Gass-lecanology Internationa October/November • Year 36 • No. 5/2025

THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY



BEST MAKINA POWERS CAM YAPI'S BOLD BERGAMA PRODUCTION LEAP

ARCHITECTURAL AND AUTOMOTIVE GLASS BOTH OPTIMIZED WITH BOYONE TECHNOLOGY

> FROM FAMILY PASSION TO GLOBAL EXCELLENCE: ITECH

> > SMARTER, GREENER, FASTER GLASS PROCESSING -ALL ENABLED BY GLASTON

> > > BUILDING TRUST THROUGH TESTING: CUGHER'S DECISIVE EDGE





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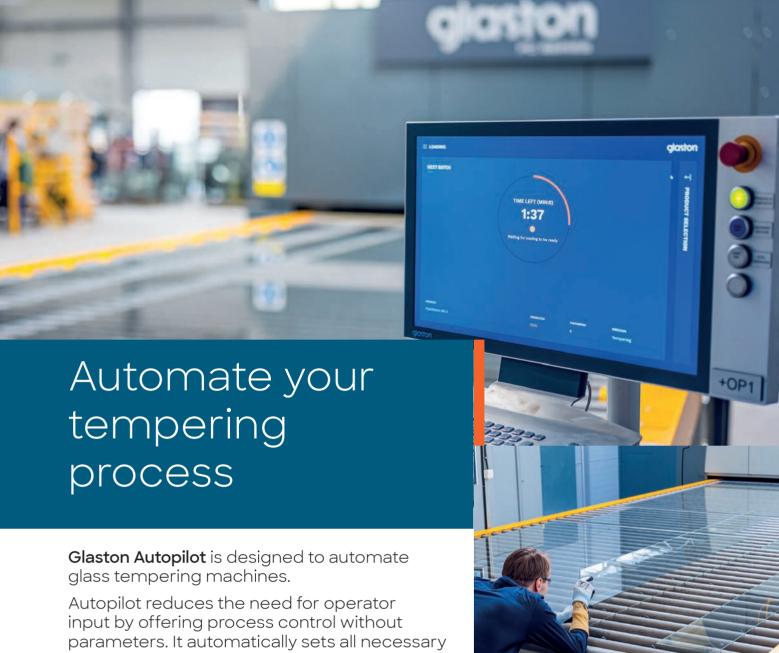


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Glass-Technology International

Year 36 No. 5 (207)

BI-MONTHLY MAGAZINE
PUBLISHED BY



Via Antonio Gramsci, 57 - 20032 Cormano (Milan) - Italy Tel : +39 - 02 - 66306866

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PRINTED BY: BICIDI ARTI GRAFICHE - Via San Felice N° 37d 16138 Genoa (Molassana) - Italy

BACK COPIES: € 29 air mail included | Italy: € 15

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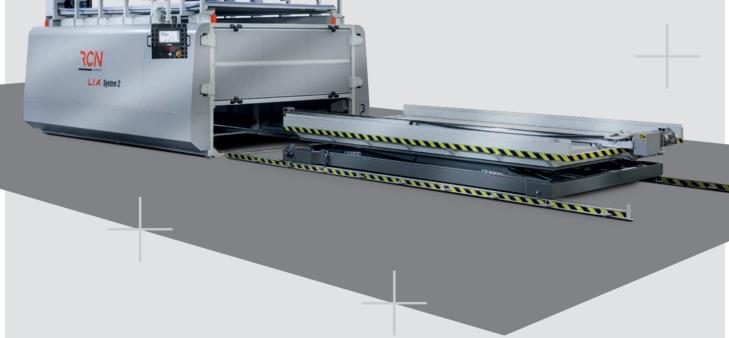
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we cut glass

Designed for glassmakers who want to evolve their business by adopting automated and flexible float cutting systems, **BKM** float cutting tables offer both the uncompromised high quality and long lifetime typical of Bottero products with an easy-to-use approach for the operator.

Thanks to the modular platform concept, common to all our float cutting systems, **BKM** cutting tables are equipped with technological solutions and components adopted on our highend float cutting models also (**BCS**, **EVO**), ensuring high performance and strong reliability.

The equipment configurations can be stand-alone and/or in-line with an automatic loader (series 600) and

break-out table (**series BBM/BLM**) ensuring higher versatility of operations always in safe conditions.

BKM float cutting systems can perform linear and shaped cuts on glass substrates with a thickness **up to 19 mm**, offering the possibility of making small and medium batch productions and/or customized sizes.

Various accessories can be added to the machine like easy deletion tool, air cushion, tilting movement, plastic foil cutting,....

9 BKM float cutting tables are **Industry 4.0** complaint and to support the green transition, Bottero S.p.A. recently achieved the **ISO 26000** certification which effectively assess and address our social responsibilities.













2026 TRADE FAIRS CALENDAR The magazine will be distributed at the following Events







Editorial files:

16-01-2026

Deadline Adv files: 20-01-2026



FENSTERBAU FRONTALE | 24-27 MARCH | NUREMBERG - GERMANY

GLASS EXPO NORTHEAST | 25-26 MARCH | LONG ISLAND (NY) - USA

Editorial files:

09-02-2026

Deadline Adv files: 13-02-2026

2026

CHINA GLASS | 7-10 APRIL | SHANGHAI - CHINA

INTERNATIONAL GLASS MANUFACTURING SHOW | 21-23 APRIL | DUBAI - UAE

WINDOREX | 7-9 MAY | CAIRO - EGYPT

Editorial files:

02-03-2026

Deadline Adv files: 06-03-2026

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GLASS-TECH POLAND | 26-28 MAY | WARSAW - POLAND

BIG 5 CONSTRUCT SOUTH AFRICA 9-11 JUNE JOHANNESBURG - SOUTH AFRICA

GLASSTECH MEXICO | 15-17 JULY | MEXICO CITY - MEXICO

Editorial files:

24-04-2025

Deadline Adv files: 28-04-2025



ICCG CONFERENCE & EXHIBITION | 15-17 SEPTEMBER | BERLIN - GERMANY

GLASSBUILD AMERICA | 23-25 SEPTEMBER | LAS VEGAS (NV) - USA

Editorial files:

27-07-2026

Deadline Adv files: 30-07-2026

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GLASSTEC | 20-23 OCTOBER | DÜSSELDORF - GERMANY

All **GLASSTEC** exhibitors advertising in this issue also receive a free **GLASSTEC PREVIEW**

VETECO | 10-13 NOVEMBER | MADRID - SPAIN

Editorial files:

24-09-2026

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EURASIA GLASS | NOVEMBER - Date to be confirmed | ISTANBUL - TURKEY

GLASSTECH ASIA | NOVEMBER - Date to be confirmed | FAR EAST

ZAK GLASS TECHNOLOGY | DECEMBER - Date to be confirmed | DELHI - INDIA

Editorial files:

26-10-2026

Deadline Adv files: 30-10-2026





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- The convection air circulation has been optimized for more uniform distribution, reducing anisotropy, enhancing convection effectiveness, and improving energy efficiency.
- With "NorthGlass Tempering Cloud", customers can access remote technical support from our experts, download recommended recipes, and perform remote diagnostics on furnace's internal parameters (optional).
 - 1: When loading rate is below 80%.
 - 2: Take the furnace data of B or E width as an example.







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SATINAL

Production launch of STRATO® EVA CLEAR interlayers up to 2800 mm wide

leading Italian manufacturer of EVA interlayers for safety glass lamination, **Satinal** S.p.A. recently announced the start of production for its STRATO® EVA CLEAR interlayers in an exclusive new width of 2800mm. This expansion is a direct response to growing market demand for larger, high-performance interlayers needed for ambitious architectural and design projects.

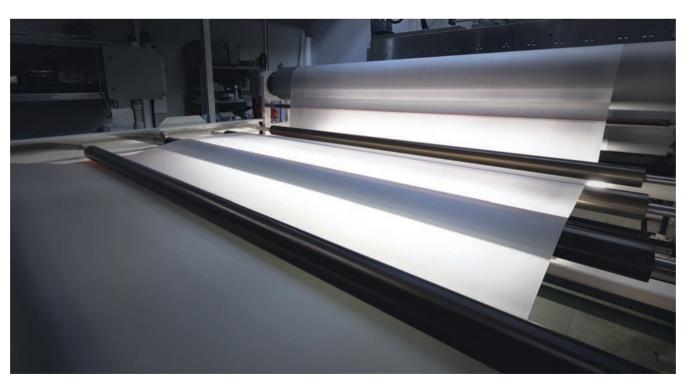
The new 2800mm width, available from 0.38 mm up to 1.52 mm thickness, will allow glass laminators to process extralarge laminated safety glass panels without the need for splicing. This not only streamlines the production process but also enhances the aesthetic and structural integrity of the final glass product - making it ideal for applications such as jumbosized facades, skylights, balustrades and partitions.

A renowned product range

Satinal's STRATO® EVA CLEAR product range is well-re-

garded for its exceptional transparency, superior adhesion and durability, as well as its resistance to moisture and UV radiation. The new, wider format will give architects and designers greater creative freedom - enabling them to realize larger-scale visions with fewer constraints. This strategic advancement further solidifies Satinal's unique position in the European market. The company is the sole EVA interlayer manufacturer on the continent, and it is currently the only one producing 2800 mm wide rolls. This singular capability gives Satinal a significant competitive advantage, enabling it to meet the specialized needs of high-end architectural projects that demand both exceptional scale and uncompromising quality. This exclusive offering not only simplifies production for its clients but also sets a new benchmark for what's possible in large-format glass lamination across Europe. The company's commitment to continuous innovation and investment in advanced manufacturing technology is reflected in this new capability, reinforcing its position as a key player in the global glass industry. Indeed Satinal continues to guarantee comprehensive coverage worldwide, from Europe to South America - all to meet the needs of all its customers.

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SEKURIT & ROTAGLASS OTOCAM

Türkiye Partnership

Sekurit Service recently announced that **Rotaglass Otocam** has officially joined the Sekurit Partner network, becoming its first partner in Türkiye. This significant milestone was celebrated with the signing of the partnership contract at the recent Poland Expo, where it was possible to meet face-to-face and solidify this collaboration.

Rotaglass Otocam is a respected player in the Turkish automotive glazing industry and Sekurit is thrilled to work alongside them as the company looks to expand their presence in this dynamic market. Their deep local expertise, commitment to quality and shared values align perfectly with what Sekurit strives for in every partner.

This partnership is part of a broader vision led by Sekurit Partner, a European network of independent automotive glass professionals supported by Saint-Gobain Sekurit, a global leader in automotive glazing. Sekurit Partner connects trusted local experts who meet high standards of safety, technical excellence and customer satisfaction.

Members benefit from access to cutting-edge tools, continuous training and a strong supply chain, ensuring they stay ahead in a rapidly evolving industry shaped by innovations such as ADAS calibration, smart glazing and sustainable repair practices.

As Sekurit's first official partner in Türkiye, Rotaglass Otocam brings valuable local insight and a strong operational presence to the network. Headquartered in Istanbul, Rotaglass is part of a fitting chain that operates across Türkiye and owns two fitting stations, offering services like wind-shield replacement, ADAS calibration and crack repair.

Their extensive reach and dedication to quality make them an ideal partner as the two companies work together to deliver exceptional service to customers throughout the region. This is the start of a promising journey and Sekurit looks forward to growing together, driven by shared values, technical excellence and customer focus.

WWW.SEKURIT-SERVICE.COM





Turning complexity into capability: technology empowers Ramos

arge formats, complex shapes - the systron proHD significantly expands Ramos' production capabilities

From Madrid to the forefront of architectural glass processing - with over 40 years of experience, **Ramos Industria del Vidrio** is one of Spain's top glass processors. With the installation of the **systron** 5025proHD + WM, Ramos has taken a decisive step forward: investing in waterjet cutting technology to boost precision, expand design possibilities and unlock new markets.



Carlos Ramos, owner of Cristalerías Ramos, together with his daughter Silvia Ramos in front of their new systron proHD A strong legacy of innovation

Founded in 1984, Ramos gained early momentum in the insulated glass market. Key milestones include a Tamglass ProE furnace (2003) and a PVB lamination line with digital printing (2008) - completing the in-house glass transformation cycle.

Today, Ramos operates three facilities in southern Madrid, with 100 employees and 8,000 m² of space. The company specializes in façade, interior and custom architectural solutions.

Strategic leap with systron

In February 2025, Ramos commissioned the systron proHD glass processing centre with waterjet- a cutting-edge solution delivered in a custom white finish.

"After years of evaluation, our 2023 visit confirmed systron's vision, professionalism and innovation," said Carlos Ramos, owner of Cristalerías Ramos. The project was supported by Tecnocrisa, systron's Spanish partner.

The power of waterjet cutting

The key driver for the investment was clear: Ramos needed to process complex shapes and delicate coated glass without compromising quality. Waterjet technology offered the ideal solution.



"The cutting precision and flexibility simply outperform other technologies," said Carlos Ramos, owner and CEO. "It allows us to take on challenging jobs that were previously not possible."

Smooth integration

Despite space limitations, the setup was seamless. "With trained operators and close support from systron and Tecnocrisa, we started production on day one." The machine now runs at full capacity in a single shift.

Future-ready with a trusted partner

Ramos continues to invest in smart glass, XXL formats and sustainability. "We source high-recycled-content glass and optimise processes to cut our carbon footprint." The partnership with systron remains strong: "We believe in innovation through collaboration."

WWW.SYSTRON.AT

TROSIFOL

Trosifol® SkyViera® - innovation meets illumination

rosifol recently announced that Indian automotive manufacturer Mahindra Group is integrating the innovative Trosifol® SkyViera® PVB film into the panoramic sunroofs of its all-electric vehicles. BE 6 and XEV 9e.

Trosifol® SkyViera® empowers automotive OEMs to deliver distinctive, brand-defining features in laminated glass roofs by illuminating printed designs that create everything from subtle ambient glows to bold visual effects. Virtually any pattern can be produced and illuminated in any colour. Depending on customer requirements, the design can appear nearly transparent or opaque when not illuminated.

As global auto makers drive an electric revolution, vehicle de-

sign is undergoing a transformation - futuristic features, advanced styling elements and visual innovation are now central to brand identity, status and the all-important "wow factor." Trosifol® SkyViera® is quite literally a leading light in this design evolution and will continue to play a pivotal role in shaping the vehicles of tomorrow.

WWW.TROSIFOL.COM





> Vibrorath K99 high-alumina and Vibrorath 420 zircon-mullite channel blocks

> FOURATH® 4: the new feeder expendables series





VITRO ARCHITECTURAL GLASS

FramingFactor™ tool debut

itro Architectural Glass has introduced FramingFactor™, a digital tool that allows users to quickly evaluate Total Assembly Performance (TAP) of insulating glass units (IGUs) in architects' future builds.

"FramingFactor™ is an essential tool that serves as a guide for users to evaluate performance data for both glazing and framing options when planning upcoming projects," said Fernando Diez, Vice President of Marketing at Vitro Architectural Glass. "By calculating TAP based on key project details - such as project name, framing system type and framing performance -FramingFactor™ empowers architects to make informed early decisions that align with energy efficiency objectives and regional building code requirements."

FramingFactor™ also includes a custom sizing feature designed to accommodate unique project dimensions with ease and critical performance metrics such as Visible Light Transmittance (VLT), Solar Heat Gain Coefficient (SHGC) and winter U-value.

Powered by Vitro's proprietary product data and performance



metrics from the National Fenestration Rating Council (NFRC), FramingFactor™ delivers project-specific calculations. This eliminates the need for manual entry of centre-of-glass values, streamlining the process and reducing complexity.

By referencing the International Energy Conservation Code (IECC) map embedded in the tool, users can ensure regional compliance while meeting their project's energy efficiency targets.

Developed with insights from internal technical service teams and external consultants, FramingFactor™ continues to evolve, redefining how architects and fabricators approach performance analysis with greater efficiency and accuracy.

FramingFactor[™] is a helpful guide for early-stage planning. The tool should not be relied upon for precise energy calculations or official submissions.

WWW.VITROGLAZINGS.COM

ZIPPE

Project Milestone: High-tech batch plant for NovaSklo in Ukraine



Zippe reports being proud to support **NovaSklo** in the development of a new float glass production facility in Ukraine. Currently in the basic design phase, the plant will feature a state-of-the-art batch plant and cullet return system, including automation - developed by Zippe in close cooperation with the NovaSklo team and the local engineering office.

This project reinforces the company's commitment to delivering innovative, sustainable and reliable solutions for the global glass industry. With over 670 successfully implemented plants worldwide, Zippe Industrieanlagen continues to set the benchmark in batch and cullet technology. The company reports being honoured to be part of this forward-looking project, supporting NovaSklo and contributing to Ukraine's industrial development with cutting-edge technology while remaining hopeful for a peaceful future.

WWW.ZIPPE.DE

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SAINT-GOBAIN

New float glass and insulation lines to be built in India

Saint-Gobain recently announced the commencement of construction of its seventh float glass line and fifth mineral wool insulation line in Oragadam, Chennai, India. This expansion marks a significant milestone, reinforcing the Group's strategic commitment to strengthen local manufacturing capabilities and grow in the Indian market.

