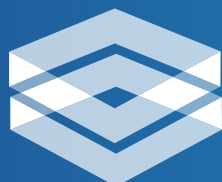


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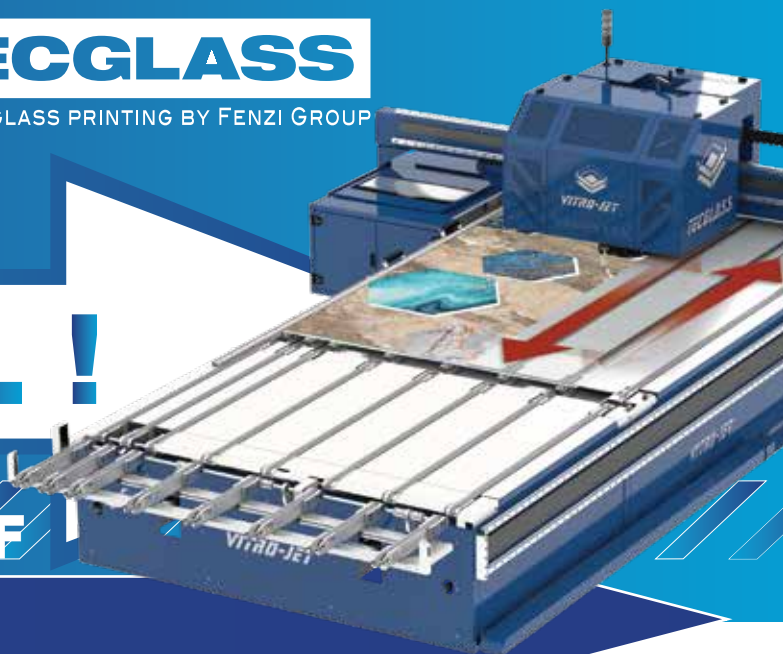


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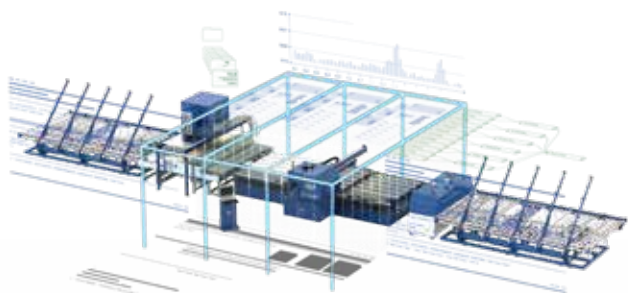
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# Filtraglass and Glashaerderiet: water filtration systems around Europe



Filtraglass, with over 20 years of experience in the sector are specialists in the manufacture of water filtration systems for all types of glass industries, covering a wide sector of the automotive and optics industries, as well as the transformation of flat glass in general. Throughout its long history, the company has become a renowned international market leader, providing cutting-edge systems and exporting them to various countries. Today, its water filtration systems can be found in the Americas, Europe and Asia. The latest system to be installed by Filtraglass was at Glashaerderiet (Denmark).

**-Why did you decide to buy a purification machine?** There are a number of reasons which led to this decision. First and foremost, having a water treatment system in place enables us to significantly reduce our water consumption. We are thus able to both improve our production rate (because the machine doesn't need to be switched off to change the water) and additionally, pollution is reduced. Another vital factor for us is that by

using clean, good quality water in our handling machines means they last longer and their parts don't need changing as often. Similarly, as the water doesn't have to be changed we can now reduce our coolant consumption.

**-Why did you choose Filtraglass systems?** We opted for Filtraglass because it's a brand with many years of experience and renowned worldwide. Moreover, right from the beginning, Filtraglass proved themselves to be reliable and professional making us feel confident we had made the right decision. At the initial meeting with them, they understood our needs and provided us with customised advice on which system would meet the requirements of our company. In our opinion, their professional attitude and attention to detail were key. Without a doubt, the fact that their systems enable us to do our bit for the environment is also a huge plus.

On a day-to-day basis, what are the most noticeable differences you have experienced after





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purchasing a Filtraglass system? As well as the obvious reduction in the amount we pay for our water supply, there are two other changes that can be emphasised. Firstly, an overall improvement in the quality of the final product; since we installed the first Filtraglass system, our glass displays a transparent finish with absolutely no signs of dust marks and debris. This sparkling finish reflects positively on the quality of the product we offer and the reputation we have with our customers. Furthermore, and also very importantly, our productivity has increased because there is no need stop the production line for maintenance work anymore. Our machines are working non-stop, so we're now able to offer more in the same amount of time.

**-What has your relationship with Filtraglass been like over time?** From the outset, we have had a very positive business relationship with Filtraglass. This began before we even purchased the machine, with their advice, then during installation, which also went very smoothly, and now with their technical and after-sales service. The Filtraglass team is always willing to help us resolve any queries or problems whenever they arise and we also appreciate being able to contact them in a variety of ways, including WhatsApp, which is very practical. From the moment we started working with Filtraglass, Luis and his team have been monitoring it to ensure it runs smoothly



and have always offered to help when necessary. This excellent relationship and after-sales service is another real advantage along with everything else the company offers.



**-How do you see the future of the glass industry?** I see an industry becoming more centralised by larger established companies. These companies have a broader approach to optimising general operating costs, maintenance of machines, as well as focus for the green transition. We are already seeing that thinking about the environment and offering a green solution, meeting customer demands for sustainability, is gaining more and more ground in the Nordic countries. Deciding on a transition in your company from a more traditional operation, to thinking green and taking social responsibility into the companies is a big decision and involves a lot of work, it is something that everyone will have to do sooner or later, and I believe that those who do get a head start will have a better competitive parameter and be stronger in the market, EPD – LCA – ESG, is the focus already now, and will be for many years to come. I predict that those in the glass industry who dare to take the plunge into a greener future will undoubtedly reap great advantages from doing so.



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# Glaston at China Glass 2024 – showcasing glass processing innovations

When the markets and industries keep changing, it is good to keep the essentials in mind - trusting the originals when choosing technology providers and partners to support you every step of the way. At this year's China Glass, we will be showcasing some of our latest technology developments. Below are just a few of the most exciting innovations you can expect to see firsthand.

## Insulating glass manufacturing:

### Glaston TPS® – the most flexible IG manufacturing

Now available exclusively in China with Glaston COMFORT IG lines, TPS® is the most 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® simplifies production significantly. It eliminates any need to stock different spacer profiles and connectors. Plus, changes to spacer width can be made during the process without any loss of time.

Invented by Glaston, TPS® has already been installed at over 170 glass processing facilities worldwide. The technology has been developed in Germany and the main components TPS®'APPLICATOR and UNIT'ASSEMBLER will be provided from Germany. In combination with all other line components that are manufactured and assembled in China the new COMFORT line featuring the capabilities of TPS® is the ideal entry solution into the TPS® IG manufacturing technology for customers in China.

### Glaston COMFORT'SEALER – an automatic sealing robot

Glaston has a solution for those who no longer want to seal IG units manually. The automatic sealing robot COMFORT'SEALER transforms Glaston COMFORT BOX into a fully automated insulating glass production line.

COMFORT'SEALER offers high material dosing accuracy as its superiority. The gear pump dosing

technology allows the solution to precisely determine the sealing depth and width. It then applies the exact volume of the sealing material required.



## Flat glass tempering:

### Glaston TC Series – energy-efficient production

Effective and accurate heating is key to high-yield, high-performance glass production. The TC Series tempering furnace utilizes the Chinook circulated air convection system, which reduces energy consumption to an absolute minimum. The solution ensures faster heat transfer for shorter cycle times. This allows overall production costs to be reduced, including labor costs per square meter.

With an automatic process adjustment based on a large number of measurements, Chinook stands





out as the market's most efficient heating system. In practice, it minimizes operator input while maintaining consistently high capacity.

The TC Series furnace meets the ever-growing safety requirements for fire-resistant or super-tempered glass.

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

From shower doors to architectural glass, the Glaston RC Series offers effortless tempering for all glass types.

The RC Series is very easy to operate, requiring minimal effort for smooth and effective processing. Thanks to the RC Series' accurate and intelligent heating system, the line maintains impeccable glass quality even at increased production rates.

Ensuring uninterrupted production, the RC Series boasts the highest uptime and can be upgraded, if necessary, to meet evolving future processing needs. It also facilitates easy maintenance and guarantees the best availability of spares and support in the market.

The line is configurable to meet diverse capacity needs, providing a tailored solution for your specific requirements.

## **Automotive glass processing:**

### **Glaston CHAMP EVO – an evolution in automotive glass preprocessing**

Glaston CHAMP EVO represents the latest evolution in the CHAMP automotive glass preprocessing line.

The grinding machine of the newest CHAMP EVO boasts considerably higher precision. Its

energy-saving linear drives significantly reduce maintenance costs and wear, while a freely moveable glass holding system ensures shorter changeover times.

Moreover, the line features lighter and better-optimized moving parts, such as the cutting bridge and the grinding table, along with many other technological improvements.

### **Glaston HYPERFEX – a revolution in edge grinding**

Glaston has developed its glass edge grinding solution, HYPERFEX, in extensive cooperation with experts and research institutions.



The HYPERFEX grinding system is a novel approach to glass grinding that takes into account all process-relevant parameters. In combination with the HYPERFEX Administrator software, which links the grinding wheel with the control system, the solution opens huge improvement potential in edge grinding.

Benefits of this innovative solution include improved cycle time and machine performance, enhanced grinding quality, extended wheel lifetime and increased grinding capacity. Additionally, HYPERFEX grinding wheels comply with all application requirements.

## Glaston Tianjin Open House – experience innovation firsthand

We invite you to visit our state-of-the-art facilities and take a closer look at Glaston glass processing technology in action!

Explore our COMFORT IG line demo, see the TC Series tempering line in assembly and witness the precision of our CHAMP EVO pre-processing line. Date: Monday, April 29, 2024, from 10:00-15:00 Venue: Glaston Tianjin (close to Beijing) Register: [jerry.yin@glaston.net](mailto:jerry.yin@glaston.net)

**Meet us at China Glass 2024, Hall N1, Booth #300!**

# HFT

## selected for PQ's Augusta, Georgia expansion



**HFT will deliver the global silicates producer's new U.S. expansion project, targeting a production date of 2025.**

PQ LLC has hired HFT to design and build its new silicate production line in Augusta, Georgia. The

new line will be built on an existing site and will utilize the latest technology to reduce greenhouse gas intensity.

McMurray, Pennsylvania based HFT will serve as engineering, procurement, and construction (EPC) contractor on the project, and will begin with detailed engineering, early site work and long-lead equipment procurement in the first quarter 2024. PQ and HFT expect the project to be completed for production to begin in 2025.

This project showcases HFT's ability to deliver a single-source fully integrated project solution. HFT will bring the expertise to execute all elements of the project from site/civil through the process.

"HFT is excited to work with PQ as they enhance their production capabilities in a way that delivers on their core value of sustainability," says HFT President and CEO Mark Piedmonte.

PQ is a leading global provider of silicates, silicas and derivative products. PQ's products are used in a wide variety of industrial processes and many customer products, from decorative paints to green cement, from clean drinking water to green tires, and from toothpaste to biofuels and beer. Supported by 1,400 employees across 32 facilities in 13 countries, PQ serves more than 900 customers around the world.





