the quality of its glass railing systems significantly. The cooperation with LiSEC was a decisive step in cementing and developing the market position of Baros Vision even further.

Tailor-made machine: Developed for a high quality end product

In addition to the existing LiSEC machine fleet in the glass cutting area, a specially-designed laminated glass line was installed. Among other things, the PLUSLAM S2040 COMPACT, the first of its kind on the Bulgarian market, comprises a PNM-B20 instead of a PNM-B20SN, as well as am FCC – Foil Cross Cut, FTC- Foil-Trim-Cut and FSS - Foil-Shuttle. This configuration is therefore tailored exactly to the customer's requirements and ensures a high quality end product.

The FCC (Foil-Cross-Cut) ensures precise and right-angled machine glass cutting of the foils to the required length. This guarantees high precision and helps to reduce foil wastage. Furthermore, only one person is required in the assembly area.

The FTC (Foil-Trim-Cut) enables excess foil to be removed automatically on all four sides of right-angled 2-slot LSG glass lites sheets. This automation makes life easier for the staff. While the excess foil is being removed, the next unit can already start to be assembled. Precise and

automated removal of excess foil enables smooth operation of the subsequent processes.

The FSS (Foil-Shuttle) is used to set down foil residues efficiently and enables fast assembly by setting down existing pre-cut foils. This component optimises the production process by making handling foil residues easier and shortening the preparation time for assembling the glass lites sheets.

The material flow has been optimised by using additional drives known as the "Split-Drive". Each of the transport sections is designed for lengths of up to 2000mm and is therefore ideal for manufacturing balustrade glass. This reduces the distance between the glass lites sheets in order to increase efficiency and therefore the output. Despite this, producing glass lites sheets with a length of up to 4000mm remains possible.

In order to obtain support for any problems with the aforementioned machines, Baros uses LiSEC Online Support. This service has proven extremely reliable for Mr Dzhamal Aliman, as Baros has always been helped quickly and efficiently. It is particularly remarkable that Support has always been able to offer competent solutions even for machines that are not series products.

Sustainability and looking to the future: Ground-breaking for a green future

Within the keyword of efficiency, Baros Vision is also positioning itself as an innovator when it comes to sustainability. An impressive 80 % of the energy used is generated by solar power. When purchasing the raw glass sheets, the company's founder greatly values the fact that they are produced using green energy. This underlines the company's aim to reduce CO2 emissions significantly by 2050. These measures highlight Baros Vision's commitment to environmental protection, as well as sustainable and high quality products.

Looking to the future, Baros Vision has recognised that hard foils are becoming an every-growing trend for producing laminated glass. In addition, Baros Vision uses a special foil that makes an important contribution to bird and animal protection. These innovations underline the company's success and future-oriented focus.

In summary, Baros Vision has continued to improve its market position thanks to continuous innovation, high quality standards and strategic partnerships, such as that with LiSEC. With a major focus on sustainability, efficiency and introducing innovative products, Baros Vision is well equipped to remain successful in the future.

Glass Futures completes decarbonised fuel trials

Glass manufacturers O-I, Ardagh, Encirc, Pilkington and Guardian and refractory supplier DSF Refractories & Minerals part in the Glass Futures alternative fuels trials.

UK glass manufacturers took part in successful trials focused on the use of alternative fuels in industrial manufacturing.

The trials, organised by Glass Futures were focused on investigating ways to decarbonise industrial manufacturing.

One trial involved the use of liquid biofuels in glass production at four UK container glass plants.

Another involved an e-boosting system at a Guardian float glass plant and an Encirc container glass facility.

The third demonstrated hydrogen and hydrogen-natural gas blend firing in a custom-designed ceramics pilot-kiln at the Glass Futures pilot facility in the UK.

Biofuels

Industrial trials at the end of 2024 and the start of 2025 used five different liquid biofuels in glass and ceramics production.

The trials involved four UK glass manufacturers — Ardagh Glass Packaging, Encirc, Pilkington UK and O-I Glass— as well as DSF Refractories & Minerals.

It included modification and adoption of existing liquid fuel systems at the glass plants.

The demonstrations will help Glass Futures develop an economic model for switching to biofuels, providing insights into the feasibility of this alternative fuel as an option to help decarbonise industry.

Electrification

Electric boosting technology involves heating the molten glass via electrodes which are inserted into the molten glass within the furnace.

E-boosting enhances furnace efficiency and is an enabler to heat glass using electricity to reduce reliance on natural gas and other fuels.

Glass Futures' member and float glass manufacturer Guardian Glass trialled an e-boosting system at its Goole, UK facility.

Encirc also carried out e-boost trials on a container glass production line.

Glass Futures is developing its 30t/day oxy-fired pilot furnace to reach a higher percentage of electrical boosting.

Further pilot trials are planned later this year to assess the maximum levels of e-boost that can be achieved – which is potentially more than 60%.

The trials will also assess the rate at which the boost system can be turned up or down, to respond to supply/demand constraints on local electricity grids.

Hydrogen

In a project led by Ceramics UK, Glass Futures and hydrogen supplier Ryze Power demonstrated hydrogen and hydrogen-natural gas blend firing in a custom-designed ceramics pilot-kiln at the Glass Futures pilot facility.

The operation of the pilot kiln firing on 100% hydrogen and other blends provided insights into the impact of hydrogen on ceramic products including bricks, tiles, refractories, pipes, sanitaryware, tableware and specialty ceramics.

These findings further support the case for hydrogen as a viable alternative for direct combustion processes where electrification is currently not an option.

Justin Kelly, CEO of Glass Futures said the trials were a milestone in the UK's journey to net zero.

"It not only demonstrates the technical feasibility of low-carbon fuel alternatives but also opens up new opportunities for economic growth through sustainable energy supply chains."