The new float glass facility will have a production capacity of 1,000 tonnes per day, significantly boosting Saint-Gobain India's ability to meet the growing demand for high value-added glass in the construction market.

Aligned with Saint-Gobain's global sustainability goals, the new float line is designed to minimise energy consumption and environmental impact, while integrating advanced digital capabilities for operational excellence and superior product quality.

Following the acquisition of Rockwool India (Rockinsul) and UP Twiga (Twigainsul), Saint-Gobain has rapidly expanded its insulation business in India. The fifth mineral wool insulation plant

will be its largest investment in Asia-Pacific, with a production capacity of 50,000 tonnes. This near net-zero carbon facility will serve the growing insulation needs in building construction across India and feature the latest digital and engineering innovations to deliver superior insulation solutions for the growing Indian market.

Speaking on the occasion, Sreedhar N., Senior Vice-President and CEO - Asia Pacific and India, said, "Saint-Gobain is uniquely positioned to serve the Indian construction market with a comprehensive portfolio of solutions that are both light and sustainable. Our commitment to local manufacturing, coupled with state-of-the-art facilities, including a dedicated R&D centre, empowers us to adapt our solutions to the evolving needs of our customers. The two new investments, leveraging advanced engineering and industry 4.0 technologies, will further enhance our ability to deliver high-performance and differentiated solutions to our customers, aligning seamlessly with our commitment to innovation and excellence."

The Oragadam site is poised to become Saint-Gobain's largest multi-business manufacturing hub that will house facilities for float glass, mineral wool insulation, gypsum plasterboards, plasters and acoustic ceilings.

WWW.SAINT-GOBAIN.COM





Partnership to manufacture iPhone and Apple Watch cover glass

pple and Corning recently announced a major expansion of their longstanding partnership to make precision glass for Apple products. Ap-

ple is making a new USD 2.5 billion commitment to produce all of the cover glass for iPhone and Apple Watch in Corning's Harrodsburg, Kentucky, USA, manufacturing facility.

This means that 100 percent of the cover glass on iPhone and Apple Watch units sold worldwide will be made in the U.S. for the first time. Corning is creating the world's largest and most advanced smartphone glass production line at the Harrodsburg facility.

Corning will now dedicate this entire facility to manufacturing for Apple, which will help increase Corning's manufacturing and engineering workforce in Kentucky by 50 percent.

The two companies will also open a new Apple-Corning Innovation Center at the Harrodsburg plant. The Innovation Center will play a key role in the development and engineering of advanced materials and next-generation manufacturing platforms for Apple's future generations of products.



GRENZEBACH

Egbert Wenninger takes over global management of Glass Business Unit

gbert Wenninger will take over the leadership of the Hamlar site and the Glass Business Unit Effective August 1, 2025, the **Grenzebach Group** is consolidating its business operations at the Hamlar site, Germany and the Glass Business Unit under unified leadership.

Egbert Wenninger, a seasoned expert with over 20 years of experience at Grenzebach and a well-known figure in the glass industry with international experience, will assume responsibility for both areas. Wenninger brings extensive market knowledge and a deep







understanding of the entire Grenzebach portfolio. He sees great potential in both the Hamlar location and the glass business and plans to develop them further, strategically, in collaboration with the global team.

Markus Gruber, the previous head of Glass Business Unit, has left the company as of August 1, 2025, at his own request. The Grenzebach Group thanks him for his dedication and successful collaboration. As part of this realignment, Florian Nagler -also with Grenzebach for around 20 years and a recognised expert in the glass industry- will now serve as Deputy Head of Business Unit Glass. Florian Nagler will serve as Deputy Head of the Glass Business Unit going forward

WWW.GRENZEBACH.COM

SPARKLIKE & POLYPANE GLASINDUSTRIE

Polypane Glasindustrie purchases newest Laser Portable 2.1

olypane Glasindustrie has purchased the newest Sparklike's Laser Portable 2.1 to improve their IGU quality assurance. Polypane Glasindustrie has relied on Sparklike Handheld technology for nearly two decades and recognised the need to upgrade to the latest ver-



sion. With the new Laser Portable 2.1, Polypane can now perform non-destructive gas measurements, even on triple-glazed units with lamination and coatings, further improving their quality assurance process.

"We have been following the development of this device for some time now and believe it to be the right moment to make this investment in order to strengthen our Quality Control procedures," said Franky Symoens, Managing Director at Polypane Glasindustrie.

WWW.SPARKLIKE.COM

SCHIAVO

New installation completed

Schiavo recently announced the installation of a new vertical washing machine PLUS2000.4 at Inotherm in Slovenia. This state-of-the-art machine is designed to offer exceptional performance and reliability. The PLUS2000.4 is completely made of



stainless steel, ensuring durability and resistance over time.

Key features

- Maximum height: 2,000 millimetres
- 4 brushes
- Glass thickness: from 2 to 20 millimetres
- Pre-wash section
- Independent washing section

Investing in high-quality machinery such as the PLUS2000.4 means much more than just a purchase. It means choosing to:

- Have fewer operational problems
- Drastically reduce unplanned downtime
- Reduce maintenance frequency and costs

Schiavo knows that efficiency and business continuity are key for modern businesses. That's why the company is committed to providing solutions that not only meet but exceed customers' expectations, ensuring a significant return on investment through increased productivity and less need for interventions.

Schiavo reports being proud to contribute to the success of Inotherm with its advanced technologies and has thanked its agent Glasmik for this great opportunity.

WWW.SCHIAVOTECH.IT









Intelligent Glass Tempering Furnace















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GlassBuild America

Nov 4-6, 2025 Booth No.: 24159

Orange County Convention Center, Orlando



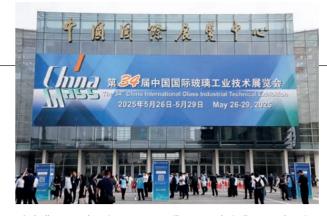
CHINA GLASS

35th edition ready to go

s the largest and most influential annual event in the global glass industry, the 35th China International Glass Industrial Technical Exhibition (China Glass 2026) is scheduled to be held from April 7 to 10, 2026, at the Shanghai New International Expo Centre. The exhibition will open a total of seven exhibition halls from N1 to N5 and halls W4 and W5, with an expected exhibition scale of 90,000 square metres, committed to building an authoritative platform that brings together cutting-edge technologies & products and innovative solutions in the global glass industry and deeply empowering the collaborative innovation and high-quality development of the upstream and downstream of the glass industry chain. The successful holding of the 34th exhibition once again confirms the status of China Glass Exhibition as a "barometer" and "weather vane" in the glass industry. The exhibition attracted 910 well-known enterprises from 31 countries and regions around the world to participate in the exhibition and received a total of 105,987 professional visitors from 136 countries and regions around the world. Sponsored by the Chinese Ceramic Society, after more than 30 years of development, China Glass has become an international exhibition with leading scale in the global glass industry, top specialisation and full coverage of the industrial chain. It is not only the preferred platform for domestic glass companies to showcase their innovative achievements and expand domestic and foreign markets, but also an important window for international glass giants to seek cooperation opportunities and deepen their cultivation of the Chinese market.

The exhibition deeply links the upstream and downstream resources of the global glass industry chain and is the core exhibition platform that drives technological innovation, deepens trade cooperation and leads the development of the industry.

In 2025, China's glass industry moves forward steadily in the face

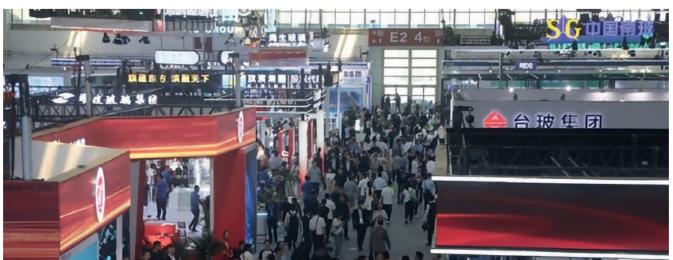


of challenges, showing strong resilience and vitality, accelerating structural transformation of the industry and opening up new incremental markets along three major directions:

- First, the in-depth development of application scenarios, the extension of the construction field from the engineering market to the home decoration retail end, the upgrade of energy-saving standards drive the increase in the penetration rate of highperformance products such as Low-E and vacuum glass and the transformation of green buildings release incremental space.
- Second, the integration of cross-field technologies has accelerated, the production capacity of photovoltaic glass has been upgraded to the direction of BIPV integration and the breakthrough of special-shaped power generation curtain wall technology has broadened the application scenarios; Automotive glass has become the core growth pole and innovative products such as coating dimming and super tempering are adapted to the needs of new energy vehicles; Special glass extends to high value-added fields such as electronic display and pharmaceutical packaging.
- Third, Green and Smart Manufacturing is the core of cost reduction and efficiency increase and enterprises actively invest in energy conservation and emission reduction technologies such as flue gas treatment, waste heat utilisation and energy substitution. Looking forward to 2026, the industry will continue to evolve in the direction of high-end, intelligent and green and green & low-carbon transformation, deep integration of intelligent manufacturing and high value-added glass products will become a new track of competition.

The 35th China Glass Exhibition will be a core platform for insight into trends and future opportunities.

WWW.CHINAGLASS-EXPO.COM





- > Enamelling and design printing
- > For any kind of flat glass on the market
- > Working width from 1300 to 2600 mm





TUROMAS

Crielec Vidres innovates to lead the double glazing sector

Crielec Vidres began in 1980 as a family-run workshop in the glass industry. Since those early days, the company has evolved - not only in size but also in the range of products and services it offers. Over time, it specialised in the manufacturing of insulating glass.

Throughout the years, Crielec has remained at the forefront of the sector by adapting to market changes and demands. This evolution has been driven by a continuous commitment to the latest technologies, enabling the company to provide cutting-edge solutions to its customers

Staying competitive means constantly evolving. For many years, the company worked with various brands of cutting tables, but in 2014, they decided to upgrade their machinery. This decision materialised with the acquisition of the **Turomas** LAM-304, a cutting table that significantly improved their efficiency and precision.

However, their commitment to continuous improvement did not stop there. In 2022, Crielec made another technological investment, acquiring the LAM 505-TR along with an automatic loader-storage system. This upgrade further optimised their production process while saving space in their facility.

One of the reasons Crielec trusts Turomas is its after-sales service. They know that with Turomas, they are not just purchasing a product but also gaining the necessary support to ensure everything runs smoothly.

Crielec Vidres continues to look toward the future with optimism and their investments in cutting-edge technology and machinery remain a key part of their success.

WWW.TUROMAS.COM





The ultra clear choice of EVA for all architectural and decorative projects.

Evalam is the international reference brand of EVA for architectural and decorative laminated glass applications. Our products are manufactured in Spain with our own exclusive formulas, which assures unmatched quality.

Evalam Visual, our most advanced range, offers the highest level of reliability on all projects. Its excellent and incomparable transparency, high adhesive strength, superb acoustic insulation, and a crosslink index like no other on the market, make Evalam Visual the ideal lamination solution in applications for areas where optics and durability are essential requirements.

LiSEC

Viridian Glass innovative and futureoriented



'iridian Glass works at the cutting edge. The company, which can reflect back on a long history in glass processing, keeps a constant an eye on the latest trends and developments. "The change to Australian building regulations has resulted in higher thermal efficiency requirements for new residential buildings. Over time, this will lead to significantly higher market penetration for double glazed units," said Dean Haritos, CEO of Viridian Glass, "Viridian has invested in inhouse capability and capacity over many years to meet this demand. As the market continues to evolve, we will ensure that our facilities are optimised to efficiently meet the needs of our customers."

Automated LiSEC cutting systems as facility centrepieces

"Our automated lines start with a LiSEC PKL, which is connected to several cutting tables that allow X, Y and Z breakouts and which subsequently feed the LiSEC KSR. These systems enable us to deliver a consistently high quantity of quality glass to the tempering oven, resulting in an increased output of finished products."

Viridian was one of the first LiSEC customers in the world

to connect a tempering oven fully automatically, eliminating the need for operators. The tempering bed is generated and loaded automatically. Production is therefore practically fully automated from the raw glass to the finished insulating glass unit.

Downstream of the LiSEC PKL with remnant plate storage is a LiSEC ESL-RS with automatic X-breakout, which supplies the LiSEC KSR and KSV glass edge grinding and edging systems fully automatically and a LiSEC GFB-VB cutting table for laminated glass.

With the LiSEC PKL/SBL, Viridian Glass has the option of unloading the raw glass sheets directly from the inner loader frame, which is delivered by HGV and placed in glass storage and transporting the sheets to the stationary LiSEC ATL glass loading station. The laminated glass is fed into the float line and travels past the oven via a bypass into the sorting system, which feeds the insulating glass line.

As the largest glass processor in Australia, it is important for Viridian Glass to stay at the forefront of innovation. This is possible with the right employees and the right partners - like LiSEC - who can make a significant contribution, particularly in terms of quality and efficiency and also when it comes to collaboration and exchange.

WWW.LISEC.COM











TOUCH WITH YOUR HANDS THE NEW CONCEPT OF PERFECTION



Skill Glass: the italian school of vertical CNC machines.

Years of experience and innovation to arrive at machines that represent a technical synthesis, unbeatable in functionality, precision and performance. Not just machines that fulfill their function, but high-tech solutions designed to dramatically reduce the need for service.

- Interchangeable dual head THT technology for super-fast processing
- Self-compensating support rollers to keep the glass perfectly supported and balanced at all times
- No mechanical parts directly exposed to water, dirt and falling of removed parts
- Tool racks with short, simple, precise and effective movement
- Self-washing system for parts exposed to dust
- 150 mm diameter tools with automatic size control and self-learning

The future is already here: reliability, precision and long life.



NSG

Investment in advanced glass coating line in Poland

ilkington Polska, a member of NSG Group, plans to install an advanced architectural glass coating line at its facility in Sandomierz, Poland. The new sputtering coating line will be a fully automated system designed to apply ultra-thin, high-precision functional coatings to glass surfaces. Production is scheduled to commence in the first guarter of 2027. The investment, valued at PLN 160M, is expected to create over 30 new jobs in the region.

These advanced coatings enhance glass with specific properties such as improved energy efficiency and optimised light transmission. The new line will enable Pilkington Polska to produce a broad portfolio of high-performance glass products, including energy-saving low-emissivity glass, meeting the growing demand for sustainable building solutions in Poland and across Europe.

"The market is evolving rapidly and demand for high valueadded glass is increasing both domestically and throughout Europe. This new coating line is our strategic response to these trends. It will not only expand our production capacity but also introduce cutting-edge technologies that support energy efficiency and sustainable development," said Krzysztof Granicki, Managing Director - East, Nordic & Central Downstream Europe, Architectural Glass SBU, NSG Group.

The Sandomierz plant, one of NSG Group's key global manufacturing sites, offers an ideal location for this investment thanks to its robust technological infrastructure, skilled workforce and advantageous logistics. This initiative represents not only a technological leap forward but also a significant contribution to the local economy through job creation.

This investment aligns with NSG Group's medium-term plan, "2030 Vision: Shift the Phase," which is driven by the "4D" strategies, including "Business Development" and "Decarbonisation." The decision reflects NSG Group's commitment to expanding its presence in high-value segments that contribute to the sustainable development of society.

WWW.NSG.COM

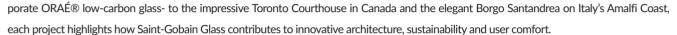


SAINT-GOBAIN

Glass Reference Book 2025

S aint-Gobain Glass presented the new edition of its Reference Book recently - a publication that seeks to showcase inspiring projects from around the world and demonstrates the versatility of its glass solutions.

This edition is particularly special, as it brings together two years of outstanding achievements, featuring iconic projects across Europe, the Americas, Africa, Asia and the Middle East. From Habitat 7 in Sweden -one of the first buildings to incor-



Inside the Reference Book

- 37 inspiring projects from around the world
- A dedicated "Technical Notebook" section for professionals and glass enthusiasts
- Several projects combining multiple Saint-Gobain solutions.

Saint-Gobain Glass has thanked all of its partners, architects, designers and colleagues who made these achievements possible and has invited interested readers to explore the Reference Book and get inspired by the creativity, innovation and passion behind each project.

WWW.SAINT-GOBAIN-GLASS.COM





SPARKLIKE

How to test for argon gas in windows

nsulating glass units (IGUs) are critical for maintaining energy efficiency in modern buildings. Filled with inert gases like argon or krypton, they offer superior thermal insulation compared to standard air-filled units. However, maintaining optimal gas concentration is vital for their performance. A 2008 study, "Nondestructive Method of Measuring Relative Concentration of Gases in Double-Pane Windows." ex-

plores how to test for argon gas in windows using DC electrical discharge, shedding light on advancements in gas measurement technologies. **Sparklike**'s devices align with the topic, by providing precise, non-invasive methods to test for argon gas in windows, making them a practical choice for quality control and maintenance.

Ensuring quality in IGUs: Why it matters

IGUs filled with argon or krypton provide better thermal insulation.