# CHINA GLASS 2024

## The 33<sup>rd</sup> China International Glass Industrial Technical Exhibition

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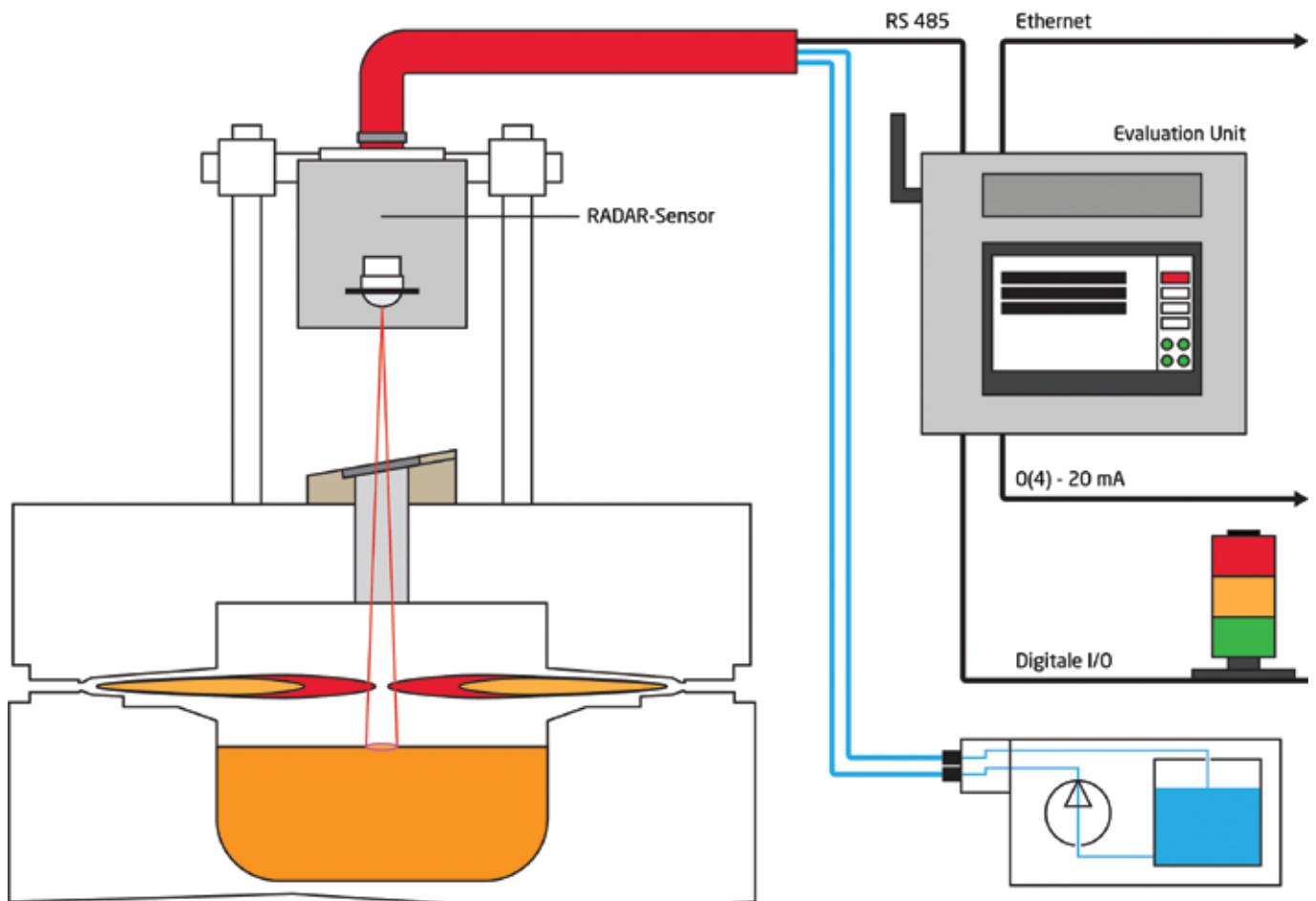
# Nikolaus SORG measures glass levels with radar precision

Nikolaus SORG has taken a leap forward in the field of glass production by incorporating radar technology and thus achieves greater accuracy in the measurement of glass levels. This new approach plays a major role in achieving the highest standards of production efficiency. The importance of this precise measurement cannot be overstated, as even minor inaccuracies can lead to substantial errors and increased loss rates, especially in sensitive processes like the narrow-neck press-blow (NNPB) method for container production.

Traditionally, other industries are using radar technology, but its application in measuring glass levels is an advancement for both SORG and the glass manufacturing sector at large. This new, contact-free method boasts a measuring accuracy of  $\pm 0.1$  mm, setting a new benchmark for precision without the need for any mechanical components.

The design of this radar measurement system is specifically engineered to withstand the harsh conditions of glass production environments. It features a water-cooled and fully sealed unit, which is placed above the target measurement area. The system operates through an opening shielded by a specially designed disc that is permeable to radar waves, allowing for accurate distance measurement between the glass surface and the radar sensor. This setup ensures that the system remains unaffected by the extreme heat and dust common in glass manufacturing facilities.

One of the main advantages of the system is its flexibility in positioning the measuring point to fulfil the specific operating requirements and environmental conditions. Moreover, this technology is designed to be inherently safe, as it does not produce any harmful radiometric emissions, making it a safe choice across all types of glass production, regardless of the colour of the glass being manufactured.





The radar-based glass level measurement system is not only recognised for its technical and operational benefits but also for its economic advantages. It is characterised by low installation costs and ongoing maintenance requirements. The system's design facilitates remote servicing, enhancing its usability and efficiency. Furthermore, it is designed with compatibility in mind, enabling seamless integration into existing production and control systems. This adaptability also extends to retrofitting capabilities, allowing facilities with pre-existing setups to upgrade to this advanced technology without significant modifications.

In summary, SORG's introduction of radar technology for measuring glass levels represents a significant technology in glass production, combining high precision, operational resilience, and economic efficiency. This technology sets a new standard in the industry, promising enhanced production quality and reduced error rates, ultimately contributing to more sustainable and profitable manufacturing processes.

Find out more about SORG and their services at [www.sorg.de](http://www.sorg.de)

## O-I Glass CEO Andres Lopez to retire



After 40 years at O-I Glass, Andres Lopez will retire on May 15th.

Mr Lopez joined O-I in 1986 and has held numerous leadership positions across the company's global operations before being named CEO in January 2016.

Among other achievements, he successfully led the completion of a business portfolio optimisation programme, strengthened the balance sheet, delivered several inorganic and organic expansion projects and integrated sustainability into the business strategy.

During his tenure, the company has focused on innovation, exemplified by initiatives such as the development of its MAGMA and ULTRA technologies.

John H. Walker, Independent Board Chair, said: "On behalf of the Board, I would like to thank Andres for his vision, leadership and contributions to O-I during his nearly four-decade tenure, including the last eight years as CEO.

"Andres has played a critical role in strategically

expanding O-I into key global markets and transforming the business to be an innovation leader.

"The Board is committed to identifying a leader to build on this momentum and deliver future value creation for O-I customers and shareholders. We look forward to continuing to work with Andres as we complete the search process and wish him all the best in his well-deserved retirement."

The Board has been working with an executive search firm to identify O-I's next CEO.

Mr Lopez is committed to supporting a seamless transition of responsibilities to his successor.

Mr Lopez said: "It has been a privilege to serve as CEO of O-I for these past eight years and to work alongside such a talented team for the entirety of my career.

"We have made significant progress on our transformational journey and are well-positioned to meet the evolving requirements of the packaging market and capitalise on emerging trends.

"Indeed, I am extremely proud of what we have built together as we advance new standards in sustainable glass manufacturing. O-I has a bright future and I believe that breakthrough innovations like our MAGMA technology are just the beginning."

Mr Lopez will step down from the O-I Board of Directors at the Company's 2024 Annual Meeting of Stockholders to be held on May 15, 2024.

# Glaston JUMBO XXL allows AGC Interpane to maintain its leading-edge

“I walk through our insulating glass production facility every day with pride,” says Daniel Bruckelt, Production Manager Insulating Glass of AGC Interpane in Plattling, Germany. “Not just because everything is so well organized and structured, but also because Glaston has given us a coherent concept for our unique insulating glass (IG) production. And this is what allows us to remain top-of-mind for challenging world-class projects.”

AGC Interpane’s Plattling plant, located at the gateway to the Bavarian Forest, produces high-quality semi-finished glass products and insulating glass. Since 2012, AGC Interpane has been coating glass up to 18 m x 3.21 m. This extra-long glass can be coated with a variety of solar control layers or iplus thermal insulation layers.

AGC Interpane’s Plattling site specializes in processing logistically complex, fixed-size insulating glass orders. The company’s magnetron sputtering system, a physical vapor deposition method that produces thin films and coating, differentiates the company from its competition. The system allows AGC Interpane to offer high-quality façade glass from a single source.

AGC Interpane has been a long-term customer of Glaston and the earlier brands that now belong to the Glaston family. The company currently has three Glaston insulating glass lines and one Glaston tempering line. The most recent addition, the Glaston JUMBO XXL FLEX line, was customized for AGC Interpane. The line was ordered in 2021 and commissioned in April 2022. It allows AGC Interpane to automatically produce jumbo formats up to 3.3 x 6 m.

Earlier, these could only be produced semi-automatically or with additional manual effort. The line includes standard components for edge deletion, glass cleaning and glass inspection as well as several specially engineered features.

The first unique feature is the FLEXSPACER’TWINAPPLICATOR, a

twin-headed applicator for the automatic application of Super Spacer® material including T-Spacer™ butyling.

The second feature is the UNIT’ASSEMBLER, a heavy-duty assembly, gas-filling and press robot, which automatically processes 4-sided stepped IG units with a stepped bottom edge of up to 250 mm. Other special formats can also be automatically filled with gas. Until Glaston made this automatic production possible, such units could only be produced manually.

The third special feature is the heavy-duty Glaston sealing robot SPEED’SEALER, which opens up new sealing possibilities. Its dynamic mixing system helps AGC Interpane quickly manufacture deeper sealings.

“Glaston has given AGC Interpane a unique constellation in the spacer application sector. We are the only ones in the world to have this configuration. The UNIT’ASSEMBLER allows us to process special shapes and fill them automatically with gas. The SPEED’SEALER has eliminated any bottleneck at the end of the line. This means that it is now possible to automatically produce large insulating glass units weighing up to 600 kg / m,” Daniel Bruckelt says.

## Glaston in brief

Glaston is the glass processing industry’s innovative technology leader supplying equipment, services and solutions to the architectural, mobility, solar and display industries. The company also supports the development of new technologies integrating intelligence to glass.

Glaston is committed to providing its clients with both the best know-how and the latest technologies in glass processing, with the purpose of building a better tomorrow through safer, smarter, and more energy efficient glass solutions. Glaston operates globally with manufacturing, services and sales offices in nine countries and its shares (GLA1V) are listed on NASDAQ Helsinki Ltd. For more information visit [glaston.net](http://glaston.net).





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Edgetech at China Glass Show 2024

# Under the motto "More efficiency in the manufacture of insulating glass", Edgetech will be presenting its entire Super Spacer® family from April 25th to 28th April in Shanghai.



Joachim Stoss, Vice President International Sales IG: "In 1989, Edgetech was the first manufacturer worldwide to introduce flexible, foam-based warm edge spacer systems.

Since then, we have seen an incredible amount of innovation in the window and facade technology. Today, our Super Spacer® can show its full potential in many domains.

Whether it is in the areas of energy efficiency, room comfort, in automated insulating glass production, as well as in the aesthetics of the edge seal."

## Lever 1: The structure of the edge seal

The expression, "the whole is more than the sum of its parts" also applies to the edge seal. The spacer and its desiccant capacity, in combination with primary seal and secondary sealant, are an essential element in ensuring the water vapour and gas impermeability and energy performance of the insulating glass unit throughout its entire product life, which is widely believed to be at least 25 years.

The various spacer technologies on the market can be roughly broken down into two categories, which,

entail considerable differences where the manufacture of the insulating glass is concerned: rigid hollow profiles that are filled with desiccant and assembled to form spacer frames, as well as flexible systems that already contain a desiccant. Flexible thermoplastic spacers made of Polyisobutylene are extruded from a barrel onto the glass pane while still hot; spacers made of silicone structural foam come prefabricated from the roll and are also applied automatically along the edge of the glass. Therefore, when using flexible spacers, the production steps of cutting, bending and assembling as well as desiccant filling and separate butyl application outside the insulating glass line are eliminated.

Spacers must be resistant to wind and climate loads, UV radiation, temperature as well as mechanical stress and form a permanent bond with the respective sealants such as Polyurethanes, hot-melt butyl or silicone. Gas must not be allowed to escape from the interior, nor must moisture be allowed to penetrate through the edge seal to the inside of the insulating glass, and last but not least, the edge seal is also responsible for ensuring the structural integrity of glass constructions in the facade.

Super Spacer® structural silicone foam design makes the edge seal flexible, cushions the pressure on it so to speak and the risk of breakage for the glass is significantly reduced. Less stress in the edge seal results in an improved seal tightness and durability of the glass units. The full or partial offsetting of the loads acting on the edge seal is an advantage that especially desiccant integrated pre-formed flexible spacers, such as Edgetech Super Spacer® TriSeal™ can claim to possess by comparison with rigid spacers.

The manufacturer proves the material properties by



means of corresponding tests. We at Edgetech/Quanex have, for instance, tested the shear load capacity. An insulating glass unit measuring about 6 x 3 metres wide and 6 mm each thick, was only bonded by means of the integrated primary, high-strength acrylic adhesive. The unit was lifted on one supported glass lite using vacuum cups and the spacer did not give a single millimetre during the 30 minutes test phase. The test demonstrates: The additional adhesive layer reduces the stress on the primary PIB seal, which thus functions exclusively as a water vapour and gas barrier to the secondary seal.

In the so-called Dade Country Hurricane Test (an US based test), the units withstood wind speeds of 350 km/h where a positive wind pressure was present and of almost 400 km/h where a suction effect was evident. The test did not end in a unit failure but was stopped as the test stand was not able to produce higher wind loads.

***Edgetech at China Glass Show Hall N1 - Stand N° N1-212***

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](http://quanex.com) for more information.



# NSG starts UK flat glass carbon capture trial



## NSG Group has started a carbon capture trial at its Pilkington UK float glass facility.

The trial is part of a national project led by C-Capture and will take place on a float glass line at its Pilkington UK Greengate site in St Helens.

Following pre-installation commissioning at C-Capture, a carbon capture solvent compatibility unit (CCSCU) has been connected at the base of UK5 furnace chimney.