These projects form part of the UK's Industrial Fuel Switching (IFS) Programme, supported by the government's £1 billion Net Zero Innovation Portfolio managed by the Department for Energy Security & Net Zero (DESNZ).

Vetropack glass manufacturer reports profit drop of 78%

Vetropack said the closure of its St-Prex glass production site in Switzerland in 2024 cost it CHF 24.3 million ($27.6 million).

Glass packager Vetropack said 2024 was one of the most difficult in its history.

The Swiss-headquartered company said a persistently tense market environment and the closure of its St-Prex glass facility were dominant features.

This was reflected in its financial figures with a 78% drop in profit from the previous year and a 6.3% decrease in sales

Consolidated profit in 2024 was CHF 13.7 million ($15.1 million) compared to CHF 63.3 million ($71.9 million) the year before, a 78.3% drop.

It said net profit was impacted by the one-off costs of CHF 24.3 million ($27.6 million) in connection with the closure of the St-Prex plant.

Net sales from goods and services was CHF 842.1 million ($957.5 million) in 2024, a decline of 6.3% (after adjustments for currency effects: 4.2%).

It expects a tentative recovery of the markets in the course of 2025, but warned of volatile energy costs.

CEO Johann Reiter said: "In 2025, we will still be operating in a world with enormous potential for crises.

"The last few years have clearly shown that our markets often react sensitively to small changes.

"Various imponderables still remain, including in particular the further progress of the war in Ukraine as well as the potential impact of the new US administration's economic policy on the global markets.

"In this challenging environment, it is more important than ever to stay on the course we have set.

"In practical terms, this means reacting quickly and promptly to changes, pursuing a prudent investment and personnel policy, and ensuring proactive management of production capacities.

"Our aim is to create all the conditions that will enable us to act quickly and ramp up our production when the market situation improves and demand increases."

Enter LAM-BA: the TUROMAS answer to balustrade cutting

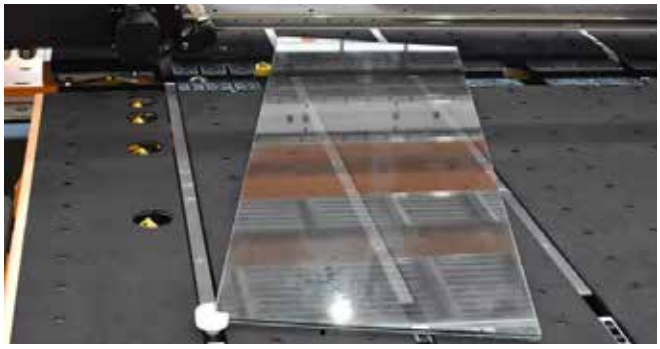
TUROMAS responds to one of the current needs of the glass market with the new cutting system for laminated safety glass railings.

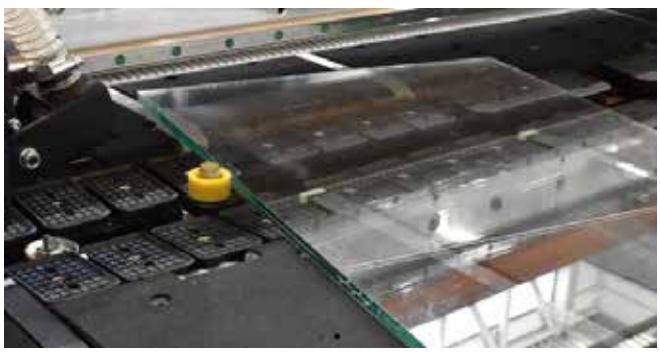
Composed of two mechanical stops that allow agile and precise positioning, the new TUROMAS system eliminates the need for additional tools and considerably reduces cutting time, optimizing the workflow.

How the LAM-BA System Works
The TUROMAS system is composed of two mechanical stops that work together to ensure precise glass positioning. Of these, the first is located on the measuring carriage. It enables positioning and rotation of the glass until it is perfectly squared with the second stop, which is located on the cutting line.

Both stops are automatically positioned, adjusting to the largest dimension of the balustrade to utilize the full length of the piece. Such a design eliminates the need for additional tools or elements reducing the possibility of errors while maximising efficiency.

Unlike other systems, the potential error is limited to the margin of one of the two stops, avoiding additional deviations that might arise with more complex configurations.





The glass is positioned in a single step. The stops automatically adjust to the required dimensions, allowing the operator to square and rotate the piece in one action. This simplifies the process and significantly reduces cutting times. Additionally, as no additional tools are needed for positioning, overall efficiency is improved.

2. Precision for Laminated Glass up to 10+10 mm

The system is designed to meet the requirements of the Technical Building Code (CTE), which regulates the characteristics of laminated safety glass in construction projects, particularly for balustrades. This system ensures precise scoring, breaking, and separation in glass up to 10+10 mm thick, delivering high-quality results without the need for additional processes.

3. Cutting Nested Balustrades

The system also allows for agile and precise cutting of nested balustrades. Thanks to positioning based on the corners of each piece, contiguous cuts can be made without the need to align shapes in a straight line. This capability provides great versatility for projects requiring complex or customised cuts.

4. Specialised Software for Balustrade Cutting

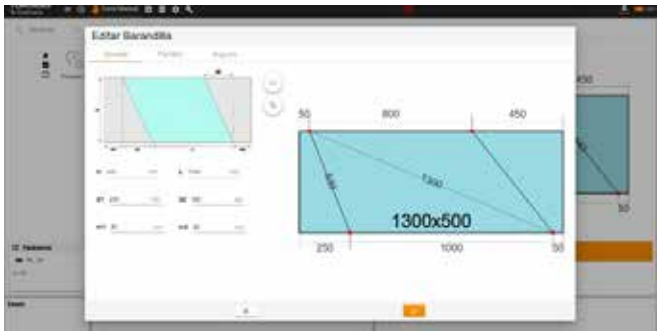
The system includes a software module designed to facilitate the work. This programme allows both the opening of existing optimisations and the creation of new shapes tailored to the specific needs of the project.