Gas leakage over time reduces efficiency, increases energy costs and impacts sustainability.

The 2008 study

Introduced a DC electrical discharge method for measuring argon in double-pane windows.

- Achieved ~5 percent accuracy at moderate to high gas levels.
- Advantages: non-invasive, sensitive, adaptable for manufacturing.
- Limitations: requires lab conditions and spectrometers, not suitable for field testing.



Sparklike's solution

Sparklike Laser Devices use Tunable Diode Laser Absorption Spectroscopy (TDLAS). Independent testing (ift Rosenheim) shows results within ±2 percent of gas chromatography.

Benefits

- Portable and easy to use on-site.
- Non-destructive testing no damage to IGUs.
- Works in production, installation and maintenance phases.
- Suitable for double and triple glazing.

Impact across the IGU lifecycle

- Manufacturing: verifies proper gas filling and compliance.
- Installation: ensures units meet specifications after transport/handling.
- Maintenance: detects gas loss early to maintain efficiency.

Conclusion

While lab-based methods like DC discharge offer insight, Sparklike provides a proven solution.

Enables reliable quality control, reduces energy consumption and supports sustainable construction practices.

WWW.SPARKLIKE.COM



Complete traceability for critical laminate applications

uraray's Advanced Interlayer Solutions (AIS) Division recently announced that its new CertiPly™ Blockchain-based technology will deliver even greater peace of mind, authenticity and confidence to all users of its industry-leading SentryGlas® ionoplast interlayers.

CertiPly™ will create and allocate a unique Blockchain token to every batch of SentryGlas®, which will then accompany it, in real time, along all elements of the value chain - from Kuraray to the laminator and on through the architect, contractor, installer and ultimately to the building owner. This decentralised tracking solution means that anyone involved in a project can verify the authenticity, origin and traceability of the laminate. This

gives suppliers confidence in the materials they are using, while also delivering the means to prove to their customers and building owners that their processes fall within industry-approved smart, secure building practices. According to Alberto Alarcon, Global Marketing Communications Leader at AlS: "With the Blockchain tokens moving across stakeholders in real time, CertiPly™ will shape the future of laminated glass by delivering transparency, efficiency and trust at every step of the fabrication and build process. It gives all parties the peace of mind that they are dealing with a global supplier and genuine products that deliver their stated class-leading functional and aesthetic capabilities."



WWW.TROSIFOL.COM





SCHRAML

Products under the LiTROS brand going forward

rengthening its strategic focus, the LiSEC Group recently announced that the products of Schraml Glastechnik GmbH will be marketed under the **LiTROS** brand from now on.

Schraml Glastechnik, which has its headquarters in Großraming, Upper Austria, has been part of the LiSEC Group since 2016 and can draw on over five decades of experience in the development and manufacture of machines for flat glass processing. The integration into the LiTROS brand signifies not only a new name, but also a clear strategic focus: the tried-and-tested technology from Schraml is to be continued and further developed under LiTROS - with a focus on modular entry-level solutions and practical partial automation. LiTROS is taking this step to expand its portfolio and strengthen its position as a provider of robust, practical machine solutions for glass processing. LiTROS is synonymous with simple operation, sound technology and scalable automation - ideal for glass processors who want to get started with software-supported processes. Integrating Schraml's established products adds high-performance solutions in the field of flat glass processing to the range.

September will mark the start of the changeover, which will affect both the product name and design as well as the digital presence. Information on the existing Schraml products will be available immediately on the LiTROS website in the "Processing" and "Washing" product categories and will also be presented on LiTROS' social media channels.

The LiSEC Group is setting a clear signal for future viability, customer orientation and technical excellence by bundling its activities under the LiTROS brand. The strategic focus remains clear: LiTROS complements the high-end supplier LiSEC with solutions that can be learnt quickly and provides customers in defined target markets with a reliable partner for entry into industrial glass processing.

WWW.LISEC.COM







SATINAL

Market leadership consolidated in South **America**

atinal recently announced a significant step in its international presence with the upcoming opening of a new office and showroom in São Paulo, Brazil. The company has quickly gained market leadership in the South American EVA industry for architectural glass lamination. This strategic move underscores Satinal's commitment to strengthening its presence in the prestigious South American market and providing enhanced support to its growing customer base in the region. The new São Paulo facility will serve as a central hub for Sati-



nal's operations in Brazil, offering a dedicated space for sales, customer service and technical support. Crucially, the integrated showroom will provide an immersive experience for clients, allowing them to explore STRATO® EVA interlayers for safety glass lamination first-hand and witness the quality and performance that define the brand and TK glass machinery for 360° integrated solutions in lamination, tempering, chemical tempering and HST.

Satinal is pleased to confirm that the new office and showroom will be available for visits after the prestigious Glass South America exhibition. Satinal invites all interested parties to stay tuned for further updates regarding the official opening and visiting hours for the São Paulo office and showroom.

WWW.SATINAL.IT

CEBRACE

Cebrace Atmos: South America's first low-carbon glass

ebrace presents Cebrace Atmos, the first low-carbon glass produced in South America, marking a new chapter in the glass industry and the way we build.

With approximately 50% lower greenhouse gas emissions compared to conventional glass, Cebrace Atmos represents a significant advance in sustainability. The equivalent emission is approximately 5 kg of CO₂ per m² at a thickness of 4 mm, one of the lowest rates

ever recorded for commercial glass of this type worldwide.



This result is the fruit of a transformational journey: Cebrace Atmos is manufactured with approximately 70% recycled material and uses renewable energy sources in its production, such as certified-of-origin electricity and biomethane. Each step of the process was designed to reduce impacts and increase benefits for the environment and for those who build with purpose.

WWW.CEBRACE.COM.BR



LANDGLASS

LandGlass Intelligent Manufacturing shines in Europe

ecently, multiple intelligent tempering furnaces have been successfully tested and packaged at LandGlass' manufacturing base, ready for shipment to Europe. The bustling logistics operation epitomises LandGlass's customer-oriented approach and sustained expansion into the European market, confirming the strong appeal of "Chinese Intelligent Manufacturing" in the field of European glass processing. Europe, with a total area of approximately 10.16 million square kilometres and a population of about 746 million, is a key region for



LandGlass's overseas market expansion. Since 2000, LandGlass has consistently participated in European glass industry exhibitions and engaged with local customers to analyse and understand their needs.

Driven by the core demands for "Quality, Intelligence and Energy-saving," LandGlass has developed industry-leading innovative technologies and products. From the in-depth recognition demonstrated by the Romanian customer through three consecutive purchases, to the first breakthrough of LandGlass tempering furnace in the Finnish market, LandGlass has solidified its brand and reputation through a series of benchmark projects. Nowadays, LandGlass intelligent tempering furnaces have been installed in more than 20 countries across Europe, with extensive ap-

plications in automotive, architectural, home appliance and photovoltaic industries.

"For your next leap" is the brand philosophy of LandGlass. This philosophy not only runs through LandGlass's R&D, production and service systems, but also serves as the spiritual core that drives the company's growth, guiding the company to walk hand in hand with customers in the digital age and create the future together.

WWW.LANDGLASS.NET





NEW ITALCARRELLI FC50 LGV

AGV GLASS HANDLING

MAIN FEATURES

- > Heavy load capacity
- > Laser guidance technology
 > Integration with production lines
- > Automatic battery changing
- > AGV management software
- > Al features integrated

OPERATIONS

- > Handling of glass packs from stackers
- Warehouse handlingHandling of racks on trucks
- > Automotive glass handling

PLUS

- > Customized dimensions
- > Autonomous guidance
- > Low maintenance
- > Obstacle detection system
- > AC technology
- > High maneuverability





EVA FILM MANUFACTURER

SUITABLE FOR LAMINATING:

- Tempered glass
- Open edge railings
- Low-E glass
- Glass stairs and floors
- Structural glass
- Multi-laminated & bulletproof glass
- Entire facades
- Windows and doors
- Smart glass
- Decorative glass with inserts







Italian Ecosystem for Safety Glass Manufacture













Training in multishading champions FRATELLI PEZZA sandblasting leadership

As it transforms sandblasting from a purely decorative treatment into a strategic tool for the modern glass industry, FRATELLI PEZZA consistently demonstrates how technologies are now reshaping glass performance, identity and long-term industrial value - also through targeted coaching and design.

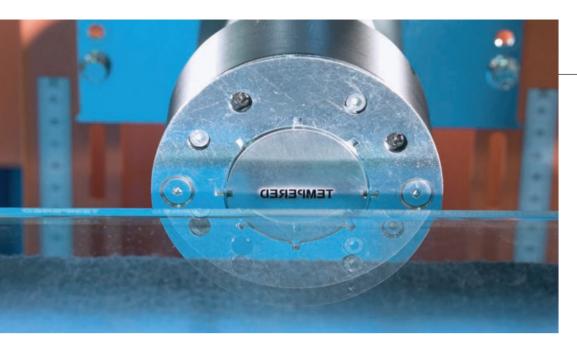
TRANSPARENCY: SANDBLASTING IN THE MODERN GLASS **SECTOR**

A central Fratelli Pezza conviction is sourced by the company philosophy that sandblasting should never be seen as an exclusively decorative finish but rather as a strategic instrument. This is because it offers manufacturers, architects and designers a means to enhance value in glass - whether the goal is improved safety, optimized performance or a distinct expression of identity. What once might have been considered an ornamental process has matured into a decisive factor in how glass is perceived and used within multiple industries.

MULTISHADING: A NEW CHAPTER IN PRECISION **SANDBLASTING**

Fratelli Pezza has long been recognized for its commitment to innovation in surface treatment. Among its most recent achievements is MultiShading, a significant technological development incorporated into the MISTRAL EV+ range of automatic sandblasting equipment. MultiShading introduces a multidirectional gradient control system that fundamentally changes what is possible with sandblasting. Traditionally, gradient effects were constrained largely to horizontal motion, forcing operators to reposition glass manually whenever vertical,

radial, or circular patterns were required. The result was a slower process, with greater reliance on operator skill and more handling of large sheets of glass. MultiShading eliminates those obstacles, empowering users to apply vertical fades, concentric gradients and complex multidirectional designs without ever rotating the sheet. This saves time, ensures consistency and allows for production that is both faster and more reliable. The benefits of this approach become clear in several practical contexts. Glass balustrades and safety parapets can now feature vertical or diagonal fades that provide visual privacy while maintaining architectural elegance. LED mirrors, long valued for their decorative possibilities, can be enhanced with concentric halos and subtle gradient effects that add depth to illumination. Signage and



branding applications gain a distinctive edge with multidirectional finishes stand out in commercial environments. Even functional glazing, such as solar control or shading solutions, benefits from this technology, allowing sandblasting to contribute actively to both energy performance and aesthetics. By condensing what once required multiple operations into a single controlled pass, MultiShading not only streamlines production but also minimizes energy consumption and reduces risks associated with manual handling. The system reaches its full potential when paired with other Fratelli Pezza innovations such as SandConnection 4.0, which links machines to the Industry 4.0 ecosystem; MistralApp, a remote SVGbased programming interface; and OptiAir, which optimizes compressed air use. Together these tools form a comprehensive platform where creative flexibility meets technical efficiency. The message is unmistakable: sandblasting can and

should deliver both artistry and performance.

MISTRALAPP: VISUALIZING BEFORE BLASTING

Programming complexity has often been a barrier for those working with advanced sandblasting systems. To simplify this stage, Fratelli Pezza developed MistralApp, a web-based interface accessible from virtually any connected device. Operators can create, edit and upload SVG files, previewing the precise

sandblasting path over a digital representation of the glass layout. This visibility allows instant adjustments to pattern intensity, coverage zones and fine details, all without interrupting production or halting the machine. As a result, set-up times shrink dramatically while operator dependency lessens. The outcome is a smarter, faster and more versatile workflow, ideally suited to companies managing dynamic schedules or operating across multiple shifts.

OPTIAIR: EFFICIENCY DESIGNED INTO THE MACHINE

As sustainability becomes a defining factor in industrial operations, Fratelli Pezza has anticipated the market's demand for greater resource responsibility. OptiAir, a built-in system for the MIS-TRAL EV+ and ZEPHIR+ series, is a direct response to that challenge. By reducing the amount of secondary compressed air consumed during sandblasting, OptiAir cuts down on waste without compromising quality. This has an immediate impact on operating expenses and at the same time reflects broader environmental responsibility. It demonstrates that energy efficiency can be seamlessly integrated into the very structure of the machine rather than added as an afterthought.





INSPIRATION GALLERY: SANDBLASTING AS DESIGN AND PERFORMANCE AT VITRUM

At VITRUM, Fratelli Pezza presents the Inspiration Gallery, a curated space that demonstrates not only what its machines can technically achieve, but also the broader role of sandblasting in design and performance. The gallery highlights real-world applications across diverse industries, showing how sandblasting can simultaneously enhance sustainability, safety and creativity. Visitors encounter examples such as anti-slip treatments for flooring, decorative lighting panels, bird-safe glass and photovoltaic solutions where aesthetics meet renewable energy. One particularly striking showcase is the sandblasting of solar glass. This process allows partial opacization of the surface while maintaining solar absorption, effectively transforming functional energy panels into design objects. Another pressing application is bird-safe architecture. Highly reflective or transparent facades cause fatal collisions for countless birds. Fratelli Pezza, using Amacor moulds, has designed a solution in which automatic sandblasters imprint dot or stripe patterns directly onto glass without requiring manual masking. The result is rapid, cost-effective production of glass that safeguards wildlife while maintaining architectural appeal. The Inspiration Gallery also underscores the versatility of Fratelli Pezza systems when working with non-glass substrates. Materials such as marble, wood, ceramics, metals, fabric, plexiglass and

even leather can be sandblasted to achieve unique textures and finishes. This broadens the creative horizon for architects and interior designers, offering hybrid material solutions that extend far beyond traditional expectations of glasswork.

PERMANENT IDENTITY THROUGH SANDBLASTING MARKING SYSTEMS

Another dimension of Fratelli Pezza's offering lies in sandblasting-based marking systems. Available in portable and automated forms, these machines allow for permanent engravings that serve purposes ranging from branding to certification and traceability. Unlike labels or inks that can fade, detach or degrade, sandblasted markings remain visible and unaltered for the life of the product. They also preserve

the chemical and structural integrity of the glass itself, ensuring that durability and safety are not compromised. The resulting matte finish communicates quality and professionalism. Whether used in artisanal studios needing flexibility or in industrial lines requiring precision and repeatability, these marking systems present an eco-friendly, low-maintenance solution to identity and traceability.

PROTECTIVE COATINGS: EXTENDING GLASS PERFORMANCE

A frequent concern about sandblasted surfaces is their maintenance. Because of their porous appearance, some assume such surfaces are difficult to clean or unsuitable for hygiene-sensitive environments. Fratelli Pezza addresses this issue with its line of protective coatings that form invisible, durable barriers against dirt, oils and fingerprints. The coatings not only preserve the clarity and transmission of glass but also extend its lifespan, making sandblasted finishes practical in settings that require frequent handling. These treatments have proven particularly effective in architectural and high-contact applications. To ensure customers achieve optimal results, Fratelli Pezza organizes microtraining sessions under the COATING EXPERT programme during VITRUM 2025. These hands-on modules provide practical instruc-





tion in applying the coatings correctly, ensuring users fully harness the benefits of protection, durability and easier cleaning. In markets that increasingly emphasize hygiene, sustainability and durability, protective coatings represent an intelligent enhancement to sandblasting practices.

TRAINING FOR **TOMORROW: PASSING KNOWLEDGE FORWARD**

The glass industry is undergoing significant generational transitions and with them come knowledge gaps. Many companies struggle to maintain continuity as experienced workers retire or as staff turnover accelerates. Advanced technologies such as automated sandblasting demand specialized knowhow that cannot always be passed down informally. Recognizing this, Fratelli Pezza has established training programmes tailored to the needs of both small workshops and large industrial operations. These programmes, offered both on-site and remotely, cover foundational machine use, preventive maintenance, advanced programming and optimization techniques. The purpose is to ensure that every piece of equipment is matched by skilled operators who can unlock its full value. By strengthening confidence and competence among new staff, the company helps safeguard productivity, preserve expertise and ensure that technological innovation translates directly into practical advantage.

VISIBILITY AND SUSTAINABILITY: A

NEW CAMPAIGN

Fratelli Pezza's latest communication campaign issues a challenge to the industry. For too long glass has been confined to a minimalist role - treated as transparent and almost invisible. While purity and clarity have their place, this approach often strips the material of its expressive potential. The company calls on professionals to reverse that trend with the motto: "Don't be invisible." Sandblasting emerges as the tool that enables glass to reclaim visibility, serving not only as a medium for

decoration but as a means to communicate identity, fulfill functional demands and engage sustainably with the environment. In this context, sandblasting ceases to be an afterthought and becomes a strategy. It equips glass with narrative, utility and personality - reminding the industry that transparency does not have to mean anonymity. The material can protect, inspire and express - if equipped with the right techniques.







