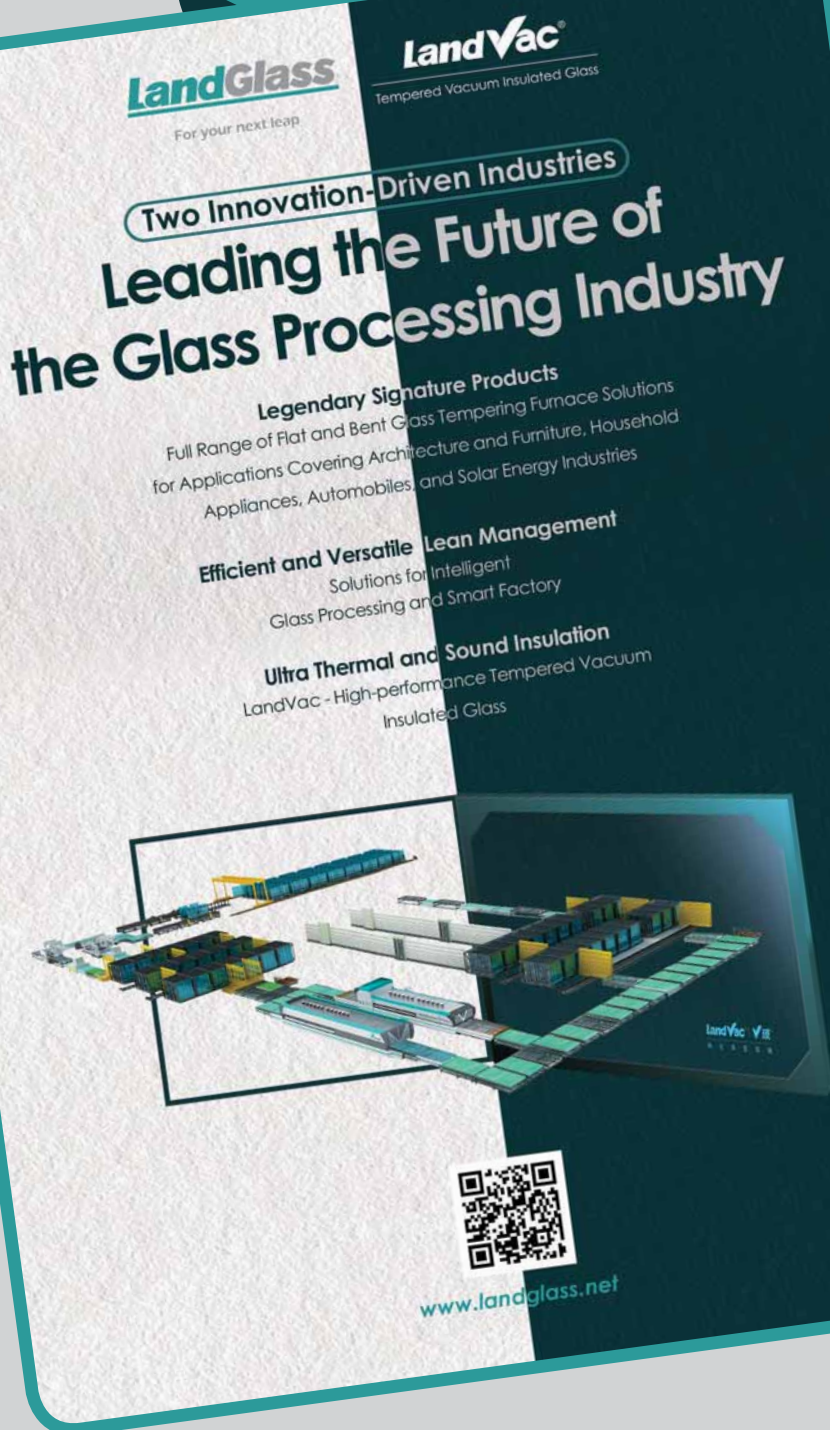


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March/April • Year 31 • No. 2/2020



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FIRST AUTOMATIC OPTISTREAM APPLICATORS IN THE US

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CHOSEN BY RGC (RSK) FOR GLASS EDGING AND EXTRAJUMBO IG PRODUCTION

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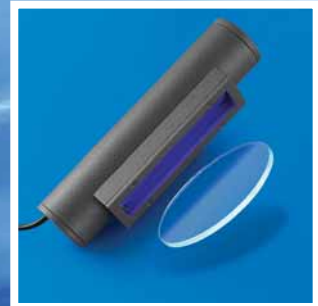
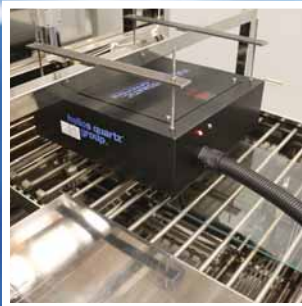
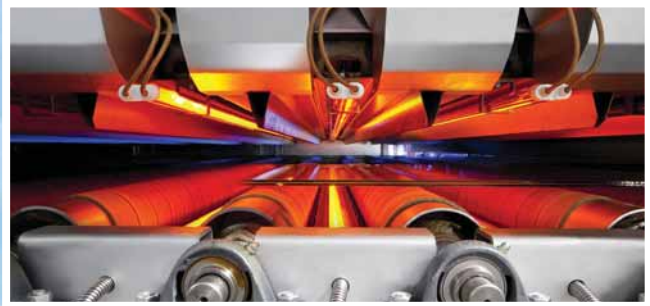
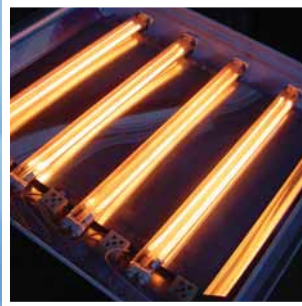
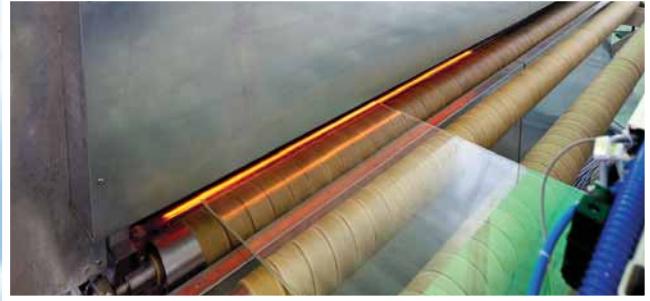
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R.C.N. Solutions

CONSTANT AND CONTINUOUS
RELIABILITY IN TECHNOLOGY
AND HUMAN CONTACT FOR
GRUPPO VETRARIO PACI

A recent visit to one of R.C.N. Solutions' industrial clients - Pac Vetrario - gave Glass-Technology International the perfect example of how to maintain client relationships through constant availability, listening to their requests, and basically being there when needed - with the right machinery, of course!

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Ashton Industrial

FIRST AUTOMATIC
OPTISTREAM
APPLICATORS IN THE US

is used manufacture not only positioning and sealing of the protection of the same as even installation. In the Ashton Industrial's line demands - automatic effect - but also the short storage and even less.

GRUPO PUJOL
ACQUIRES THE EVASA
PRODUCTION UNIT
FOR THE EXPANSION OF
EVALAM PRODUCTION

Continuing on its expansion plan based on a group strategy, Grupo Pujol operates its current acquisition of the Evasa production unit, which is strengthening its current position of leadership in the laminated glass market.

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Bovone Diamond Tools

CONTINUOUS DEVELOPMENT
IN PRODUCTS AND
INTERNATIONALISATION

Since its foundation, accompanied by the development of the business, quality, innovation and performance.

GRUPO PUJOL ACQUIRES THE EVASA PRODUCTION UNIT FOR THE EXPANSION OF EVALAM PRODUCTION

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Turomas

COMMERCIAL NETWORK
IN SOUTH AMERICA

This year's South American commercial network meeting was, for Turomas, an important opportunity to analyse 2019 results, projects for 2020. The article, however, also gives us some feedback from its teams there, demonstrating their commitment to Turomas to remain a leading company in the Latin American market.

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Forel

CHOSEN BY RGC (RSK) FOR
GLASS EDGING AND EXTRA-
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A visit to the RGC group in the Russian Federation gave Forel the possibility of this special interview with this client. Speaking to two people from the top management, our readers find out why Forel was chosen, and how the company's machinery - and the RGC's - will be used for the Russian RGC's leading position in the market.

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INTERLAYER FILMS

STRATO® by Satinal

'MADE IN ITALY' EVA FILM FOR EASY PRODUCT TRACING AND CONSISTENT QUALITY

This first quarter of 2020 has been quite an important time for Satinal, as it has announced the introduction of its most recent new product — STRATO® PLUS, developed entirely in-house and tested throughout 2019.

The R&D department of the Satinal has always been deeply involved in the development of new products. The STRATO® PLUS has been built on the basis of the experience and know-how of Satinal's technical staff, which has been able to create a new product that is not only easy to make in Italy but also in other countries, ensuring a consistent quality and consistent production.

A NEW TECHNOLOGICAL AND TECHNOLOGICAL PRODUCT

The STRATO® PLUS is a new EVA film developed by Satinal, which is characterized by a high level of transparency and a high level of consistency in the production process. This new product is designed to be used in the production of glass products, ensuring a high level of consistency in the production process.

HEGLA meets the needs of companies involved in the production of glass products, ensuring a high level of consistency in the production process. The STRATO® PLUS is a new EVA film developed by Satinal, which is characterized by a high level of transparency and a high level of consistency in the production process.

STRATO® PLUS IS A NEW EVA FILM DEVELOPED BY SATINAL, WHICH IS CHARACTERIZED BY A HIGH LEVEL OF TRANSPARENCY AND A HIGH LEVEL OF CONSISTENCY IN THE PRODUCTION PROCESS.

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MIRROR PRODUCTS

Pilkington Mirropane™ Chrome

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Imagine highly-reflective mirrors that will stand in any environment to create an illusion of space, transforming small interior areas into bright spacious rooms — safely and with ease. This is Pilkington Mirropane™ Chrome, with its highly reflective, extremely corrosion-resistant coating.

EXCLUSIVE DESIGN COOPERATION

Pilkington Mirropane™ Chrome is a new product developed in cooperation with the design firm of the Italian architect and designer, Luca Cusi. The product is designed to be used in the production of glass products, ensuring a high level of consistency in the production process.

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MARKET INNOVATIONS

SCHOTT GREATER VISIBILITY WITH NEXT-GENERATION FREEZER DOORS

Next-generation glass doors: large transparent presentation areas for frozen food departments thanks to the revolutionary slim-line design of SCHOTT's Mirropane™, which reduces frame dimensions of glass units for freezer cabinets by half and significantly improves the view of goods.

SCHOTT's advanced glass doors are designed to be used in the production of glass products, ensuring a high level of consistency in the production process.

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78 SCHOTT GREATER VISIBILITY WITH NEXT-GENERATION FREEZER DOORS

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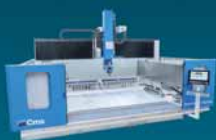
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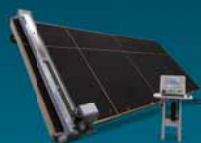
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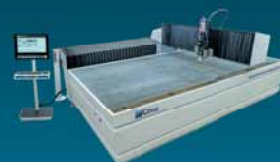
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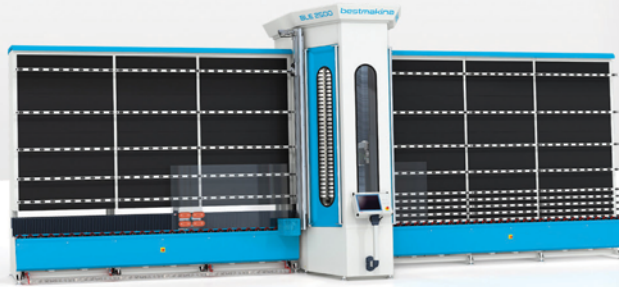
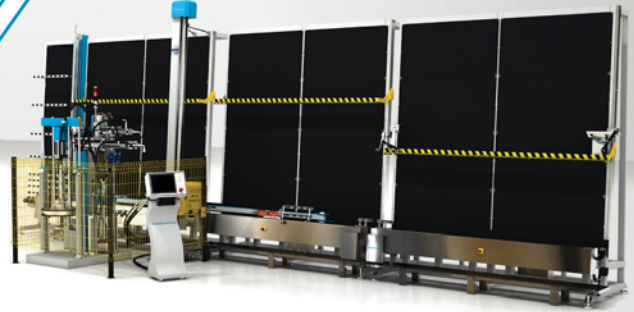
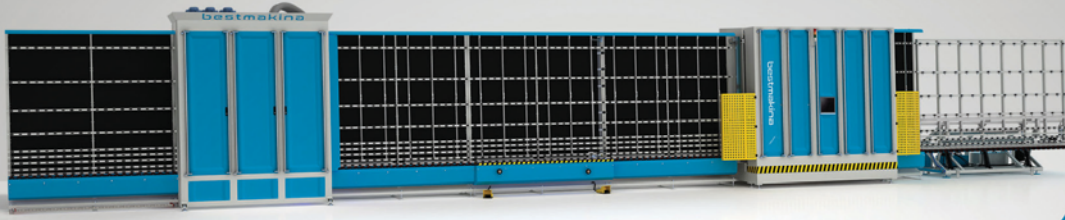


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2020 1	GLASS MIDDLE EAST EXPO	27-29 February	CAIRO Egypt	
	EURASIA GLASS	4-7 March	ISTANBUL Turkey	
	ICCG	Postponed	BRAUNSCHWEIG Germany	
	FENSTERBAU FRONTALE	Postponed	NUREMBERG Germany	
2020				
2020 2	CHINA GLASS	Postponed	SHANGHAI China	
2020 3	GLASS SOUTH AMERICA	Postponed 5-8 November	SÃO PAULO Brazil	
	MIR STEKLA	8-11 June	MOSCOW Russia	Deadline Adv files: 30-04-2020
2020 4	GLASSTECH MEXICO	27-29 July	GUADALAJARA Mexico	Editorial files: 12-06-2020
	GLASSBUILD AMERICA	15-17 September	LAS VEGAS (NV) USA	Deadline Adv files: 27-06-2020
2020 5	GLASSTEC	20-23 October	DUSSELDORF Germany	Editorial files: 04-09-2020
	ALL GLASSTEC EXHIBITORS ADVERTISING IN THIS ISSUE ALSO RECEIVE A FREE GLASSTEC PREVIEW ▶▶▶			Deadline Adv files: 18-09-2020
2020 6	VETECO	10-13 November	MADRID Spain	
	GLASSTECH ASIA	17-19 November	BANGKOK Thailand	Editorial files: 02-10-2020
	ZAK GLASS TECHNOLOGY	3-6 December	MUMBAI India	Deadline Adv files: 16-10-2020

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Busetti Radius Revolution

 **INTERMAC**

KERAGLASS

Fourth tempering furnace installed at Vidriocar

Vidriocar was founded in 1976 in the city of Encarnación (Paraguay), specialising in the sale and installation of glass. In 1998, the company moved to the city of Fernando de la Mora, where it began to implement the glass transformation process.