Available Software Options:

Open Piece: The software identifies optimisations

that include balustrades, allowing the desired shape to be selected and transferred directly to the cutting window.

Draw Balustrades: This tool enables the design of balustrades using predefined parameters, such as the base, the diagonal between points, the length of the sides, and the angles between them. This ensures any design can be quickly and precisely adapted.



Measurement and Verification

When a balustrade is included in the optimisation plan, the programme detects its presence and displays the trajectory along with the necessary instructions, such as rotating the piece 180 degrees. It also allows measurements to be checked at any point of the shape, ensuring a perfect fit.

5. Benefits for the Construction Sector

The implementation of this system offers notable advantages for the construction sector. Production times are significantly reduced thanks to the agility of the process, and the cuts meet the highest quality standards. This ensures that the resulting pieces are ideal for demanding projects.

The stop-based positioning system represents a practical and efficient solution for cutting balustrades in laminated safety glass. With this approach, it becomes an indispensable tool for optimising cutting processes and ensuring quality results in every project.

Euroglas upgrades tempering with Glaston Roller Heat Control

25-year-old ProE furnace gets an A+ again

Euroglas chose Glaston's Roller Heat Control (RHC) upgrade to improve its tempering line performance as part of a series of investments to grow with its customers. "We aim to offer the width and depth of glass products they need to be their best partner," says Frederik De Knijf, CEO of Euroglas in Belgium.

Euroglas serves the construction market in the Benelux countries with tailor-made glass. Founded in the 1960s, its broad glass portfolio strongly focuses on all interior glass types. The company also offers glass accessories, such as hinges and locks.

Expanding its operations, Euroglas acquired new production sites in the early 2000s and again in 2017. Today, it serves customers from three locations in Belgium – Meer, Fleurus and Bornem.

LARGEST TEMPERING FURNACE AT THE TIME
Euroglas co-invested in a first tempering furnace for its facility in Bornem in 1995 together with two other independent glass processors. In 2000, the same three partners joined forces again and purchased a Tamglass, now Glaston, ProE tempering furnace for the factory in Meer, just northeast of Antwerp. It was the largest tempering line in Benelux at the time. The company added a third tempering furnace, again from Glaston, when it acquired its production site in Fleurus.

In recent years, Euroglas has updated its machinery and product offering as part of a longer-term investment strategy.

UPGRADING PERFORMANCE
“In the past few years, we’ve replaced our core machines – the cutting, polishing, drilling and washing machines. But since tempering lines tend to wear less than equipment that is constantly in water, we decided to upgrade rather than replace our ProE,” De Knijf says.

The first driver for the upgrade was the ability to fully utilize the furnace bed, since the rollers no longer heated evenly. Especially larger glass sheets were prone to warp and other glass faults.

“The second driver was that we planned to start laminating. And to do that, we knew we needed A+ tempering quality. B+ wasn’t good enough,” De Knijf says.

The company chose Glaston’s RHC to bring Euroglas’s tempering furnace up to speed. They began the project at the end of 2023.

FULL BED UTILIZATION AND QUALITY ISSUES RESOLVED
“Our two goals have been achieved,” De Knijf says.

“Earlier, we could only use part of the furnace’s capacity, and we needed to run the furnace for about 16 hours. When we used the complete furnace bed, we had quality issues. Now, we are averaging 12 hours because we’re able to use its full capacity.”

And the quality issues have all been resolved – no more warping or surface defects like tempering marks.

“Operators, too, have been very excited to use the upgraded tempering line. They no longer need to work magic to get the quality and quantity out of the furnace.” “Operators, too, have been very excited to use the upgraded tempering line. They no longer need to work magic to get the quality and quantity out of the furnace.”

QUALITY GLASS AND GOOD CUSTOMER FEEDBACK
The overall installation went well, and communication was smooth. “I would say it was a good, positive project,” De Knijf says. “We’re also currently considering the RHC for our other tempering furnace, although it is a smaller one.”

Customers have also given Euroglas positive feedback, saying they appreciate the improvement, especially with larger glass sheets. “When we ran a full-size 6 x 2.8 m glass sheet as part of our lamination line approval process, everything went smoothly. That was all the proof we needed!” De Knijf adds.

THE RIGHT TOOLS MAKE A DIFFERENCE
“Operators, too, have been very excited to use the upgraded tempering line. They no longer need to work magic to get the quality and quantity out of the furnace,” De Knijf describes. “It was too much trial and error before.”

Now operators have much more control over the furnace. With the new control panel, they can monitor the different zones to see exactly where the heat is. They can see the uniformity. The heat cameras show images of the heat distribution within the glass before it exits.

“With the right tools, our operators are much more motivated to do their jobs well,” he confirms.

GRADUAL GROWTH FORWARD
Euroglas plans to continue evolving over the years with its customers, gradually and steadfastly growing alongside them. “We will continue to challenge them – as they do us,” says De Knijf.

According to De Knijf, investing in quality equipment enables Euroglas to offer the full scope of glass products its customers need – helping the company strengthen its role as a trusted partner. “That’s why having first-class lines is so important,” he concludes.

RGF

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BETTER LIFE

ALL ARCHITECTURAL
GLASS PRODUCTS

OUR UPCOMING GLASS PROCESSING
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Unelko Corporation Expands Its Range of Invisible Shield Glass Coating Projects

Invisible Shield® PRO 15 glass protection from Unelko Corporation saves time, labor and money in reduced glass maintenance.

Unelko Corporation, developers of the world-famous Invisible Shield Glass Coatings, is pleased to announce they have made significant advances in the Glass and Building Maintenance category, helping to protect thousands of homes, offices and glass buildings worldwide with their high-performance glass coating.