BEST MAKINA powers CAM YAPI's bold Bergama production leap

BEST MAKINA's long-standing partnership with CAM YAPI has reached new heights with the latter's bold consolidation into a vast production hub at Bergama. Together, the two are driving oversized IG/SG unit innovation - merging advanced engineering, trusted collaboration and sustainable growth to meet the most demanding global architectural projects.

n a bold move that underscores its position among the elite players of architectural glass, CAM YAPI has consolidated its three factories into a single, producstate-of-the-art tion hub in the Bergama Industrial Area. This strategic leap, marking the third major milestone in the company's 25-year journey, extends its closed production space to 50,000 sqm on a vast 110,000 sqm site. Alongside the expansion, CAM YAPI has strengthened its machine infrastructure with decisive new investments.





BROUGHT TOGETHER BY AMBITIOUS DEMANDS

For decades, CAM YAPI has been synonymous with cutting-edge façade solutions. Exporting 80 percent of its production, the company supplies world-renowned projects with glass units that combine fire-proof, blast-proof, multi-laver and soft-coated laminated configurations - often jumbo-sized and weighing over 300 kg/m². Such demanding specifications require not only engineering excellence but also partnerships that can sustain quality and growth. At this crucial juncture, CAM YAPI has chosen BEST MAKINA as its trusted partner in massive IG/SG unit production. The collaboration is far from new: CAM YAPI invested in its first BEST MAKINA IG line, with a 3300 mm height capacity, in 2015 - upgrading it in 2020 with advanced

technology. With the move to its new Bergama site, the company installed a second line -2800 mm in height- bringing greater flexibility and ease to production teams.

A ROBUST INNOVATION PARTNERSHIP

Reflecting on this journey, Abidin Akulker emphasized the pivotal role of this partnership:

"Our customers' requirements often involve oversized, multi-layer laminated IG units. To meet these demands, we needed solutions with heavy-duty, rigid construction and precise conveying systems. BEST MAKINA's lines excelled in handling these challenges. Having operated for nearly a decade without issue validated our choice. That confidence led us to invest in a second IG&SG line for our new facility."

Akulker further highlighted the quality of cooperation:

"From pre-sales to aftersales, BEST MAKINA demonstrated professionalism and reliability. They understood our requirements in detail, offered precise solutions, and supported us with quick, solution-oriented service. Their contributions ensured uninterrupted production and have been vital in securing our sustainable growth."

This enduring collaboration recently reached another milestone when Aydin Sardan, General Manager of BEST MAKINA and Oguzhan Kukul, Plant Manager, visited CAM YAPI to evaluate the latest project and share insights on emerging market trends.

With his characteristic candour, Kukul summarized the relationship:

"CAM YAPI has always been more than a customer to BEST MAKINA in the period both companies grew together. Akulker always approached with an engineering mindset and explained what he really needed. His satisfaction motivated our teams for new projects and his ideas for details were highly important to us." As CAM YAPI takes its boldest step yet in production capacity, its partnership with BEST MAKINA stands as a testament to how technological synergy and trust can drive not only project success but also industry transformation.

bestmakina

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Twin OMV VISMARA strategies for vertical and horizontal glass processing



rom its location in the heart of Lombardy, a region synonymous with Italian industrial knowhow, OMV Vismara has been refining the art of glass machinery for more than

three decades. Founded in 1981, the company has carved out a distinctive position in the specialized field of drilling and milling solutions for flat glass, serving industries that range from interior design and construction to heavy equipment manufacturing.

TRADITION MEETS **INNOVATION**

What sets OMV Vismara apart is its ability to work on both sides of glass processing - developing single- and multi-head machines in horizontal and vertical formats. This dual approach ensures versatility for manufacturers who must adapt to different applications and production An Italian specialist in flat glass machinery, OMV VISMARA has built its reputation upon innovation, customization and dual verticalhorizontal solutions. Combining tradition with advanced technology, the company delivers tailor-made systems, international support and a distinctly 'Made in Italy' identity that drives global recognition.

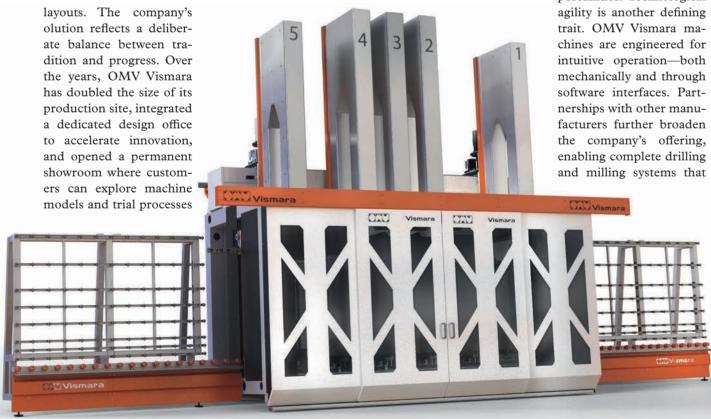


firsthand. Such investments underline the firm's responsiveness to the market while reinforcing its long-standing commitment to "Made in Italy" craftsmanship.

TAILOR-MADE AS A STANDARD

At the core of OMV Vismara's philosophy lies customization. Unlike many

producers equipment who rely solely on standard models, the company thrives on creating tailormade solutions. This flexibility not only addresses highly specific customer demands but also represents a rarity in the world of high-tech glass machinery. Backed by generational expertise, the company continues to grow while maintaining a sharp eye on future challenges and opportunities. Technological



INDUSTRY LEADERSHIP



integrate seamlessly with automation for loading, unloading, and handling. Advanced features such as barcode scanning add an extra layer of efficiency, allowing customers to work with a single, coordinated supplier.

SERVICE, SUPPORT AND GLÓBAL

Collaboration is central to

how OMV Vismara builds entire processing lines, whether for general use or specialized production. By working closely with partner technical departments, the company is able to meet complex requests that might otherwise remain unaddressed in the market. This cooperative

spirit extends beyond design and production to after-sales service. OMV Vismara maintains direct relationships with its clients, ensuring continuous improvement and reliable support through two dedicated divisions:

• OMV Service, which oversees installation, training, upgrades, maintenance and remote diagnostics.

bined with the durability of its machines and the expertise of its technical team, has earned OMV Vismara recognition across international markets. From its beginnings as a small family-run business to its present-day global reach, OMV Vismara has never lost sight of its defining strengths: customization, innovation, and a brand identity rooted in Italian quality. Today, it continues to prove that whether the solution is vertical or horizontal, precision in glass processing can always be tailored to fit.





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www.omvvismara.eu



Join the future of Glass Protection with Invisible Shield® PRO 15

A TRUSTED LEGACY OF GLASS COATING SOLUTIONS

The Invisible Shield® Glass Coatings are trusted by hundreds of glass companies, architects, builders, distributors, and millions of end users across more than 40 With 50 years of innovation in hydrophobic and hydrophilic coatings, "dual-action" cleaners, glass restorers & stain removers, Unelko continues to lead the way in superior glass coatings and advanced surface care.



The Invisible Shield "Nanoscale" Glass Coatings and other products are cutting edge! They provide durable protection against water, soil, stains, minerals, scratching, pitting & environmental degradation. They offer valuable "easy clean" benefits that outperform other coatings. Unelko's goal is to promote its superior application, durability & performance to manufacturers, fabricators, installers, architects and builders; Unelko offers one of the "Best in Class" marketing & warranty programs and value per ft. compared to other coatings.

Join the Future of Glass Protection With Invisible Shield® PRO 15 and become a certified applicator today!

Our innovative products are designed to provide long-lasting protection and preservation, saving time and labor while enhancing the look of glass for years.

- ✓ Durable Nanoscale Glass Protection
- ✓ Repels Water, Soil, Stains, Minerals & Contaminants ✓ Increase Customer Satisfaction and Loyalty
- ✓ Increases Scratch Resistance up to 93%
- ✓ Reduce Customer Complaints
- ✓ Add Value & Increase Revenue









Steven Ohlhausen President of Unelko

Meet the **Glasscare Experts**



Heather Ohlhausen Lyons 3rd Generation VP of Sales & Marketing

Glass companies such as AGC, Saint-Gobain/Sekurit, Pilkington, PPG, Oldcastle BuildingEnvelope, Arizona Shower Door/Dreamline, Contractors Wardrobe, Trulite and others have praised Unelko's coatings for meeting the highest standards in safety, application, stability, performance/contact angle, and value. Unelko does not use any fluoropolymers or fluorocarbons. PFAS or PFOS in our glass coatings, which are now regulated worldwide.



















UNELKO achieves numerous glass coating success stories for branded & private programmes

A pioneer in surface cleaning, coating and glass protection technology with over five decades of expertise, UNELKO delivers its top-of-the-line glass coating Invisible Shield PRO 15, which is now setting new standards in glass protection and quickly earning the trust of major industries and glass producers worldwide.

ith its 50-yearplus track record of product excellence, Unelko has specialized in long-lasting glass coatings, stain removers and useful maintenance products that provide optimum glass protection and reduce the need for frequent cleaning, and/ or costly glass restoration. Indeed its Invisible Shield 'Easy Clean' Glass Coatings are highly-coveted by glass producers worldwide for their reliability, perfor-







Manager of St. Gobain Sekurit: "The test results for Unelko's Glass Coating against others were overwhelmingly positive." Invisible Shield & IS PRO 15 Glass Coatings are being used by major glass, building and cleaning companies worldwide. Including application on over millions of shower doors, windows/facades, glass doors, mirrors, railings, balconies and entry

glass at Marriott, Hyatt, Hilton & MGM Hotels, Mayo Clinic, Disney & Sea World, Solar Panels & Solar Farms, Automotive/Transportation Glass, Retail buildings like Apple Stores and High-rise buildings including the Sears/Willis Tower in Chicago. It is being used by top glass producers and contractors and many others as the 'best in class' protective coating.

mance, application and value - preserving and protecting glass and repelling water, soil, stains and contaminants whilst preventing permanent staining and degradation on glass. The value-added benefit, reliability and impressive performance of the Invisible Shield PRO 15 product was a key factor for a successful partnership. Said Category

ABOUT UNELKO CORPORATION

Recognized as the world leader in Advanced Glass Care Technologies, Unelko has focused on the preservation, enhancement and 'preventive cleaning' of residential and commercial glass including architectural glass, facades, windows, partitions, walls, skylights, shower doors, tile and other vitreous china, solar, automotive, aeronautical and marine glass applications.



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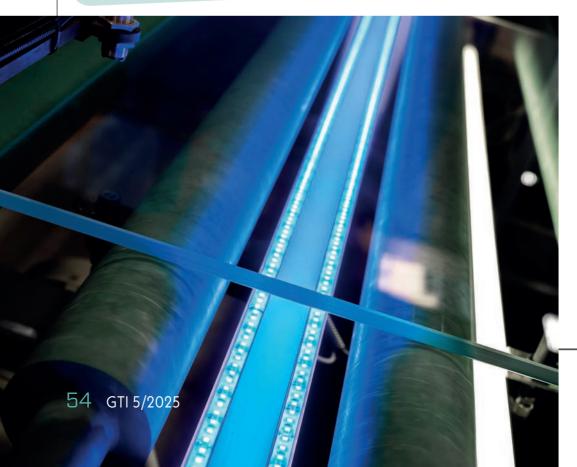
www.unelko.com www.GlassCareExperts.com





Next generation defect detection delivered through DELTAMAX OPT

By scanning unwashed sheets to detect structural defects before cutting, DELTAMAX's OPT system is reshaping glass manufacturing. This innovation reduces costs, minimizes waste, saves water and energy and seamlessly integrates with Industry 4.0 workflows - bringing smarter efficiency and sustainability to any cutting line.



magine improving efficiency, sustainability and product quality before the glass even reaches the cutting table. What once sounded like science fiction is now reality. Called OPT, this breakthrough system from Deltamax Automation effectively turns a deceptively simple idea into a revolution: scanning unwashed glass sheets just before cutting to detect structural defects and instantly decide how to cut smarter. Every glass sheet carries its own narrative. Some arrive flawless, while others

conceal bubbles or hidden flaws that no process can repair. Traditionally, these defects are discovered too late after having wasted time, energy, water and materials. OPT changes that equation. The system inspects the raw sheet, generates an accurate defect map and passes this intelligence to third-party cutting software. The software then recalculates the nesting layout - excluding defective zones and assigning them to scrap. The result: no blind processing, no unnecessary waste.

IMMEDIATE, **TANGIBLE BENEFITS**

Here the benefits are as follows:

• Cost savings: No need to wash sheets for inspection, reducing overheads and saving space.

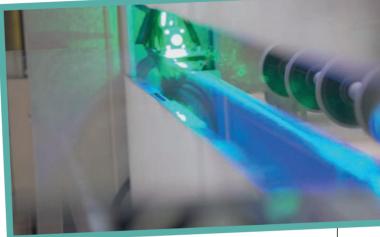
• Optimization: Defect-aware layouts ensure smarter cutting and

higher usable vield.

- Waste reduction: Fewer reworks, fewer discarded pieces.
- Process efficiency: Smoother, faster production cycles.

Beyond these measurable gains lies an even greater impact - sustainability. If noncompliant sheets are never washed, you save water. If they don't enter the line, you save energy. Here, they bypass the line, cutting energy use. They avoid downstream processing, reducing consumables. Every stage spared translates into a smaller footprint, while the quality of finished products rises. OPT was designed with real-world factories in mind. Installation is simple, requiring no disruptive changes to layout.





Fully connected, it integrates into the logic of Industry 4.0, communicating seamlessly with cutting software in real time. Its innovation is formally recognized with a patent, but the strongest validation comes from the market: companies that tested OPT once often extend it across all their cutting lines.

TRUST EARNED WHERE IT MOST **MATTERS - ON** THE PRODUCTION **FLOOR**

OPT is more than a scanner. It represents a new layer of intelligence for the line, a different perspective on manufacturing: sharper, cleaner and unmistakably forwardlooking.





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www.deltamax.eu



Architectural and automotive glass both optimized with BOVONE technology

With its complete modular lines, advanced hybrid ovens and stand-alone EVA solution, EVATHERM, BOVONE is strengthening its leadership in glass lamination. By combining Italian engineering tradition with innovation, the company delivers flexible, efficient and sustainable technologies tailored for architecture, design and automotive industries worldwide.





OMPLETE LINES, HYBRID OVENS AND STAND-ALONE SOLUTIONS

Glass lamination has become indispensable for contemporary architecture, high-end interior design and automotive innovation. From the towering curtain walls of modern skyscrapers to decorative interior panels and next-generation windshields, the demand for laminated glass continues to rise - driven by the need for safety, performance and sustainability. In this fast-

moving market, Bovone has established itself as a trusted global partner. With over one hundred laminating lines installed worldwide, the Italian company offers a portfolio that ranges from fully automatic and semi-automatic lines to advanced hybrid ovens and EVATHERM, its latest stand-alone solution dedicated to EVA film lamination.

COMPLETE LINES: MODULARITY, CUSTOMIZATION, PRODUCTIVITY

Bovone laminating plants are designed around adaptability. Their modular architecture allows manufacturers to choose in-line or U-shaped configurations, making the most of available floor space. Vertical loading and washing stations further minimize footprint while safeguarding productivity. Every line is conceived as a tailormade project. By combining standardized modules with customer-specific engineering, the company serves both high-output producers and niche processors. This flexibility enables manufacturers to scale capacity over time by adding modules or integrating new technologies - without disrupting established workflows. Robust design and premium components form the foundation of Bovone's reputation. Customers in architecture and automotive especially value the plants' structural solidity, operational continuity and long lifecycle – all qualities that ensure investment security where reliability is paramount.

HYBRID TECHNOLOGY OVEN: EFFICIENCY AND CONTROL

At the core of Bovone's laminating lines is the HRC hybrid oven, a sys-

GLASS LAMINATION



tem that integrates two independent heating modes - radiation and forced convection. Operators can employ them separately or in combination, depending on material requirements. This dual approach offers two crucial benefits. First, it optimizes cycle times across different glass and interlayer types, ensuring consistent quality. Second, it enhances energy efficiency through precise thermal control and shorter start-up phases, aligning with sustainability targets and regulatory demands. Equally important is the oven's agility: producers can switch quickly between product runs without compromising throughput or quality. In markets where format variety and fast response are decisive, this versatility gives manufacturers a critical edge.

EVATHERM: THE STAND-ALONE EVA **SOLUTION**

Expanding its portfolio, the company recently unveiled EVATHERM, a dedicated oven for EVA film lamination which is ideal for interior design and high-end architectural applications. EVATHERM emphasizes simplicity, efficiency and readiness for immediate integration. Key features here include:

- Dual independent chambers, enabling parallel cycles with different parameters.
- Forced convection heat-

ing, ensuring uniform temperature distribution, even for curved glass or decorative inserts.

- Intuitive 10-inch touchscreen HMI, with customizable cycle storage.
- Generous capacity, up to $3200 \times 2200 \text{ mm with}$ 430 mm useful height.
- Energy efficiency, with an installed power of only 45 kW, below industry average.

With these attributes, EVATHERM offers glass processors a reliable, energy-conscious solution that fits seamlessly into existing production flows.