Today its strong presence in the most important cities of the country makes it a leader in glass processing.

The relationship with Keraglass began in 2002 with the installation of the first KFO tempering furnace and was strengthened by the installation of two more plants: a lamination kiln and a screen-printing line.

This growth was and is supported by collaboration between two partners who share the same business and production values: quality, mission, vision and innovation.

The partnership has been further reinforced at the end of 2019 with the purchase, and the subsequent installation in January 2020, of another latest-generation tempering furnace: Vision 700, able to temper jumbo glass sheets with an average production potential of 70,000 m² per month.

What's more, a dedicated software package, complete with preventive maintenance and problem-solving, enables Vidriocar to monitor and control the energy consumption in relation to productivity, automatically calculating the cost of the tempered product.

Vidriocar Chairman and Founder Carlos Costa commented, "Today we have four Keraglass furnaces operating continuously in Paraguay's four largest cities. The performances of Keraglass furnaces are reflected in the high quality and maximum safety of the final product. At the same time, we can count on the Keraglass technical team to get rapid responses and immediate assistance. If we were to purchase other furnaces in the future, they would definitely be Keraglass, because," Costa concluded, "they are the answer to our needs and to those of our customers, who demand innovative, high quality products for major construction projects."



From left to right: Maicol Spezzani – Keraglass Director, Sales Coordinator, Carlos Costa – Vidriocar Chairman and Founder, Stefano Spezzani – Keraglass Founder, Vice President



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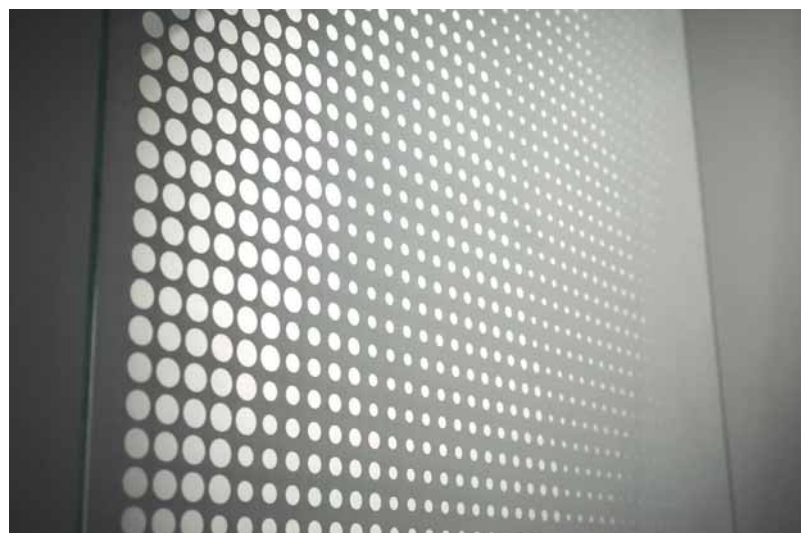
keraglass

GLASS COMPANY

A wide range of laser engraving with LaserMek

LaserMek is an innovative machine developed thanks to the experience of Glass Company in special surface coatings for flat glass, and was, at first, associated with diverse types of turnkey plants built over the years. It was then created as a stand-alone machine with the GlassMek brand name, to expand the product range offered for specific sectors of the industrial market, with extremely high added value.

LaserMek, a highly-configurable and modular machine, can engrave the surface of glass treated with any type of coating (functional or decorative) as well as silver. The machine is available in a wide range of dimensions, power and types of laser, as per the specific applications requested by customers, enabling to develop a wide range of applications in the industrial processing of coated flat glass.



In the refrigeration sector, it is used for the production of doors for frozen food display cases; the laser enables to engrave heating circuits in the resistive transparent coating of the glass at controlled temperature, thus obtaining anti-condensation effects without using additional electrical devices. In the rail transport sector, on the other hand, the machine engraves textured designs allowing the passage of wi-fi used by personal communication devices of passengers such as smart phones, tablets and notebooks.

In bathroom furnishings, it is used to remove silvering, leaving the surface of mirrors transparent, thus obtaining design effects with high visual impact and added value.

This type of processing is also used in heating by engraving the elements for the creation of sophisticated electric radiators for home and office environments.

Even large structural glass façades are decorated with graphic engravings and personalized phrases. The same type of processing is also carried out on doors, windows and partition walls for office use.

LaserMek is therefore a machine with a wide range of applications in specialised industrial sectors with high added value, ensuring an extremely short payback time.



GLASTON

FC Series tempering line for Steinfort Glas

Steinfort Glas, a long-time Glaston customer, has always invested in the latest technology in order to deliver leading, inspiring glass. Glaston's latest *FC Series* is a masterpiece of intelligence equipped with the latest tech-



nology for efficient tempering, resulting in top quality of the processed glass. Due to the customer's very wide product range where serial sizes are typically small and need for a reliable and flexible tempering solution for efficient, mixed production, the technology of the FC Series tempering furnace was taken another step further.

Equipped with the Chinook, the market's most intelligent heating system, based on the highest number of measurements combined with automatic process adjustment, Vortex pro convection technology and the Insight Assistant Pro, that automatically adjusts furnace settings based on the measured glass size and loading pattern information, the solution helps the customer to efficiently handle all product segments from selective windows to coloured automotive glazing.

"The FC Series is the choice for glass processors looking for top quality at high production rates. By increasing the level of automation, efficiency of operations can be further increased. In this specific project, the degree of automation will be further increased, further improving the loading rate, average quality and yield of the line," said Juha Liettyä, SVP Glaston Heat Treatment Technologies.

Steinfort Glas is known for their extensive product portfolio: tempered, laminated, illuminated and interactive glass, enamelled or ceramic printed glass – in all shapes sizes and colours. The company is often involved in unique projects together with architects, designers and builders.

"Steinfort Glas aim to stand out in its logistic and technical performance towards its customers. For that we need a reliable and state of the art tempering line with the highest level of automation. We believe that our cooperation with Glaston, being the technology leader in this field, will provide us with the best solution for that," said Jan Anjema, Director at Steinfort Glas.

Glaston FC Series™, Glaston Chinook™, Glaston Vortex Pro™ and Glaston Insight Assistant Pro™ are trademarks of Glaston Corporation.

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GUARDIAN GLASS.

Solar protection for Melbourne shopping centre

Guardian Glass' SunGuard® Solar Silver 20 was selected for the glass roof of the Chadstone Shopping Centre in Melbourne, Australia, due to its high level of solar protection, particularly in applications where heavy sun would make excessive solar heat gain an issue. The coated glass provides a neutral transmitted colour for the visual comfort of shoppers and retail staff.

Guardian ClimaGuard® 1.0 T was also chosen for the roof glazing. The neutral colour and the high light transmission provide a pleasant indoor environment and actively promote well-being. The roof glazing also incorporates a smoke grey coloured PVB interlayer from Vanceva.

The shopping centre accommodates more than 100 new retailers, as well as leisure and food outlets. The 31-metre high, 7,000-square metre glass roof was a multi-disciplinary collaboration between architects, designers and engineers, working with research departments from the University of Bath and the University of Stuttgart.



WWW.GUARDIANGLASS.COM/EU/EN

KURARAY

Matthias Gutweiler appointed to Board of Directors

The Kuraray organisation in Germany and Europe is gaining a strong voice within the global Kuraray Group. Dr. Matthias Gutweiler, President of Kuraray Europe GmbH, has been appointed with immediate effect to the Board of Directors of Kuraray Co., Ltd. Gutweiler has a PhD in chemistry and is the first person from outside Japan to be appointed to the 12-member Board of Directors, which is headed by the Masaaki Ito, President of the Kuraray Group. Matthias Gutweiler has been managing director of Kuraray's European subsidiary, based in Hattersheim, near Frankfurt am Main, Germany, since 2009. Before that, he was in charge of the PVOH and PVB business at this speciality chemicals producer. One of the first key projects in his new role will be the new 3-year plan, which sets out the next strategic mile-



stones for the Kuraray Group.

"I see my appointment to the Board of Directors of the Kuraray Group as recognition of the success

that we have achieved together at Kuraray Europe in the past years and as a special acknowledgement of the excellent work done by our employees," said Dr. Matthias Gutweiler. "Collaboration between the management in Japan and Kuraray in Europe has always been characterised by trust and mutual respect. On this basis, we have been able to provide key ideas that strengthen the company and are reflected in the strategy of the Kuraray Group. We will continue to build on that in the future."

The Kuraray Group, headquartered in Tokyo, has more than 11,100 employees around the world and is a leading supplier of industrial polymers and synthetic microfibres. Kuraray Europe GmbH (KEG) was established in 1991 and it has more



← than 700 employees in Germany and a further 200 at six other European sites. It is a wholly owned subsidiary of Kuraray, in 2019 its annual sales were EUR 661 million.

Gutweiler has played a significant role in the development of the company in Europe in recent years. Having obtained his doctorate at the Biochemical Institute of Johannes Gutenberg University in Mainz, Germany, Dr. Gutweiler began his career in research and development at Hoechst AG in 1988. He subsequently held managerial roles in PVB Development and PVOH Production at Hoechst. In 2001, the newly established company Kuraray Specialities GmbH acquired the former PVB and PVOH business of Hoechst AG from the Clariant Group. Dr. Matthias Gutweiler became Head of Research and Development for the PVOH brand Mowiol, now Kuraray Poval, and the PVB brand Mowital. In 2009 he was appointed Managing Director of Kuraray Europe GmbH – the first non-Japanese member of the extended executive management.

“Globalisation also means involving people from around the world in decision-making. By appointing me to the Board of

Directors, the management is responding to this by ‘globalising’ itself,” said Dr. Matthias Gutweiler. “I am delighted to have this opportunity to play a part in determining the course of the Group. I see myself as an advocate for the international management and would like to contribute new perspectives and impetus for Kuraray’s continued development. The next 3-year plan, which we will be drawing up this year to define Kuraray’s global focus, is a good opportunity for that.”

In addition to his seat on the Board of Directors of the Kuraray Group, Dr. Matthias Gutweiler will remain Managing Director of Kuraray Europe GmbH.



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A+W

Clarity - the new software experience



Under the project name *Clarity Experience*, A+W is currently developing a completely new, ergonomic user interface, initially for A+W Enterprise and then for A+W Production. The company is working closely with its customers, using their expertise and experience to achieve the best results.

In a first step, A+W has taken on the areas of order entry and dispatch in A+W Enterprise. In dispatch, there is already a pilot installation that is being tested intensively.

The Clarity Experience project is scheduled to last four years. In the first year, the dispatch module was developed and work was started on order entry. These are remarkably short development times if you consider that the developers are working on the "open heart" of A+W Enterprise, which must keep beating and remain fit for work throughout. For the pilot users, the new elements are implanted in their familiar work environment, so that old and new input systems are provided in parallel. The dispatch module has already proven itself to pilot users in real-time operation.

This is all possible thanks to the application of a new development methodology, the agile sprint methodology. The development teams work in 'sprints' of a week or so and then present their results to all participants.

Here, there is no clear end goal – the project can and should change during the development. For example, at the end of a sprint, a customer could suggest practical changes to one of the newly-developed input screens, changes that result from experience in his working world. The teams work extremely flexibly and in close contact with customers and colleagues.

Customers especially appreciate that the results of the sprints are integrated immediately into the 'real' work environment and can be tried out. This is how A+W can constantly incorporate new suggestions and avoid presentation of a flawed product that fails to meet customers' needs after many years' development time.

Agile software development includes various approaches, with which requirements and solutions arise thanks to the cooperation of a self-organizing development team and customers/end users. It requires adaptable planning, evolutionary development, timely provision and continuous improvement, and quick and flexible reaction to changes.