As homeowners and commercial building owners know quite well, it can be very expensive to have their residences or commercial building's glass cleaned every month or quarter—only to need to get it cleaned again shortly thereafter.

In addition, many window cleaning companies have resorted to using razor blades, abrasive pads and brushes to remove stains, which further scratches and degrades the glass, and dramatically reduces its clarity and appearance.

Thanks to Invisible Shield PRO 15 from Unelko, frequent cleanings that can damage glass are now a thing of the past.

The Advanced Glass Protection system, which is exceptionally easy to apply, has been found to keep glass in a clean, protected and "like new" condition and appearance for 15 years or longer.

"Invisible Shield represents a breakthrough in glass and surface coating technology. It chemically seals the pores of glass, porcelain, and ceramics to prevent water, soil, stains and minerals, scratching, etching and other degradation from permanently damaging the surface," said Howard Ohlhausen, Inventor and Founder of Unelko Corporation.

"It represents the only long-term solution for improved, 'like new' appearance and extended life of glass and tile."

Invisible Shield PRO 15 also increases the scratch resistance of glass by more than 93%, and protects glass against permanent stains, scratches, etching, pitting and other degradation. This eliminates the need for expensive, labor and time-consuming glass restoration.

In addition, Invisible Shield PRO 15 helps to prevent the need for follow-up cleanings.

Residential glass, hotels, and landmark buildings will stay cleaner longer, and in excellent condition and appearance once protected with Invisible Shield.

Some of the companies and/or types of buildings and glass that have benefited from Unelko's Invisible Shield Glass Protection include: Marriott, Hyatt, Hilton, Blue Green Vacations, MGM hotels, Major Hospitals, Stadiums, Airports, Autos/Buses, Cruise Lines, Theme parks like Disney and Sea World, Aquariums, the Smithsonian Institute, Louvre Museum, Vanderbilt Home, Solar Farms, Retail Glass Fronts and Buildings including Apple stores and high-rise buildings.

Speaking of high-rise buildings, Anita Vigil, Director of Operations at Skydeck Chicago in Willis Tower in Chicago, noted that the harsh weather conditions, including winds that blow up to 100 miles per hour, can be tough on the Tower's glass.

"More than average dirt, grime, debris and pollution is thrown at our windows. The Invisible Shield protected glass stays so much cleaner and has saved our team more than 35% in labor savings, requiring much less extensive re-cleaning," she said.

As Mark Evitt, Managing Director of APQ Australia noted, Unelko's Invisible Shield glass coatings are "cutting edge."

"Their products' protective benefits, repellency, durability, performance, and scratch resistance properties exceed all other coatings, and has helped us earn the trust of some of the most prominent names in the glass industry," Evitt said.

Peter Justo, Owner of the nationally recognized commercial cleaning company Enviromaster in Princeton, New Jersey, said that the Invisible Shield products are "phenomenal."

"We use the product somewhere on glass almost every day. In today's business climate, you need products that help us function efficiently and deliver quality performance to our customers. The Invisible Shield Coating fulfills those needs," Justo said.

As Lee Sparaco, Glassologist and Owner of Allied Glass in New York City noted, Invisible Shield has been "time tested" on glass and tile, and has exceeded expectations.

"Invisible Shield has preserved the integrity of many of my glass and tile projects, which are exposed to the harshest conditions and elements for more than two decades," Sparaco said.

Piotr Plaza, Owner of Krysztal, has tested many types of protective coatings for glass. Invisible Shield PRO 15 Glass Coating has been found to offer the best performance, is the easiest to apply and is the most competitively priced product.

"If you want to be the best, you must work with those who are the best and we believe Unelko is a leader in Advanced Surface Coatings and After Care Products," Plaza said.

A+W Software: How Software Solutions Improve Efficiency and Reduce Costs in the Glass Industry

Smart software solutions help glass fabricators streamline operations, reduce waste, and improve profitability in an increasingly challenging market.

The North American flat glass industry is navigating a complex landscape shaped by multiple challenges. Rising raw material costs, increasing energy expenses, trade policy fluctuations, and economic factors like high interest rates all put pressure on fabricators. However, one challenge that cannot be ignored is the increasing demand for improved energy efficiency and cost-effective production. For years, fabricators have sought ways to reduce expenses and streamline operations but evolving regulations and shifting market expectations make continuous optimization more critical than ever. As governments and industries establish new regulations and customers seek competitively priced, high-quality products, glass fabricators must find ways to optimize operations while maintaining profitability. Among the many strategies available, digital transformation through advanced software solutions in both the front office and shop floor offers one of the most effective paths forward.

The Push for Greater Efficiency in the Glass Industry

Today's glass fabricators face growing operational costs, stringent regulatory requirements, and fluctuating energy prices. To control expenses and reduce waste, companies must implement efficiency-driven solutions that streamline production and improve resource management. As industry standards continue to evolve, businesses that proactively integrate advanced technology and process optimization will gain a competitive edge and strengthen long-term profitability.

To remain competitive in this environment, companies must embrace efficiency-driven solutions that help them control expenses, reduce waste, and lower emissions. Regulatory bodies continue to refine industry standards, and businesses that proactively adopt cost-saving and compliance-oriented strategies will position themselves for long-term success.

Upgrading machinery and investing in alternative energy sources can be beneficial but require substantial upfront costs and long implementation timelines. A more immediate and cost-effective approach is leveraging software solutions to streamline operations, reduce waste, improve overall resource management, and optimize supply chain logistics.

How Software Enhances Operational Efficiency

Advanced manufacturing software solutions help glass fabricators take significant strides in cost control, energy efficiency, and emissions reduction through process optimization, automation, and real-time data insights. Here's how:

1. Optimizing Production Efficiency

Manufacturing execution systems (MES), enterprise resource planning (ERPs), and production management software provide real-time monitoring and control of production lines. By minimizing idle time, reducing bottlenecks, and optimizing machine utilization, fabricators can lower energy consumption and increase productivity without adding labor costs.