INTEGRATION AND **SUSTAINABILITY**

Across its laminating portfolio, Bovone pursues

common principles: durability, ease of use, modularity and sustainability. Indeed reduced consumption, low maintenance requirements and extended component life all characterize the company's engineering philosophy. EVATHERM further reinforces this vision by combining user-friendliness with low operating costs. By having Italian mechanical tradition converge with technological innovation, Bovone delivers systems that directly answer real production challenges. Its global footprint of installed lines and expanding adoption of new solutions confirm its role as a benchmark in laminated glass technology. From large-scale automotive production custom decorative processing, the company ensures efficiency, flexibility and long-term reliability. With complete lines, hybrid ovens and stand-alone systems, it's providing not only technology but also a pathway for growth - supporting customers as they meet the evolving demands of the glass industry.





Seeing the customer with Bando's eyes Feel the customer with Bando's heart









SATELLITE NON-TEMPLATE BREAKOUT





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From family passion to global excellence: ITECH

Founded in 2001, ITECH SRL has grown from a family company into an international leader in insulating glass machinery. Blending Italian craftsmanship with cuttingedge innovation, it pioneers sustainable solutions today -most notably the APUS dry arrissing machine- reshaping efficiency, reliability and environmental responsibility in glass production.

ounded in 2001 by technology enthusiasts Andretta Benvenuto and his wife Panizzon Patrizia, ITECH Srl was conceived as the fusion of artisanal creativity and industrial precision. Their shared vision was

to design and build custom machinery for insulating glass, drawing on experience that stretched back to 1991 in the field of electrical systems and programming panels. From modest beginnings as a family workshop, the company gradually evolved

into a solid industrial enterprise. Its growth has always been guided by a clear set of values: innovation, technology, expertise, experience and precision. These principles continue to define ITECH's identity and shape every project it undertakes.

GENERATIONAL

As is often the case with family-run businesses, the second generation soon became part of the picture. The founders' children -Matteo, Alessandro





and Aurora- each brought their own perspectives and skills, progressively strengthening the company's structure and preparing it for the future. Matteo began his professional journey outside the glass sector, working initially in marble. When he eventually chose to focus on insulating glass, he brought with him a broader vision shaped by his earlier experience, enriching the company's approach to design and processing. Alessandro's specialization in assembly plays a vital role in making ITECH's solutions fully operational on client sites. Thanks to his expertise, machines move seamlessly from the drawing board to functioning in real production, ensuring reliability and efficiency from day one. Aurora, the voungest of the siblings, has been the most recent addition. With a focus on marketing and administration, she has strengthened both external communication and internal processes. Aurora's role enhances the company's organization and market positioning, while also ensuring that strategic initiatives carefully coordinated.

ITECH'S GROWTH: MILESTONES AND FIGURES

The company's rise has been punctuated by important milestones. From its first insulating glass line in 2002, through the introduction of sealing robots and on to high-capacity lines and fully automated solutions, each step forward reflects its commitment to innovation and responsiveness to market demands. Today, ITECH boasts more than three decades of experience, with around 630 machines built and a presence in over 35 countries. This track record confirms the company's ability to combine the excellence of Italian craftsmanship with the dependability required in international markets.

THE PILLARS OF COMPETITIVENESS

Reliability remains one of ITECH's defining qualities, with machines built from robust, guaranteed components entirely Made in Italy and designed for long service life. Another strength lies in its ability to deliver tailor-made solutions, ensuring that every system is adapted to the production requirements of each client. Strategic consulting is also part of its offering, providing technical and training support to optimize performance and





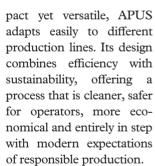




efficiency. Training and after-sales services extend well beyond installation, encompassing preventive maintenance and remote assistance. A long-term warranty underscores the durability of its products, while more than thirty years of successful projects have built a reputation that remains its strongest endorsement.

APUS: A BREAKTHROUGH OF SUSTAINABILITY

Among ITECH's most recent developments is APUS, a patented vertical dry arrissing machine for glass edge processing. Unlike traditional solutions. APUS works without water, making it especially effective for Low-E glass while drastically reducing environmental impact. Com-





A NEW STANDARD **WITH APUS**

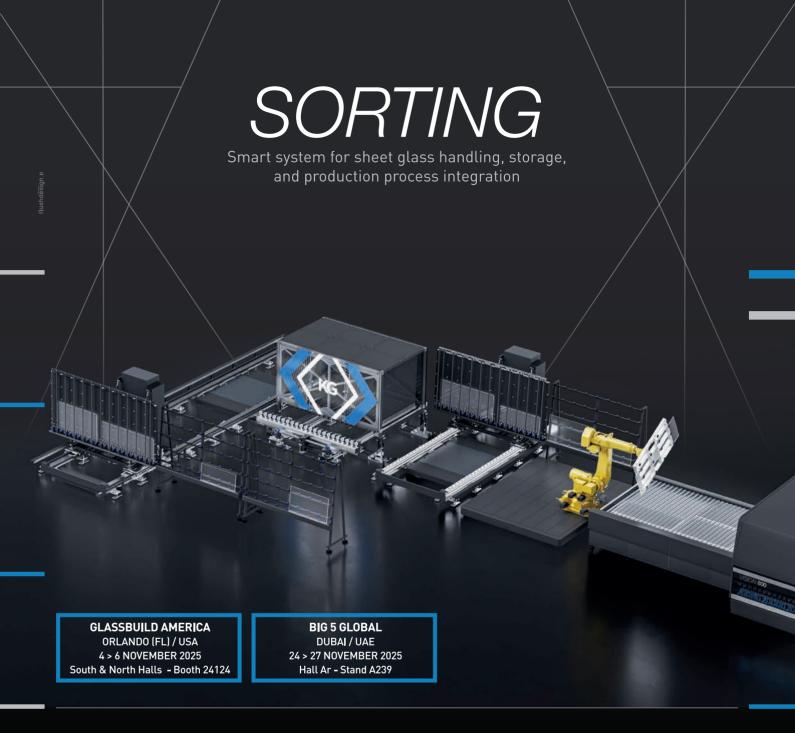
APUS perfectly embodies ITECH's philosophy: advanced technology, environmental responsibility, and the excellence of Italian engineering. More than just an innovative machine, it represents a tangible response to the growing demand for precision, efficiency and sustainability in the glass industry.

CONCLUSION

ITECH Srl is proof of how a family's passion can grow into industrial excellence. By remaining faithful to innovation, namely customer focus

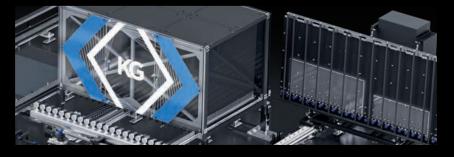
and a sustainable vision, the company continues to evolve. With solutions like the dry arrissing machine, ITECH charts a path toward a future where technology and environmental stewardship advance hand in hand.











- + PRODUCTION CONTINUITY
- **+** OPERATING EFFICIENCY
- + PRODUCTION PROCESS MANAGEMENT
- CONSUMPTION OPTIMISATION





Global partnerships strengthened as KERAGLASS unveils latest innovations



Again this year at Vitrum, KERAGLASS underscored its role as an innovation leader in glass processing. Showcasing Vision 800, Supervision Intelligent, RCK and Combi, the company highlighted its signature efficiency, sustainability and versatility - all whilst strengthening global connections and reaffirming its commitment to shaping the industry's future.

itrum 2025 is now behind us, having proved once more to be a vibrant stage where technology, dialogue and opportunity all converge. For Keraglass, this latest edition was hardly about presenting machinery alone. It was also about sharing a vision: one where innovation, efficiency and sustainability set the pace for the future of glass processing. Welcoming industry professionals to our stand in Hall 9P, the stand team was delighted to engage with long-standing partners and new contacts alike - all in an atmosphere charged with curiosity and collaboration, which reaffirmed the event's role as a catalyst for progress in the international glass community.

VISION 800: REDEFINING **TEMPERING**

At the heart of attention stood Vision 800, Keraglass' latest-generation tempering furnace. Engineered to deliver outstanding performance on LOW-E glass (down to e = 0.01), it captivated visitors with its ability to combine superior optical quality and reduced energy consump-

tion. By harnessing preheated air convection at 700°C, Vision 800 has established itself as a decisive solution for the architectural sector meeting the industry's dual demand for precision and sustainability.

SUPERVISION INTELLIGENT: MASTERING PRODUCTION

Equally compelling was Supervision Intelligent, the advanced monitoring system that embodies the principles of Industry 4.0 and 5.0. Offering total control of parameters, automatic diagnostics, remote management and predictive maintenance, it ensures that production remains transparent, reliable and interconnected. For manufacturers, it represents not just oversight but confidence - zero surprises in an increasingly demanding marketplace.

RCK: EFFICIENCY THROUGH SMART **MAINTENANCE**

Another highlight was RCK, Keraglass' intelligent roller cleaning solution. Designed for quick, efficient and customisable intervention, its modular system

reduces downtime while streamlining daily operations. Visitors immediately recognised its value as a practical innovation that strengthens performance while easing maintenance.

COMBI: VERSATILITY IN LAMINATION

Completing Keraglass' showcase, Combi demonstrated remarkable adaptability. Its independent chambers allow flexible lamination of diverse materials - including challenging pairings like glass/ceramic or glass/marble. With low energy impact and outstanding versatility, Combi was praised for responding precisely to evolving market demands.

A SHARED JOURNEY **FORWARD**

Vitrum 2025 confirmed Keraglass' standing among the international leaders shaping tomorrow's glass industry. The conversations, insights and enthusiasm of its stand visitors all continue now to be a powerful incentive for the company to continue innovating with passion. For those who missed the fair, the team has signalled its availability to provide tailored presenta-



tions and deeper insights. In that sense the journey does not end here as Keraglass continues to drive progress, with innovation, quality and passion as its constant companions.



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www.keraglass.com

Glass processing trailblazer CMS plays its winning hand

Today, CMS Glass Technology showcases its 'four aces' for glass processing, namely agil tr, electa, taktika and easyline. Compact, flexible and super-easy to use, these innovations redefine productivity and quality - offering manufacturers versatile solutions that streamline every stage of production whilst maintaining CMS's hallmark reliability and engineering excellence.

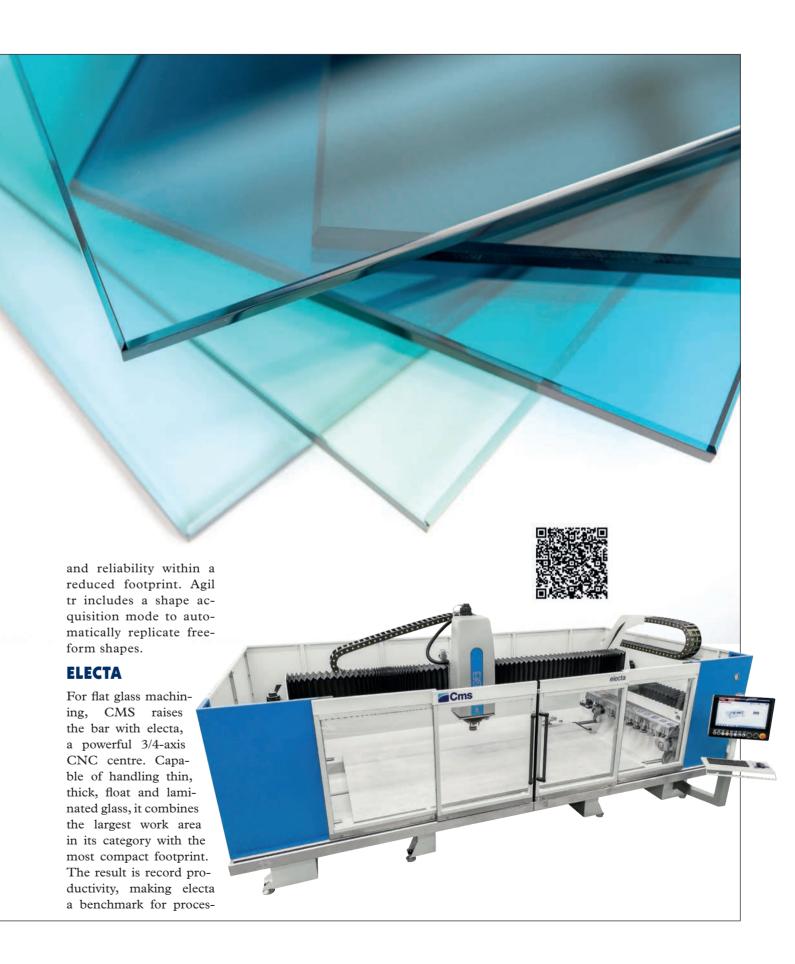
THE FOUR ACES OF PRODUCTION

In today's competitive glass industry, success depends on combining efficiency, flexibility, and uncompromising quality. CMS Glass Technology, a pioneer with over 50 years of expertise, has distilled this philosophy into a unique winning formula it proudly calls its 'four aces' - agil tr, electa, taktika and easyline. Each represents a distinct yet complementary solution, reshaping the way glass processors approach their production lines.

AGIL TR

Compactness and versatility define agil tr, the most advanced cutting table CMS has ever produced. Designed for adaptabilmaximum ity, it can be installed with ease w h i l e delivering precision cuts across monolithic (float) glass. Thanks to its handy doublezero system, laminated sheets can also be processed semi-automatically, offering manufacturers both flexibility









sors who demand speed, precision, and efficiency without trade-offs.

TAKTIKA

When production quires handling small batches with agility, taktika emerges as the perfect ally. Compact and userfriendly, this vertical machining centre manages edge seaming, grinding, polishing, milling, drilling and countersinking - all while maintaining CMS's hallmark quality. Its simplicity ensures operators can quickly adapt, while its flexibility provides a competitive advantage in meeting diverse customer demands.

EASYLINE

Rounding out the quartet is easyline, CMS's solution for waterjet cutting. Its cantilever structure with independent tank ensures accessibility and robustness, while features like pendulum cycle and multi-head configuration optimize speed and output. The result is a streamlined cutting process that is both efficient and highly cost-effective. Together, these four technologies form a strategic suite of solutions that enable glass companies to optimize every stage of production.

IN SUM

CMS's 'aces' share a common DNA: compact design, operational flexibility and

user-friendly interfaces - all engineered without compromising quality or reliability. For CMS Glass Technology, innovation has always been about more than machines it's about empowering manufacturers to raise standards, minimize footprint and maxi-

> mize performance. Here, with agil tr, electa, taktika and easyline, the company demonstrates that in glass processing,

> > holding the right cards truly makes all the difference.





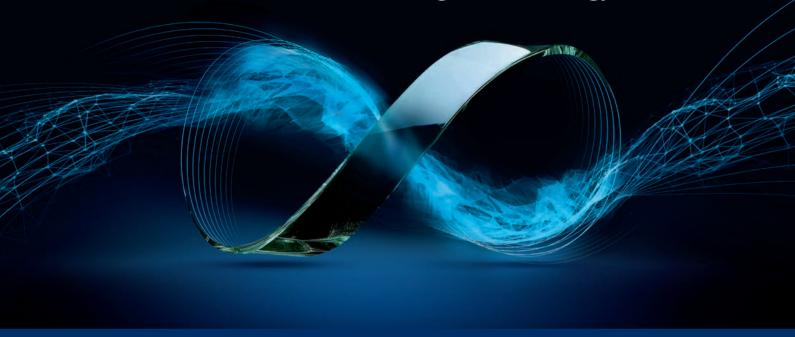
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Boundless solutions for glass technology



HIGH PERFORMANCE CNC MACHINES AND UNIQUE INTEGRATED LINES FOR GLASS PROCESSING



HORIZONTAL MACHINING CENTERS



VERTICAL MACHINING CENTERS



CUTTING TABLES AND CUTTING LINES



SEAMING MACHINES





WATERJET CUTTING SYSTEMS



Smarter, greener, faster glass processing - all enabled by GLASTON

GLASTON's booth at Vitrum 2025 highlighted cutting-edge smart technologies across tempering, laminating, insulating and mobility glass. With automation, energy efficiency and quality at the forefront, innovations like ProL SPEED, ULTRA TPS® and MATRIX EVO all reinforced the company's leadership in shaping the future of glass processing.

At Vitrum 2025, Glaston confirmed its position at the forefront of smart glass processing by showcasing

a wide-ranging portfolio of technologies and integrated solutions designed to redefine production in tempering, laminating, insulating and mobility glass. With automation, energy efficiency and consistently superior quality at the heart of its offering, the company's presenta-







tion highlighted how intelligence and innovation are shaping the next era of glass processing.

TEMPERING

The spotlight fell on the new Glaston FC Series E glass tempering line - a solution that marries flexibility with energy efficiency. Equipped with the advanced Bora convection system, it ensures precise heating across all glass types. Automation runs deep, securing consistent, high-quality output whilst minimizing operator intervention. Roller Heat Control (RHC) further guarantees uniform tem-

peratures, slashing energy use and reducing defects. Visitors were also able to review a suite of innovations now available both in new lines and as upgrades. These included Autopilot - the industry's only fully automated mixedproduction solution; Online Stress Calculation for real-time quality verification; Glass Temperature Imaging for precise Low-E control; and Anisotropy Control, capable of reducing anisotropy by up to 50 percent. Complementing these was the Adaptive Quench system, automatically tuning cooling zones to each load - thus cutting energy consumption and carbon emissions without impacting throughput.