WWW.A-W.COM/US/

Production limit extended to a width of 3.6 meters

SEDAK



Sedak now presents transparency in a larger maximum size, achieving a new milestone in glass processing: the technological leader for large-format functional glass now manufactures panes

up to 3.6 meters wide. This makes insulation and safety glass with areas of up to 72 square meters possible. The new format extends the freedom of design and the transparency of façades; the glass also fulfils the highest requirements on quality and appearance.

Even when coated glass is used, the maximum format is impressive: panes of up to 3.21 x 19.45 meters are possible. As a full-service supplier, sedak supports its customers with trouble-free transport to the installation location and works in partnership with architects, fabricators and



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investors from the planning to the installation.

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* Albert Einstein

SWISSPACER

Retrofitting of Swisspacer Air successfully tested

In order to ensure that a pressure-equalised insulated glass unit functions correctly, the validated method so far envisaged the installation of Swisspacer Air in front of the seal using a secondary sealant. This method involved additional work steps and delayed cycle times in the production of the insulated glass units.

Swiss company Swisspacer has now presented a new method with which the Air can be installed quickly and easily, above all as a retrofit. The Swiss manufacturer is thus responding to its customers' wish to decouple the timing of the installation process from the manufacturing. The advantage: in this way, manufacturers of insulated glass units – and now also window makers – have the possibility to react flexibly to their customers' requirements.

The now validated installation process involves drilling a hole through the hardened sealant and the rear of the spacer bar in the recommended position, about 200 mm from



SWISSPACER
The edge of tomorrow.

the top edge of the insulated glass unit, using the special Swisspacer drill. Next, an O-ring is mounted on

the Air thread, which is then screwed in straight with a torque of 0.2 Nm. The only thing that needs checking is whether the sealing ring fully surrounds the Swisspacer Air and reliably seals the hole. Other steps, such as, for example, applying sealant, are no longer necessary.

"In terms of the service life simulation and underlying conditions, the procedure is equivalent to the originally tested and approved installation method," said Matthias Bach, Technical Director at Swisspacer. "However, we should point out that retrofitting changes the specification of the insulated glass unit. As installation of the AIR turns the insulated glass unit into an air-filled one, the U_w value changes and the CE mark is lost. The \ddot{U} mark, on the other hand, still applies," continues Bach. It should also be noted that all four sides of the frame have to be filled with desiccant in order to be able to ensure the service life as before.



[EN.SWISSPACER.COM/](https://en.swisspacer.com/)

NORTHGLASS

Classified by Saint-Gobain as A-Supplier

NorthGlass has been assessed by Saint-Gobain Deutsche Glas GmbH as A-supplier for the project "New Temper Furnace" in Freiburg, Germany. This assessment result is the first official honour given to Saint-Gobain's equipment suppliers in Asia Pacific.

Since 2005, NorthGlass and Saint-Gobain have carried out the deep cooperation in the fields of glass tempering furnace, vacuum coating line components, glass processing automation systems.



NorthGlass A-series glass tempering furnace installed in Freiburg, Germany

So far, NorthGlass has supplied dozens of glass tempering furnaces and glass cutting and storage systems to more than 20 Saint-Gobain branch companies in Germany, France, UK, Denmark, Italy, Spain, Portugal, Poland, Czech, Romania, Estonia, South Korea, India, Mexico and Brazil, and these



← cooperation are expected to further expand in the near future. The evaluation in Freiburg has been assessed within the framework of Saint-Gobain's strict supplier management system. NorthGlass achieved an overall result of 96% in this supplier evaluation and were thus classified as an A-supplier. "This result is very satisfying and we hope that you will be able to maintain this excellent result in the future," Saint-Gobain Deutsche Glas GmbH wrote in their official letter. After receiving this news, the leaders of Saint-Gobain APAC IPO immediately sent their congratulations to NorthGlass, in one e-mail they wrote, "Congratulations to NorthGlass team! Thank you for your long-term unremitting efforts and support to Saint-Gobain's business! This assessment result is benefited from NorthGlass's excellent product quality and valuable service, and it is a great commendation to the unremitting efforts of your team in the past 15 years. "On behalf of Saint-Gobain APAC IPO, I would like to extend our warm congratulations on your high praise and express my heartfelt thanks to all your employees who participated in this project. Thanks to your management team for your consistent support on Saint-Gobain projects. We believe that our cooperation will go steps further on basis of today's excellent achievements, and will make greater progress in expanding the business and developing new markets." Saint-Gobain's affirmation and praise is a great encouragement for NorthGlass, adhering to the enterprise spirit of 'Innovating forever, Striving for success', relying on their strong technical innovation ability and complete product industry chain and excellent service network, NorthGlass will continuously provide quality products and valuable services to Saint-Gobain and all other customers, and make every effort to power the development of NorthGlass and support the development of its customers.



WWW.NORTHGLASS.GLOBAL



NorthGlass A-series glass tempering furnace installed in Kjellerup, Denmark

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- ▶ **PVB wiring** machinery for **heatable laminates**.
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HHH TEMPERING



Furnace bearing vibration analysis video

Imagine you could detect problems in your machinery before your operators start spotting the symptoms.

Bearing vibration analysis makes it possible to identify premature bearing wear and the associated causes.

Curious about the causes? Watch as the HHH Tempering technical team discusses factors and solutions for bearing wear and tear.

<https://www.glassonline.com/hhh-tempering-furnace-bearing-vibration-analysis-video/>

Transcript:

Vibration analysis can detect problems with rotational equipment long before maintenance personnel or operators even notice there's a problem. One of the most common problems that vibration analysis turns up, is bearing wear.

Misalignment contributes to about 1/3 of all the bearing failures. Improper lubrication contributes to roughly 1/3 of bearing failures as well. Whether the lubricant is grease or oil, the proper application of OEM lubricants is essential. Over lubrication can lead to premature bearing failures as well as under lubrication.

Initial vibration analysis provides valuable data for baseline information to tell you where your working equipment is at. Subsequent, vibration analysis provides the data so you can effectively schedule your preventative maintenance. HHH Tempering Resources provides these services.



HHHTEMPERING.COM/



SAINT-GOBAIN

Divesting from German glass transformation business

Saint-Gobain SA has announced that it has sold part of its glass transformation business Glassolutions in Germany to DIK – Deutsche Industriekapital GmbH, a Berlin-based investment firm. The divestment concerns seven sites, which employ a total of 350 people and delivered sales of EUR 45 million in 2019.

Saint-Gobain said Glassolutions will remain present in Germany mainly through its large glass transformation sites for

industrial clients and its sites with specific areas of expertise such as in solar glass or curved glass.

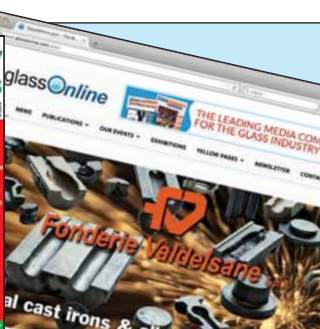
The disposal is part of Saint-Gobain's continued portfolio optimization strategy in the context of its new organization to enhance the Group's growth and profitability profile.



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GLASSCOMPANY

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PLASMEK is a glass treatment cell with atmospheric pressure plasma, for cleaning and increasing the surface tension of flat glass, in only one step. As the adhesion of the glass increases, it becomes possible to apply different products very easily in the subsequent processing phases.

Conceived with innovative technology, PLASMEK cleans and prepares the glass for digital printing, spray painting, coating, gluing, stratification and much more.

The PLASMEK processing machine is available for any size of glass and can be configured in line through automated integrations with other systems for the production process.



Atmospheric Plasma Treatment

PLASMEK

GLASS SOUTH AMERICA and R+T SOUTH AMERICA



Postponed to November 2020

The Coronavirus (COVID-19) continues to spread quickly among the population, and public and private events are being re-scheduled at the same speed. Glass South America has announced the postponement of the event to the first fortnight of November in 2020. R+T South America, a simultaneous event that takes place co-located, has also been postponed to the same date. NürnbergMesse Brasil, the organizer of the main events in the industries of glass and sun protection systems, has announced the change to preserve the participants' safety and specially to ensure a high quality exposition when the pandemic ends. According to health specialists, April will be the month with the highest amount of cases and the virus contention might occur only in the end of July.

"Even though it is hard, we believe that this was the best decision, aiming the integrity, safety and health of participants and employees. In a scenario of insecurities and people avoiding leaving their houses, keeping the June date would not give the possibility of making business and networking with the quality and efficiency that we have always promoted. It is still noteworthy that June is Winter, which is the period with the highest spread of viruses and diseases, like the COVID-19", explains João Paulo Picolo, CEO of the German promoter.

All the well-known attractions will remain in the new date and will become even stronger, such as the *Glass Performance Days South America* (GPD SAME) forum and *Vidro em Ação*. "Glass South America has an important role in the glass market dynamics. It is an to strengthen relationships, as well as a glass window to releases from our industry. Keeping the fair on this year's calendar, shows our confidence in a more positive second semester for the industry," said José Domingos Seixas, president of the Associação Brasileira de Distribuidores e Processadores de Vidros Planos (Abravidro), the event co-organizer.

Assured that this was the best decision for the market, for the participants' health, and the event integrity, the moment is of union in the industries. The Glass South America and R+T South America postponement shows the commitment of the promoter of the business platform that the market needs now more than ever.

NürnbergMesse Brasil has exhaustively negotiated to keep the events still this year and avoid a four-year hiatus of this highly important events for the Brazilian industry. "The new date will be a great opportunity to promote business, thinking on a growth for 2021," added Picolo.

WWW.GLASSEXPO.COM.BR/EN



NSG

Testing the world's first use of hydrogen fuel for glassmaking

NSG Group announced on 27 February 2020 that it will test the use of hydrogen as an alternative fuel for the float furnace at its Greengate Works in St. Helens, UK, to manufacture glass. A global first,

the initiative is part of a project managed by HyNet, a consortium of industries in the North West of England, aimed at reducing carbon emissions from industry, homes and transport.

NSG Group will investigate whether hydrogen can be used to wholly or partly replace the natural gas and oil that are standard fuels for the glass making industries. If all of the natu-

ral gas can be replaced with hydrogen this would reduce emissions of CO₂ by around 80%.



← The work is supported by GBP 5.2 million of funding from the UK government under the Industrial Fuel Switching Scheme with first trials planned for November 2020.

By 2030, NSG targets to reduce absolute carbon emissions (Scope 1 and Scope 2*¹) by 21% compared to the 2018 level.

By reducing CO₂ emissions from business operations and supplying innovative glass products, NSG will continue its contributions to mitigating climate change risks.

*¹ Scope 1: Direct emissions by business operators (Use of fuel in manufacturing processes, etc.)

Scope 2: Indirect emissions by consumption of energy sources (Purchased electricity used in manufacturing processes, etc.)



WWW.NSG.COM/EN

TECGLASS and CUGHER GLASS

Joining forces in the automotive arena



Already a successful player in the automotive field with an array of custom-engineered products, Tecglass neatly complements Cugher Glass, a leading glass industry manufacturer, which strengthens its own position as the sole supplier able to provide complete turnkey systems for printing on glass. Thanks to the partnership with Tecglass, Cugher expects to bolster its standing as a general contractor assisting automotive clients as the exclusive

partner in the supply of systems.

The two companies are jointly focusing on a sector with abundant potential, where they can deliver highly automated, precise, integrated screen printing and digital decoration lines that ensure the fastest speeds, high print quality, reliable results and high energy standards to optimize production costs and investments.

The strategy sharpens the competitive edge – both companies are technological benchmarks in their respective sectors and, through knowledge sharing, are geared toward the development of innovative solutions, responsive to market needs, that generate substantial added value for clients.

One of the practical objectives is to simplify the management of all print projects – with the utmost efficiency, no glass size or shape limitations, ultra-fast production cycles, safe and easy maintenance and technical support for every part of the system.

Javier Fernandez, co-founder with Manuel Ramos of Tecglass, expressed the company's satisfaction with this agreement, "We are delighted with this new partnership. Those who work in the automotive sector need to be able to rely on fast, error-free production, highly flexible and adaptable to last-minute changes. Which is exactly what this new partnership means: the best available technology and the reliability of partners with extensive experience in the industry who are aware of the issues that can arise during production and have a complete, coordinated solution for every need."

A sentiment echoed by Barbara Mazza, Managing Director and CFO of Cugher, "For more than 50 years, we have developed integrated systems for the automotive sector, dedicating ourselves daily to finding better solutions to support our clients in all aspects of production. This motivated us to partner with Tecglass, to pair our well-established screen-printing technology with digital printing in order to give our clients a single partner for the construction of industrial systems: from the simplest to the most complex and sophisticated."

Through this innovative partnership, the two companies can provide customized, extremely versatile solutions for all types of production.

WWW.TECGLASSDIGITAL.COM/



WWW.CUGHER.COM/



WALKER GLASS and VITRO ARCHITECTURAL GLASS

Two full surface finishes

Architects now have the choice between two full surface finishes from Walker Glass' Textures® on surface 1 with Solarban® high performance coatings from Vitro Architectural Glass on surface 2. This combination provides multiple benefits such as privacy, energy performance and a uniquely aesthetic look to the overall building design.

Both Walker Textures® Satin and Opaque finishes offer excellent wear, stain and scratch resistance properties while providing excellent functional elements such as high visible light transmittance and glare control with no significant impact on solar performance. They are also highly effective as bird-safe glass solutions. Combined with Solarban® high performance coatings from Vitro Glass, these finishes offer a truly innovative design option.