The unit is now separating CO<sub>2</sub> from the waste flue gas.

The trial at the Greengate site will continue for several months to assess the compatibility of C-Capture's solvent-based technology with real-world flue gases from an industrial glassmaking furnace.

The trial forms part of the 'XLR8 CCS – Accelerating the Deployment of a Low-Cost Carbon Capture Solution for Hard-to-Abate Industries' project.

XLR8 CCS aims to demonstrate that a low-cost carbon capture solution is a reality for

difficult-to-decarbonise industries in the race to net zero.

XLR8 CCS is funded by the UK Government's Department of Energy Security and Net Zero with £1.7 million of funding secured from its £1 billion Net Zero Innovation Portfolio

### Net Zero Innovation Portfolio

The Net Zero Innovation Portfolio provides funding for low carbon technologies and systems, to help enable the U...

The funding is part of the £20 million Carbon Capture, Usage and Storage (CCUS) Innovation 2.0 programme, aimed at accelerating the deployment of CCUS technology in the UK.

Additional private sector contributions support a £2.7 million total for this multi-industry project.

A further five carbon capture trials will take place across the UK as part of the XLR8 CCS project at industrial sites owned by project partners Glass Futures, Heidelberg Materials and Energy Works Hull – in conjunction with engineering company, Wood.

Carbon capture solvent compatibility units (CCSCUs) designed and built by C-Capture and Wood will be installed and operated on partners' sites.

Wood has also completed a feasibility study into 100 tonnes a day application of C-Capture's technology at the Greengate site.

Project success will see C-Capture and its project partners well placed for deployment of commercial-scale carbon capture facilities across the three industries by 2030 which could capture millions of tonnes of CO<sub>2</sub> per year.





## DOORS INSPIRED

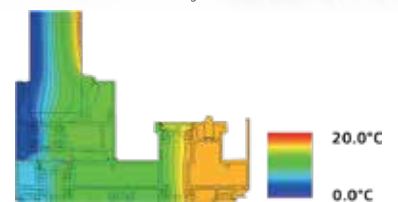
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Le coefficient de conductivité thermique a été calculé pour la construction : 5000 x 2500 avec  $U_g = 0,6 \text{ W / m}^2\text{K}$   
The coefficient of thermal conductivity was calculated for construction: 5000 x 2500 with  $U_g = 0.6 \text{ W / m}^2\text{K}$



# Visy chooses Redwave technology for glass recycling plant



Redwave has supplied sorting technology to Visy's glass recycling facility in Melbourne, Victoria, Australia.

Designed to process 200,000 tonnes of recycled glass per year, the facility will double Visy's glass recycling capability in the Australian state of Victoria.

The recent opening ceremony at the Laverton (Melbourne) site marked the culmination of the partnership between Redwave and Visy.

Together, they have embarked on a project that aims to redefine glass recycling in Australia.

The advanced facility, equipped with the latest sorting technology, replaces the previous facility, and introduces a new approach to sustainable glass management.

Wayne Russell, Executive General Manager - Recycling at Visy, said: "At Visy, we are committed to closing the loop for glass in Victoria. By building our brand-new glass recycling facility with Redwave's world-class optical sorters, we've doubled the amount of glass we can recycle.

"Our partnership with Redwave means we have state-of-the-art equipment supported by a trusted and reliable technology partner."

As general contractor, Redwave was responsible for the entire process of design, engineering, delivery, installation, and commissioning, ensuring a maximum yield of cullet.

Silvia Schweiger-Fuchs, Redwave CEO, said: "We

take pride in Redwave's contribution to reducing glass landfilling in Australia. With our exceptional sorting quality, we can now reintroduce this glass into the recycling loop, facilitating the creation of new bottles."

## Glass processing



With a processing capacity of 200,000 tonnes annually, the new plant will receive two-thirds of the input from kerbside mixed recycling collections (MRF Glass) and one-third from the newly established Victorian container deposit scheme (CDS Glass).

On arrival, the glass is sorted into three different colours, down to three millimetres in size.

This systematic sorting ensures a reliable supply of flint (clear), amber, and green glass for future glass production. The plant also maximises the use of by-products, minimising the impact on landfill and recovering valuable secondary materials.

The sorting operates autonomously, eliminating the need for manual sorting.

## Sensor technology

Redwave has devised a solution to the challenges posed by glass-ceramics, which behave differently to ordinary glass when melted.

Using its proprietary CX camera and lighting unit,



the system separates glass-ceramics, ceramics, stones, porcelain, and off-colours through a multi-stage sorting process.

### Redwave mate smart plant

The implementation of Redwave mate smart plant software optimises plant efficiency by collecting and processing real-time production data.

This data empowers operators and enables autonomous plant operation, all tailored to meet customer requirements. At the heart of this data collection are Redwave's sorters, which act as data hubs to relay critical information to the software.

### Digital sales landscape

Navigating this plant sale during the global pandemic required innovation.

Therefore, Redwave made the entire sales process digital.

All interactions, including reference visits and sorting tests, were conducted virtually, bridging distances of 16,000 kilometres and an eight-hour time difference.

### Follow-up order

A follow-up contract to build another glass recycling facility at the Yatala site near Brisbane has been awarded.

This project is already underway and is scheduled for completion in early 2025.

# Schott Pharma invests in \$371 million US manufacturing facility



Schott Pharma is to build a manufacturing facility in the USA.

The facility in Wilson, North Carolina, will primarily make prefilled polymer syringes required to meet the need for deep-cold storage and transportation of mRNA medications.

In addition, the site will have the capability to produce glass prefilled syringes for GLP-1 therapies, for example to treat diseases such as diabetes or obesity.

The project will add 401 jobs to the region and

include a total investment of \$371 million, with groundbreaking expected by the end of 2024, and projected operations starting in 2027.

The new site will expand the US supply chain for in-demand syringes that deliver injectable medicines, vaccines, and other fields of applications.

It will allow Schott Pharma to triple its contribution of glass and polymer syringes to the US market by 2030.

Bringing production to the US will reduce lead times and slash transportation costs, as well as protect against future shortages of critical drugs and ensure pandemic preparedness.

“Wilson County stood out in a nationwide search for a number of reasons, particularly for its favourable pool of local talent and its proximity to the Research Triangle area, which hosts numerous universities, healthcare companies, and biopharma resources,” said Christopher Cassidy, President of Schott North America.

# New Technical Bulletin Covering WOCDs Now Available



**A new technical bulletin has been released in collaborative partnership between the Fenestration and Glazing Industry Alliance (FGIA) and the Window & Door Manufacturers Association (WDMA).**

The purpose of this document, AAMA/WDMA TB-24-01, is to clarify the definition of a window opening control device (WOCD) to promote greater understanding of the role of WOCDs and provide an understanding of a WOCD's function.

WOCDs are intended to help support home safety. When properly designed, tested, specified and installed, WOCDs can help prevent or reduce accidental falls from windows, while allowing the ability to open the window fully as may be needed to exit in the event of a home emergency.

“This informative new technical bulletin will help users understand the important role of WOCDs, and how to tell the difference between them and other window hardware types like vent limiters or night latches, designed for different purposes,” said Dan Raap (AmesburyTruth), Co-chair of the FGIA Window Opening Control Device (WOCD) Update Task Group.

WOCDs were introduced as a new window fall

prevention device starting with the 2008 version of the ASTM International (formerly known as American Society for Testing and Materials) (ASTM) F2090, Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms. ASTM F2090 is a standard for window fall prevention devices that are releasable such that a window can be fully opened for emergency escape or rescue. The publication of this technical bulletin is especially timely because Window Safety Week takes place April 7-13, 2024.

“This technical bulletin was the result of a lot of effort from our industry members and will serve as an informative and helpful document to better understand code driven window fall prevention requirements and the important role of ASTM F2090 that is referenced in the code,” said Mark Mikkelsen (Andersen Corporation), an active member of both Associations who also worked extensively on developing the document. “It also provides important information on the requirements for an ASTM F2090-compliant WOCD and how they can help with meeting code required window fall prevention.”

Download AAMA/WDMA TB-24-01 now in the FGIA Online Store or from the WDMA site.





# RCN Solutions Supplies Viraver Technology for Special Bending Project



## Viraver Technology Srl and RCN Solutions forge an innovative path in high-tech curved glass production.

Viraver Technology srl, located in Vanzo, province of Padova, does not need any presentation: the name is enough to recall the image of a leader company in the glass industry, in particular in the production of high-tech transparent solutions and safety products for yachting as well as for automotive. They are appreciated not only in Italy but worldwide.

Viraver Technology was founded in 2000 from the experience of its President, Ennio Mazzarolo, who together with his son Marco and an expert team, carries out important projects requiring the utmost glass safety, offering all the experience and professionalism of Italian excellence. Keeping up with technology, Viraver is ready to push forward by studying innovative proposals paying the utmost care to quality, regulations, standards, and specific individual demands.

Viraver Technology covers a very large area where they have installed machines able to offer products of big sizes, becoming one of the major reference points for safety products having high-tech

systems.

Looking for a solution to increase the production of curved glass, Viraver contacted RCN at the beginning of 2023, submitting the feasibility for one rotating system with four positions.

RCN had not yet manufactured one bending kiln having the features required by the customer but has the idea in mind to develop something similar to widen the technical-commercial offer with products built with more modern systems. RCN accepted the chance to take on the first big bending project. Construction started in June 2023 and ended with delivery and installation at the end of January 2024.

Supply Viraver Technology has been a huge experience for RCN: trust has been a very important matter, allowing it to face the wall for technical development. Thanks to the new generation joining the RCN's technical team, who are highly motivated to study new high-tech solutions to facilitate and maximize production, keeping an eye on the experience in bending acquired over the years. No less important has been the assistance from Viraver who has not hesitated to support RCN about technical choices.

This is how the rotary bending system was born, a self-excluding twin-axle machine, equipped with four working positions, controlled movement, and a size of 4000x5500xH2000 millimeters.

The machine is in full production for special curves that can be performed thanks to Viraver's experience in bending, a job for which this company shows great skill and from which RCN has learned a lot.

RCN SOLUTIONS is ready for new challenges.

# Gerresheimer outlines Querétaro investment



Hector Garcia, Gerresheimer's Senior Vice President of the Americas, discusses an investment plan at the manufacturer's Querétaro, Mexico facility.

This will include 10 glass forming machines and boost manufacturing capacity for ready to fill glass syringes.

The transformation of Gerresheimer to a system and solution provider to the global pharmaceutical and biotech industry has fuelled our growth in the last years. Based on the positive development of our operative business and a high new order-intake, we have been and still are expanding our global production capacities.

The expansion of our Querétaro site is one of our large global projects to double our syringe production capacity until 2028. We are also expanding our capacities in Skopje, North Macedonia, and Buende, Germany.

## Queretaro site

The Querétaro site is positioned to serve the North and South American pharmaceutical and biotech markets. We concentrate here on type 1 tubular glass products (clear and amber) and manufacture e. g. ampoules, vials, cartridges and prefillable syringes and process them into ready-to-fill (RTF) formats.

We are transforming our sites and upgrading our capabilities to respond to the pharmaceutical and biotech industry trends where customers are looking for the right solution provider.

Our strategic view is to partner with our customers, to be the high-quality system, solution and service provider they are looking for.

## Capacity increase

The expansion of the new production building at Queretaro will include 10 glass-forming machines, several needle assembly lines and RTF processing lines. Syringe preparation, including washing and packaging will take place in ISO 8 to ISO five class clean rooms.

The expansion is dedicated to RTF syringes. With the project completed, we will increase our manufacturing capacity for syringes in particular for the North American market by several hundred million RTF syringes annually.

The building is expected to be completed by mid-2024 and validation work and ramp-up of production is anticipated to start in the second quarter of 2025. We expect the expansion facility to run at full capacity in the first half of 2026.

## Technology

The modern production lines (glass forming, needle assembling, RTF lines) will in general increase production efficiency while reducing scratches or breakages.





For quality assurance we will use - beyond other measures - e. g. Artificial Intelligence (AI) based automated camera systems for the inspection of geometrical parameters and cosmetic-visual defects. Our quality management system in Querétaro is ISO 13485, ISO 9001 and ISO 15378 certified.

We are a global player, but we always produce locally for the respective regional markets. With the Querétaro expansion we will not only expand our footprint in the Americas, but also fulfil a growing need on the market for RTF syringes.

These pre-fillable glass syringes are - among other applications - suitable for injectable biopharmaceuticals such as GLP-1-based drugs for the treatment of obesity, a market which is expected to grow substantially over the next years.

We certainly see for our markets a growing demand for pharmaceutical glass products, like vials, cartridges and syringes, with added-value features. This may include special coatings and/or delivery as sterilised RTF product for a better line performance and reduced risks in the fill and finish process.

## Sisecam appoints Chief Production Officer



**Şişecam has appointed Beytullah Şahin as its Chief Production Officer to execute its ambitious production strategy and plans.**

A cornerstone of Şişecam's production agenda is the empowerment of a technology-centric framework, marked by efficiency-driven initiatives such as waste heat conversion and the implementation of digital twin technologies.