LAMINATING

For glass laminating, the Glaston ProL platform again demonstrated its versatility. The ProL SPEED edition stood out with its promise of up to 40 percent higher efficiency - all thanks to full automation of handling, foil placement and trimming. Customers also took note of the patented ProL Convection Control, which enables premium output when working with demanding structural laminates like SentryGlas®. Equally impactful was the ProL-zone upgrade, replacing infrared

with convection heating to reduce energy consumption by at least half, without compromising flexibility in mixed production.

INSULATING GLASS MANUFACTURING

A major talking point came from the ULTRA TPS® system, which leverages a patented method for producing thin triple IGUs. With center glass as slim as 0.5 mm, these units maintain the thickness of standard double IGUs while surpassing them in thermal performance, making them ideal for both retrofits and new builds. Improved light transmission and material



savings were additional advantages. The same line also demonstrated efficient production of quadruple IGUs. Supporting elements included the MUNTIN'MASTER - a fully automated muntin placement solution that eliminates manual steps while raising precision and cost-efficiency.

MOBILITY GLASS PROCESSING

For mobility glass, Glaston unveiled two nextgeneration solutions. The CHAMP EVO pre-processing line introduced faster changeovers, energyefficient drives and high precision. Meanwhile, the MATRIX EVO automatic bending furnace impressed





with its ability to handle complex geometries required for ADAS and HUD applications - delivering optical excellence alongside energy savings through modular design and active convection. Particularly notable was its efficiency in processing borosilicate glass, valued for durability and weight reduction.

AUTOMATION AND LIFECYCLE **SERVICES**

Across all product areas, automation played a central role. Batch Optimization with robotics ensured maximum furnace bed utilization, while seamlessly integrated process intelligence kept every production stage

running at peak efficiency. Glaston also underlined its commitment to lifecycle services and upgrades, reinforcing that long-term performance and sustainability remain as crucial as the initial technology investment. Ultimately, Vitrum 2025 underscored Glaston's vision: glass processing elevated through intelligence, automation and efficiency.





High TEMPERATURE GASKETS



Texpack srl is a manufacturer of various products for the protective coating of rolling rollers in tempering furnaces in the flat glass industry and conveyor belts. For example:

1200N Aramtex® discontinuous filament tapes

Aramtex® tapes are produced using 100% pure paraaramid yarns with discontinuous filaments, which are usually woven in several layers.

1210N Aramtex® continuous filament tapes

Aramtex® tapes are produced using 100% pure paraaramidic yarns with continuous filaments, that are usually woven in several layers,



Texpack also produce textiles for the glass industry: roller coatings for tempering furnaces in flat glass production, as well as coverings for molding dies or handling clamps for hot glass.

1200C Aramtex[®] discontinuous filament sleeve

The Aramtex® sleeve is produced using 100% pure aramid yarns with discontinuous filaments that provide it with greater softness and good mechanical resistance at a lower cost compared to sleeves made with continuous filaments.

1210C Aramtex® continuous filament sleeve

The Aramtex® sleeve is produced using 100% pure aramid yarns with continuous filaments that give it better mechanical properties than discontinuous filament sleeves.













Building trust through testing: CUGHER's decisive edge



n the highly competitive flat glass processing sector, accuracy, reliability and performance are not optional. Instead they are the very currency of success. Indeed few companies embody this ethos as clearly as Cugher - a global benchmark in industrial automation for the handling, screen printing and quality control of flat glass. With consolidated expertise spanning the automotive,

home appliance, architectural and solar industries, Cugher has become synonymous with solutions that combine mechanical excellence with advanced digital intelligence. Every project undertaken by the Italian company is designed and engineered inhouse - ensuring that each system is tailored precisely to the production requirements of the client. But Cugher's true distinction lies not only in design and manufactur-

ing - it lies in its testing philosophy. Unlike many in the industry who see testing as the final hurdle before delivery, Cugher positions it as a strategic, structured and integrated methodology, guiding each machine from its first assembly steps all the way to live production on the customer's factory floor. This comprehensive approach is organized into three distinct phases: Internal Testing, Factory Acceptance Test (FAT)

and Site Acceptance Test (SAT). Together, they form a rigorous framework that guarantees both technical compliance and operational excellence.

PHASE 1: INTERNAL TESTING - DESIGNING WITH CONFIDENCE

Before a single crate leaves Cugher's facility, each system must first undergo an exhaustive series of internal tests designed to simulate the real-world conditions of its future production environment. At the conclusion of the assembly phase, machines are scrutinized from multiple perspectives. Mechanical functionality comes first: technicians verify movement precision, robustness of structure and flawless alignment of assemblies. These checks are complemented by software testing, where simulated scenarios challenge the logic of automation programs to ensure consistency, adaptability and reliability. Electrical and safety compliance form another crucial element. Wiring layouts, protection systems and emergency circuits are

CUGHER redefines testing in flat glass automation with a three-phase methodology: Internal Testing, Factory Acceptance Test and Site Acceptance Test. This structured process ensures precision, customer collaboration and real-world validation - guaranteeing systems are delivered fully compliant, optimized, and production-ready from day one.

inspected in detail to guarantee that the system is not only efficient but also secure. Special attention is given to communication protocols, both for interfacing with upstream and downstream machines from other suppliers and for integrating seamlessly into the customer's digital infrastructure. This proactive process is designed to detect and resolve potential issues early, ensuring the machine that reaches the customer is already a proven, production-ready solution. By elevating internal testing to a discipline in its own right, Cugher safeguards reliability from the start.

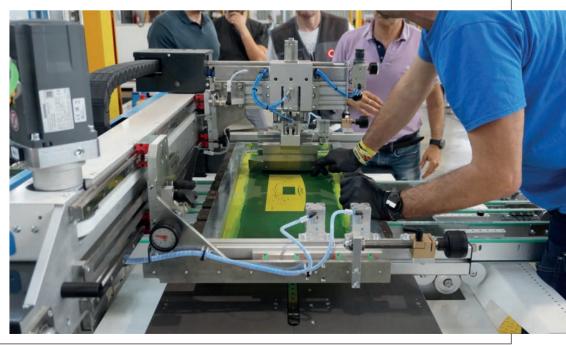
PHASE 2: FACTORY ACCEPTANCE TEST - VALIDATING IN COLLABORATION

The next stage of Cugher's method is the Factory Acceptance Test (FAT), conducted at its production site with the active participation of the customer. Here, transparency and collaboration take center stage. During FAT, machines are tested using real glass samples provided by the customer,

exposing the system to conditions that closely replicate the actual production environment. Every component -mechanical, electrical and digital- is validated step by step, with live demonstrations of user interfaces and parameter adjustments. Cugher organizes interactive Q&A sessions during this stage, inviting operators and maintenance personnel to engage directly with the system. This is not merely a technical step - it is a knowledge transfer process, giving customer teams the opportunity to familiarize themselves with the new equipment long before installation. Upon successful completion, Cugher issues an official FAT certificate, formalizing that all contractual specifications have been met. Beyond certification, however, FAT serves as a trust-building milestone: a moment where expectations are aligned, confidence is strengthened, and the foundation for seamless installation is laid.

PHASE 3: SITE ACCEPTANCE TEST -REAL CONDITIONS, REAL RESULTS

With FAT complete, the system is shipped, installed, and integrated into the customer's actual production line. It is here -amid real operators, real cycle times, and real production flow- that the Site Acceptance Test (SAT) takes place. SAT begins with fine calibration, adjusting machine settings to align perfectly with product characteristics, throughput re-





quirements and the nuances of surrounding equipment. Operators and technical staff receive hands-on training, ensuring not only that the machine functions as intended, but that the workforce is confident in operating and maintaining it. Performance is then validated under full production conditions: output rates are monitored, reliability is assessed, and all functionalities are confirmed in real time. Once customer approval is granted, final documentation is delivered and post-installation support is activated. For Cugher, SAT is not just a concluding check. It represents the birth of the machine's productive life - a transition from project to operational reality. By the time this step is complete, the system is no longer a new installation, but a fully-optimized asset integrated into the customer's business.

WHY THE CUGHER METHOD WORKS

The strength of the Cugher approach lies in its layered validation model, which combines engineering rigor



with customer collaboration and real-world testing. By embedding quality assurance into every stage of development, Cugher dramatically reduces unforeseen issues during installation, optimizes commissioning times and ensures that systems meet contractual requirements from day one. Equally important, this process empowers customers. By involving them early and continuously -through FAT

sessions, training and live demonstrations-Cugher equips operators with the skills and knowledge they need to run their systems independently, efficiently and confidently. For industries where uptime and precision are paramount, this level of assurance is invaluable. It transforms testing from a bureaucratic formality into a strategic differentiator a guarantee of reliability, safety and long-term performance.

TESTED, VERIFIED, **GUARANTEED**

In Cugher's world, testing is not an afterthought. It is a core design principle. Each phase -internal verification, collaborative FAT and onsite SAT- contributes to a disciplined process that delivers more than machines. It delivers confidence, continuity and competitive advantage. With its complete testing method, the company reaffirms its role as a global leader in glass automation, not only supplying technology but ensuring that every solution is tested, verified and guaranteed to perform.

SUMMARY TABLE

Phase	Where	Main Focus	Conclusion
Internal Testing	Cugher facility	Engineering tests, functional checks, troubleshooting] 3
Customer FAT	Cugher facility	Joint testing with customer, verifica- tion of requirements	Solution approved by the customer
On-Site SAT	Customer facility	Operational implementation and training	Solution operates as expected



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HYDROVertical washing machine



FV1000 Vertical milling and drilling machine



HTL Horizontal flat glass washing machine



GEBI Vacuum lifter



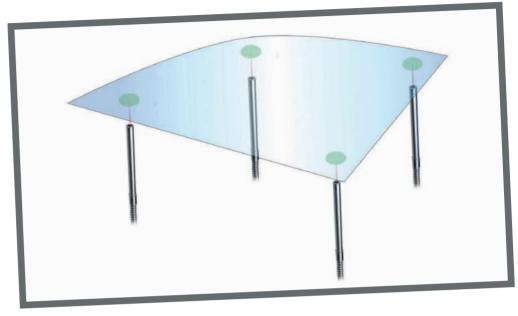




From contact to optical solutions: TECNOSENS redefines glass measurement

With a shift from traditional contact-based LVDT probes to next-generation optical solutions, TECNOSENS has revolutionized displacement sensors. Compact, precise and non-contact, its optical probe ensures accuracy, durability and easy integration - safeguarding delicate surfaces whilst advancing automation and quality standards in both the automotive and construction industries.





n both flat and curved forms, glass is a fundamental material for the automotive and construction industries. In both sectors, such parameters as geometry, curvature and surface quality must all be monitored with the highest precision - whether during production or in final inspection. For decades, this task has relied on contact-based instruments like LVDT probes, which became the industrial benchmark thanks to their robustness, reliability and ability to deliver consistent, repeatable measurements across a wide range of production environments. Yet, despite their widespread use, LVDT probes show clear limitations. The presence of moving parts inevitably causes wear, increasing maintenance needs and slowing down inspection processes. In addition, when



measuring delicate or reflective glass surfaces, physical contact with the probe can risk surface damage, forcing manufacturers to choose between precision and product safety.

FROM CONTACT TO OPTICAL MEASUREMENT: A **NEW GENERATION** OF OPTICAL **PROBES**

As the glass industry moves toward greater automation and increasingly stringent quality standards, the demand for noncontact measurement solutions has grown. In this context, optical technology offers clear advantages in precision and reliability: it eliminates mechanical wear and enables accurate measurements even on delicate or highly reflective surfaces, without the risk of scratches or marks. To meet these needs, Tecnosens has developed a new Optical Probe with a diameter of just 8 mm. Compact yet powerful, it is designed for both flat and curved glass, including highly reflective automotive windshields and advanced construction panels. Its patented optical design allows precise measurement of key parameters such as distance, slope (angle relative to the normal), and thickness, marking a significant step forward compared to traditional contact-based systems. Thanks to this innovative technology, the probe delivers consistent and reliable measurements across a wide range of applications, supporting manufacturers in maintaining high quality standards.

THE ADVANTAGES OF OPTICAL **TECHNOLOGY**

The new optical probe brings significant improvements over traditional measurement methods. Compared to LVDT probes, it has no moving parts, which eliminates mechanical wear, extends its operational life, and reduces maintenance needs. Its compact design also simplifies installation, with no pneumatic tubing or fittings required, making integration into production lines faster and easier. Most importantly, its non-contact operation allows precise meas-



urements on even the most delicate glass surfaces, avoiding scratches or damage that contact probes might cause. The benefits become even clearer when compared to confocal sensors. While confocal systems highly accurate, they rely on fiber optic cables connecting the probe to external electronics, which increases installation costs and makes replacements expensive if the fiber is damaged. Tecnosens' optical probe overcomes these challenges with a more compact and robust design: both optics and electronics are contained within the probe body and connected via a single standard connector. The result is a solution that is easier to integrate, more reliable in industrial environments, and more costeffective to operate.

INLINE AND OFFLINE APPLICATIONS

The Optical Probe's compact size and high accuracy make it particularly well suited for direct integration into production lines, where manufacturers must balance strict quality control with the need to maintain minimal cycle times. To meet these requirements, Tecnosens offers the complete Caliber system for measuring the curvature of automotive glass. Capable of analyzing shape, curvature, and pe-



rimeter, Caliber combines non-contact optical probes with traditional LVDT transducers in a hybrid configuration, giving manufacturers the flexibility to choose the most suitable measurement method for each application. This ensures both precision and operational efficiency. One of the system's greatest strengths is its versatility. The probes can be used inline, integrated directly into automated production flows, or offline, for sampling and laboratory testing. This flexibility not only helps reduce inspection times but also guarantees full traceability of each measurement, supporting manufacturers in maintaining high quality standards and meeting increasingly stringent industry requirements.

A SOLUTION FOR MULTIPLE SECTORS

The fields of application are wide-ranging: from automotive and safety glass to industrial vehicles, architectural panels, and even specialty glass such as shower enclosures. This combination of innovation, quality, and flexibility makes the Caliber system a strategic solution not only for large manufacturers but also for smallerscale operations, allowing them to take advantage of advanced measurement tools without compromising productivity. For over twenty years, Tecnosens has been a trusted partner of leading glass manufacturers worldwide, delivering solutions that combine technological innovation with robust industrial performance. Its

proven reliability, seamless integration, and full data traceability have established Tecnosens as a benchmark in the glass industry. By continuously enabling manufacturers to achieve precision, efficiency, and consistent quality, Tecnosens confirms its role not just as a supplier, but as a strategic partner driving the future of glass measurement technology.







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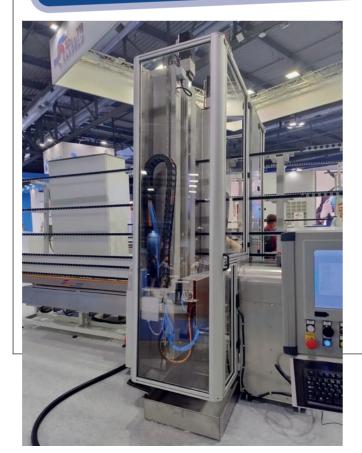
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Glass modular excellence sees SCHIATTI ANGELO as benchmark setter

Setting new industry standards with precision, versatility and sustainability, SCHIATTI ANGELO's new TFV1600 vertical drilling and milling machine features automatic tool management, modular design and advanced software. It also delivers efficiency and adaptability - making it a future-ready investment for glass processors worldwide.



/ERTICAL INNOVATION

For more than half a century, Schiatti Angelo has been synonymous with excellence in glass processing machinery. Today, the company reinforces this reputation with the launch of the TFV1600 vertical drilling and milling machine, a cutting-edge solution designed to elevate performance benchmarks across the industry.

TECHNOLOGY REDEFINING PRECISION

The TFV1600 marks the

latest evolution of Schiatti's acclaimed TFV series, seamlessly blending tradition with state-of-theart engineering. Among its most distinctive features are the automatic tool change system and integrated automatic tool grinder, innovations that ensure remarkable autonomy, operational efficiency, and accuracy down to the millimeter Engineered with a closed-top structure, the machine offers enhanced rigidity and stability during processing. Its pressurized, ultra-precise spindles guarantee flawless drilling and milling, while optimized axis movements and advanced glass transport systems deliver exceptional speed and reliability.

VERSATILITY MEETS SUSTAINABILITY

Designed to process glass thicknesses ranging from 3 to 19 mm, the TFV1600 demonstrates versatility across a wide range of applications - from bathroom shelves and mirrors to laminated panels, tabletops, doors and kitchen components. Its intuitive touchscreen interface and dedicated software streamline programming directly from the office, reducing errors and accelerating production cycles. In keeping with Schiatti's commitment to environmental responsibility, the TFV1600 boasts reduced energy consumption - aligning high performance with sustainable practices. This dual focus reflects the company's strategic vision of innovation that benefits both manufacturers and the planet.