"We are excited to offer the architectural market a solution that combines design and solar performance – ideal for non-vision glazing applications. The acid-etched finish on surface 1 reduces reflection, provides privacy and high VLT without compromising U-value and solar heat gain targets," said Marc Deschamps, Director of Products & Business Development at Walker.

"Walker Glass and Vitro have teamed up to offer architects an array of innovative glass solutions over the last decade or so," said Nathan McKenna, marketing manager, Vitro Architectural Glass. "We are pleased to build on that legacy with low-e, acid-etched glass, which offers an unprecedented array of benefits in a striking new product."

WALKERGLASS.COM



PULP STUDIO

Precision Edge® for glass handrails

Pulp Studio, leading designer and manufacturer of technically superior decorative glass, introduced Precision Edge® technology.

Precision Edge® is a proprietary process exclusive to Pulp Studio delivering a high quality, zero-tolerance finish with perfect alignment for both tempered and annealed laminated glass handrails.

"The exposed edges on glass handrails are an aesthetic detail you don't want to overlook," said Bernard Lax, founder and CEO of Pulp Studio. "Codes require that handrail glass be laminated, but high-quality edgework is still imperative for the integrity of the design. With Precision Edge®, designers and property managers do not have to accept a pre-polished laminate product when a better option is available."



Pulp Studio offers a warranty on its edge work for post-tempering fabrication as there is no ASTM standard yet for this process. "We've built an expertise that is unique in the industry as Pulp Studio has post-polished

tempered and laminated glass to achieve smooth edges since 1998," stated Lax. "That's how we can warranty the glass to meet specification and performance for every project so that the client can be confident in the ultimate product."

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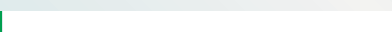
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GLASS FOR EUROPE

Europe's new industrial strategy and circular economy action plan

The European Commission's Communications A New Industrial Strategy for Europe and the Circular Economy Action Plan shed light on the challenges and potentials for emissions reductions and kickstart the legislative activities to achieve a climate-neutral Europe by 2050.

To Glass for Europe, it is time to activate, without further delay, the right sequencing of actions that will make the Green Deal a success.

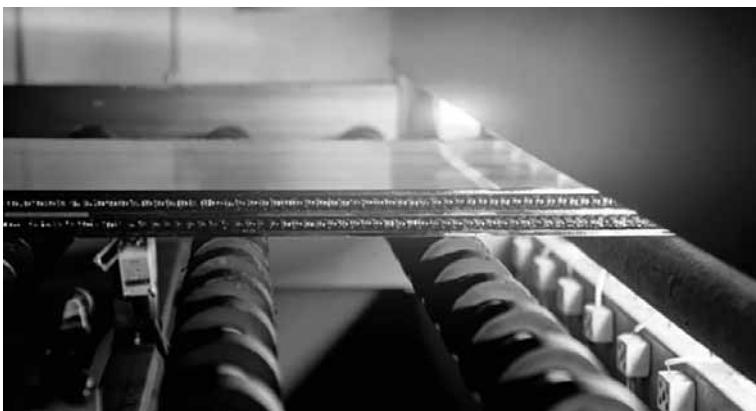
The Industrial Strategy and the Circular Economy action plan mark a promising start to operationalize the carbon-neutrality agenda. Since the carbon budget is

limited, there is an urgent need to act in the sectors where the largest potential for quick emissions reductions lies. "The announcements made by the European Commission with the Green Deal and Climate Law have generated high expectations. We need to build on this momentum to start working with the sectors where solutions are ready to be deployed," said Bertrand Cazes, Glass for Europe's Secretary General.

To support the definition of concrete actions, the flat glass sector has released in January 2020 a vision for a climate-neutral Europe in 2050. The vision is the result of a long reflection inside the industry on how the sector could maximise its contribution to the carbon neutrality objective. "It is reassuring to read that we share with the European Commission the assessment of the challenge ahead: the need to continue providing at a competitive price the materials required for the transition in the building and transport sectors, while at the same time reducing our own manufacturing emissions. The task is daunting, but our sector is willing to contribute," commented Bertrand Cazes.

The flat glass sector agrees with a number of actions listed in the industrial strategy, such as the investments in renewable energy infrastructures or the support to research and development. Yet, some important elements are missing and would require to be included in the future set of EU actions. In the field of manufacturing emissions, all renewable sources of energy are not considered and the strategy omits the carbon capture storage infrastructures which would be required in particular by sectors with process emissions. In terms of market activation for the production, the strategy limits itself to mention the need for creating new markets, while studies show that existing markets, such as the construction sector, are functioning far below their potential for reduction with the use of sub-optimal products.

Glass is a resource and recycling glass to replace virgin raw materials is good for the environment, the climate and the economy. While the flat glass sector has successfully worked on closing the industrial recycling loop, it is estimated that 40 percent additional recycled glass could be used if the end-of-life building glass was entirely recycled. Glass for Europe is eager to engage in a dialogue with the decision-makers to support this and is looking forward to contribute to the discussions on Sustainable Built Environment, the need for material special recovery targets or the implementation of by-products status across the Member States.



[EC.EUROPA.EU/INFO/SITES/INFO/FILES/COMMUNICATION-EU-INDUSTRIAL-STRATEGY-MARCH-2020_EN.PDF](https://ec.europa.eu/info/sites/info/files/communication-eu-industrial-strategy-march-2020_en.pdf)



TOP ROLLER

TOP STANDS FOR QUALITY - OF COURSE

Top rollers are among the most important parts of a tin bath. These machines are used in pairs in the forming section. Each pair, consisting of master and slave, works synchronously and has to create optimal conditions for a smooth production process. That requires nothing but the highest quality standards!



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HEGLA

Cwmtillery makes further investments

Cwmtillery Glass (CGC), based in South Wales, UK, has once again bolstered its production facilities with the installation of another HEGLA Optimax cutting table. The system incorporates laser technology and two loading systems that include a double sided loader as well as a shuttle loader, which can provide the double sided loader with many more types of glass.

This will allow the company to further increase cutting capabilities, increase efficiency and work in conjunction with other equipment already installed. Laser technology allows Cwmtillery Glass to provide customers with a broader product range in a far shorter timescale and in a much more controlled way.

This expansion phase is part of Cwmtillery Glass' management continuing investment in the company. By upgrading equipment this will ensure that there is more quality control which will help to drive efficiencies and improve productivity. As the company will be celebrating its 25 year anniversary next year, this is testament to the drive and commitment of the team to provide consistently top quality products for customers.

With demand increasing for various types of glass from the company's range, made Managing Director Paul Hayward, want to simplify production methods. Subsequently, flow-through and output on the production floor have increased considerably, with staff now deployed elsewhere to better use their technical expertise.

A new 20,000 sq.ft. extension to the CGC production facility has ensured that new equipment including a furnace will

enable the company to improve and extend its manufacturing capabilities. The HEGLA team's understanding of the market together with vast experience has ensured that the right products could easily fit into this facility. Long-term efficiency was crucial for this installation with the Optimax enabling larger batch sizes to be cut more quickly and the laser technology simplifying the whole production process in combination with the shuttle loader.

The initial CAD drawings demonstrated how the Optimax could be incorporated into the Cwmtillery facility. Therefore, when the machines were delivered and installed, manufacturing was not disrupted, with downtime minimized. The two machines from HEGLA now replace three machines that were previously cutting their requirements, the combination of laser marking system in combination with automatic changing of multiple glass types cannot be underestimated.

The highly advanced cutting and loading systems installed provide greater health and safety guarantees as the machines are fully fenced to current standards and electro mechanically interlocked. The loader is sequenced fully automatically with the cutting table via a cutting code. This guarantees that glass quality is improved with fewer scratches made during production with less handling.

A fully tailored design was provided by the HEGLA engineering team with the assembly process considered 'perfect' by Paul Hayward.

Cwmtillery Glass' portfolio incorporates high quality processed glass units which are supplied to the domestic sector nationally.

The reliability of the HEGLA brand has already proved itself and had a very positive impact on the company. Cwmtillery further automated its methods and the company has achieved excellent results on the back of this.

Paul commented "It is absolutely vital that we can get orders right and to get that done quickly, which can only be achieved on dependable machinery. This latest in-



HEGLA Optimax in situ at Cwmtillery Glass Company Ltd.



← stallation has brought numerous real time saving benefits and the after sales care from the engineering team is superb. They leave nothing to chance.

Since installation the HEGLA equipment has proved its worth many times over."

For Cwmtillery Glass, customer care is imperative and with quality engineering interwoven into the business, to ensure that standards remain at their highest.

Steve Goble, Managing Director at HEGLA UK, said, "The quality of our engineering standards are reflected at Cwmtillery Glass – helping customers achieve optimum results will always be our priority.

We look forward to a long, continuing working relationship with Cwmtillery Glass."

WWW.CWMTILLERYGLASS.CO.UK/



WWW.HEGLA.COM/EN/



TUOMAS

Jumbo and Jumbo+ glass performance



Tuomas has published a new video, on its YouTube channel, about its fully automated, high performance, storage, loading and cutting line for half jumbo, jumbo and jumbo+ glass sizes.

The line comprises a SR-07 smart glass storage system and a RUBI 306C cutting table for float glass. It is equipped with the 2-TOOL system, low-E&TPF glass edge deletion system, all integrated with the ERP for production optimization and management using software compatible with Industry 4.0.

<https://www.glassonline.com/tuomas-huge-performance-for-jumbo-and-jumbo-glass/>



WWW.TUOMAS.COM/EN/

GLAS TRÖSCH

Plans to acquire Scheuten International

Swiss family-enterprise Glas Troesch intends to acquire Scheuten International B.V., based in the Netherlands, from the latter's current private-equity investor, Value Enhancement Partners. The takeover is still conditional to approval by the Competition Authority, the works-council is also being consulted. The acquisition would comprise



the entire Scheuten group, including all affiliated companies in the Netherlands, Germany and Belgium and all their employees.

The intended acquisition would neither cause any changes in staffing, nor in current activities vis-a-vis business-partners. Scheuten will continue to focus on its three core-activities in insulating glazing, projects and industrial base-glass.

The management of both groups is looking forward to the new opportunities and synergies that would be created also for their customers.



WWW.GLASTROESCH.CH/EN.HTML

HORN GLASS

Azerbaijan Float Glass project



In Sumgait, Azerbaijan, a brand-new 300tpd float line is getting ready to start operations: the installation of technology equipment is mostly complete and the cold tests already started.

HORN supervisors are assisting the customer during equipment construction and commissioning and, at the same time, experienced



tutors from HORN are training Azerfloat's technical personnel.

The German ambassador in Azerbaijan, Dr. Wolfgang Manig, visited the site.

WWW.HORNGGLASS.COM

PILKINGTON IGP

Expansion of Ostroleka plant

The modernization of the Ostroleka plant is the latest investment of Pilkington IGP, a member of the NSG Group. The objective is to increase production and operational efficiency, as well as work ergonomics. Pilkington IGP has recently expanded its sites in Cracow and Skierniewice, as well as built a new plant in Bialystok.

The plan includes an expansion of a production area as well as office space providing more floor space for the state of the art technologies and machinery.

"The new investment will create 80 new jobs," said Krzysztof Granicki, Managing Director Architectural Glass East, Nordic Europe and Central Downstream Business in Europe.

"The expansion is our response to a growing market need for highly specialized products. Architectural and construction markets are dynamic when it comes to innovative solutions and production capability expansions. We are determined to



anticipate the needs of our customers at an early stage. This requires detailed awareness of the market, diverse experience and constant investments," he concluded.

The expansion work is expected to be completed in September 2020, with work carried out in line with the normal operation of the plant, without impacting existing customer orders. Pilkington IGP produces toughened, enamelled and screen printed glass, as well as structural glazing panes, and handles glass manufacturing and distribution. The Company's sites are located in Skierniewice, Cracow, Bydgoszcz, Bialystok, Ostroleka and Szczecin.



WWW.NSG.COM/EN

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 **EXPOCENTRE**

R.C.N. Solutions

CONSTANT AND CONTINUOUS
RELIABILITY IN TECHNOLOGY
AND HUMAN CONTACT FOR
GRUPPO VETRARIO PACI



A visit to one of R.C.N. Solutions' historical clients in February gave Glass-Technology International the perfect example of how to maintain client relationships through constant availability, listening to their requests, and basically being there when needed — with the right machinery, of course!



One of the most important strong points of R.C.N. is its availability and ability to listen to its clients, creating unique machines that are built in response to each glassworks' particular needs.

We recently went to one of R.C.N. Solutions' historical clients – Paci Glassworks, northern Italy – to speak to the first and second generation of the Paci family about their ongoing and historical relationship with R.C.N., and how the company is continuing to provide complete service. Roberta Cometti, International Business Relationships and Simone Vecchi, Sales & Technical Manager

at R.C.N., told us how Paci had decided to re-invest in R.C.N. and its machines, trusting once again in the constant and continuous reliability of the technology and people in their production of specific and specialized glass.

PACI: "NEVER SAY WE CAN'T DO IT!"

With the second (but some say third) generation of the family in the company, Gruppo Vetrario Paci was founded in 1959 – 60 years of activities (but almost 100 years of experience!), and is located to the north of Milan, in Brianza. The first activities of the company concerned artistic and artisan production,

where the presence of a master glassmaker was an essential part of everyday work.