A+W Smart Factory provides fabricators with an integrated approach to managing production, ensuring efficient workflows and reducing

unplanned downtime. By automating processes and leveraging real-time data, manufacturers can significantly improve overall production efficiency.

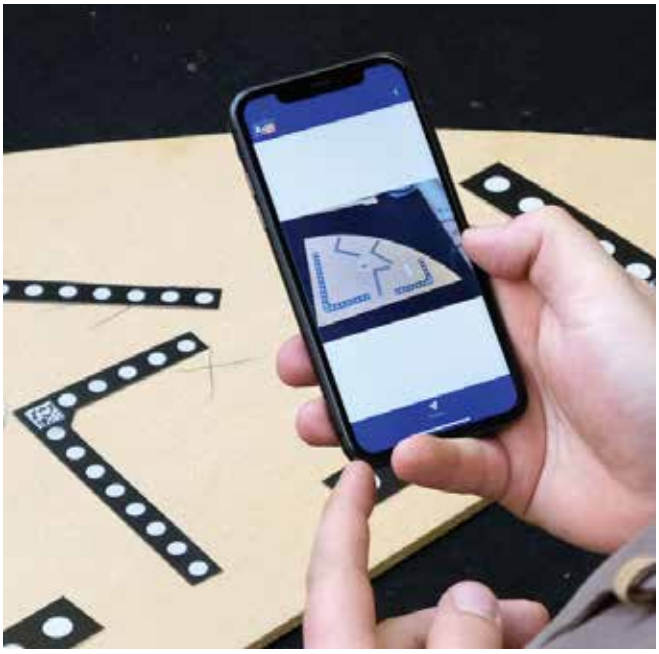
2. Reducing Material Waste

Every defective or excess glass sheet produced represents wasted raw materials, higher production costs, and increased environmental impact. Software-driven production planning and quality control systems ensure precision in cutting and processing, minimizing scrap rates and improving cost efficiency while reducing landfill waste.

The A+W Smart Companion Production scanner app revolutionized barcode scanning by eliminating the need for costly hardware. Designed for efficiency, it securely scans lites allowing you to track items as they move throughout the facility, increases employee productivity, and provides real-time visibility into order components and rack contents.

While A+W Smart Companion Stock helps you improve inventory control of hardware and stock items. This simple app was built to help you properly stage stock items to pair with fabricated glass orders and speed up your cycle counting with electronic inventory lists. Thus, your employees can better track goods receipts, stock movements, outgoing goods, and inventory all in real time.

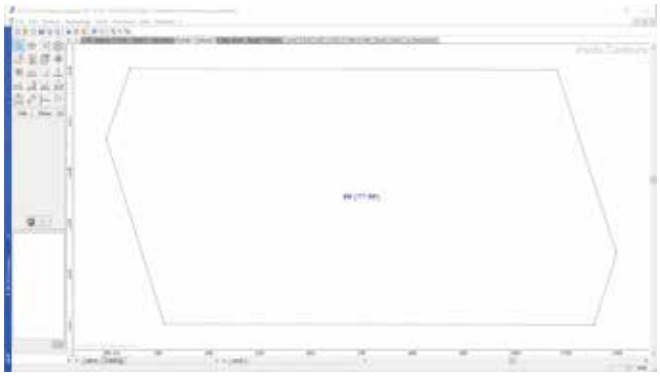
What does this mean for you? Your employees can better track goods receipts, stock movements, outgoing goods, and inventory all in real time. The app also ensures that all users always work with up-to-date data.What does this mean for you? Your employees can better track goods receipts, stock movements, outgoing goods, and inventory all in real time. The app also ensures that all users



always work with up-to-date data.A+W iShape, our updated template-digitizing software solution, allows you to photograph templates with a smartphone camera and then digitizes the template for easier fabrication. These improvements allow for greater functionality and user-friendliness. First, place the L-shaped reference objects to automatically detects the template/photographed object. Second, the L-shaped reference objects help correct any distortions when photographing a template. Once photographed, the iShape file can be imported into A+W CAD Designer, where further edits can be done. Fourth, transfer the DXF file to your CNC machine and start the production. This greater flexibility allows you to generate digital data from templates, which saves you time and money, while making your customers happier.A+W iShape, our updated template-digitizing software solution, allows you to photograph templates with a smartphone camera and then digitizes the template for easier fabrication. These improvements allow for greater functionality and user-friendliness. First, place the L-shaped reference objects to automatically detects the template/photographed object. Second, the L-shaped reference objects help correct any distortions when photographing a template. Once photographed, the iShape file can be imported into A+W CAD Designer, where further edits can be done. Fourth, transfer the DXF file to your CNC machine and start the production. This greater

flexibility allows you to generate digital data from templates, which saves you time and money, while making your customers happier.

A+W iShape, in conjunction with Viprotron, is another software solution that allows companies to work faster, while also enabling quicker turnaround times by limited waste of both time and material. By utilizing our proprietary L-angles, employees can digitize a customer's template in just a few minutes and send it to A+W CAD Designer before fabricating it on the shop floor.



A+W CAD Designer is a powerful CAD system built specifically for the flat glass industry, making it easy to create complex free forms and reusable templates. It streamlines the entry of lite and contour data, integrates customer CAD files, and digitizes templates for precise design. With automated CNC code generation and an intuitive bar design program, it ensures accuracy and efficiency for construction and automotive glass manufacturing.A+W CAD Designer is a powerful CAD system built specifically for the flat glass industry, making it easy to create complex free forms and reusable templates. It streamlines the entry of lite and contour data, integrates customer CAD files, and digitizes templates for precise design. With automated CNC code generation and an intuitive bar design program, it ensures accuracy and efficiency for construction and automotive glass manufacturing.