A MODULAR INVESTMENT IN THE FUTURE

Perhaps the most forward-looking aspect of the TFV1600 lies in its modular design. The system has been conceived for scalability - enabling upgrades and customizations without requiring full replacement. This adaptability transforms the machine into a long-term technological investment that's ready to evolve alongside changing market demands. Its fully automated working cycle, supported by advanced software, allows users to import and export design data, modify existing models and build customized libraries. The combination of automation, flexibility and reliable technical support guaran-

step ahead.

tees production continuity while minimizing downtime. Whether operating as a stand-alone solution or integrated within a complete production line, the TFV1600 embodies Schiatti Angelo's ability to deliver tailor-made, future-ready machinery that keeps glass processors one



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Building with light: GLASS COMPANY reshapes transparency

PROTECTION AND **DESIGN**

Glass has always been more than a building material - it is a symbol of clarity, openness, and the interplay of light and structure. At Glass Build America, Glass Company Srl is redefining what this versatile medium can achieve, presenting a portfolio of breakthrough solutions that merge transparency, safety, and design into a unified vision. From nextgeneration laser systems to fire- and bullet-resistant glazing, and from advanced insulating units to glassbased spacers, the company underscores its belief that glass is no longer passive - it is an active driver of innovation across industries.

INNOVATION, **VERSATILITY AND A TRANSPARENT FUTURE**

For Glass Company Srl, exhibiting at Glass Build



America is not a simple showcase - it is a reaffirmation of a philosophy. Built upon three foundational pillars -innovation, reliability and sustainability- the

company approaches each new project as a dialogue with global markets. Careful listening to customer needs, coupled with analysis of emerging trends, leads

to highly customized solutions. This responsiveness has made the Italian firm a recognized reference point in the engineering of unconventional machinery GLASS COMPANY SRL will be unveiling groundbreaking technologies at Glass Build America. These will include LASERMEK precision laser systems, dual-function fire- and bullet-resistant glazing, as well as FULL VISION insulating units with glass spacers - all to advance transparency, safety and sustainability while redefining glass as both a material and a driver of innovation.

and systems for the glass industry. At this year's event, Glass Company Srl introduces three product lines that encapsulate its ability to innovate across multiple domains: LASERMEK highperformance laser systems, a plant for the production of dual-function fire- and bullet-resistant glass, and FULL VISION insulating glass units featuring glass spacers. Together, these offerings paint a clear picture of a future where glass seamlessly blends performance, safety and aesthetic excellence.

LASERMEK: PRECISION AT THE SPEED OF LIGHT

Among the highlights is LASERMEK, a suite of laser-based systems designed for ablation, frosting, drilling, and cutting. As demand rises for flexible, clean and efficient glass processing, LASERMEK offers an advanced solution that eliminates consumables while minimizing environmental impact. The system ensures precision engravings, elegant frosted effects and calibrated cutting, even on thick substrates. Beyond technical mastery, these capabilities translate into shorter production cycles, reduced costs and consistent repeatability - qualities sought after in architecture, interior design, automotive, rail and marine applications. Built on a modular platform, LASERMEK adapts easily to both artisanal workshops and large-scale industrial lines. Its scalability and reliability underscore Glass Company Srl's role as a technological leader capable of aligning flexibility with industrial performance.

SAFETY REDEFINED: FIRE **AND BALLISTIC** RESISTANCE COMBINED

Also debuting at Glass Build America is a new





production plant fire-resistant glass, now uniquely enhanced with ballistic protection. This innovation directly addresses growing global demand for materials that combine passive fire safety with active defense in high-risk environments - such as airports, museums, banks and public institutions. The plant integrates optimized process cycles and automated quality control systems to guarantee consistent reliability. The resulting glazing withstands both extreme temperatures and ballistic impact, all while maintaining transparency and design integ-



rity. This dual protection reflects the company's ongoing commitment to technological excellence and social responsibility, delivering real solutions for safer, more resilient built environments.

FULL VISION: SEAMLESS **TRANSPARENCY WITH GLASS SPACERS**

Rounding out the company's showcase is the plant for producing FULL VI-SION insulating glass units with glass spacers. Addressing demand in refrigeration, facades, interiors, and balustrades, the technology eliminates the visual interruption caused by conventional metal spacers, creating a surface of pure, uninterrupted ency. The benefits are both aesthetic and functional. FULL VISION units deliver exceptional thermal performance, supporting energy efficiency and sustainable building practices. Engineered for continuous industrial operation, the plant incorporates automation to streamline production and uphold exacting quality standards. The result is a solution that combines visual lightness with technical robustness - pushing the boundaries of what insulating glass can achieve.

A VISION BEYOND THE SHOWCASE

Company Srl's presence at Glass Build America signals more than product launches. It represents the fusion of industrial tradition with forward-looking vision. By blending engineering expertise with relentless research and development, the company positions itself as a trusted partner for professionals who view glass not simply as material, but as a medium for progress. As glass continues to shape modern life -illuminating, protecting and inspiring-Glass Company Srl stands at the forefront, ensuring that transparency itself becomes a pathway to innovation.



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Glass Company Srl



VISIONMEK



A future of urban icons forged by NORTHGLASS expertise

Featuring a groundbreaking seven-layer laminated IGU curtain wall, the 'Ring of Glory' recently unveiled by NORTHGLASS in Lingang, Shanghai, is an architectural marvel that showcases cutting-edge glass innovation - merging structural sophistication in a monumental circular landmark that redefines the city's skyline with its bold design.

The Designer Says

"We hope to develop the new Lingang area of Shanghai with world-class architectural standards

enabling it to aptly reflect China's important role in 21st-century globalized trade,"

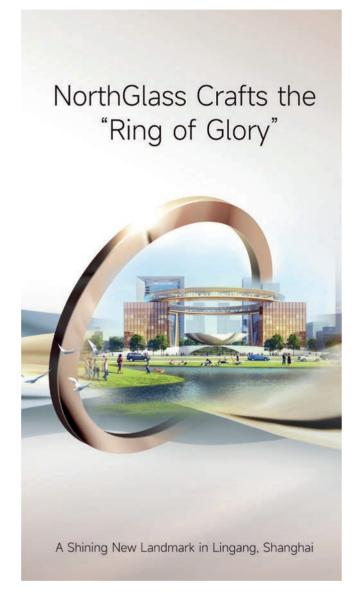


he construction of the 'Ring of Glory,' the centerpiece of Dishui Lake Financial Bay in Shanghai's Lingang New Area, has reached substantial completion and is slated to open officially in 2026. This monumental circular structure, striking in both scale and vision, is poised to become a defining symbol of Lingang's urban identity - captivating both residents and visitors with its futuristic silhouette. At the heart of the design is a signature elevated observation platform, enclosed by a state-of-the-art

layer laminated insulating glass unit (IGU) curtain wall system, entirely engineered and fabricated by NorthGlass.

PERFORMATIVE DESIGN

Architecturally cious, the 'Ring of Glory' evokes the image of a massive, golden ring suspended above the cityscape. Realizing such an ambitious vision required materials and construction techniques of the highest order. North-Glass met this challenge by producing customcurved, ring-shaped curtain wall panels, each reaching an extraordinary single-panel length of up to seven metres. In total, 192, low-iron, seven-layer laminated IGUs were deployed - setting a new benchmark in both technical achievement and aesthetic execution. Balancing structural integrity with optical clarity, the glass curtain wall not only ensures panoramic views and immersive transparency but also meets stringent safety criteria for



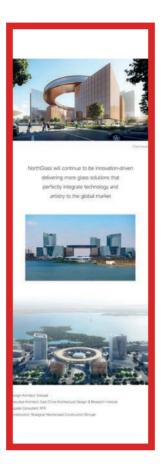
the high-altitude observation deck. Leveraging advanced tempering and lamination technologies, NorthGlass precisely tailored the glass to conform to the complex geometries of the ring - achieving a seamless fusion of form and performance. Visitors ascending to the platform will encounter a dramatic, 360-degree vis-

ual experience that spans Dishui Lake to the East China Sea.

INDUSTRY LEADERSHIP

Throughout the project, NorthGlass demonstrated its industry-leading capabilities in addressing intricate design challenges - including the manufacturing of oversized multi-





Shanghai's New Landmark

layered assemblies, precision forming of curved surfaces, and navigating irregular installation conditions. By translating the architects' daring vision into built form, NorthGlass once again affirmed its position at the forefront of innovation in architectural glass. As the company looks to the future, it remains committed to delivering integrated glass solutions that redefine the boundaries between technology, design and urban expression.



Profitability through precision, STUDIO 1 automates glass manufacturing worldwide

A pioneer in robotics and automation, STUDIO 1 Automazioni Industriali has been empowering the glass industry with cutting-edge solutions since 1984. From reducing waste to boosting efficiency, its Italian-made systems deliver reliability, simplicity and profitability - driving global competitiveness through innovation, research and customer-focused design.

ounded in 1984 as a design studio for automatic machinery, Studio 1 Automazioni Industriali quickly established itself as a forward-looking innovator. By 1990, the company had evolved into a full-fledged manufacturer of machines and automatic plants, a transformation that confirmed its long-term commitment to technologi-





a wide range of production sectors. Its reputation is built on strong technical expertise, consolidated know-how, and a product offering of high technological value. Success has been reinforced by continuous research, strategic choices and a vision that focuses not on single products, but on optimizing entire production processes. This approach has made the company a dynamic partner for businesses that are after tailored automation solutions. Indeed, for the glass industry, choosing Studio 1's innovative machines means investing in the future with immediate returns. Clients experience faster production cycles, higher product quality and the reliability of systems designed to operate seamlessly 365 days a year. Here the benefits are both operational and financial: reduced waste, lower energy consumption and safer, more ergonomic working environments.

cal advancement, quality, and growth. Over the decades, the company has secured a leading position in industrial automation design and construction and is now renowned for its flexibility, research-driven culture and ability to anticipate industry needs.

A WINNING TRAJECTORY

Today, Studio 1 Automazioni Industriali designs and builds complete automatic machines and plants across





QUINTESSENTIALLY ITALIAN

A key strength lies in Studio 1's in-house capabilities. With a team of mechanical and software engineers, the company designs, engineers and manufactures custom equipment that integrates cutting-edge hardware with dedicated software. The result is state-of-the-art automation backed by efficient after-sales support. Importantly, the company proudly keeps all of its business activities in Italy, a decision that underscores its commitment to quality and authenticity while resisting relocation trends. Collaboration with clients is central to Studio 1's philosophy. The company listens, observes and advises, always prioritizing solutions that combine efficiency, reliability and simplicity. The goal is to provide systems that are not only technologically advanced but also intuitive for operators to manage.



A GLOBAL FOOTPRINT

With customized machines and systems installed in more than 50 countries worldwide, Studio 1 continues to expand its global presence. Under the leadership of the founder's son, the team approaches every project with passion and enthusiasm - embracing new challenges in automation. Recent milestones include the automation of unload-

ing operations from cutting tables -supplied twice to a major Italian customer within a year -and the development of a robotic cell for loading vertical grinders on a double line. This system features a six-axis anthropomorphic robot with an additional interpolated axis and a shuttle translating on a seventh axis, demonstrating Studio 1's ability to deliver complex, forwardlooking solutions.







GlassBuild America provides the foundation for smarter business decisions and stronger outcomes. See the latest innovations up close, experience live demos of cutting-edge products and get a firsthand look at what's driving the future of glass and glazing. With top suppliers, trailblazing ideas and nonstop action on the show floor, this is your opportunity to connect, collaborate and learn alongside a vibrant community of industry peers.

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How Next-Gen ERP is changing the glass fabrication landscape

OW NEXT-GEN ERP IS FABRICATION LANDSCAPE

The global flat glass sector is riding a wave of unprecedented growth, fueled by the rapid pace of urban expansion, the rising demand for environmentally responsible buildings and the emergence of innova-

tive applications in energyefficient architecture, advanced automotive safety and contemporary interior design.

WHAT'S CHANGING: INSIDE THE INDUSTRY'S QUIET TRANSFORMATION

Flat glass processing is in the

and isolated spreadsheets are giving way to visually rich, user-friendly dashboards that instantly display order status, inventory levels,

Industry Snapshot (2024–2029 Forecast)

Metric	Value	
Global Flat Glass Market Size	USD 145 Billion (2024)	
Expected CAGR (2024–2029)	6.8%	
Top Growth Drivers	Construction, automotive, solar, smart buildings	
Digitalization Adoption Rate	55% (Up from 35% in 2020)	



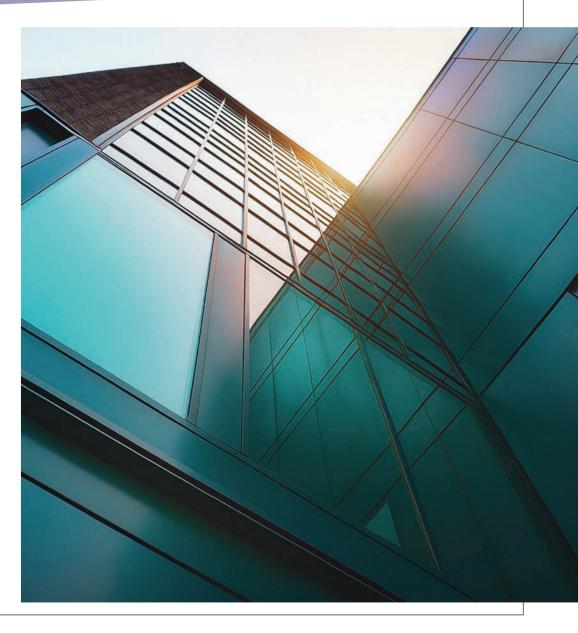
midst of a quiet yet deeply significant shift - one that is altering the very DNA of modern manufacturing plants. While advances in machinery have delivered faster, more accurate cutting and handling capabilities, the true revolution lies in the widespread move toward digitized workflows and intelligent automation. The days when paper-based processes dominated shop floor operations are swiftly fading. In their place, secure, cloud-enabled systems are taking centre stage, delivering real-time visibility and complete traceability. Outdated manual data entry

production milestones and delivery progress. Scheduling has broken free from the limitations of manual, fixed timetables. Today, sophisticated algorithms dynamically adjust plans in real time to account for changes in orders, raw material availability and production bottlenecks. At the same time, cutting plans are increasingly generated by advanced optimizers capable of maximizing glass yield, minimizing waste and producing CNC-ready files within moments. Customer engagement has also evolved dramatically. Buyers can now monitor the progress of their orders digitally -from the iniThe flat glass industry is undergoing a quiet revolution - moving from paper-based workflows to intelligent, cloud-enabled ERP systems. Leading this transformation, SPIL Glass offers real-time visibility, waste reduction and scalable automation - empowering glassmakers to achieve higher efficiency, sustainability and competitiveness in an increasingly demanding global market.

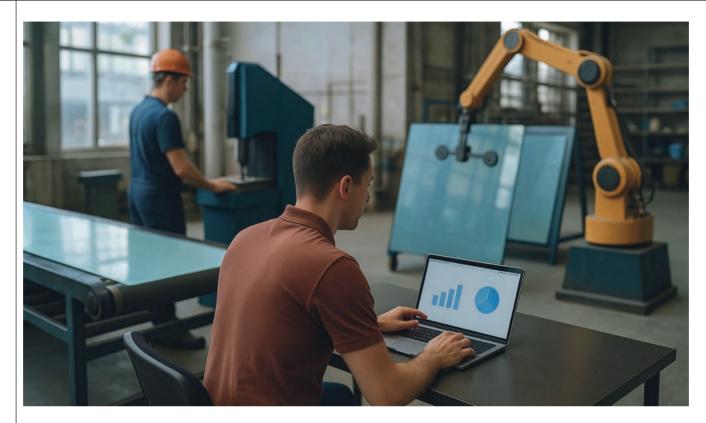
tial quotation right through to the shipping dock- ensuring complete transparency and a faster, more responsive experience. This digital foundation is enabling not only efficiency but also scalability, accuracy and agility in an industry where precision and turnaround speed remain non-negotiable. This transformation is being propelled by a series of unmistakable trends. Paper records are disappearing, replaced with cloud-hosted platforms. Excel-based planning is giving way to live dashboards. Scheduling is no longer dependent on manual oversight but is managed through algorithmic logic. Cutting optimization is handled by AI tools and customer orders are traceable from the first inquiry to final dispatch without a single sheet of paper changing hands.

PERSISTENT HURDLES IN FLAT GLASS MANUFACTURING

Yet, even with the industry's impressive upward momentum, many fabricators face







ongoing operational challenges that restrict efficiency, scalability and profitability. Manual cutting plans often result in excessive waste and production delays. Departments that work in isolation struggle with poor visibility from order entry to delivery, whilst error-prone scheduling triggers costly reworks and workflow disruptions. Paper documents make it difficult to maintain an audit trail or meet regulatory requirements. Inaccurate job costing obscures profitability and disorganized vendor or purchase order management creates procurement headaches.