Over the years, thanks to continuous investments and inventions, Paci has always been one step ahead of competition. Of course expansion also includes company area and, after working in a small rented warehouse, the company moved on to purchase its own premises, which were expanded as per production requirements.

The 1970s saw the founding of Italvetrine, for the manufacture of display cases, promotional sales units and shop fittings, which then led to the building of new premises,



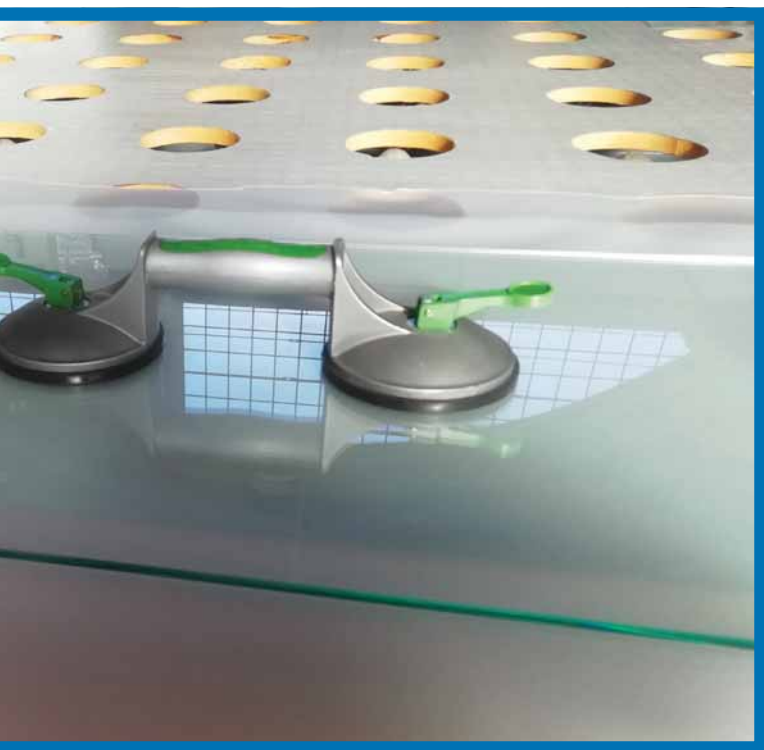


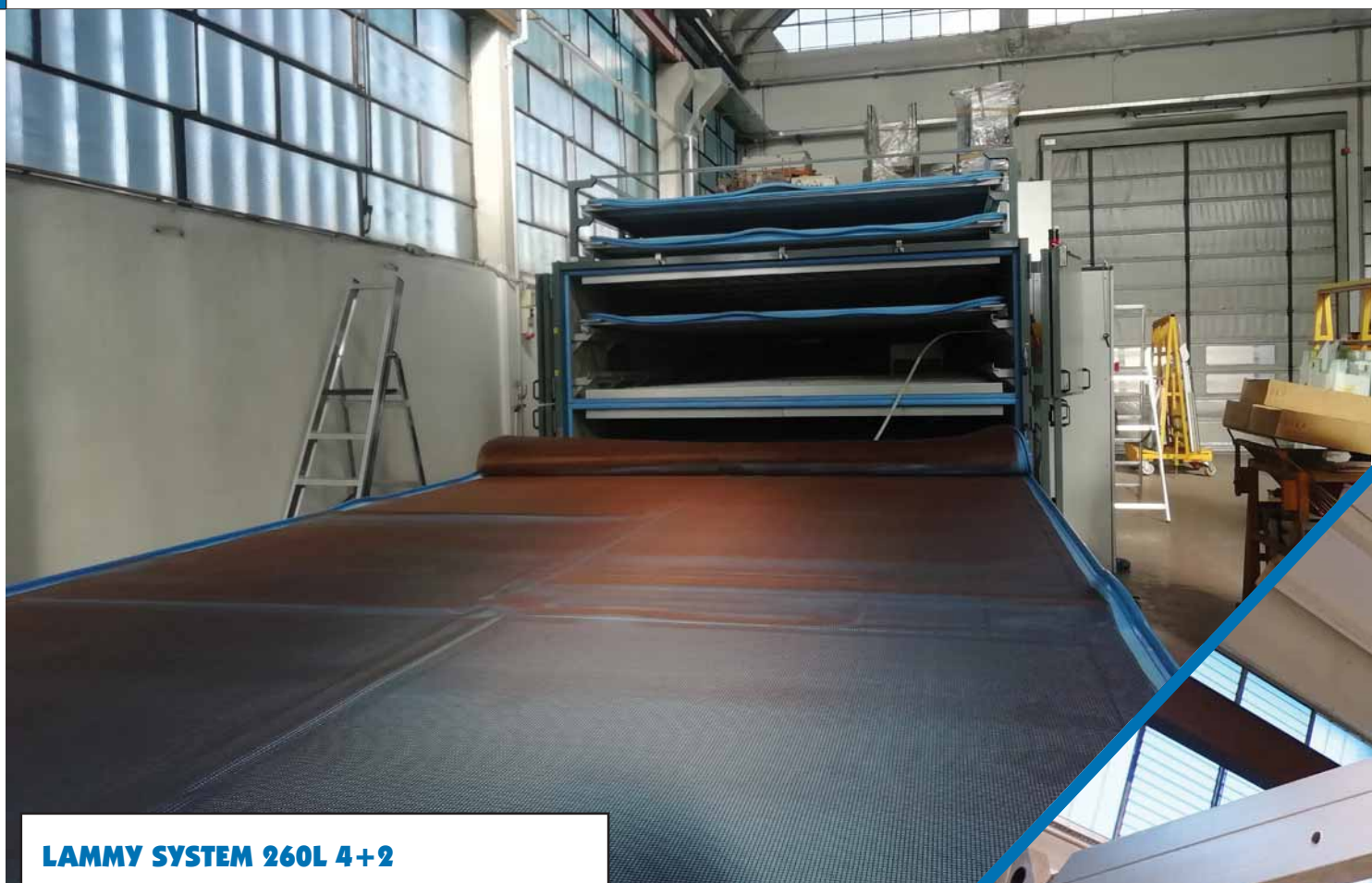
expanding to the present 16,500 square metres of the company.

Pacì is now an important player in manufacturing both industrial and art glass, also through its subsidiary Italvetrine.

Another important aspect of the daily work at Pacì is that of processing large glass sheets, made possible thanks to a partnership with Isotempra, which also involves PVB colour lamination and much more.

From left: Roberta Cometti, International Business Relationships at R.C.N., Maurilio Pacì of Pacì Glassworks, Simone Vecchi, Sales & Technical Manager, both from R.C.N., Roberto Pacì, Pacì Glassworks





LAMMY SYSTEM 260L 4+2

Glass size: 2600x5100mm

technical specifications:

2 independent heating chambers
1 level storage area with 3 positions
6 laminating levels – (2 for each chamber + 2 external)
6 Silikosoft – vulcanized lamination bags, with special closure
4 extraction pumps + 1 external pump with 2 connections
2 automatic side hatches for chamber cooling
1 electric platform, capacity: 2000 kg.
1 PLC touch screen
Installed power: 130 Kw

ONGOING RELATIONSHIP BETWEEN R.C.N. AND PACI

During our visit to Paci Glassworks, we discovered that this new R.C.N. machine is not the first for Paci. The company has, in fact, decided to invest once

again in R.C.N. machines and technology. One of the important reasons behind this choice is that Paci's production is made up of 'special' products – not in series – requiring, therefore, special machines. Maurilio Paci, the second generation of the Paci fam-

ily, along with his son Roberto spoke to us about the company's production, and why their choice was for R.C.N. once again: "When we had to decide to create 'alternative' or niche production, our choice was for R.C.N."

"In any case, a great deal of our production is also based on industrial glass processing with PVB, as we are also co-founders and partners of Isotempra, while, thanks to the use of this EVA furnace from R.C.N., we can diversify our production, focusing more on these niche products using metal, textiles and other products to be laminated between the



glass, as well as for urgent requests.”

“Our first laminating furnace from R.C.N., purchased in 2013, was smaller, with two levels, for glass sizes of 2,200mm x 3,800mm. This new furnace has 4+2 (6) levels, for glass sizes of 2,600mm x 5,100mm, with production ongoing right

from the day after installation.”

“An important characteristic of our company – and of our family – is that of keeping up with technology. My father first, and then my brother and I, have always been in the forefront when it comes to new machines and technology!”

Roberta Cometti, Simone Vecchi, R.C.N.: “So this could mean that your next machine may be one of our chemical tempering furnaces.....”

Maurilio Paci: “Why not. We all know that traditional tempering distorts the glass a little while chemical tempering does not. It’s

true that this technology is still in its early stages but we need to consider the advantages that we can have with this technology.”

“The only type of glass that we have never produced is that for buildings and construction – IG glass. This is probably due to the fact that the industry in the area



where we are – Brianza – is mainly focused on furniture and interior design, and there was no need for us to branch out into another sector.”

Roberta Cometti, R.C.N.: Af-

ter all these years, and after seeing and experiencing the many changes of glass processing, what is your opinion on today’s market?

Maurilio Paci: My personal idea right now is that per-

fection is not enough. We always need to be one step ahead of the demands of our clients, improving on their demands and on the standards that glassmakers have.

Glass-Technology International (GTI): How has your production changed in terms of domestic and international markets and exports?

Maurilio Paci: We work



very little for international markets at present due to the changes in the markets and demands regarding not just quality, but even more focused on speed and quantity. In the past,

our percentage for exports was a lot higher. But we still work internationally but indirectly – as a ‘component’ of finished products.

GTI: This is your second

A CUSTOMISED MACHINE FOR PACI GLASSWORKS

One of the most important strong points of R.C.N. is its availability and ability to listen to its clients, creating unique machines that are built in response to each glassworks’ particular needs.

Paci Glassworks wanted a customised machine for its specific production needs and R.C.N. accepted this challenge, supply a non-standard sized machine with particular features. The furnace was, in fact, made entirely following indications from Paci, with structure and sizes discussed and designed in collaboration with the client.

machine from R.C.N., but our question is why did you choose an R.C.N. machine the first time?

Maurilio Paci: A very important part of our choosing R.C.N. is the commercial relationship that we found with them, their continuous presence, always ready to respond to our needs and demands, with valid advice in processing and the right machinery to use.



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Ashton Industrial

FIRST AUTOMATIC
OPTISTREAM
APPLICATORS IN THE US

IG unit manufacture not only involves the perfect positioning and sealing of the glass panes, but also the protection of the same units during transport, storage and even installation. In this article, we take a look at how Ashton Industrial's Optistream™ can respond to these demands — automatically.

Glass units need to be protected against scratching, marking, dust and weather not only during transport to site, and not only when stored on site waiting to be glazed. But also even after being glazed into window and door frames, right up until final handover. And this protection is being increasingly demanded by architects and specifiers, while IGU manufacturers and window suppliers are finding it as a requirement to tender.

MANUAL VERSUS AUTOMATIC PROTECTION

Manually wrapping and trimming individual IGUs is awkward, labour-intensive and inconsistent. It generates large amounts of waste film and offcuts. And operatives trimming with blades presents a high risk of scratches. Combined, a very expensive operation which does not even properly address one of the most important issues: How to glaze the IGU into its frame without removing the protective film.

Optistream™

Optistream™ is an automated applicator that not only applies protective film to both sides of each unit, but also simultaneously performs trimming and, most importantly, creates pre-perforated borders all round on both





sides. These Easy-Peel border strips stay in place right up to the point when the IGU is ready to be set into its frame, and are then pulled off in seconds to expose just the glass edges without disturbing the protective film covering the rest.

Not just IGUs, but any high value glass products can be protected: printed glass, mirrors, coated shower panels, spandrels, in fact any kind of flat sheet material.

FIRST OPTISTREAM APPLICATORS IN THE US

Westcoast Glass – special requests

The Westcoast Glass Optistream™ is complimented by a custom-built ancillary table which uses special tandem hot-knife tips to score 'tramlines' on both sides of any unit destined to have external Muntin bars fitted.

Again the protective film stays in place until the muntins are ready to apply,

the strips are then peeled off without removing protection from the multiple individual glass areas.

Hartung

Hartung opted for a special Mini model that will process very small IGUs right down to 4" x 4" (100mm x 100mm) for those special Heritage-style multi-panel doors and windows.

Random sizes or series runs, small lites right down to 4" x 4". And up to 16" width x any length are au-

tomatically applied with protective film top and bottom, with Easy-Peel borders perforated on all eight sides which allow IGUs to be glazed without removing the protective film from the central viewing area.

Ashton Industrial



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GRUPO PUJOL

ACQUIRES THE EVASA PRODUCTION UNIT FOR THE EXPANSION OF EVALAM PRODUCTION

Continuing on its expansion plan based on a growth strategy, Grupo Pujol speaks about its recent acquisition of the Evasa production unit, aimed at strengthening its current position of leadership in the laminated glass market.