Şişecam's strategic blueprint includes developing regional strategies that align production and sales with dynamic trade trends, as well as a comprehensive modernization drive aimed at optimising costs.

Şişecam focuses on alternative energy sources and sustainable raw material use. Additionally, the company prioritises the integration of artificial intelligence-backed, data-driven decision-making

mechanisms in production processes.

These initiatives underscore Şişecam's commitment to pioneering sustainable practices and cutting-edge technologies in its operations.

Mr Şahin graduated from Akdeniz University, Department of Mining Engineering in 1995. From 1996 to 1998, he worked as a Research Assistant in the Department of Mineral Processing and Beneficiation at Middle East Technical University.

He obtained his master's degree in the same field. He completed various executive training programs including Leadership Academy Baltas, Stanford University Strategic Marketing, and INSEAD Executive Leadership Program.

Beytullah Şahin started his professional career at Şişecam and took key positions as Operations Engineer, Purchasing and Material Planning Chief, Material Management and Production Planning Manager across the globe.

Notable among these roles are his General Manager positions at Trakya Glass Russia Flat Glass Plant in 2012 and later at Şişecam Northern Italy Flat Glass Plant in 2017. He also managed the commissioning and integration of Şişecam's Southern Italy Flat Glass Plant. Mr Şahin was appointed as Senior Production Director of Architectural Glass in 2021 and Senior Production Director of European Operations in 2022.

# Pilkington Nederland BV Finalizes Quality Control with Sparklike Laser Portable™

**Pilkington Nederland BV has recently taken a significant step forward in quality assurance by incorporating the Sparklike Laser Portable™ into their production process.**

This move exemplifies the company's commitment to maintaining the highest standards in the manufacturing of insulating glass units (IGUs).

## Pilkington Nederland Aims to Exceed Quality Standards

The training session for the Sparklike Laser Portable™ was an event marked by a keen interest in innovation and quality. The training provided the team at Pilkington Nederland BV with comprehensive knowledge about the advanced features of the device. It is designed to non-invasively measure the insulating gas fill percentage in IGUs, an essential factor in determining the thermal performance of the insulating glass.

"Quality is very important for Pilkington Nederland, and with the newest Sparklike we can secure the quality even better. So, thanks!" Bert Poelman, Operations Manager from Pilkington Nederland BV commented. This sentiment highlights the industry's growing focus on not just meeting, but exceeding quality standards. Also, MI Windows told in their interview that they aim to exceed the general requirements.

## Dutch Insulating Glass Industry Is Focusing on Quality

The Dutch insulating glass industry has been on a progressive trajectory, with companies like Pilkington Nederland BV at the forefront. The Netherlands has little by little focused on building regulations concerning energy efficiency and

sustainability. Insulating glass plays a critical role in this, as it significantly reduces energy consumption in buildings by providing excellent thermal insulation.

In addition, Netherlands has been increasingly adopting energy-efficient solutions in construction, with a notable rise in the use of high-quality IGUs. The market demand for energy-efficient windows and façades is on the rise, driven by both environmental concerns and stringent EU regulations. Read how Sparklike Laser Portable was used in Dutch research about The Re-use Potential of Insulating Glass Units.



## Instant result of gas level

By integrating the Sparklike Laser Portable™ into their quality control process, Pilkington Nederland BV is not only aligning with these trends but also setting new standards in the industry. This technology ensures accurate and reliable measurements of insulating gas concentration, which is pivotal for the thermal performance of IGUs.

As the Dutch insulating glass industry continues to grow, the adoption of innovative technologies like the Sparklike Laser Portable™ will be crucial in maintaining the high-quality standards that companies like Pilkington Nederland BV are



known for. This commitment to quality and innovation is what sets the Dutch insulating glass industry apart and paves the way for a more energy-efficient and sustainable future.

Pilkington Nederland BV Finalizes Quality Control with Sparklike Laser Portable™

For more information about Pilkington Nederland BV and their use of the Sparklike Laser Portable™, please visit their website or contact their representative.

About Pilkington Nederland BV:  
Based in Enschede, The Netherlands, Pilkington Nederland BV is a leading manufacturer of insulating glass units, committed to delivering high-quality products that meet the evolving needs of the construction industry.

About Sparklike:  
Sparklike is a pioneer in the development of non-invasive gas fill analyzers for the insulating glass industry, offering innovative solutions to ensure the quality and performance of IGUs.



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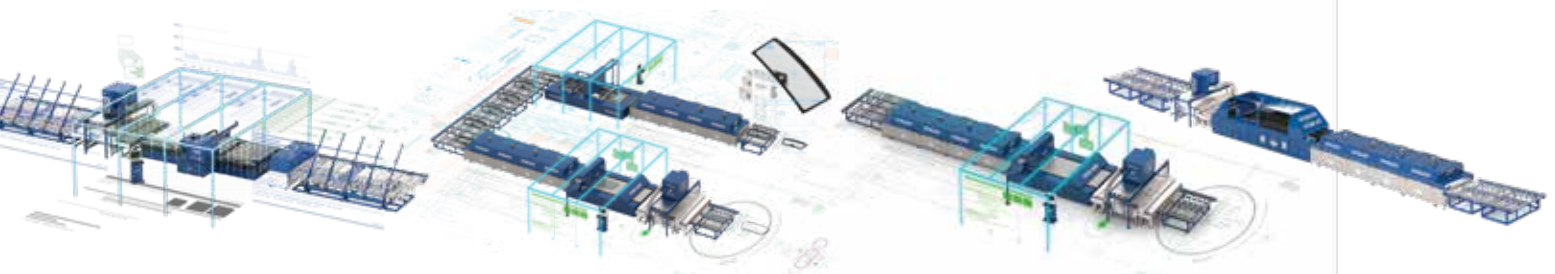
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# The global speciality glass industry

The global speciality glass industry is experiencing growth, characterized by the manufacturing and use of glass products that possess distinctive properties and engineered features. These products cater to various sectors including automotive, electronics, aerospace, and healthcare. Speciality glass offers benefits such as exceptional resistance to thermal and chemical impacts, high strength, and optical qualities. The significance of this market lies in its capacity to provide tailored solutions for challenging applications across different industries, supporting technological progress, energy efficiency, and improved safety standards. The increasing requirements for advanced materials, ongoing technological advancements, and rising demand for speciality glass in developing countries are anticipated to propel the global market's expansion in the foreseeable future.

Specialty glass is a specialized type of glass meticulously crafted for distinct purposes, boasting exceptional qualities and characteristics. This specially engineered glass is designed to fulfil specific needs such as superior strength, resistance to chemicals and high temperatures, as well as excellent optical clarity. Its versatile usage spans across diverse sectors like automotive, electronics, aerospace, pharmaceuticals, and renewable energy. Unlike conventional glass, the production of speciality glass involves intricate processes, precise formulations, and advanced methodologies, resulting in customized properties that cater to unique requirements. Due to its outstanding attributes, speciality glass plays a vital role in elevating safety, efficiency, and overall functionality within a myriad of technological and industrial environments.

The market for speciality glass was estimated to be worth US\$ 3201 million in 2022 and is expected to increase at a compound annual growth rate (CAGR) of 5.6% to reach US\$ 3755 million by 2030.

View More Information About Specialty Glass Market @ <https://www.adroitmarketresearch.com/contacts/request-sample/4697>

Extensive studies reveal that the Asia Pacific area is anticipated to take the lead in the worldwide

speciality glass market. The region's dominance is attributed to the significant demand stemming from sectors like automotive, electronics, and construction in nations such as China, Japan, and South Korea, as well as the notable presence of major industry players in this geographic area.

Borosilicate Glass is anticipated to lead the Global Specialty Glass industry, owing to its exceptional features such as high thermal shock resistance, outstanding chemical durability, and minimal thermal expansion. These unique properties render it highly suitable for a wide range of sectors including pharmaceuticals, electronics, and laboratory equipment. Moreover, its adaptability and capacity to endure high temperatures position it as the preferred material for the production of cookware and kitchenware items. Given its diverse applications and superior characteristics, Borosilicate Glass is forecasted to hold a significant market share within the Global Specialty Glass domain.

The Solar Energy Tubes sector is poised to dominate the Global Specialty Glass market, primarily driven by the escalating global demand for solar panels and renewable energy sources. This trend is fueled by the increasing uptake of solar energy systems across residential, commercial, and industrial settings, alongside governmental incentives that promote clean energy generation. Speciality glass plays a crucial role in enhancing the efficiency and longevity of solar panels encapsulated within solar energy tubes, thereby reinforcing the prominence of this in the industry.

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Corning Inc. and Merck KGaA joined forces on January 21, 2021, to develop cutting-edge glass solutions tailored for pharmaceutical packaging purposes. This strategic partnership aims to deliver top-tier glass packaging options for pharmaceutical products, ensuring the secure storage and transit of delicate medications.

Meanwhile, Asahi Glass Co., Ltd. (AGC) successfully finalized the acquisition of AGP



Plastics on March 9, 2021. AGP Plastics is renowned as a key player in the production and supply of specialized glass materials. Through this acquisition, AGC bolsters its product range and solidifies its standing in the niche glass market, granting it the capacity to cater to a broader spectrum of industries.

Lastly, on June 14, 2021, SCHOTT AG unveiled a groundbreaking technology in the specialized glass sector with the launch of SCHOTT RealView™ glass wafer platform. This innovative glass technology facilitates the creation of ultra-thin, lightweight, high-resolution displays, marking a significant advancement in augmented reality (AR) and virtual reality (VR) applications.

Prominent figures in the Specialty Glass Market comprise Corning Inc., Schott AG, Asahi Glass Co., Ltd., Nippon Electric Glass Co., Ltd., Saint-Gobain S.A., Guardian Industries, AGC Inc., NSG Group, PPG Industries, Inc., and Owens Corning. These entities stand out in the speciality glass sector, delivering diverse product lines and innovative solutions across electronics, automotive, construction, and healthcare. Their industry knowledge and established market positions solidify their leadership in the speciality glass domain.

To find out more, visit [www.adroitmarketresearch.com](http://www.adroitmarketresearch.com)

# Owens Corning initiates review of glass reinforcements business



US glass producer Owens Corning has decided to review alternatives for its global glass reinforcements (GR) business.

The decision to explore alternatives for the GR business is part of the company's strategy to focus on building and construction materials.

The GR business generates annual revenues of approximately \$1.3 billion and has operations in 11 countries, with 18 manufacturing facilities.

It supplies a variety of glass fibre products for applications in wind energy, infrastructure, industrial, transportation, and consumer markets.

Brian Chambers, Board Chair and CEO of Owens

Corning, said: "Our Board and management team regularly review strategic opportunities with a goal to maximise shareholder value.

"Through this disciplined approach to capital allocation, we have taken actions over the past several years to optimise our performance and have concluded it is the right time to explore options for our glass reinforcements business as we continue to focus on strengthening our position in building and construction materials."

The company has retained Morgan Stanley & Co. as financial advisor to assist in the review of strategic alternatives.

A range of options are under consideration, including a potential sale or spinoff; there can be no assurance that the review will result in any transaction or other outcome.

The company has not set a timetable for completion of the review.

Owens Corning's vertically integrated glass nonwovens business, that supports the Roofing segment and other building products customers, is out of the scope of the evaluation.

# GPAD Spotlights AI, Product Launch Success and the Role of Windows in Energy Efficiency



## GPAD | Glass Processing Automation Days concluded in Nashville yesterday.

The event welcomed 126 fabricator and supplier attendees to investigate new and innovative glass fabrication technologies and discover the potential of automation and integration.

To kick off GPAD, Dave Miller & Craig Morris of Cynclly walked attendees through how AI will change the glass fabrication industry. Miller says there are three types of learning: supervised, unsupervised and reinforcement learning. Miller adds that successful AI will include data-informed development, ethical application and practical solutions. From a strategic standpoint, you want to make sure you're staying on top of recent technology upgrades. Morris dug into real-life case studies on this topic. One company successfully used AI reinforcement learning to optimize its production schedules.

In her presentation on product launch success, Syndi Sim, VP of marketing and business development for DFI, says when launching a new product or product line, companies should always have goals in mind, such as capturing new customers, up sell existing customers, differentiate your business, increased/new revenue stream, and more. Sim added that the product pre-launch

"is the bulk of the work" and the most important step. This phase includes market research, identifying the target audience, creating a launch plan, develop market collateral and clear communication across teams, always.

"Your sales teams are critical in the success of a launch. They are the key to our success." Your solutions partner should educate the sales team on competing products, key value propositions and product differentiators, product demos and review common customer questions. Sim says the launch itself is "your day to scream it from the mountains." Post launch, review its status about 5-6 months afterwards. Ask your sales team "What do they think of the new product?" Once you get that feedback, you have to implement it.

To start day two of the conference, Joe Hague and Scott Knisley of Forel covered Manufacturing High-Performance Glass, Triple IGUs with Thin Glass, discussing the importance of high performance, triple IGUs when it comes to creating energy-efficient homes. According to the DOE, commercial & residential buildings account for 40% of all energy consumed; highlighting the role windows & doors play.