WHY GOING DIGITAL CUTS COSTS AND REDUCES WASTE

The case for digitalization is not built solely on con-

venience - it is grounded in measurable business impact. By replacing outdated manual processes with streamlined, automated systems, fabricators can cut down on material waste, reduce the likelihood of rework and accelerate production cvcles. Studies and real-world implementations show that digital transformation in flat glass operations can directly lower scrap rates, shorten order turnaround times and improve on-time delivery - delivering a double win of higher profitability and stronger customer loyalty.

PAPERLESS GLASS FACTORIES: A STRATEGIC SHIFT

In a fast-moving manufacturing environment, paper-based workflows are increasingly unsustainable for companies that need to scale. Flat glass processors, in particular, deal with intricate specifications, frequent custom orders and the necessity of real-time tracking. Moving toward paperless production is no longer a token environmental gesture - it is a strategic operational upgrade that unlocks entirely new levels of performance. When work orders are generated digitally, communication between departments becomes clearer and errors are minimized. Real-time dashboards allow managers to act proactively, seeing potential delays before they become costly problems. Centralized digital document management means audits are simpler, onboarding is faster and

critical files are always accessible. Automatically generated cutting plans ensure intelligent material use, while QR-based traceability enables each piece of glass to be tracked from cutting to loading. By removing paper from the equation, fabricators not only gain speed and accuracy but also establish a strong foundation for ongoing digital evolution.

GLOBAL FORCES DRIVING ERP UPTAKE

The shift toward digitally integrated manufacturing is happening across industries worldwide and the flat glass sector is keeping pace. Multiple global trends are converging to make ERP adoption not just an option but a neces-

sity for forward-looking fabricators. Industry 4.0 -once discussed as a future vision- is firmly here. By 2027, more than 62 percent of glass manufacturing companies are expected to invest in IoT connectivity, ERP platforms, or other forms of process automation. These smart factories depend on linked systems that feed real-time operational data, enable predictive analytics and make automated decisions - capabilities that advanced ERP solutions are specifically designed to provide. The construction sector is undergoing its own transformation under the banner of Construction 4.0, with a strong emphasis on sustainable and energy-efficient building practices. Certifications such as LEED and BREEAM are pushing glass to the forefront as a preferred material for modern projects. Meeting these sustainability targets often requires faster production schedules, minimal errors and full trace- rial, minimizing the need adoption supports directly. Competitive pressures are also pushing fabricators toward just-in-time manufacturing models. In this approach, material inproduction is closely synchronized with demand. Such precision requires seamless coordination across sales, purchasing and production teams something only achievable through ERP-driven planning and monitoring tools. inventory, better cash flow and more responsive operations.

SUSTAINABILITY AS A BUSINESS IMPERATIVE

Sustainability goals are no longer confined to corporate mission statements; they are becoming binding obligations. For glass manufacturers, that means making measurable reductions in scrap mate-

ability - goals that ERP for energy-heavy reworks, cutting back on paper use and improving transport efficiency. ERP tools such as SPIL Glass are built with these goals in mind, providing the means to ventories are kept lean and monitor scrap levels, calculate and reduce carbon footprints through optimized logistics and eliminate unused inventory before it becomes a sunk

WHY SPIL GLASS **ERP STANDS OUT**

The result is reduced idle Developed specifically for the unique requirements of the flat glass fabrication industry, SPIL Glass is a robust, modular ERP platform that helps companies -whether small local workshops or large-scale international producers- build and maintain a competitive advantage. Backed by more than sixteen years of specialized industry experience and a diverse global client base, the system offers an endto-end suite of integrated tools to streamline workflows, enhance production efficiency, cut waste and speed up delivery schedules. SPIL Glass is designed with scalability in mind, ensuring it can adapt to businesses at different growth stages. It is cost-effective, quick to implement and built for measurable impact. The platform empowers fabricators to digitize every aspect of their operations,

from initial order capture and cutting optimization to comprehensive financial oversight and in-depth business intelligence. Many customers see tangible returns on their investment in under a month, demonstrating not only the software's effectiveness but also its alignment with the pace of change in today's manufacturing environment. By bringing together all operational functions under one intelligent, connected framework, SPIL Glass offers flat glass fabricators the tools they need to navigate the demands of modern production with confidence - reducing waste, improving efficiency and ultimately transforming the way glass is made in the twenty-first century.









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Superior thermal performance through FINEO by AGC

hen working heritage buildings, preservation authorities place particular emphasis on maintaining the original architectural elements. Here FINEO's Heritage Series elegantly balances aesthetic sensitivity with a strong focus on energy efficiency. Those concepts are consistently foregrounded by key principles in window restoration - namely that any replacements or upgrades to glazing must preserve the historical appearance of the facade. In

most practical cases, that entails refurbishing the existing windows to enhance their energy performance rather than undertaking full reconstruction. Even the most stringent heritage conservators acknowledge the growing necessity of energy-efficient renovation to ensure buildings remain suitable for continued and cost-effective use.

MODERN GLAZING IN A HISTORICAL CONTEXT

Generally, approval is granted for the installation

of new insulating glazing unless the original glass has notable historical value, such as mouth-blown cylinder glass or early drawn types. The ideal solution involves incorporating the new glazing into existing window frames without compromising their structural integrity. However, when the window frames themselves must also be preserved, standard double or triple glazing often proves unsuitable due to the excessive thickness of these units. Furthermore, modern float glass lacks the subtle visual irregularities and

characteristically undulating surfaces seen in older drawn glass varieties, making them ill-suited for accurate restorations.

A LEADER IN RESTORATION GLASS SOLUTIONS

A division of AGC, FINEO specialises in advanced glass solutions tailored for the sensitive renovation of protected and culturally important buildings. Its vacuum-insulating glass technology is not only highly effective in terms of thermal performance but also supports



Offering an ideal solution for restoring historic windows, FINEO Heritage Series by AGC combines traditional aesthetics with modern energy efficiency in a series that enables heritage buildings to retain their character - all while meeting today's performance standards for insulation, comfort and sustainability.

improved daylight control and indoor comfort. The FINEO Heritage Series can be paired with Fourcault glass -a traditionally-manufactured restoration glass- creating a product that respects both modern demands and historical aesthetics. With a slim profile between 10 and 17 millimetres, FINEO Heritage glass is notably thinner than conventional insulating glass and thus fits into most existing window frames without modifica-

RESTORED FRAMES, **UPGRADED EFFICIENCY**

Once historic frames have been carefully restored and



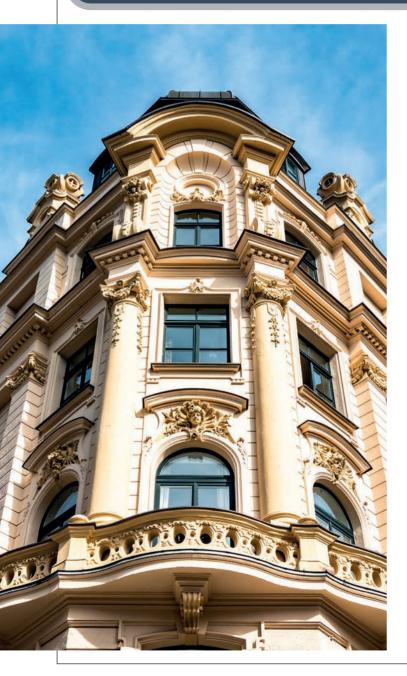


paired with this high-performance glass, the building's exterior retains its authentic character while achieving the energy efficiency standards of a contemporary triple-glazed structure. Where original single-pane windows typically have U-values exceeding 5.8W/m2K, FINEO Heritage achieves an impressively low U-value of 0.7 W/m2K. In terms of solar gain, the glazing allows a total energy transmittance of no less than 57 percent, while sound insulation values reach up to 40 dB, significantly enhancing interior comfort in historic environments.



ABOUT AGC GLASS EUROPE

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



TRADITION AND TECHNOLOGY IN PERFECT SYNCHRONY

The development of the Heritage series was carried out in close cooperation with experts in restoration glass, relying on the time-honoured Fourcault process. This collaboration has resulted in a glass range that brings together superior thermal insulation with the optical qualities essential for historical authenticity. The five available versions -Classic, Classic Light, Classic

Strong, Modern and Traditional Light- each offer distinct patterns of waviness, streaking and surface irregularities, representing historical glazing styles from around 1880 to the present day.

DESIGN FREEDOM WITH AUTHENTIC APPEAL

Beyond these visual qualities, the product's engineering delivers several clear advantages. Its ultrathin composition accommodates use in original timber or metal frames, including those with complex shapes such as arches. It maintains high visual clarity and transparency, while significantly enhancing thermal and acoustic insulation. FINEO Heritage is also highly durable and low-maintenance, offering a 20-year warranty







ABOUT FINEO

FINEO is the new generation of insulating glass. With its unrivalled thinness, this vacuum glazing provides optimum thermal and acoustic comfort, meeting the expectations of joinery professionals concerned about sustainability and energy efficiency. Under the aegis of AGC Glass Europe, FINEO benefits from a revolutionary production method compared with glazing for buildings. In terms of both thermal and acoustic insulation its incomparable thinness in no way detracts from its technical prowess.

and an estimated 60-year lifespan. From a sustainability perspective, its production within Europe and circular environmental approach support a reduced carbon footprint. Based in Belgium, FINEO by AGC notably remains the sole European manufacturer to have attained CE marking for vacuum-insulating glass - a testament to both its in-

novation and quality assurance.



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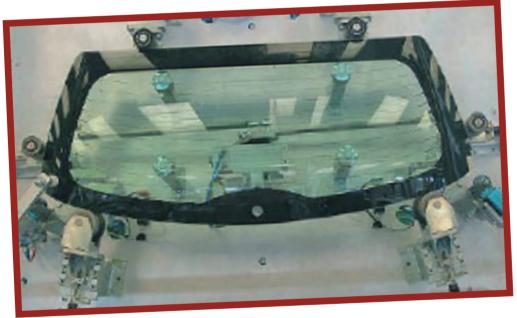
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How Theory of Constraints shapes MECCANICA H7 supply chain strategy

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ALESSANDRO,
MECCANICA H7 IS
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IN INDUSTRIAL
AUTOMATION,
WHICH INCLUDES
THE AREA OF
AUTOMOTIVE. WHAT
SETS YOUR COMPANY
APART IN SUCH A
COMPETITIVE FIELD?

Alessandro Amadio: At Meccanica H7, we've always believed that leadership comes from mastering the full production cycle - from research and development right through to final testing and after-sales support. We design and build everything in-house: machines, complete plants - even mass production modules tailored to specific sectors like automotive glass. What really distinguishes us is our continuous pursuit of process improve-



ment and our reputation for reliability. We're not just suppliers; we're partners in performance. That's why we're present in so many countries today - because our clients trust us to deliver results end-to-end.

GTI: Let's talk about agility. In today's turbulent market

conditions, how can companies respond with the speed and precision that clients now expect?

AA: Great question. The market today is not just fast - it's unpredictable. To respond effectively, companies need more than good intentions; they need structure. That's where the Theory of Constraints, or TOC,

comes in. It gives us a clear framework for understanding where performance bottlenecks actually occur. Every business system, especially in manufacturing and supply chains, is subject to constraints. If we can identify and manage those constraints intelligently, we dramatically improve the system's overall perfor-



This second of our articles on the Automotive Glass Forum, hosted by GTI and held during E-Tech Europe 2025 on 16 April at the Bologna Exhibition Centre, features an interview with forum speaker Alessandro Amadio, Operations & Supply Chain Director at MECCANICA H7, who spoke with our editorial team on applying TOC to optimise supply chain performance.

mance.

GTI: Can you elaborate on what makes a system 'complex and interdependent' in this context?

AA: A system is complex when it's influenced by many diverse variables often in conflict with each other. It's interdependent when the outcome of one process directly or indirectly affects another. Business, by nature, fits both definitions. You can't change one function without it rippling through others. That's why we treat the organisation as a single, interconnected

system. Improvement in isolation -what we call 'silo thinking'- is not only insufficient; it can actually harm the broader system.

GTI: So, the Theory of Constraints helps companies avoid the silo trap? AA: Exactly. TOC teaches us that not all problems are created equal. Instead of chasing dozens of small inefficiencies, we focus on the single biggest constraint - what's really holding the system back. Improve that, and you improve the whole. Too often, departments optimise their own perfor-

mance without considering how it affects upstream or downstream processes. That leads to misalignment and, sometimes, regression. TOC forces us to see the big picture.

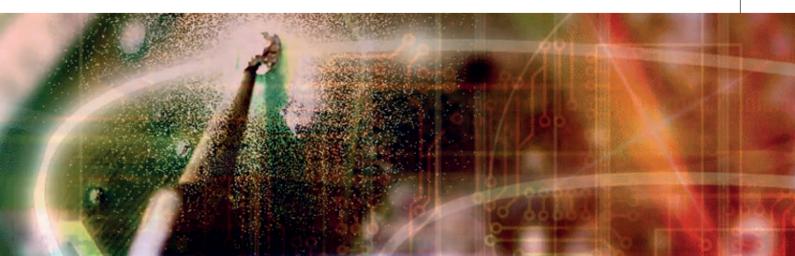
GTI: How does this approach apply specifically to Supply Chain Management?

AA:SCM is the ideal ground for TOC. A supply chain is the very definition of an interdependent system. From suppliers and raw materials to production, warehousing, and delivery - everything is linked. If one part underperforms, the whole chain slows down. Introducing TOC into SCM helps companies become both more proactive and more reactive. You eliminate bottlenecks that compromise efficiency and, in doing so, increase agility and responsiveness.

GTI: What steps should a company take to identify those constraints?

AA: It starts with data specifically, KPIs. You have to look at lead times, cycle times, production rates, inventory levels, wait times, service punctuality. These indicators will point you to where the system is under stress. But beyond numbers, it's vital to involve the people on the ground. Operators, technicians - they often see what management misses. Structured brainstorming and performance reviews can uncover hidden bottlenecks. Once identified, constraints can be prioritised and addressed systematically.

GTI: Once a constraint is identified, how do you opti-



ABOUT MECCANICA H7

Beginning back in 1980 as a small workshop which produced machines for the local market, Meccanica H7 started to expand from 1985 when it introduced significant technological innovations on the market effectively proving that competence and experience are important components for growth. That challenge has since become a reality. Today Meccanica H7 offers an extensive, complete range of solutions in different industrial sectors as it manufactures machines and plants destined to both the national and international markets. Flexibility, dynamism and innovation are now key strengths of the company, which currently has over 140 employees and extends over a productive area of over 10.000 sqm divided into four departments: designing, production, assembly and testing.

mise around it?

AA: You align your entire operation with the pace of that constraint. Introduce best practices to improve its performance - whether that's reducing cycle time, increasing throughput, or improving material flow. Then, you synchronise everything else around that improvement. It's about flow optimisation, not just local fixes. Aligning activities with the constraint ensures that your improvements are scalable and sustainable.

GTI: From your experience, Alessandro, what are the most common constraints

in modern supply chains? AA: We see seven recurring challenges. Insufficient production capacity is a big one - if your output lags behind demand, nothing else matters. Low proactivity and reactivity can cripple responsiveness. Then there's material availability, which directly affects lead times. Demand variability, if unanticipated, causes serious disruption. Inventory mismanagement -too much or too little- creates inefficiencies. Inefficient processes and poor communication round out the list. Any one of these can throttle performance if left unchecked.



GTI: You've mentioned team involvement several times. Why is a heterogeneous team so critical in TOC projects?

AA: Because diversity fuels systemic thinking. When you bring together different skill sets and perspectives, vou avoid tunnel vision. TOC projects demand collaboration and open communication. Diverse teams are also more resilient - they adapt better when variables change, which they inevitably will. When people feel included and understand how their work connects to broader goals, their engagement goes up. That sense of ownership is what makes TOC initiatives successful.

GTI: To close, what would your message be to manufacturing leaders facing unpredictable market shifts?

AA: Don't chase complexity with more complexity. Instead, focus on what's limiting your performance. TOC gives you a way to do that systematically and effectively. Especially in supply chain management, it helps you regain control, align your processes, and create real value. If your goal is to compete not just today but sustainably into the future, TOC is not an option - it's an imperative.



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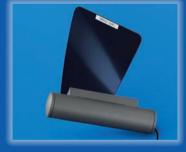














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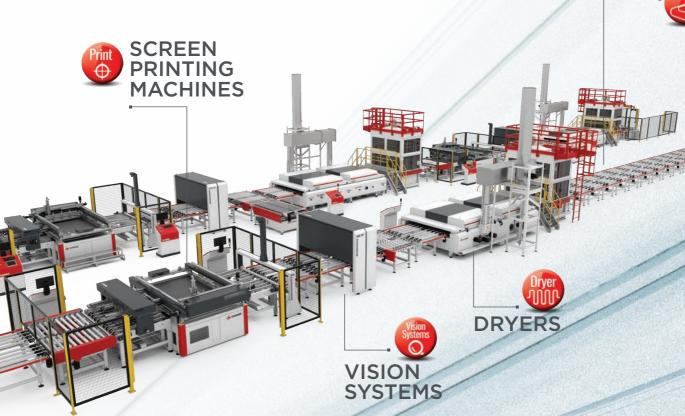
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