GRUPO PUJOL, the Spanish company owner of Hornos Industriales Pujol, S.A., global leader in the manufacturing of glass lamination furnaces, has acquired 100 per cent of EVASA production unit, located in A Coruña, Galicia (north-west – Spain). This way, the production of

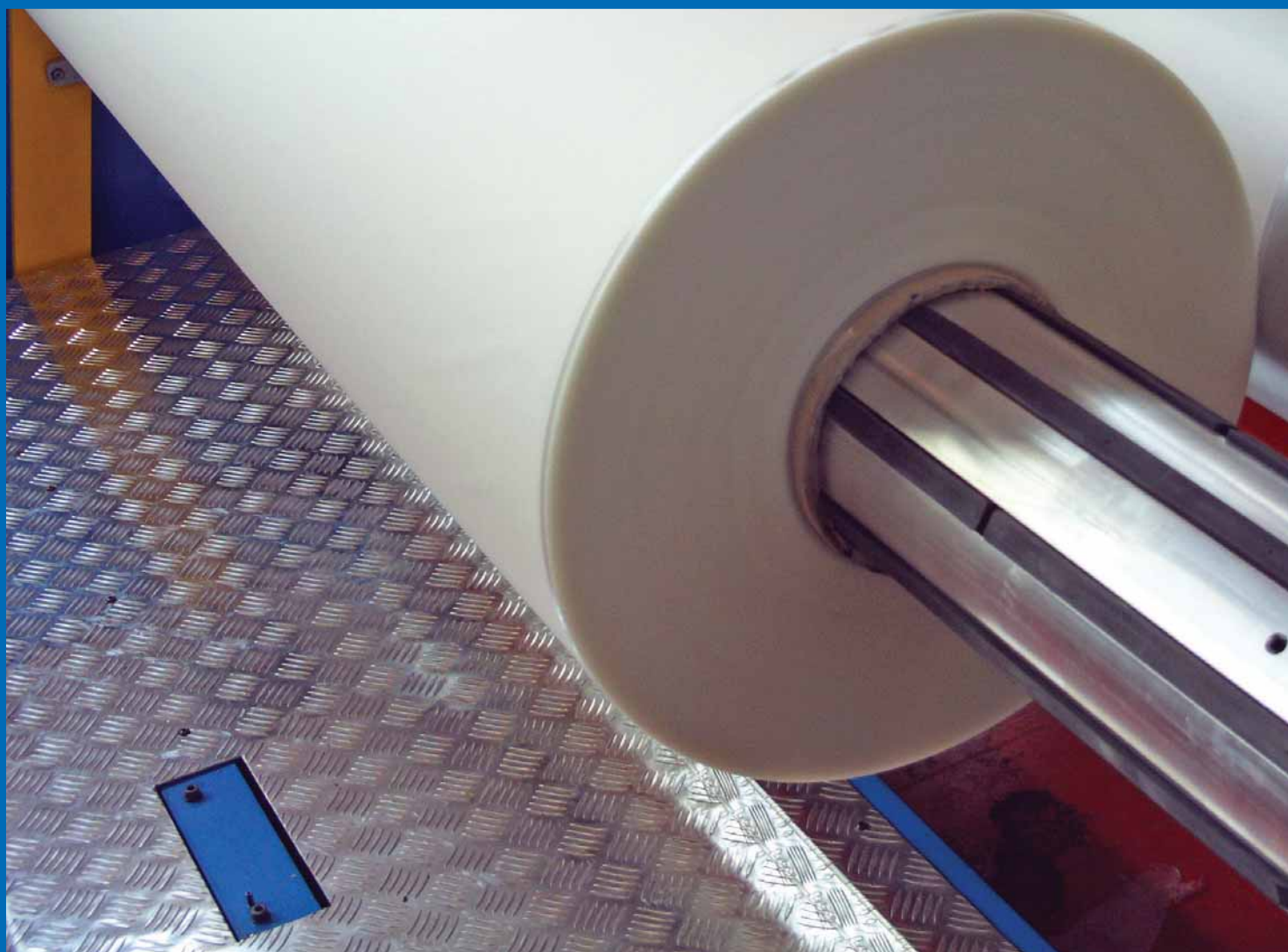
EVA interlayers continues in Spanish territory as the main European hub; following a strategy of descending vertical growth.

NEW INVESTMENT; SIGNIFICANT PRODUCTION INCREASE

Thanks to this new invest-

ment, the production of EVALAM –specialized brand and international reference for architectural EVA belongs entirely to GRUPO PUJOL – a significant increase will be seen, since two new massive production lines will be incorporated as special actions at GRUPO PUJOL. These

include a 2.61-meter-wide line which, in 2020, will transform the La Coruña-based company into the only EVA factory with capacity to produce the widest pieces in the world. Thanks to all this, GRUPO PUJOL will increase the surface of its production facilities by



50 per cent: 9,000 square meters for production and another 8,000 land for future extensions that the Group may need. The team structure will be made up of 70 people and the Group will strengthen its current position of leadership in the laminated glass market, offering even better service to its customers.

AMBITIOUS EXPANSION PLAN

The ambitious expansion plan of the company, based

on a growth strategy, also includes the extension of the productive plant, leading the company to be present in more than 90 countries. This will allow it to guarantee the fulfilment of the highest level of quality and safety of materials, either for current products or future developments, aimed at all kinds of problem solving for the architectural market or other future markets that could diversify the current EVALAM range of products.

“Day after day, different EVALAM solutions are chosen by professionals as the best option for laminating glass for large projects.”

NEW GROWTH OPPORTUNITIES

Jorge Pujol, CEO of GRUPO PUJOL affirms: “This new investment and acquisition of the new production line within Grupo Pujol, confirms the opening of a new horizon

of growth opportunities, which will consolidate us even more – if possible – as leader and as the only 360-degree manufacturer in the market. In addition, it positions the Spanish consumables industry for lamination of glass in the international market as a



reference of quality and excellence.”

Furthermore, Joaquín Pujol, Sales Director of PUJOL, says: “Given the growing demand of our interlayers year after year, the incorporation of this new production unit was fundamental in order to maintain product quality and service ratio excellence.”

NEW N-FLUENT, LESS EDGE CLEANING; MORE COST SAVINGS

Included within the strategic product plan of EVALAM, and manufactured in the new production unit, the entire know-how of a team of the Spanish firm has worked on the development of this new product, prioritized to ob-

tain a product to help all glass lamination professionals.

Its unique and innovative formula gives it an extra hardness, which lower product fluidity and fewer risks are achieved as the EVA flows through the edges of the laminated glass, reducing the time allocated to cleaning the glass which results in lower cost per square meter of glass produced and greater benefits for the company.

The new EVALAM N-FLUENT provides UV filtration harmful to health over any wavelength ($<390\text{ nm}$). This allows to protect people and goods behind the laminated composition. Moreover, these properties also include

an 85 per cent crosslink, which guarantees durability and stability far superior to any thermoplastic. The exhaustive quality controls of EVALAM demonstrate its stability against contractions once attached to the glass, which protects it against possible future problems such as delamination.

HORNOS INDUSTRIALES PUJOL



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Bovone Diamond Tools

CONTINUOUS DEVELOPMENT IN PRODUCTS AND INTERNATIONALISATION



BDT, has, in order to guarantee the important continuity that it has always had, dedicated significant resources to its production development, both in terms of technologies used as well as human

resources. Moreover, the company has also invested in new machines and highly skilled technicians to respond to the increase in demand. During 2019, BDT carried out numerous tests on

a new, recently-purchased work centre, aimed at improving even more the testing of peripheral grinding wheels. In fact, the new, high speed glass and Dekton processing wheels demonstrated guaranteed high performance with regards to both speed and performance.

Market demands are ever more focused on finished product quality, but, at the same time, also on performance of tools and processing. The advantage, in fact, can not only be the end result, but also the time required, as well as ease of use.

IMPORTANT REQUESTS - NEW RANGE OF WHEELS

And it is bearing these aspects in mind that BDT has been working on a new range of wheels that respond to these ever more important requests from end clients and dealers. The three types of high-

2019 was an important year for Bovone Diamond Tools, in which the company continued working with its distinctive values that have, since its foundation, accompanied the development of the business: quality, innovation and performance.

speed wheels made by BDT are those for flat and trapezoidal profiles, as well as for milling:

Flat profile wheels have a new sector design, which are smaller and closer to each other, allowing to reach speeds of 10 metres per minute at 7,500 RPM. Trapezoidal profile wheels have a different composition compared to traditional wheels, as well as a different grain size, allowing to reach speeds of 8 metres per minute at 7,500 RPM. The same new design has also been applied to BDT's milling wheels, with speed now 50 per cent higher than traditional milling wheels, with estimated speed of 10 meters per minute at about 12,000 RPM.

The excellent results ob-



tained on glass were also found on Dekton, demonstrating the very close relationship between traditional hard and transparent materials and the brand new and constantly evolving stone-type synthetic materials.

Another new product in 2020 regards the launch of new drill bits that are parts of the range of high-speed tools. These new drill bits, in fact, with or without countersink, as for the other products of this range, ensuring improved performance and high speed processing. These drill bits are compatible with all machines of the main national and international manufacturers and are available in various diameters and lengths. They have a thinning of the crown, which passes thicknesses of from 1mm to 0.7 mm: for even more precise and clean drill holes.

QUICK ATTACHING

In 2019 Bovone Diamond Tools tested its new quick attaching system for grinding wheels – Click-Fit – which, right from the start, gained positive feedback from operators. Click-Fit is an innovative attachment system for both metal and resin diamond cup wheels, in which the alu-

minium base remains attached to the motor while the diamond parts of the wheel is changed. This results in savings in storage and time, as well as – of course – costs. The environment also benefits from this system, as it is completely ecological, reducing the disposal of material to minimum.

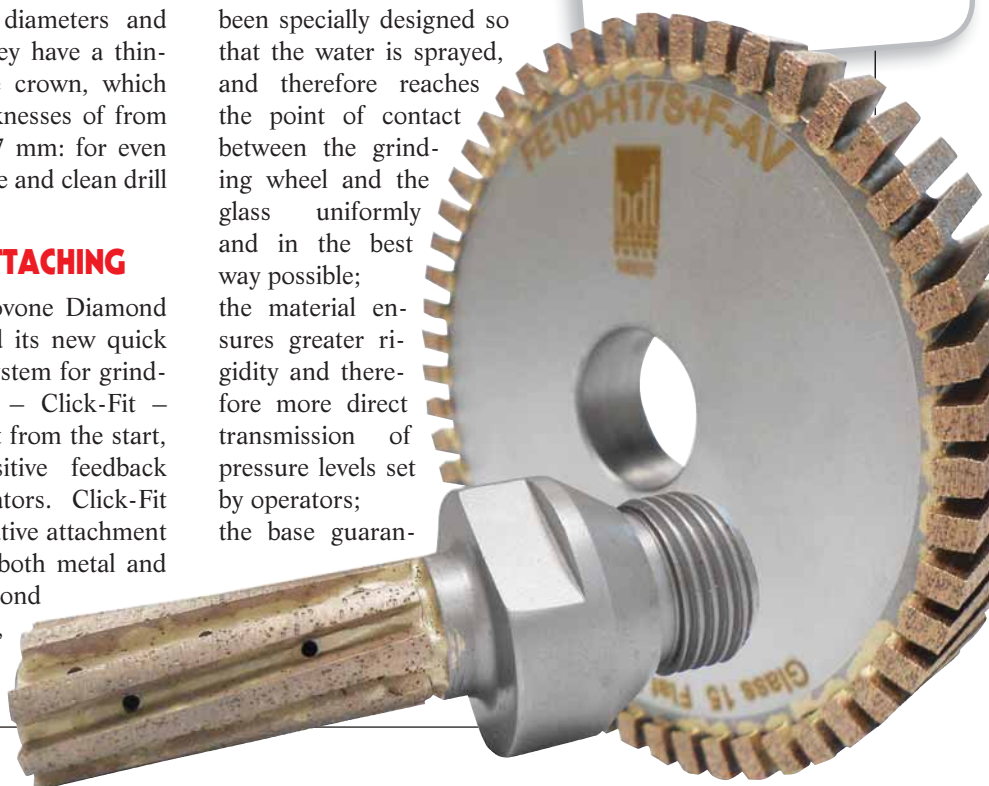
NEW RESIN BASE

last but not least, BDT's new resin base for cup wheels immediately demonstrated important advantages with regards to production:

- the wheel is lighter, resulting in less stress on the spindle;
- the slats on the base have been specially designed so that the water is sprayed, and therefore reaches the point of contact between the grinding wheel and the glass uniformly and in the best way possible;
- the material ensures greater rigidity and therefore more direct transmission of pressure levels set by operators;
- the base guaran-

tees perfect balance of the grinding wheel.

BDT is therefore following tradition in providing its clients with products that will continue to enable it to continue to confirm its position in important reference markets.



Tuomas

COMMERCIAL NETWORK IN SOUTH AMERICA

This year's South American commercial network meeting was, for Tuomas, an important opportunity to analyse 2019 results, projects for 2020. This article, however, also gives us some feedback from its teams there, demonstrating how their commitment is fundamental for Tuomas to remain a leading company in the Latin American market.

STRATEGIC MARKET

Latin America is considered one of the most strategic markets for Tuomas, which is why it has three commercial delegations: one in Santiago de Chile, one in São Paulo and the other in Bogota. These three points of sale are distributed strategically in the territory to ensure that clients have direct contact with their delegates in less than two hours from anywhere in Latin America. The ideal location of the offices makes it easier for customers to receive faster service and more efficient assistance without the need to resort to the 24-hour Premium Remote Service, although they can also benefit

from this service.

Commercial delegations in each capital have cutting tables and manual glass cutting stock. They also have a complete parts and consumables stock ready to be shipped anywhere, in the shortest possible time, to keep machines operating without interrupting production.

SALES NETWORK ADVANTAGES

In addition to machinery sale and assembly, Tuomas has also developed a free preventive maintenance programme. With this plan, the machines are periodically checked to anticipate incidents, avoid shutdowns and save costs.