3. Energy Monitoring and Smart Scheduling

Energy-intensive processes, such as glass melting and tempering, contribute heavily to operating expenses. Software that integrates with smart meters and energy tracking systems can identify peak energy consumption periods, allowing manufacturers to optimize scheduling and reduce unnecessary energy expenditures.

4. Supply Chain Optimization

Managing inventory effectively and optimizing transportation routes can lead to significant cost savings and lower carbon emissions. Software solutions enhance inventory management, improve supplier coordination, and reduce transportation-related expenses by streamlining logistics and ensuring better forecasting.

While A+W Smart Companion Stock helps you improve inventory control of hardware and stock items. This simple app was built to help you properly stage stock items to pair with fabricated glass orders and speed up your cycle counting with electronic inventory lists. Thus, your employees can better track goods receipts, stock movements, outgoing goods, and inventory all in real time.

A+W Smart Delivery ensures efficient logistics planning, allowing manufacturers to optimize delivery routes, avoid tolls or construction, reduce fuel consumption, and lower transportation costs. By automating scheduling and tracking, companies like yours can streamline their supply chain operations and improve customer satisfaction.

According to Ryan MacDonald, the head of IT at PFG Glass in British Columbia, who uses the A+W Smart Delivery on a daily basis, describes the savings and process as follows: "A+W Smart Delivery is great software that saves us time and

paperwork. For example, it allows us to save about 3 hours a day between four people reducing the handling of paperwork and delivery notes for both drivers and customers."According to Ryan MacDonald, the head of IT at PFG Glass in British Columbia, who uses the A+W Smart Delivery on a daily basis, describes the savings and process as follows: "A+W Smart Delivery is great software that saves us time and paperwork. For example, it allows us to save about 3 hours a day between four people reducing the handling of paperwork and delivery notes for both drivers and customers."

5. Data-Driven Decision Making

With real-time analytics, manufacturers can track key performance indicators (KPIs), such as energy use, production efficiency, emissions levels, and cost per unit. Data-driven decision-making helps businesses identify inefficiencies and adjust processes to improve overall financial performance while maintaining compliance with industry regulations and sustainability goals.

A+W solutions provide advanced analytics and reporting tools, allowing fabricators to make informed decisions based on accurate, real-time data. By identifying trends and inefficiencies, businesses can take proactive steps to optimize operations and reduce costs.

The Role of A+W Software in Cost Control and Compliance

As outlined above, A+W's suite of software solutions can help at every touchpoint in the glass fabrication process because our solutions were designed to optimize production, enhance resource efficiency, and improve customer satisfaction. These solutions, whether its A+W Production, A+W Smart Delivery, or A+W Smart Companion, equip fabricators with real-time data and automation capabilities, enabling dynamic process adjustments to reduce waste and operational costs while adhering to regulatory standards. By tracking key metrics and facilitating immediate responses to production variables, A+W's software empowers glass manufacturers to achieve their financial and operational objectives

efficiently.

Industrial scanners are being usurped by smartphones, equipped with A+W's Smart Companion app. A+W's app assists companies along the entire value-creation chain and contributes to digitalization, saving time and money. A+W's Smart Companion acts as a mobile information terminal, allowing employees to display locations of order components and contents of racks, making communication bidirectional.Industrial scanners are being usurped by smartphones, equipped with A+W's Smart Companion app. A+W's app assists companies along the entire value-creation chain and contributes to digitalization, saving time and money. A+W's Smart Companion acts as a mobile information terminal, allowing employees to display locations of order components and contents of racks, making communication bidirectional.

Looking Forward

The glass industry’s path forward requires a multi-faceted approach that prioritizes cost reduction, energy efficiency, and regulatory compliance. A+W Software plays a critical role in this digital transformation, providing glass fabricators with the tools to streamline processes, optimize resource usage, and reduce operational risks. By implementing A+W’s smart software solutions, companies can lower expenses, enhance productivity, and build a more resilient business in an increasingly competitive market. Those who embrace A+W’s technology will be better positioned to improve efficiency, maximize profitability, and sustain long-term success.

Satinal: Understanding Solar PV Science

Satinal releases a technical update on solar panels, highlighting advancements in efficiency and performance.

In a recent update, Satinal - Italian manufacturer specializing in STRATO® Interlayers for safety glass lamination and STRATO® SOLAR PV Encapsulants for photovoltaic modules - released a comprehensive technical background on solar panels, highlighting the significant advancements made in the field over the years. The innovations have led to the development of increasingly sophisticated photovoltaic modules, capable of harnessing more solar energy and improving overall efficiency.

Traditional solar panels primarily convert visible light into electricity. However, a significant portion of the sun's energy is carried by ultraviolet (UV) rays.

The latest breakthrough in solar technology is known as UV conversion. This innovative approach leverages the power of ultraviolet rays, a component of sunlight often overlooked in traditional solar panels. By incorporating specialized materials that can absorb and convert UV light into usable energy, UV conversion technology promises to increase the overall energy output of solar panels, even in conditions with less direct sunlight.

Main benefits of photoconversion films in easy-to-understand terms.
Prolonged Module Longevity: a UV-converting encapsulant substantially mitigates power decline due to UV degradation. By transforming harmful UV radiation into useful light, it optimizes the module's spectral response and reduces performance deterioration.

Extended Module Lifespan: an encapsulant with UV conversion properties can perform significantly better in reducing power loss caused by UVID. By converting harmful UV rays into beneficial blue light, it enhances the spectral response of the module and minimizes degradation.

Reduced Levelized Cost of Energy (LCOE): by enhancing the longevity and energy output of PV modules, this technology contributes to a lower LCOE, making solar power projects more financially attractive.

Boosted Energy Production: leveraging the light conversion technology, solar installations experience a significant uptick in energy generation, leading to improved returns for solar project owners.