Attendees network and learn during GPAD Tabletop presentations Attendees network and learn during GPAD Tabletop presentations





# Glass for Europe updates its paper on the recycling of end-of-life building glass



**On the Global Recycling Day (18 March), Glass for Europe launched a new webpage dedicated to flat glass recycling.**

It gathers all our resources (position papers, videos, news...) on this key issue, including the newly released updated version of its paper on the recycling of end-of-life building glass.

Recycling is a priority of flat glass manufacturers as it is one of the most prominent ways to improve the sustainability of manufacturing by reducing raw materials, limiting energy consumption and reducing overall CO<sub>2</sub> emissions. To reflect this high level of priority – and of ambition – Glass for Europe has updated its position on the recycling of end-of-life building glass. Entitled “A powerful tool to reduce CO<sub>2</sub> emissions”, the paper sets out proposals to improve the legislative framework and move towards a closed-loop system where flat glass can be returned to flat glass furnaces, further contributing to the EU’s climate neutrality objective.

So far, the flat glass sector has mostly progressed on its own. Successful industry execution of

company schemes implemented at local level led to an increase of the average share of cullet used to produce flat glass in Europe from 20 to 26% between 2010 and 2018. Despite this substantial increase, there are remaining sources of cullet that could be returned to flat glass furnaces in particular from construction and demolition projects, of which only 5% is recycled today.

To improve this situation, the European institutions must work during the next term to develop a framework that is sufficiently conducive to the recycling of waste glass. To do so, Glass for Europe is making the following recommendations:

**Recognizing the status of ‘by-product’ for pre-consumer cullet in all Member States,**

**Banning the landfilling of waste building glass from construction and demolition projects and strengthening the glass provisions from the Landfill Directive,**

**Setting a framework to incentivise the adequate sorting of construction and demolition waste,**

**Defining targets for C&D glass waste and rules on dismantling windows/glazing and recovering glass,**

**Providing a high-quality recycling definition and implementing a closed-loop model (flat glass to flat glass),**

**Having mandatory pre-demolition audits.**

**To stress the relevance of this issue for the flat glass industry, Glass for Europe has created a dedicated webpage where all resources are available.**

# NorthGlass: Elegance at Shanghai Grand Opera House



**NorthGlass proudly announces its contribution to the Shanghai Grand Opera House, showcasing seamless glass integration.**

Shanghai Grand Opera House is a vision realized by Snøhetta, the architectural firm co-founded by Thorsen, responsible for this iconic project. Thorsen, one of Snøhetta's founders, commented, "The Shanghai Grand Opera House represents a practice of adapting to local conditions, embodying the high regard both the client and our design team have for utilizing public spaces for the benefit of the people. Through its design, the opera house enhances the sense of public ownership, offering a stage not just for the citizens of Shanghai but for all of China and the world."

Located in the Expo Houtan neighborhood, along the banks of the Huangpu River, the Shanghai Grand Opera House is more than an emblematic cultural building; it is a masterpiece where architectural aesthetics are seamlessly integrated. Each detail of this site has been meticulously crafted, combining UHPC (Ultra-High Performance Concrete), wood, and NorthGlass glass into a modernist architectural style filled with aesthetic appeal.

The Mirror of NorthGlass: The Fusion of Elegance at Shanghai Grand Opera House

The opera house includes public lobbies, a grand opera hall, a medium-sized opera hall, and a chamber opera hall, and is set to open in 2025. Its exterior, spiraling outward from the public lobby, resembles a gently unfolding







Chinese fan. The immense white staircase spirals upward, extending into the sky like the handle of a fan, elegant yet simple, lending the structure dynamic beauty and embodying the distinctive characteristics of the East.

### The Mirror of NorthGlass: The Fusion of Elegance at Shanghai Grand Opera House

The fan's handle and the three opera halls are adorned with NorthGlass's large curtain wall glass. The Shanghai Grand Opera House primarily uses multi-layer ultra-white tempered homogeneous laminated insulating glass, featuring a 4-layer laminated hollow as its main characteristic. The grand opera hall is equipped with nearly 13 meters high, 8-layer super large and thick laminated insulating glass, covering a total area of about 16,000 square meters.

The fan shape embodies significant symbolism in traditional Chinese culture, presenting an eye-catching design that slowly unfolds along the Huangpu River, offering an international aesthetic while showcasing a Chinese ambiance.

### The Mirror of NorthGlass: The Fusion of Elegance at Shanghai Grand Opera House

The plaza of the opera house serves as an open space, accessible to visitors 365 days a year, 24 hours a day. The ultra-high glass curtain walls

bathe the auditorium in natural light, allowing the architectural space to shift atmospheres between daylight and season. At night, the external lighting transforms the appearance of the stage tower, making the opera house resemble a glowing lantern, illuminating the rooftop.

The Shanghai Grand Opera House is a collaborative design effort between the renowned Norwegian architectural firm Snøhetta and the East China Architectural Design & Research Institute (ECADI), with Shanghai Mei Shi Design Studio acting as the curtain wall consultant and Shenzhen Sanxin contributing to the creation of the opera house's curtain wall system. This collaboration has produced a perfect piece of architectural art and technological innovation, highlighting NorthGlass's unique contributions to the field of glass craftsmanship. This remarkable collaboration adds an eye-catching cultural landmark to the city, setting a new benchmark for the flourishing development of the cultural industry.



# The Borosilicate Glass Market

The Borosilicate Glass Market has experienced significant growth recently due to its exceptional qualities, such as high thermal shock resistance, superb transparency, and low expansion coefficient. This type of glass finds wide applications across industries like pharmaceuticals, chemicals, consumer goods, laboratory equipment, and cookware. The market's importance has been fueled by the increased demand for durable and heat-resistant glass materials. Moreover, the extensive use of borosilicate glass in manufacturing laboratory equipment and glassware has further enhanced its popularity. The market has also been boosted by the surge in research endeavors and strict safety standards across multiple industries, solidifying its position as a crucial within the global glass industry.

Borosilicate glass stands out as a distinct type of glass characterized by a notable boron oxide content, granting it unique attributes. Recognized for its exceptional resistance to sudden temperature changes, it finds relevance in applications requiring thermal stability. This glass exhibits remarkable durability, showcasing a reduced susceptibility to breakage in comparison to alternative glass varieties. Noteworthy for its robust chemical resistance, it finds applicability in laboratory settings and the manufacture of scientific glass equipment. Moreover, borosilicate glass boasts high transparency, a low refractive index, and effective electrical insulating properties. Its adaptability and dependability have propelled its widespread adoption across diverse sectors such as cookware, illumination, and pharmaceuticals.

The Borosilicate Glass Market is projected to exhibit a compound annual growth rate (CAGR) of 7% from 2021 to 2032, reaching an estimated value of US\$ 4 billion by 2032.

View More Information About Borosilicate Glass Market @  
<https://www.adroitmarketresearch.com/contacts/request-sample/3020>

Our studies indicate that the Asia Pacific region is poised to lead the worldwide borosilicate glass industry. This can be attributed to the increasing usage of borosilicate glass in industries such as pharmaceuticals, chemicals, and electronics within

countries like China, India, and Japan. Moreover, the region's burgeoning industrial and manufacturing domains play a significant role in consolidating its prominence in the global market.

The leading sector in the worldwide Borosilicate Glass industry is the Non-Alkaline-Earth category. Non-Alkaline-Earth borosilicate glass is preferred due to its exceptional chemical resistance and resistance to thermal shock, making it well-suited for a range of industrial uses. It finds extensive applications in laboratories, pharmaceutical packaging, as well as consumer products such as cookware and lighting items. Its outstanding characteristics and adaptability position it as the top choice for consumers and businesses alike, thus establishing its dominance in the market.

The prominent category in the Global Borosilicate Glass market is the Electronics & Semiconductor sector. This trend is driven by the escalating need for borosilicate glass in electronic elements like LCD displays, LED lighting, and solar panels. Borosilicate glass's remarkable thermal shock resistance and minimal thermal expansion make it an excellent option for applications requiring precision and durability. The increasing reliance on electronics and semiconductors across various sectors, along with the demand for trustworthy and high-performing glass materials, propels the Electronics & Semiconductor industry to the forefront of the Global Borosilicate Glass market.

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In April 2021, Corning Incorporated made public its acquisition of Stevanato Group's Pharmaceutical Glass business for \$430 million, thereby bolstering its foothold in the borosilicate glass market sector.

In January 2021, SCHOTT AG revealed the latest iteration of its borosilicate glass formulation, known as SCHOTT BOROFLOAT® 33, boasting enhanced thermal resilience, optical lucidity, and chemical endurance.

By September 2020, NIPRO Corporation had initiated the manufacturing of borosilicate glass tubing in India, facilitated by its subsidiary, NIPRO India Corporation Private Limited, in response to



the burgeoning need for pharmaceutical packaging solutions within the nation.

The leading participants shaping the Borosilicate Glass Market include Corning Incorporated, Schott AG, Kavalierglass, Duran Group, De Dietrich Process Systems, Hilgenberg GmbH, NEG (Nippon Electric Glass Co., Ltd.), NEG-Haihua,

Asahi Glass Co., Ltd., and Shandong Linuo Glassworks Group. These industry players wield considerable influence in the borosilicate glass sector, spearheading its advancement and fostering ingenuity.

To find out more, visit [www.adroitmarketresearch.com](http://www.adroitmarketresearch.com)

## Ambev commissions Horn for Brazilian glass melting furnace



### NSG Group has started a carbon capture trial at its Pilkington UK float glass facility.

The trial is part of a national project led by C-Capture and will take place on a float glass line at its Pilkington UK Greengate site in St Helens.

Following pre-installation commissioning at C-Capture, a carbon capture solvent compatibility unit (CCSCU) has been connected at the base of UK5 furnace chimney.

The unit is now separating CO<sub>2</sub> from the waste flue gas.

The trial at the Greengate site will continue for several months to assess the compatibility of C-Capture's solvent-based technology with real-world flue gases from an industrial glassmaking furnace.

The trial forms part of the 'XLR8 CCS – Accelerating the Deployment of a Low-Cost Carbon Capture Solution for Hard-to-Abate Industries' project.

XLR8 CCS aims to demonstrate that a low-cost carbon capture solution is a reality for difficult-to-decarbonise industries in the race to net zero.

XLR8 CCS is funded by the UK Government's Department of Energy Security and Net Zero with £1.7 million of funding secured from its £1 billion Net Zero Innovation Portfolio.

The funding is part of the £20 million Carbon Capture, Usage and Storage (CCUS) Innovation 2.0 programme, aimed at accelerating the deployment of CCUS technology in the UK.

Additional private sector contributions support a £2.7 million total for this multi-industry project.

A further five carbon capture trials will take place across the UK as part of the XLR8 CCS project at industrial sites owned by project partners Glass Futures, Heidelberg Materials and Energy Works Hull – in conjunction with engineering company, Wood.

Carbon capture solvent compatibility units (CCSCUs) designed and built by C-Capture and Wood will be installed and operated on partners' sites.

Wood has also completed a feasibility study into 100 tonnes a day application of C-Capture's technology at the Greengate site.

Project success will see C-Capture and its project partners well placed for deployment of commercial-scale carbon capture facilities across the three industries by 2030 which could capture millions of tonnes of CO<sub>2</sub> per year.

# Equipment for Ensuring Airtight Sealing of Insulating Glass Units | Sparklike



The integrity of the seal is a crucial part of insulating glass units (IGUs) and their functioning.

This blog post explores the critical importance of seal durability, the methods to ensure the airtight sealing of IGUs, and the role of Sparklike devices in verifying the effectiveness of these seals.

## Understanding Seal Durability in IGUs

Seal durability is a key factor in maintaining the energy efficiency and longevity of IGUs. Over time, environmental stressors can impact the seal's integrity, affecting the IGU's performance. Regular assessment and maintenance are crucial for long-term viability.

The seal's integrity is vital for the hermetic sealing of IGUs. Ensuring that this seal remains intact over time is crucial for the unit's thermal performance and longevity. Various methods, including advanced technologies, are used to assess this integrity.

## Sparklike Devices: Ensuring Seal Integrity

Sparklike devices offer a non-invasive yet effective way to measure the gas concentration within IGUs, a direct indicator of seal condition. These devices provide a quick and accurate way to ensure that the seal is functioning as intended.

## Sparklike devices:

Sparklike Handheld™ – for double glazed insulating glass units

Sparklike Laser Portable™ – for double and triple glazed insulating glass units with coatings and lamination

Sparklike Laser Integrated™ insulating gas measurement station integrated to the IG-line – for

double and triple glazed insulating glass units with coatings and lamination.

## Demonstrating the Effectiveness of Sparklike Devices

In the video below, our Chinese customer, Blue Star Special Glass, demonstrates the effectiveness of the Sparklike Handheld device. This video is from Weihai Blue Star Special Glass Limited Company that is a glass deep-processing enterprise directly subordinate to Shan-dong Blue Star Glass Group. They produce various Low-E coated glass, solar controlled Sun-E coated glass, insulating glass for curtain walls, tempering glass, semi-tempering glass, interlayer glass, coated glass and its composite product using top float glass as main raw materials.