Other advantages provided

by this sales network regard the possibility of paying in local currency, thus avoiding foreign exchange operations, or to finance the payment in the medium- and long term, and thus having the necessary resources to continue growing.

But demands of South American buyers are growing, and to continue excelling in an ever increasingly demanding market, good products at competitive prices and immediate service are not enough. Commercial and technical support is fundamental.

Tuomas provides Latin American buyers with work teams that, beyond preparation and experience in the sector, are striving to improve their experience by of-

fering added value over the course of the entire purchasing process.

Tuomas commercial delegations and Chilean, Brazilian and Colombian technicians, know the name of each and every one of the clients. The Spanish manufacturer is aware of the importance of offering personalised, human and close service, for the people behind the consumers.

Listening and discussing with them is essential to find out what they really need and propose the right solutions.

TUOMAS SOUTH AMERICA COMMERCIAL NETWORK MEETING

The annual meeting be-



Chile

continue to lead in customer care and have a more direct communication with the same.”

Rodrigo Duarte, Tuomas Business Manager of the Brazil delegation

“We know that everything is in constant evolution – the manner in which we buy and sell. In said processes of endless change, customers feel confident to confirm that the company is behind them to give appropriate responses in the shortest time possible. This closeness and personal attention is always important, not only at purchase decision making time. Being at the head of the Tuomas commercial office in São Paulo allows me to transmit to our customers the assurance that we are very close to them by giving them our best service and attention.”

STATEMENTS FROM TUOMAS COMMERCIAL DELEGATES

Eduardo Nieto, Tuomas Business Manager of the Chile delegation

“As a result of the exponential growth in South America, our professional ethics obliges us to respond as we have always done by creating commercial delegations able to respond to our customers in an efficient and effective manner.

At Tuomas, we are characterised by the best treatment and service, both with regards to advice on the purchase of our products, as well as in after-sales service. These delegations are a key factor in order to



Colombia

Juan David Dávila, Tuomas Business Manager of the Colombia delegation

“Reliability has always characterised Tuomas products. This differentiating value adds another key factor to care, and creates customer loyalty: an after-sales service that accompanies them and helps them get the most of their machine.

The Colombian and Central American processors of the glass sector have never known a company with such strong commit-

ment for added value in these markets. Not only sales of quality products, but also an established commitment with clients.”

Álvaro Tomás, Tuomas Vice President and precursor of commercial attention in South America

“This commitment is the least we could do for all customers who have relied on Tuomas during all these years and have positioned us as the benchmark company of the sector in Latin America.”



Brasil



TUOMAS
OUR PASSION, YOUR PROGRESS

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For exhibiting opportunities contact
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For brand engagement opportunities contact
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Forel

CHOSEN BY RGC (RSK) FOR GLASS EDGING AND EXTRA- JUMBO IG PRODUCTION

A visit to the RGC group in the Russian Federation gave Forel the possibility of this special interview with this client. Speaking to two people from the top management, our readers find out why Forel was chosen, and how the company's machinery — and the "No Limits" IG line — will be used to maintain RGC's leading position in the market.



Sealing Robot "No Limits"



Gennady Bugrov, Executive Director of RGC

“Gennady Bugrov (RGC): “Organisation and efficiency are our greatest strengths. And now we’re investing in the future.”

“Our competitiveness is founded on organisation and efficiency. These two factors have allowed us to grow in terms of size and production capacity into what we are today, and occupy a dominating position in the glazing sector in the Russian Federation. And while today’s market calls for increasingly innovative products with higher performance that are more complex than ever to produce, the structure we have built up means we’re not afraid to tackle any project.”

The RGC group was founded in 1992, when Bor

Glassworks established a new company named Bor Glass in Saint Petersburg to process and commercialise its products. In 1997, the Belgian company Glaverbel acquired Bor Glassworks and its production sites. From 2000, investments were allocated to modernising the former Bor Glass plant in Saint Petersburg which, in the space of just a few years, acquired some of the most advanced technology available for glass processing. In 2006, the holding company Adamant acquired seven production plants and established the Russian Glass Company

FIRST VISIT – SAINT PETERSBURG

The administrative headquarters of the RGC group (standing for Russian Glass Company, and also known as RSK) is in Saint Petersburg: an impressive building, with its own 16,000 square metre production area. This is just one of the RGC sites: the group owns 13 in all, in Saint Petersburg, Moscow, Yaroslavl, Klimovsk, Tula, Nizhny Novgorod, Kazan, Samara and Krasnodar. With an estimated annual production of three million square metres of insulating glass panels, RGC produces around 25 per cent of all glazing in the entire Russian Federation. We were welcomed to the company premises by Gennady Bugrov, the Executive Director.

Forel Russia visits RGC HQ in Saint Petersburg





Eduard Kovacic (Forel Russia) and Gennady Bugrov (RGC)

(RGC), which immediately became one of the biggest players in the national market. The group strengthened its position over the following years with a series of investments in both technology and the acquisition of new plants, eventually reaching the

current total of 13 production sites. Today, RGC has an annual turnover of EUR 120 million, producing 2.5 million square metres of insulating glass for residential applications, another million square metres of insulating glass for façades and a million square metres

of tempered and laminated safety glass every year.

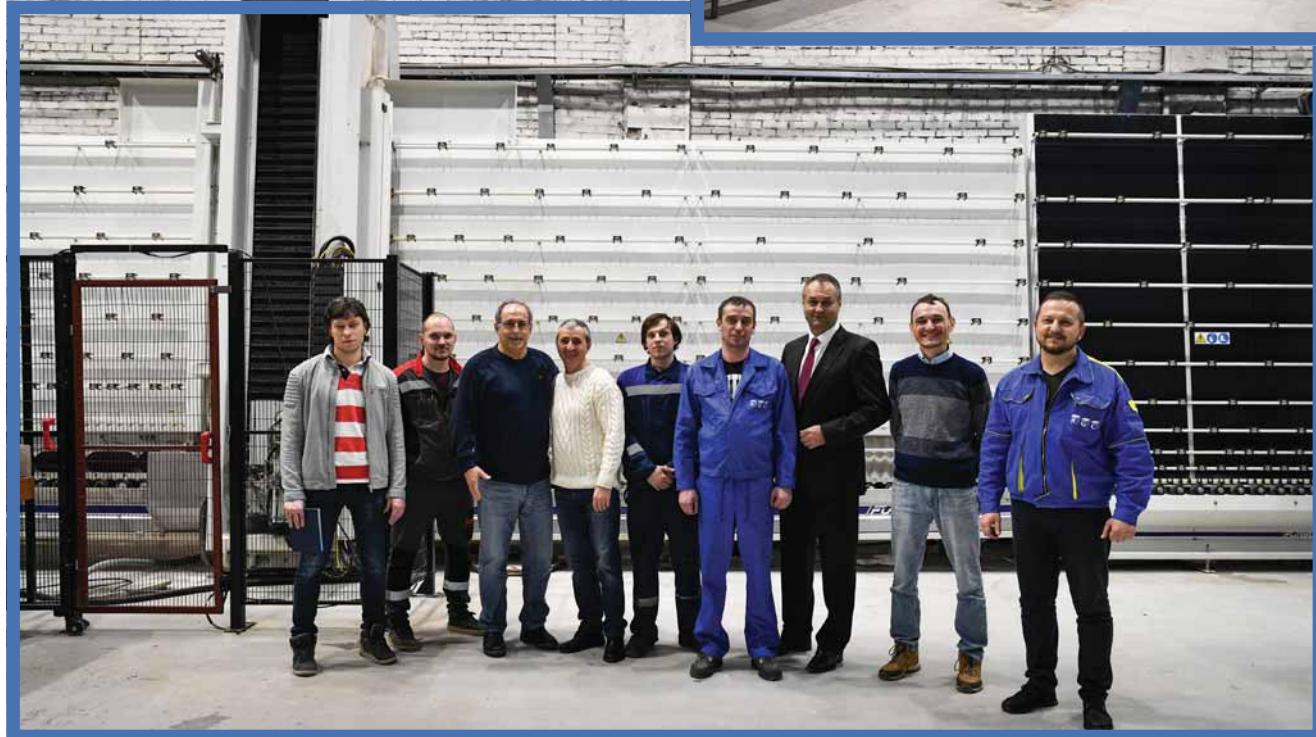
WORKING TO INCREASE QUALITY

“Over the years, we have always worked towards increasing the quality of our products. We now detain a number of international certifications, allowing us

to access export markets, although the domestic market is still our primary target,” explains Bugrov. “And it was precisely this goal of ever higher quality which led us to come into contact with Forel and, specifically, with Eduard Kovacic of Forel Russia. But we had to be absolutely



Forel edging machine
Art. EM in Mineralnaya plant



“

Aleksey Arbuzov (RGC Dzerzhinsky):

“With the No Limits IG line, we are now unmatched by any other plant in Russia.”

”

certain before we made our final decision: after seeing the machines at work and meeting Forel representatives, we wanted to visit other glassworks using the same solutions. We spoke with entrepreneurs and operators who used Forel products, and evaluated the finished product in minute detail. After a thorough assessment, we ordered two edging lines: and immediately saw an increase in both productivity

and quality in the department. We now own six edging lines in total (including two Jumbo lines), and have already ordered another four plus a Jumbo drilling/cutting line.”

INVESTING IN A NO LIMITS LINE

RGC has also invested in a Forel “No Limits” IG line of highly innovative solutions for the assembly of large format IG panels.

“Our No Limits line, in-

stalled at the Dzerzhinsky plant in Moscow, is absolutely unrivalled,” continues Bugrov. “No other glassworks anywhere in Russia can produce three-chamber panels in Jumbo formats, and work successfully with extreme weights and curvatures. In some cases, even our competitors have had to buy these formats from us. We chose to work with Forel for three reasons: the performance offered by their machines in terms of productivity, the relationship of collaboration created with Forel Russia and the company’s ability to always put the client first. Forel has never failed to be there to listen

to us whenever we had a problem.”

To wrap up the interview, we asked Mr. Bugrov what he expects to see in future. “The glass market in Russia has been in a recession for about five years,” he says “but both I and our shareholders believe that this is about to come to an end, opening the way for a new period of growth. Once new opportunities start to arise, the companies which will flourish will be the ones that have prepared for this with the right investments, which

Edging Machine Art. EM in Dzerzhinsky plant





Forel No Limits IG line

also means choosing the right machinery – and suppliers – to use. RGC is currently laying important foundations, which will be strategic for our future. And as in the past, our strength will come from our ability to organise and prepare: abilities which allowed our company to always be at the forefront in both the domestic and international scene.”

THE DZERZHINSKY PLANT

Of all the production plants of the RGC group, the Dzerzhinsky site (Moscow) was another site that we were particularly keen to visit. Situated approximately 750 km from the



Aleksey Arbuzov, Dzerzhinsky CEO



Vadim Troflyanin, Plant Manager

main headquarters, this plant has a workforce of over 200 employees and produces around 500,000 square metres of flat panes

per year. A wide range of different processes take place within the walls of this plant: horizontal cutting of jumbo panes, edge processing, tempering, laminating, screen printing and, of course, assembling insulating glass units. However, the Dzerzhinsky plant is specialised in particular in producing large format insulating glass units for façades and innovative architectural projects. We were welcomed to the site by Plant Manager Vadim Troflyanin, who took us on a tour of the different production departments, which include two Forel edge processing lines and a special “No Limits” IG line.

FOREL MACHINES FOR HIGHER PERFORMANCE

“We are very satisfied with our Forel machines,” said Troflyanin, “which immediately proved to be capable of higher performance than other machines. Moreover, an edging line configured like our Forel line uses different machines for specific processes (an edge processing machine, a drilling/cutting machine and a washing machine): as well as demonstrably improving the quality of the finished product, spreading the workload of edge processing over multiple stations also offers significantly better productivity than other so-



Sealing Robot No Limits

projects entail) without the right machinery: having to discard a reject panel for residential use is one thing, but throwing away a reject jumbo or larger format panel is an entirely different matter. This is why we chose the Forel “No Limits” IG line.”



Vadim Troflyanin,
Vladimir Mukhin (Forel Russia),
Sergei Kuznjecov

FOREL S.p.A.

FOREL

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lutions. While an operator unloads a finished pane, another pane is being washed and the next is already being edge processed.”

THE CENTRAL ROLE OF THE NO LIMITS LINE

The “No Limits” – consisting of a washing machine, a quality control scanner, an inspection conveyor, a coupling press and a sealing robot – plays a central role in the Dzerzhinsky plant. This was a major investment which, as explained by Aleksy Arbuzov, Dzerzhinsky site’s CEO, caters for a specific market need. “The Russian glass market,” he said, “has wit-

nessed a boom in large format panes over the past three years. Modern architecture is focusing increasingly on unique design projects in which insulating glass is a crucial component. To meet the needs of our clients, we decided to purchase a Forel No Limits line, and thanks to this line, we are now the only plant in Russia capable of producing three-chamber Jumbo format insulating glass units up to 100 millimetres in thickness. We intend to continue to invest in specific solutions for large formats in future. This will in fact be a must within the next few years: it’s no coincidence that the major producers of flat glass are

already considering the possibility of producing Extra-Jumbo format panels directly in Russia. And RGC is already ahead of the game, thanks also to the support of Forel.” “You can’t be competitive in the façade insulating glass market unless you’re using new, state of the art systems designed specifically to process large formats,” concludes Troflyanin. “It’s not worth even trying to take on an innovative architecture project (with all the effort and challenges these





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HEGLA

STORAGE, HANDLING, LOGISTICS, AND DIGITISATION

Habitual, mundane or unremarkable procedures are those that usually take too much time or make life at work more difficult. For HEGLA and HEGLA boraident, optimisation potential can be found in the warehouse, in handling processes, and in data provision.