Conclusion
UV Conversion technology harnesses harmful UV radiation, converting it into beneficial light. This pioneering approach not only safeguards the solar module but also definitely enhances energy output. This encapsulant technology represents a significant leap forward in photovoltaic module performance. By absorbing UV radiation and re-emitting it as blue light, it extends the module's spectral sensitivity, resulting in a tangible increase in energy production.

Sparklike: How Argon Tester Revealed Quality Issues in Sealed Units

This case study involving two UK-based companies demonstrates the critical importance of precise gas measurement and proper calibration in maintaining consistent product quality.

Accurate measurement with argon tester and strict quality control are essential components in the production of high-quality insulating glass units (IGUs). As industry standards become increasingly stringent, manufacturers and suppliers must employ reliable methods to ensure product quality and performance. This case study involving two UK-based companies demonstrates the critical importance of precise gas measurement and proper calibration in maintaining consistent product quality.

The Story

A small glass manufacturing company reached out to our distributor for a demonstration to find out if there are inconsistencies in the insulating gas content of their IGUs. Producing around 20-30 IGUs per day, the company also sources an additional 200 units weekly from a larger supplier. As part of the demonstration, the company conducted gas content testing on both their own products and those sourced from their supplier.

The self-produced IGUs had consistent gas content levels of 88-95%, confirming adherence to their internal quality standards. However, the gas content levels of the purchased units showed significant deviations, measuring only 60-65%. This discrepancy raised concerns and prompted the company to address the issue with their supplier.

Taking Action

Using data gathered from Sparklike Handheld gas measurement device, the smaller manufacturer brought the issue to the attention of their supplier. As a result, the supplier has returned both of their own Handheld devices for calibration—one of which had not been calibrated since 2012 and the other since 2014. This incident highlights the necessity of quality control routine and calibration and maintenance to ensure the continued accuracy of gas measurement devices.

The Impact

Following this discovery, the smaller company is now looking to invest in its own argon tester, Sparklike Handheld, to maintain full control over the quality of its production.

Lessons Learned

Accurate Measurement is Critical: This case underscores the importance of precise gas measurement in maintaining consistent product quality. Even small deviations in gas content can indicate potential quality issues.

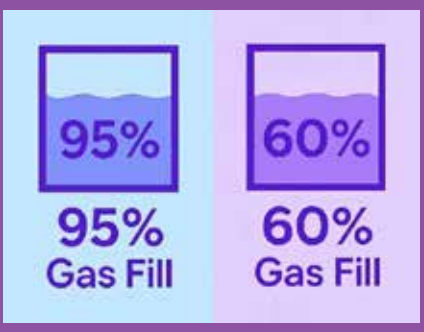
Regular Calibration is Necessary: Gas measurement devices require regular calibration to ensure they provide accurate readings. Neglecting calibration can lead to incorrect measurements and ultimately compromise product quality.

Proactive Quality Control: By implementing robust quality control measures and using reliable equipment, manufacturers can build trust and accountability across the supply chain. This approach not only benefits the manufacturer but also their suppliers and customers.

Reputation Risk Cannot Be Ignored: Poor quality control has broader consequences beyond defective products. In this case, the supplier's reputation suffered when their customer identified inconsistent gas fill rates. Once a customer finds a quality issue, trust is damaged, and this can result in lost business opportunities or strained partnerships. Maintaining a strong reputation requires ongoing commitment to quality control and transparency throughout the production process.

Conclusion

This case study serves as a reminder that ensuring the quality of insulating glass units requires the right tools and processes. Regular gas content measurement and device calibration are key factors in achieving consistent quality and maintaining compliance with industry standards. Whether a small manufacturer or a large supplier, accurate measurement practices are fundamental to delivering products that meet customer expectations and regulatory requirements.



Thermoseal Group: Why Expertise Matters as Much as the Product

Thermoseal Group's Sales Director, Mark hickox, explains why the knowledge and experience of your supplier's team can be just as valuable as the products they provide.

The perfect IGU isn't just about having the right materials - it's about having the right support, guidance, and expertise behind those materials.

Afterall, the difference between a supplier and a true partner lies in the experience and knowledge that they bring to the table.

At Thermoseal Group, we know that IGU manufacturers don't just need high-quality components; they need a supplier who understands the challenges they face, anticipates their needs, and provides solutions that help them maximise efficiency and profitability.

That's why our team is made up of some of the most knowledgeable and experienced professionals in the industry; we don't just sell products; we work with our customers to help them to consistently succeed.

All of our customers are assigned a dedicated Area Sales Manager, who has years of experience in the industry. They support customers on everything, ranging from technical advice to optimising production, and are on-hand to visit customers' premises to see their processes in action, and offer the most salient product advice.

We also offer practical training, helping manufacturers get the best out of their materials, reduce waste, and fine-tune their production lines for maximum efficiency.

But it's not just about what we offer - it's about how we deliver it. Every IGU manufacturer has unique challenges, and a one-size-fits-all approach simply doesn't work. That's why our team is always on hand to provide personalised advice, helping to troubleshoot production issues and advising on the most cost-effective material choices for a specific project.

For example, when customers invest in new production methods, our team are on-hand to help ensure that materials are compatible, machinery is optimised, and production runs as smoothly as possible. This proactive approach means fewer delays, fewer costly mistakes, and more streamlined operations.

It's this commitment to supporting our customers that led to us being named Component Supplier of the Year at the G24 Awards. This recognition is a testament to the hard work of our entire team, who are dedicated to providing the best products and services in the industry. Afterall, we don't just deliver materials; we deliver expertise, and this award reflects the trust our customers place in us as a partner who genuinely adds value to their businesses.

Whether it's providing the latest insulated glass technology, offering expert technical support, or working with customers to develop new solutions, we're committed to ensuring our customers get the maximum value from their supplier relationship.