Weihai Blue Star Special Glass showcase on the video how an IGU, after being submerged in a water tank, retains its gas concentration level, proving the sealant's effectiveness. This practical demonstration highlights the reliability of Sparklike devices in real-world scenarios and how Blue Star Special Glass value quality.

## The Role of Gas Concentration in Seal Integrity

The concentration of insulating gas inside an IGU is crucial. A drop in this level can indicate seal failure. Sparklike devices help in measuring this concentration accurately, aiding in early detection and maintenance.

## Enhancing IGU Longevity and Performance

Regular testing with Sparklike devices not only ensures seal integrity but also enhances the overall durability and performance of the IGU. Early detection of issues can lead to timely repairs, extending the unit's lifespan. Read our article "Longevity of Windows: A Guide to Maintaining and Maximizing the Lifespan of Gas-Filled IGUs".

## Conclusion

Airtight sealing is essential in the functionality of IGUs. With the innovation of Sparklike devices, assessing and maintaining this integrity has become more efficient and accurate. The real-world application by Blue Star further validates the effectiveness of these devices in maintaining energy-efficient and durable IGUs.



Extruding Aluminum  
Profiles



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# EPPA participates in the biggest European expositions of 2024 for window industry



**The motto of the EPPA and GKFP trade fair appearance is "renovation - use what we have and make it better".**

The European PVC Window Profiles and Related Products Association (EPPA) is delighted to shortly report about its successful participation in the BUDMA exposition in Poland. In the next week FENSTERBAU FRONTALE will take place in Nuremberg from March 19 to 22, 2024. EPPA ivzw, will be represented at the trade fair, this time together with RAL Gütegemeinschaft Kunststoff-Fensterprofilssysteme e.V. (GKFP) in hall 4A - stand 129. In addition, both associations will be organizing a lecture program on various exciting topics in the official FORUM of FENSTERBAU FRONTALE on 21 March from 10:30 to 14:00. The motto of the EPPA and GKFP trade fair appearance is "renovation - use what we have and make it better".

EPPA representatives were present all days during the event at the BUDMA exposition in Poznan (29th of January till 2nd of February 2024). M. Karwowski and K. Pięta (representatives of EPPA Polska) jointly presented the latest industry updates during the conference called: "The impact of recycling on the product's carbon footprint and energy certificates of buildings". They will both have also a chance to introduce the OKNOREC window recycling project directly from the stage during the FORUM at FENSTERBAU FRONTALE.

As part of the FORUM at FENSTERBAU FRONTALE, GKFP and EPPA have put together a program that comprises six presentations by

experts from various associations and institutes, with a focus on "Renovation" for the half-day event. All interested parties are invited to attend the FRONTALE FORUM on March 21, 2024, from 10:30 to 14:00, and visit the stand for further engagement.

The thematic block kicks off with an overview of the Renovate Europe campaign of which EPPA is an active participant. The initiative led by EuroACE - Energy Efficient Buildings, aimed at boosting Europe's low renovation rate (<1%) to the EU Commission's target of 3%, through targeted actions supporting building stock transformation. Perrine Ethuin from BASF, deputy chair of the Renovate Europe campaign, will delve into the initiative's measures.

Following this, Cosima Wörle from the Fraunhofer Institute for Building Physics (IBP) will provide a scientific overview of the relationship between renewable energy use for heating and energy-efficient building envelopes in alignment with EU climate targets.

Gerald Feigenbutz, temporary Managing Director of EPPA ivzw, Brussels, will update on the association's political activities, focusing on industry-relevant topics such as renovation rates, CPR, EPR, and news on old window recycling. At the event, also new Managing Director will be officially revealed.

Next, Dirk R. Schmidt will introduce himself as the new Managing Director of RAL Gütegemeinschaft Kunststoff-Fensterprofilssysteme e.V. (GKFP), discussing current and future association projects. Bernhard Elias, Quality Assurance Manager at GKFP, will address the question of PVC window cleaning methods and their impact on window durability, drawing from project findings.

The program will conclude with Alexander Franke, Chairman of the Board of EPPA ivzw, presenting Prowindo's activities, an initiative for energy efficiency, recyclability, and climate protection for PVC-U windows in Germany. Industry associations and institutes involved in Prowindo will discuss their contributions to positioning PVC windows as sustainable building products, followed by audience dialogue.





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# Vitro's Solarban Transforms Pittsburgh's Historic Steel Mill into Sustainable Tech Hub



**The unique adaptive reuse of Pittsburgh's RIDC Mill 19 features windows with Solarban® 60 Glass and skylights with Solarban® 70 Glass.**

Once a 1950s steel mill, the bones of Pittsburgh's Regional Industrial Development Corporation RIDC Mill 19 have been transformed into multi-tenant tech buildings.

A wonderful story of adaptive reuse, the former steel plant turned 2023 AIA Committee on the Environment (COTE®) Top Ten Award Winner features three connected buildings, now home to robotics, manufacturing and high-tech companies.

As the first completed project in the Hazelwood Green redevelopment initiative, the LEED®-NC Gold-certified RIDC Mill 19 buildings bring the Steel City one step closer to turning a 178-acre industrial site into a sustainable, mixed-use district reconnecting the surrounding neighborhoods to the river's edge.

Gone are the blast furnaces, railyards and slag heaps from the old Pittsburgh Jones & Laughlin Steel Company. What remains is a majestic 1,360-foot-long steel superstructure honoring the past while embracing the future.

"The approach to the design was to create a building that would nestle under the existing superstructure rather than try to re-clad and build the full volume of the old mill," explains Jeryl Aman, AIA, director of operations, MSR Design, whose firm served as the main architect on the project. "This allowed the team to optimize the depth of the floor plate to be within 75 feet for increased daylight autonomy, support better air conditioning efficiencies for the usable volume and create a distinction between the heritage elements of structure and the new building itself."

The superstructure roof houses the country's largest single-slope photovoltaic array, generating two megawatts each year, and is enclosed with large windows featuring Solarban® 60 glass and skylights made with Solarban® 70 glass.

The windows vary in size and shape, providing a rhythm of different scales that references the existing 25-foot structural bay.

"We provided more glass in certain areas where we felt a more activated ground floor might someday take hold," explains Aman.

To achieve desired energy modeling performance levels and Cradle to Cradle® material sustainability criteria, the building envelope design was based exclusively on Solarban® glass.

Drawing from extensive daylighting studies, the team designed the floor plate width, glazing area and glazing distribution accordingly to achieve the project's goal of 65% spatial daylight autonomy.

MSR's original design specified Solarban® 70 glass for the vertical windows. However, the construction manager suggested Solarban® 60 glass to save on costs. The team re-ran the energy model analysis. Because the performance was comparable, the change was accepted.

With a solar heat gain coefficient (SHGC) of 0.39, the expansive Solarban® 60 glass windows block

60% of the sun's solar energy while allowing 70% of the visible light to enter the corridors. Similarly, with a SHGC of 0.27, the Solarban® 70 glass skylights keep out 73% of the solar heat gain while letting 64% of the light through.

The Unique Adaptive Reuse of Pittsburgh's RIDC Mill 19 Features Windows with Solarban® 60 Glass and Skylights with Solarban® 70 Glass  
Corey Gaffer Photography

The glazing sizes were also optimized for performance and cost.

"The glass height was limited to panes no taller than 143 inches, which supported the 144 ¼-in. lites without the oversized glass premium and the 1-in. loss during insulating glass unit (IGU) fabrication," relates Aman.

The resulting internal courtyard-like corridors and monumental stairs that cantilever toward the superstructure are bathed in mottled light filtering down from the bifacial solar array overhead. Sunlight and views are delivered by the large windows to 88% of the regular occupied areas, providing connections to the Monongahela River, downtown Pittsburgh and the developing district.

While the architects briefly considered fully



occupying the interstitial space between the building and structure, the desire to preserve the longitudinal views down the entire structure length won out.

"The project provides a public promenade to help bridge the community's connection to the new development and the artifact that is the mill structure. The amount of public circulation, gathering, recreation and reflective space for a privately developed and leased office development is remarkable," he reports.

Instead of demolishing this large relic of history, the superstructure has been revitalized and restored, creating a beautiful and engaging public space.

## Satinal: how STRATO® can contribute to stem the global warming



It is well known that climate change refers both to long-term natural and man's hand shifts in temperatures and weather patterns.

Human activities have been the main drivers of climate change and Greenhouse Gas Emissions.

As human beings are the main culprits of the warning of global warming, they should take to heart the global issue and implement resolute actions. According to the European Commission, "...as every tonne of CO2 emitted contributes to global warming, all emissions reductions contribute to slowing it down. In order to stop global warming completely, CO2 emissions have to reach net zero worldwide. In addition, reducing emissions of other greenhouse gases, such as methane, can also have a powerful effect on slowing global warming – especially in the short term".

The looming climate emergency has been urgently demanding a strong turnover. Many companies have



been adopting a positive impact and a responsible approach within their supply chain, taking decisive steps towards a brighter, greener future, leading to an ecological renewal of market dynamics.

In this scenario, STRATO® has, de facto, adopted a sensitive approach and has been investing in transformative next-generation technologies to achieve net zero.

Recently STRATO® has been the object of in-depth analysis aiming to assess the environmental profile of its product range, in terms of CO2 impact, considering the life cycle of the materials and secondary products involved.

STRATO® obtained the ISCC PLUS certification with a score of 1,13 [kg CO2 eq], thanks to its STRATO® Carbon free product range. With 1.13, the environmental profile of STRATO® is a reference score for developing a road map toward zero-carbon aspirations in 2050. The challenge is to create a sustainable option for customers who would buy responsibly with a look at the global warming impact.

Above all, STRATO® has designed a wide range of products that mainly run on a double track:

1. Performance: control of the UV-rays and NIR energy from the outside to the inside of buildings
2. Sustainable: contribution to reducing the impact of CO2 emissions

Concerning the first point, STRATO® EVA is a thermosetting material that creates three-dimensional bonds at the molecular level during the lamination process. This notable feature makes STRATO® EVA film not sensitive to humidity, water and in particular unforeseen weather conditions, a direct consequence of climate change so far.

STRATO® FRESCO is an innovative high-performance EVA film belonging to the STRATO® SOLAR CONTROL product range. It reduces UV and NIR energy allowing the highest visible light transmission. A new generation of high-performance EVA film that uses nanoparticle technology. It has been formulated to give efficient solar control properties to laminated safety glass. STRATO® FRESCO can replace low-emission glass because it reduces heat transmission.

The second point is related to STRATO® FRESCO being specifically formulated to provide exceptional durability when exposed to weather conditions and great sound insulation. It significantly reduces energy costs and CO2 impacts by controlling solar heat

energy.

In simple terms, if we analyse the behavior of laminated glass with one or more STRATO® FRESCO EVA sheets we will notice that the value of the transmission of visible light is opposite to that of the infrared rays. A great performance of STRATO® FRESCO EVA films creates a comfortable indoor environment. By reducing the use of air conditioning, customers will get economic benefits – like a reduction of electricity costs - and also an environmental reduction of Greenhouse Gas Emissions.

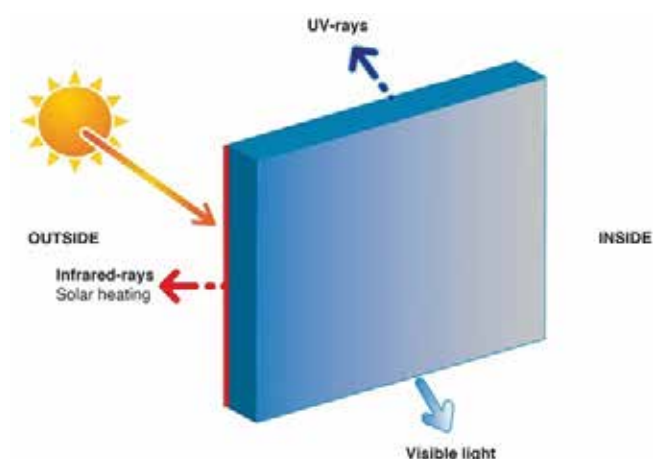
STRATO® FRESCO EVA film laminated glass behaviour.STRATO® FRESCO EVA film laminated glass behaviour.

STRATO® has been paving the way for a new generation of green products that aims at an innovative path toward the limitation of GHG emissions. A tool to achieve the 2050 net zero goals and, hopefully, a motivation to others to implement similar solutions in their manufacturing strategies.

Satinal SpA has been the first EVA film production site in Italy, a reference point in Europe for the supply of 100% made in Italy STRATO® EVA interlayers.

STRATO® EVA interlayers are the ideal partner for high quality applications, offering new aesthetic design solutions and creating modern and elegant laminated glasses, guaranteeing colour uniformity, UV protection and excellent colour stability over time.

In Satinal's R&D Lab quality controls are commonplace. Satinal's mission is to constantly offer prime quality and green product, in line with the sensitive vision of the Group, as well as to respond to a demanding clientele, increasingly attentive to sustainability issues and to a low environmental impact behavior.



# The “Crown Jewel” of Pittsburgh’s Skyline, PPG Place, Turns 40

For 40 years, One PPG Place – a shimmering neo-gothic 635-foot tower with iconic spires designed by world-renowned architect Philip Johnson – has defined and shaped Pittsburgh's skyline, becoming an integral part of the city's identity.

The PPG Place complex comprises six office buildings across 5.5 acres in Downtown Pittsburgh, with One PPG Place being the centerpiece. The PPG Place complex has over 230 spires, the tallest being 25 feet tall. Johnson said the castle-like, neo-gothic design was inspired locally by the University of Pittsburgh’s Cathedral of Learning and H.H. Richardson’s Allegheny County Courthouse.

Nearly one million square feet of Solarban® 550 clear reflective glass is featured at PPG Place. Solarban® 550 glass, a predecessor to today’s environmentally advanced architectural glasses, was chosen because it reflects heat away from the building in the summer to lower air-conditioning costs and reflects heat inward in the winter to



*One PPG Place is glazed with 19,750 pieces of Solarban® 550 glass. (Courtesy of Vitro Architectural Glass)*

reduce heating costs.

Introduced by PPG Glass (now Vitro Architectural Glass) in 1964, Solarban® glass was one of the first coated glasses engineered to reflect heat away from buildings to reduce air conditioning use. Since its inception, there have been numerous technological advances in Solarban® glass performance, including the world’s first triple-silver, low emissivity (low-e) coating, Solarban® 70, and Solarban® 90 glass, the first-ever quad-silver low-e coating.

Now celebrating its 60th anniversary, Solarban® glass is world-renowned for reducing energy consumption by lowering demand for artificial cooling and lighting while maintaining indoor temperatures and boosting occupant comfort. Solarban® glass has become the most trusted and proven choice for architects and designers worldwide due to its optimal energy efficiency and transparency.

Today, PPG Place remains the global headquarters for PPG Industries and is home to several restaurants, the Wintergarden, and the PPG Place Plaza, which features an ice-skating rink.

(Courtesy of Vitro Architectural Glass)



*Nostalgic Moments: Pittsburgh’s PPG Place was dedicated on April 11, 1984. (Courtesy of Vitro Architectural Glass)*



# The EC builds plan for industrial leadership in advanced materials... including flat glass!



**Glass for Europe is pleased to observe that the EC has acknowledged glass as an example of a material for which research and innovation must be supported to enable greater wellbeing in buildings.**

Recently, the European Commission (EC) published a communication on Advanced Materials for Industrial Leadership to outline its strategy for “advanced material” research, innovation, and production in the EU.

The EC outlines its intention to keep the current EU leadership in this sector, reach strategic autonomy regarding advanced materials, and attain Green Deal objectives with the help of research and production of advanced materials.

Glass for Europe is pleased to observe that the EC has acknowledged glass as an example of a material for which research and innovation must be supported to enable greater wellbeing in buildings.

Within the numerous other sectors and priorities for boosting research and innovation on advanced materials, glazing material can play a key role, for instance on:

improving energy efficiency in buildings by using high-performance glazing,  
improving circularity and addressing environmental performance in both the construction and mobility sectors. Flat glass is infinitely recyclable, and there is space to increase the amount of end-of-life flat glass recycled in closed-loop.

contributing to renewable and low carbon energy conversion and generation through innovation and development of solar glass and mirrors to contribute to the objective of renewing the EU solar PV value chain.

Once again, we can see that, as argued by the journal Nature, glass is the hidden gem in a carbon-neutral future!

Glass for Europe’s members stands ready to take their part in the research, innovation, and production needs for advanced glass to contribute to the objective communicated by the EC and welcome the will to sustain the advanced material industry in the EU for the achievement of the Green Deal’s objectives.

## Bormioli Pharma reports North American glass success



Bormioli Pharma increased its North American sales by 47% in 2023

It said the growth was a result of the company's evolving infrastructure and expanded capacity, tailored to meet the demands of the North American pharmaceutical market, including an increased need for pharmaceutical glass vials.

The Italian-headquartered pharmaceutical glass manufacturer said it strengthened its strategic focus

on the US market four years ago by establishing a new legal entity and a commercial branch in the US.

Since then it has expanded its on-site commercial team, established a warehouse and designed dedicated product offerings compatible with regional standards.

“For North American customers, this translates into the availability of a reliable and flexible packaging partner that can streamline their purchasing processes while reducing supply chain complexity, shortening their time-to-market and supporting them in the development of high-value projects with local, qualified support.”

The pharmaceutical glass vials market is projected to grow from \$12.1 billion in 2023 to \$24.1 billion by 2033, expanding at a 7.10% CAGR, driven by rising pharmaceutical product demands.

The US market is one of the major growth contributors (with an expected CAGR of 8.0% in North America for 2023-2028) and there is a high demand for suppliers capable of providing turn-key packaging solutions that meet regional standards, such as the use of glass Type I expansion 33.

Bormioli Pharma recently signed a key contract with a US-based company focused on allergen immunotherapy for the supply of packaging kits for two of its manufacturing sites in the US.

The full packaging kits include aluminium seals, rubber stoppers, Type I moulded glass vials, and Type I tubular glass expansion 33 vials.

Johann Depperschmidt, Bormioli Pharma’s Head of Sales, Americas, said: “To best serve our North American customers, we’ve adapted our manufacturing processes to produce Type I Glass expansion 33 vials in our European facilities, ensuring robust production and backup.

“We have an on-site, dedicated US sales team and a local warehouse, and we look forward to expanding these resources further in 2024.

“Additionally, we are also collaborating with a US-based sterilisation company to prepare ready-to-use packaging kits – a partnership we believe is a step forward in ensuring that quality healthcare becomes a more accessible reality for people

## Siemens technology supports Glass Futures furnace



The Glass Futures manufacturing facility in St Helens, UK is set to pave the way for emission reductions with support from Siemens technology.

The £54 million R&D project will model and develop an optimised approach for ‘boosting’ glass furnaces with electrical heating.

Industry body British Glass estimates this approach will cut UK emissions from glass manufacturing by 56%.

The site, which will have capacity to produce 30 tonnes of glass per day when fully operational in late 2024, is the first facility to adopt Siemens’ latest digital control system, PCS Neo, to unify and manage all its plant operations.

The technology will manage all processes across the site and provide end-to-end monitoring and control, which Glass Futures will be able to modify and build on as the facility is developed.

George Myers, control systems engineer at Glass Futures said: “Decarbonising the manufacturing process is vital with global demand for glass set to keep rising in the years ahead.

“Using electric boosting and hydrogen to melt glass provides us with a route to achieve that, and our ambition at St Helens is to model and develop a solution that large-scale manufacturers can adopt or learn from, paving the way for more efficient furnaces around the world.

“Our partnership with Siemens will provide the



technology to make this possible. People working from anywhere in the world will be able to monitor the entire facility from one unified communications pathway, which will generate new insights and enable people around the world to learn about the project and process.”

Stephen Haigh, head of glass industry UK & Ireland at Siemens, said: “By reducing the complexity of data collection and analytics at the site, and by simplifying

operations at this test stage and subsequently in full-scale glass plants, PCS Neo will play a vital role in unlocking the ambition at the heart of this project.

“Importantly, it will provide Glass Futures – other future projects across the world - with flexibility when it comes to deploying their people, independent of role or location, and enabling global engagement and learning.”

## Vitro Announces Partnership with the Pittsburgh Steelers



Vitro Architectural Glass, a Vitro business unit, roots originated in Pittsburgh in 1883

Vitro, a leading glass manufacturer in North America headquartered in Monterrey, Mexico, has partnered with the Pittsburgh Steelers, one of the most storied franchises in the history of the National Football League. Vitro becomes the first partner of the Steelers in Mexico, as part of the NFL Global Markets Program.

Western Pennsylvania, the historic center of glass and steel making, is the ideal confluence between Vitro and the Pittsburgh Steelers. Both organizations share a storied history of parallel shared values and a relentless focus on improvement and innovation.

Vitro has deep roots in Pittsburgh, as its architectural glass business, Vitro Architectural Glass (formerly PPG Glass), was founded here in 1883. This marked the first glass plant in the United States, establishing Pittsburgh as the hub of glass innovation and production. Since then, Vitro has revolutionized glass manufacturing, becoming the largest glass producer

in the Western Hemisphere whose low embodied carbon, energy-efficient and high-performance products continually raise the industry standard for sustainability. Vitro’s world-renowned glass research and development center is headquartered in Pittsburgh, a testament to its rich history in Western Pennsylvania.

Vitro’s commitment to sustainability stretches far beyond its responsible glass manufacturing processes. For instance, its patented oxy-fuel furnace technology reduces energy consumption in glass-melting furnaces by as much as 20% and lowers greenhouse gas emissions by 50%. This dedication to sustainability is further exemplified by Vitro’s low-emissivity (low-e) glass products, which reduce the energy lost through typical windows by 35%, delivering a return on carbon by dramatically decreasing a building’s operational carbon yearly.

One of Vitro’s energy-efficient products, Solarban® 60 glass, is featured at Acrisure Stadium, the home of the Steelers. Solarban® 60 glass is a solar control, low-e coating designed to block 62% of solar energy while allowing 70% visible light. Its unique properties provide year-round comfort and significant heating and cooling cost savings.

With nearly eight million fans in Mexico, the Steelers have the second largest fanbase in Mexico amongst all NFL teams.

“We are delighted to start this partnership with the Pittsburgh Steelers. Both organizations share many characteristics in their origins and culture, such as dedication, teamwork and commitment to deliver nothing but the best in their respective fields”, said Adrian Sada, CEO of Vitro. “We are convinced this partnership will yield substantial benefits to both organizations.”

# Close the Glass Loop launches new national platform



The Netherlands has become the first new country to join the Close the Glass Loop partnership since its inception back in June 2020.

Close the Glass Loop is an industry platform launched by the European Container Federation (FEVE) that aims to unite the glass collection and recycling value chain.

The Netherlands will join ranks with fellow national platforms in Austria, Belgium, France, Germany, Ireland, Italy, Poland, Portugal, Spain, Sweden and the United Kingdom.

The launch meeting of Close the Glass Loop Netherlands took place on February 29th, 2024, at the Ardagh Group's glass factory in Dongen.

The event brought together stakeholders from the Dutch glass collection and recycling value chain.

Joost Lavèn, Chair of Stichting Duurzaam Verpakkingsglas (Sustainable Packaging Glass Foundation), said: "To reduce energy consumption and CO2 in the chain of both single-use and reusable glass, bottles and jars are already made from as much recycled glass as possible, i.e. from cullet. But the bottleneck to increasing recycled content even further is often a shortage of good quality cullet.

"The glass cullet is there, but it leaks out of the cycle and that is a waste of valuable raw materials. We are convinced that more collaboration across the glass packaging value chain will lead to the collection of more glass and therefore more cullet available for glass production."

On behalf of Close the Glass Loop partners, Adeline Farrelly, the Secretary General of FEVE, said: "We are proud to welcome Close the Glass Loop Netherlands to the network. From the beginning we have always insisted on taking a bottom-up approach, to tailor solutions to every local reality.

"But we are also convinced that the long tradition of glass collection and recycling in the Netherlands will be beneficial to other partners, and this exchange of best practices is a key part of our work to enhance sustainability throughout the glass packaging value chain, across Europe and beyond."

Close the Glass Loop aims to mobilise all the relevant stakeholders towards achieving a 90% glass collection for recycling rate in the EU by 2030 – up from the rate of 80.1% achieved in 2021.

To attain this, Close the Glass Loop will:

Foster the exchange of best practices between national platforms.

Promote joint initiatives in the separate collection of glass packaging from households and the hospitality sector.

Support investments that maximise glass recycling outputs towards closed loop glass packaging.

# Guardian and Velux team up on VIG development



## Guardian Glass and the VELUX Group have entered a joint development agreement concerning tempered vacuum insulated glass.

This agreement will allow Guardian and VELUX to develop manufacturing processes and capabilities together to meet the growing, evolving demand for VIG.

“We are very pleased to enter into this agreement with Guardian Glass,” says Lars Petersson, CEO, the VELUX Group. “Glass is a key material in VELUX roof windows and we are keen to investigate together with Guardian how to advance its capabilities and integrate this into our products

to benefit our customers.”

Adds Ron Vaupel, Guardian Industries President, “The VELUX Group’s leadership in architectural roof windows and decades of expertise in high volume fabrication of window systems makes the company the ideal partner for us to make VIG technology available to a broader market. Combined with Guardian’s years of proven tempered VIG expertise, we expect to propel VIG into a new era.”

With more than 170 years combined innovation and experience, Guardian and VELUX will leverage their collective technical teams, intellectual property and additional tools to advance tempered VIG technology.