And it's our experienced team that makes this possible. With decades of industry knowledge and a passion for helping manufacturers succeed, we're here to ensure that every sealed unit manufacturer has the expert support they need to thrive.

Thermoseal Group Warns of Market Consolidation as Automation Advances in the UK

Thermoseal Group has raised questions over market consolidation in the UK in response to advancing automation, a trend already seen elsewhere in Europe.

The specialist insulated glass component manufacturer and distributor has suggested that moving to complete automation, which will likely only be possible for the largest fabricators due to cost, could leave smaller companies unable to compete, as savings made on labour drive prices down.

Mark Hickox, Sales Director for Thermoseal Group

Drawing parallels with Germany, Mark Hickox, Sales Director for Thermoseal Group, said: “Germany’s been automated for 10 years, and I think the UK has got some catching-up to do.

“One thing that naturally follows automation is a concentration of the market. A lot of small or medium sized customers will be priced out of the market and will end up being bought by the bigger ones. So, in the end, you will have 50 large customers instead of 200 of varied sizes, for example.”

With UK fabricators also facing increased employment costs from April, Mark believes the impact of this added financial burden will only accelerate the move towards automation.

"The other main reason to go automated is the hikes in minimum wages and National Insurance Contributions, which are really making some of our customers struggle,” he said.

“This could add thousands of pounds to the wage bills of a business that may only generate small amounts of profit. Passing that on is very difficult. But it's not going to be cheap to borrow money this year – we have already seen inflation rise which has made the prospect of interest cuts appear less likely.”

Thermoseal Group Warns of Market Consolidation as Automation Advances in the UK

In addition to rising employment costs, labour shortages experienced by many manufacturers - from small to medium companies, to super fabricators - are also fuelling the move towards automation.

“It is getting more and more difficult for our customers to recruit skilled operators, and so we’re seeing huge staffing problems across the sector”, Mark said. “If businesses are struggling to find the right people, then it is surely another catalyst for the move towards more automation,” he said.

Thermoseal Group, which became part of the Fenzi Group last year, recently saw annual production capacity of its UK-manufactured Thermobar warm-edge spacer more than double after investing in automation.

Guardian Glass publishes new Environmental Product Declarations for its Asia Pacific products

Guardian Glass has published new Environmental Product Declarations (EPDs) for its portfolio of processed and unprocessed flat glass produced in Thailand.

Products covered include its range of float glass (clear and tinted), laminated glass, and wet coated (mirror) glass.

Third party verified by an independent external verifier (UL), the four EPDs cover the following products:

Guardian™ Clear, Guardian™ Light Green, and Guardian™ Solar Management Glass float glass
Guardian LamiGlass™ laminated glass product range
Guardian UltraMirror™, Guardian UltraMirror™ Plus and Guardian UltraMirror™ Life mirror glass
Guardian™ Clear, Guardian™ Light Green, and Guardian™ Solar Management Glass for automotive applications, according to the Automotive Product Category Rules (PCRs)

Studio Fränk WeberStudio Fränk Weber

The EPD for float glass used in architectural and interior design applications follows a cradle-to-gate (A1-A3) study, conducted in accordance with ISO 21930 and the North American PCRs. It reports an embodied carbon value of 9.97 $kgCO_2e/m^2$ for 4 mm glass*.

The EPD for automotive glass follows a cradle-to-gate with Options study (A1-A4, C1-C4), incorporating both transportation from Thailand to Australia and New Zealand (A4) and end-of-life considerations (C1-C4). Developed in accordance with the Automotive & Transport UN PCRs, the total embodied carbon for 4 mm automotive glass is 12.3 $kgCO_2e/m^2$. This includes an A1-A3 embodied carbon value of 10.02 $kgCO_2e/m^2$ and an A4 transportation impact of 2.16 $kgCO_2e/m^2$ for shipments to Australia and New Zealand.

Guardian Glass publishes new Environmental Product Declarations for its Asia Pacific products

Renn Glass

In parallel, Guardian Glass has introduced a new feature to its current Performance Calculator tool, which allows users to calculate the embodied carbon** for the glazing configurations they select. This online tool (part of Glass Analytics) enables the modeling of the thermal and optical properties of glass substrates, coatings and interlayers. The new Performance Calculator feature provides an estimate of the embodied carbon equivalent for a wide number of glazing combinations, as it is available for most float glass, sputter-coated glass, and laminated glass products produced by Guardian Glass in Asia Pacific, North America, South America, Europe and Africa Middle East & India.

Sascha Klengel, Guardian Glass Sales Leader in Asia Pacific comments: “We are excited to

increase visibility for the embodied carbon value of our glass products for the construction and automotive sectors. By increasing the understanding and accessibility to the environmental attributes of our glass, we can help our partners make informed glass specification decisions for a positive impact on the performance of their vehicles, facades and interior design projects. Our new EPDs demonstrate our commitment to the Environmental priorities of our Stewardship Framework."

Access to Glass Analytics and the Performance Calculator - with embodied carbon calculator feature - is via the Resource Hub on the Guardian Glass website.

Guardian Glass publishes new Environmental Product Declarations for its Asia Pacific productsGuardian GlassGuardian Glass publishes new Environmental Product Declarations for its Asia Pacific productsGuardian Glass

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* Global Warming Potential of the A1-A3 stages includes the impacts from the raw materials extraction and processing stage, raw materials transportation to the manufacturing site, and the manufacturing of the product. This term is

sometimes referred to as the "product carbon footprint" or "embodied carbon."
**The embodied carbon data is the carbon equivalent in kg per ton or square meter of glass (CO 2 eq.), emitted during the glass production (cradle-to-gate, A1-A3). The calculation is an estimation based on the material's Embodied Carbon Factor (ECF) which were derived from the scaling factors and results in the Regional Environmental Product Declarations (EPDs), third-party, independently verified documents that communicate transparent information about the lifecycle environmental impacts of a product.

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