## Vetropack issues glass manufacturing jobs and shutdown warning for 2024



Schott Pharma is to build a manufacturing facility in the USA.

The facility in Wilson, North Carolina, will primarily make prefillable polymer syringes required to meet the need for deep-cold storage and transportation of mRNA medications.

In addition, the site will have the capability to produce glass prefillable syringes for GLP-1



therapies, for example to treat diseases such as diabetes or obesity.

The project will add 401 jobs to the region and include a total investment of \$371 million, with groundbreaking expected by the end of 2024, and projected operations starting in 2027.

The new site will expand the US supply chain for in-demand syringes that deliver injectable medicines, vaccines, and other fields of applications.

It will allow Schott Pharma to triple its contribution of glass and polymer syringes to the US market by

2030.

Bringing production to the US will reduce lead times and slash transportation costs, as well as protect against future shortages of critical drugs and ensure pandemic preparedness.

“Wilson County stood out in a nationwide search for a number of reasons, particularly for its favourable pool of local talent and its proximity to the Research Triangle area, which hosts numerous universities, healthcare companies, and biopharma resources,” said Christopher Cassidy, President of Schott North America.

## CGI and Glaston enter into a strategic partnership



**CGI becomes Glaston’s main global partner in the group’s IT services and in advancing digital transformation.**

Glaston is the leader in its industry, providing machines and equipment as well as related services for glass heat treatment, insulating glass production, and mobility, display and solar glass production. The company has grown strongly in recent years through acquisition, and it maintains an interest in industry consolidation and strategic partnerships. To strengthen its international competitiveness, Glaston chose CGI as its main partner to harmonize and modernize the group’s IT

systems and streamline the day-to-day activities of its employees by renewing end-user services in all its operating countries.

“It is important to us that our partner understands the operating environment of the manufacturing industry as well as the needs of our international and growth-oriented business. We were also impressed by CGI’s corporate culture, which emphasizes the desire to listen to the customer and develop services in close cooperation. Such a foundation is safe to build future growth and rely on when we consolidate operations and develop our business,” says Glaston’s VP, ICT & Digitalization Janne Puhakka.

“In the partnership between CGI and Glaston, the strategic components of our service delivery model are clearly visible. Glaston benefits from our strong local presence combined with the expertise of our global service centers. It has also been important to see how our solution-oriented customer service and quality culture have convinced Glaston of our ability to assist them in the next steps of growth and leveraging its global reach,” says Niraj Sood, Senior Vice President Consulting Services, Manufacturing Business Unit at CGI in Finland.

# Boosting profitability by up to 30% with Glaston solutions and services



**Glaston, a pioneer in cutting-edge glass processing technologies, continues to advance automation solutions that improve the quality, efficiency and profitability of glass tempering.**

## **Effortless glass tempering with Autopilot**

Glaston Autopilot is the company's newest technology in the field of tempering automation. This groundbreaking system provides fully automated glass tempering, taking care of all necessary settings and process adjustments. By minimizing manual input, the solution guarantees repeatable quality – regardless of operator or shift.

## **Lowest operating cost – highest profitability**

With its outstanding features, Glaston Autopilot contributes to the lowest operating costs – and highest profitability. It enables unmatched output and yield by bringing simplicity and ease to glass tempering and especially facilitating mixed production.

Additionally, the system empowers glass processors to attain up to 50% in energy savings.

As it eliminates downtime between product transitions and optimizes bed loading and utilization, maximized efficiency is ensured. By fostering precision throughout the entire production line, it effectively minimizes waste.

Glaston tempering line with its solid design, automation and the highest uptime supported by services offers a reliable solution for a lifetime. Plus, system upgrades allow glass processors to easily keep pace with industry developments, maintaining a competitive edge.

## **Enhanced safety with OSC**

Glaston Online Stress Calculation (OSC) solution calculates glass surface stress, middle-pane tension, and estimated fragmentation amount for all processed glasses. This tool automates quality monitoring, replacing ineffective conventional approaches. By increasing automation, we can be more certain that the safety standards required for tempered glass are met.

The system issues automatic alerts when any variations in stress levels are detected. The results are based on real-time measurements of critical process variables during the tempering process.

Autopilot and OSC mark a significant leap forward in redefining the glass tempering industry and increasing glass processors' profitability. These innovative solutions not only elevate quality and safety in glass processing but also guarantee heightened efficiency, directly translating into increased profits.

Both are available as an optional feature for new Glaston tempering lines or as an upgrade for Glaston's existing lines.



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# From practitioners: digital and AI tools already in use today



**One Hot Topic at glasstec 2024: Digital Technologies. Artificial Intelligence also plays a prominent role here and is already used at various stages of the (glass) industry.**

**Digital technologies and AI are on the advance – also in the glass industry. They hold great potential. Some companies are already using digital and AI tools to optimise products or processes in the value chain.**

With increasing digitalisation the glass industry is entering a new era worldwide. Innovation and efficiency can be increased enormously by using digital technologies and Artificial Intelligence (AI). The potential they hold for all segments of the glass industry is vast – from the container glass and flat glass industry to glass machinery building and glass processing and finishing. Possibilities are far from exhausted. The world is currently undergoing a digital revolution – driven by Artificial Intelligence, data analysis and automation. With the help of digital tools processes can be optimised, costs cut, efficiency increased and competitiveness boosted, to name but a few advantages. In a nutshell: digital technologies break new ground in terms of quality, growth and innovation; and glasstec as the world-leading trade fair is right in the middle of it.

Valuable potential by using digital tools

1. Process optimisations by data analysis and AI  
Progressive data analyses and AI algorithms can be used to optimise manufacturing processes. From raw material sourcing and manufacturing to quality control, AI-assisted data capture and evaluation enable producers to increase efficiency and reduce rejects.

2. Smart maintenance and servicing by means of IoT sensors

By installing IoT (Internet of Things) sensors combined with learning digital instruments service and maintenance expenses can be minimised – and what's more – defects, errors or repair needs of machines and technical equipment can be detected early on, avoiding high manpower needs and long, costly downtimes.

3. Virtual Reality (VR) and Augmented Reality (AR) in design and production

VR and AR help to optimise design processes and visualise the finished products faster and better for customers. This applies to both custom “glass” solutions such as container glass design and to customer or staff training. Virtual Reality and Augmented Reality already form an integral part of this industry – and will increasingly do in future.

4. Quality control and inspection by image processing

Extremely advanced image processing techniques and tools are needed to enable machine vision and, hence, an extremely precise quality control and visual inspection of glass products. Defects or irregularities can be quickly detected and remedied this way. This positively impacts product quality and substantially reduces rejects.

These are just four benefits of digital tools but one thing is for sure: digitalisation changes the glass industry and opens up entirely new avenues for many firms – from more efficient processes and optimised production workflows to innovative automation solutions. The use of digital and AI tools is progressing – in the industry just as much

as with glass producers and companies involved in the glass cycle, as the following examples of our exhibitors' use cases show.

Digital technologies as #HotTopic at glasstec 2024  
Look forward to glasstec from 22 - 25 October 2024 where under the Hot Topic "Digital Technologies" further approaches will be presented by exhibitors and experts from the industry as part of glass technology live or the glasstec conference.

Four use cases for the successful deployment of digital tools in the glass industry

Case 1: Şişecam improves the colour quality in glass production and optimises carbon emissions with Artificial Intelligence

Şişecam is a leading Turkish producer of flat glass, glassware, glass packaging, automotive glass as well as glass fibre and is a key global player. With its pioneering Glass Color Optimization Project (CROP) Şişecam shows how Artificial Intelligence in combination with machine learning can not only improve the colour quality but also reduce carbon emissions. Using advanced algorithms and machine learning the system automatically identifies colour differences in the production process. This improves the colour quality while reducing production waste – and, hence, carbon emissions. CROP aims to create an infrastructure to quickly identify and eliminate colour differences. The root causes for colour issues are to be quickly found and removed with the help of AI models to thereby minimise undesired colour differences.

Case 2: Saint-Gobain enhances its digital solutions portfolio to accelerate its customers' decarbonisation

Saint-Gobain, a world-leading company in the field of lightweight and sustainable construction, develops, manufactures and distributes materials and services for the construction and industrial markets. In January 2024 Saint-Gobain announced the acquisition of another specialist for digital solutions. The advanced control systems and simulation software of the acquisition candidate make it possible to reduce energy consumption in glass furnaces. Closing of the transaction is subject to antitrust approvals and is expected by the end of the first half of 2024. Saint-Gobain's digital solutions form part of their

strategic plan "Grow & Impact" which aims to offer customers end-to-end solutions and accelerate the decarbonisation of their products and processes.

Case 3: AGC and Citrine Informatics cooperate to develop new glass technologies using AI  
AGC Glass Europe, the European market leader for flat glass and the technology platform Citrine Informatics are cooperating in the field of Artificial Intelligence (AI) to accelerate the next generation of glass. After all, there is great demand for the optimisation of optical and mechanical properties of especially scratch and abrasion-resistant glass in both the automotive and communications industries worldwide. The cooperation is expected to give rise to innovative solutions that satisfy this demand for increasingly performant glass. The Citrine platform derives independent AI models from the AGC measured data and then gradually tests the proposed materials. Citrine improves these models using sequential learning processes oriented towards identifying the ideal process conditions for producing high-performance glass. This kind of AI-based material development is the future of the material industry.

Case 4: BISS.ID promises gapless digital product labelling, rack management, product tracing and documentation

The up-and-coming innovative Start-Up BISS.ID offers a platform that simplifies the digital data exchange in the construction supplies and construction elements sectors. Manufacturer's individual product data is to be made easily available to business customers, specialist retailers, installers and end users in a cloud-based IoT environment. The big benefit for the glass industry: this digital platform makes it possible to map the product labelling complete with rack management and the logistics process starting with shipping from the insulation glass unit manufacturer. In addition, GPS trackers can be integrated, the data transfer of rack and customer data can be synchronised, order data exchanged and digital delivery bills can be generated complete with full documentation. BISS.ID wird 2024 in der Start-Up Zone der glasstec dabei sein.

BISS.ID will join the fray in the Start-Up Zone at glasstec 2024.

# Super Spacer coming to the China Glass Show

Our industry is growing so fast that it is sometimes hard to keep up with. With new technology, new products, more standards, and requirements, not everyone can stay competitive and answer to demands efficiently.

That is where Super Spacer® comes in: Super Spacer® can be used for automatic application for insulated glass units with pane gaps between 8 mm and 28 mm, for all sizes and shapes from XS to XXL. It enables manufacturers to quickly respond to new projects as the machinery doesn't need to be preheated for the use of Super Spacer®, and set-up takes only a few minutes, meaning faster production and lower energy consumption. Finally, the production of insulating glass units with Super Spacer® requires neither specially trained plant operators and is available with a range of application equipment to suit all

production quantities, making it easy to implement and possible for anyone to be able to work with Super Spacer®.

We are very happy to be exhibiting at the China Glass Show with our distribution partner Linkeast to meet you, demonstrate the capability of Super Spacer®, and share with you ideas and future projects. We will be pleased to welcome you in hall N 1 stand n° N1-212.

In the meantime, if you want to learn more about our Super Spacer®, come visit our website at [SUPERSPACER.COM](http://SUPERSPACER.COM)

#superspacer #edgetech #warmedge #quanex #linkeast #chinaglassshow #automation #igglass #energyefficiency #fasterproduction

## Glaston and Hegla partnership targets Asia-Pacific region

Flat glass machinery suppliers Glaston and Hegla have entered into a partnership, which will cover the majority of the Asia-Pacific region.

The goal of the partnership is to strengthen the offering of both parties for the benefit of customers. With a complementary product offering, both companies can meet glass processors' growing demand for automation and integration.

The suppliers will be able to provide comprehensive solutions to customers, as well as faster responses and services, thanks to the broader network in the region.

Effective March 2024, Hegla's sales and distribution activities in the area will utilise the

resources and network of the Glaston Group.

The partnership covers the whole region except for Japan, South Korea and China.

Bernhard Hötger, CEO of Hegla Group, said: "With Glaston, we are able to provide highly customised solutions for clients, including the integration of Glaston's heat treatment and insulating glass production into our highly automated and integrated shop floor logistic solutions, in one of the largest and fastest growing regions of the world."

Both companies supply glass machinery for architectural and automotive glass applications.



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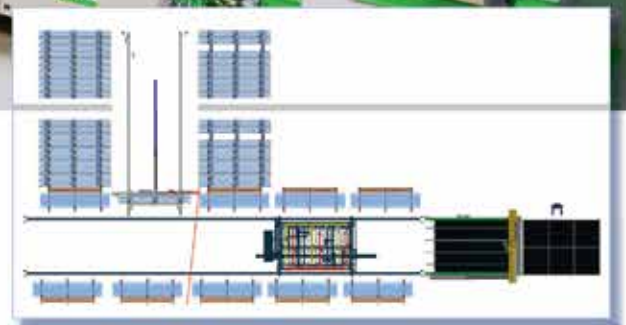


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