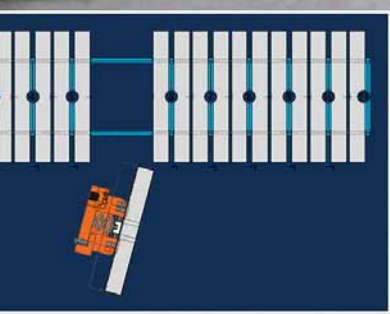




ROBUST HANDLING DEVICES FOR GLASS AND WINDOWS 'MADE IN KRETZSCHAU'

HEGLA, in the words of Hendrik Boche, Head of Sales at the Kretzschau, Germany based company, is known for its robust, low-maintenance, and user-friendly technology. As he points out: "Clients' exact

requirements for a device must be established before making a decision, in order to find a suitable, sufficiently flexible solution for its intended use." An example of this is the Hubfix F-G, the small, agile device used for window glazing and residual sheet handling, plus much more.



SPACE-SAVING STORAGE SYSTEMS FOR LENGTHY GOODS

More storage capacity in the same space, a better

With the space-saving long goods storage systems from HEGLA, you increase your storage capacity in the same space, create a clear overview, and improve warehouse processes

overview, and faster work procedures: these are the benefits of HEGLA compact storage systems for lengthy goods, which are also developed and produced in Kretzschau. The cantilever arm shelves mounted on rails are side by side and do not require an operator aisle. Depending on the construction in use, operators pull the smooth-running system shelves forward or move them sideways until a gap is created for loading or unloading. The material can be deposited or removed by direct access – no re-stacking required. If only individual profiles are needed, they can be pulled out of the storage module at the front. “Up to 50 per cent more storage capacity in the same space can be realised with our compact storage systems,” said Boche. “All profiles are clearly arranged and immediately available without searching or time-consuming re-stacking.”

LASER TREATMENT OF WINDOW PROFILES AND GLASS

The analogue and digital

window profiles, product traceability, and data provision are the focus at HEGLA boraident. A high resolution makes it possible to generate logos in razor-sharp quality on the profile for marketing purposes or as proof of manufacture. For large-scale construction products with multiple suppliers, this is particularly

beneficial: such markings provide unique information as to which production facility a particular

The analogue and digital options for the visually appealing laser marking of window profiles and product traceability from HEGLA boraident





window came from. "If a QR or data matrix code is lasered onto the profile, production data can be acquired, linked, scanned and read out on a smartphone, for example," said Dr Thomas Rainer to explain the digital applications available with laser marking. If required, a new, identical production order can be generated by pressing a button.

TWO-LEVEL HARP RACK WITH 100 COMPARTMENTS FOR SMALL FORMATS

This solution, which provides small pieces of glass, panes or decorative elements with direct access, is HEGLA's two-level harp rack with 2 x 50 compartments for the storage and access to small formats up to 1,025mm high and

1,300mm long. A removable numbered strip enables small pieces to be assigned to the relevant compartment.



HEGLA's two-level harp rack with 2 x 50 compartments

Hegla GmbH & Co. Kg

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STRATO® by Satinal

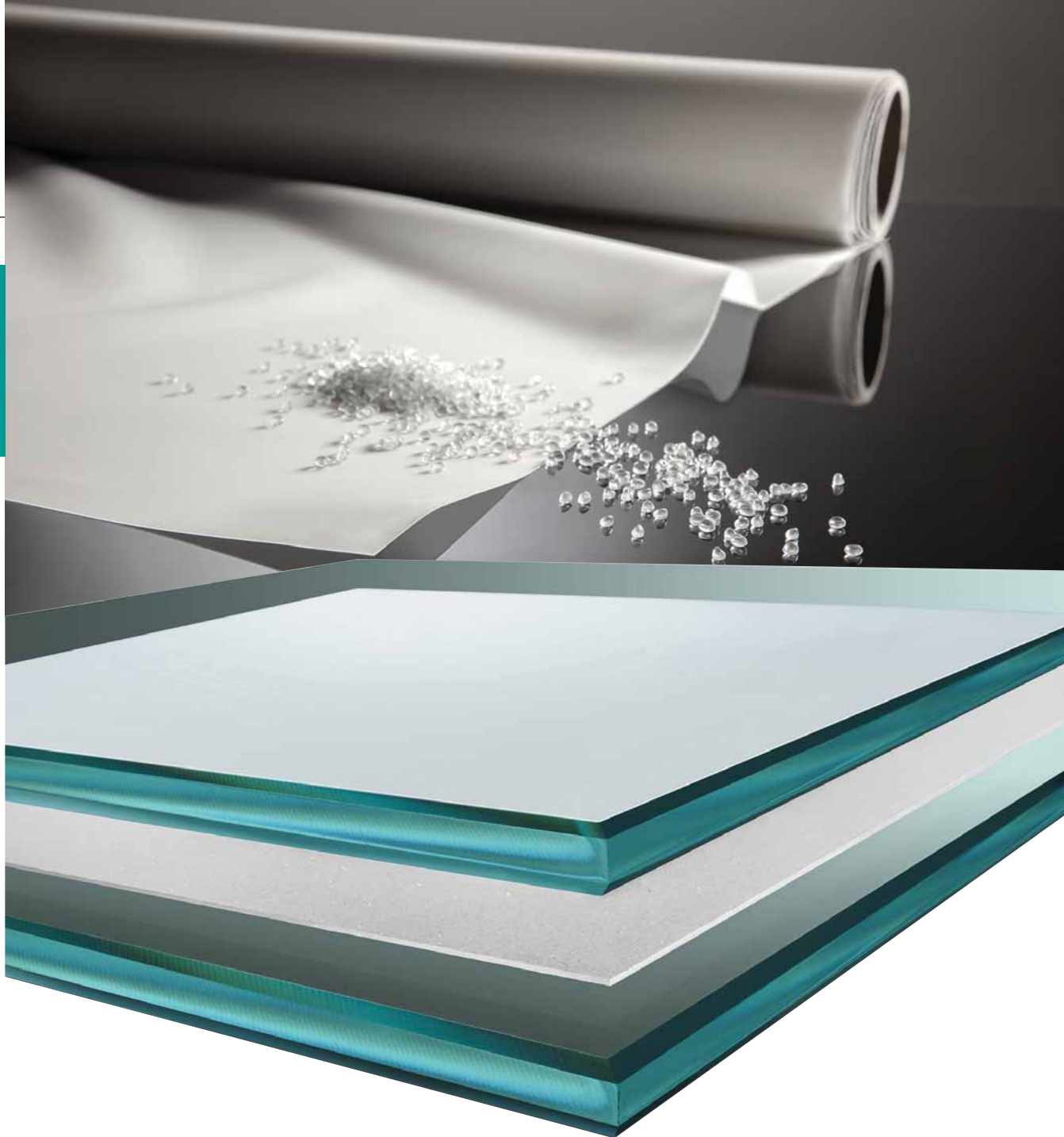
'MADE IN ITALY' EVA FILM FOR EASY PRODUCT TRACING AND CONSISTENT QUALITY

This first quarter of 2020 has been quite an important time for Satinal, as it has announced the introduction of its most recent new product — STRATO® PLUS, developed entirely in-house and tested throughout 2019.

The R&D department of the Satinal has always been an essential component of the success of STRATO®. In fact, the DNA of the STRATO® brand has been built on the scientific background and know-how of Satinal's technicians.

The Satinal's goal is not only to make a 'Made in Italy' EVA film that guarantees easy product tracing and consistent quality, but also to make it state-of-the-art.





A NEW THERMOSETTING AND TRANSPARENT PRODUCT

The S-Lab in-house laboratory is made up of a team of specialists who develop



and evaluate new formulas to make high quality products, which can meet the changing needs of the market. As a result, Satinal has formulated a new thermosetting and transparent product, STRATO® PLUS: the Non-Plus-Ultra of EVA films for the architectural glass market.

Top quality, higher than any other product on the market, is the key feature of this new product. STRATO®

PLUS meets the needs of customers identified during the production and marketing of the other products included in the STRATO® range.

During 2019, Satinal's Research & Development department was dedicated to the formulation of this new product, as well as to its detailed technical evaluation in order to ensure its best performance on the market.

STRATO® PLUS VS STRATO® EXTRA CHIARO

On one hand, STRATO® PLUS has a higher degree of smoothness and elasticity than STRATO® EXTRA CHIARO: this allows the customers to laminate special inserts such as LCD (Smart Glass), PET or fabrics without problems of distortions or air bubbles ensuring, at the same time, the highest degree of trans-



parency even with low temperature lamination.

On the other hand, STRATO® EXTRA CHIARO is the most stiff EVA film on the market and is the perfect solution for applications that require high levels of stiffness and impact resistance.

The higher stiffness of STRATO® EXTRA CHIARO also minimizes the EVA leakage from the edges of the glass during the lamination process, allowing easier cleaning after lamination.

Noise reduction

STRATO® PLUS and STRATO® EXTRA CHIARO provide excellent noise reduction properties and,

on request, Satinal shares the detailed sound performance data of laminated glass with STRATO® product range (obtained from certified external laboratories). They are both suitable for outdoor applications as well as for interior design, thanks to their resistance to UV rays and weathering, which can instead damage other products that are similar to STRATO® but with a lower quality, causing unwanted yellowing effects.

STRATO® PLUS has a UV cut of at 360 nm compared to the traditional STRATO® EXTRA CHIARO that blocks 100 per cent UV rays up to 385 nm. This feature allows to



achieve a higher degree of clarity in order to satisfy the requirement of having a completely natural and neutral looking glass.

ISO 9001 CERTIFICATION

Another important goal for Satinal is the achievement of ISO 9001 certification

which demonstrates its commitment to constantly guaranteeing the highest quality products on the market. Satinal started all the activities of standardization and finalisation of the in-house production processes in January 2020, with the aim of achieving the certification by the end of the year.

Satinal collects a sample of each item produced and delivered to customers in order to promptly check any problems encountered by the end user. This allows to make double quality checks and to establish the true causes

of post-laminating problems should they occur. Furthermore, the strict quality controls during the production process ensure the provision of high-quality products in compliance with the standards required.

COLOURS, SOLAR CONTROL AND MAXIMUM WIDTHS

With the launch of STRATO® PLUS, in addition to the rest of the STRATO® colour range and STRATO® FRESCO – the first and only solar control EVA

film on the market – Satinal confirms itself as the only company in the world that is able to produce and offer to the market a wide range of EVA which can satisfy all customers needs and which can be used in different applications. STRA-





TO[®] is also the only EVA film available with a maximum width of 2,600 mm (102 inches).

In the S-LAB department, Satinal develops technical tests related to processing methods, and testing of mechanical performances according to the reference standards, in addition to chemical studies and formulations of new products.

COLLABORATION WITH FURNACE MANUFACTURERS

With the help of TK's consolidated experience in the construction of furnaces, Satinal has studied laminating cycles with specific temperatures and times, suitable for the whole STRATO[®] product range. As a consequence, STRA-



TO[®] PLUS also follows well-established laminating recipes, but it has the peculiarity of being processed even at low temperatures, which are essential for the production of special products such as Smart Glass (LCD), ensuring a high level of transparency. Satinal makes its know-how available to all customers and offers assistance to professionals in the glass sector, both in selecting the

most suitable type of EVA and in the laminating cycle to be applied.

IN-HOUSE TESTING FOR CUSTOMERS

Satinal's customers can also request to carry out tests in the in-house S-Lab, such as resistance to high temperatures and humidity, impact tests (according to the requirements of UNI EN ISO 12543, 12600, 356, etc.),

light transmission tests, glass adhesion tests, cross-linking tests, etc.

These tests can be carried out on samples of laminated glass with STRATO[®] or with the addition of inserts, and they are useful for a first compatibility and resistance evaluation.

Satinal Spa


STRATO
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Imagine highly-reflective mirrors that will work in any environment to create an illusion of space, transforming small difficult areas into bright, spacious rooms — safely and with ease. This is Pilkington Mirropane™ Chrome, with its highly reflective, extremely corrosion-resistant coating.

ENDLESS DESIGN OPPORTUNITIES

NSG Group's new range of mirrors, Pilkington Mirropane™ Chrome offers an endless variety of features — in both design opportunities and safety. These mirrors, can be toughened, bent and laminated, making them the perfect choice for enhancing furnishings and providing a wealth of interior design options.

Until recently, a mirror's fragile silvering process

limited designers' practical and aesthetic choices. Safety glass, which is fundamental in certain applications, was not available as silvered mirrors and so only certain applications were possible.

HIGHLY REFLECTIVE, EXTREMELY CORROSION-RESISTANT COATING

The problem has been solved — thanks to Pilkington Mirropane™ Chrome. The glass with highly re-



"Cloudspace" Pavilion. Foto Pilkington Austria

flective, extremely corrosion-resistant coating, can easily be toughened and bent ensuring a totally safe and adaptable application. Even very large mirrors or mirrors installed in point-fixed, frameless supporting systems are possible. Compared to traditional mirrors that had to be glued to supporting boards or embedded in frames, the specially heat-treated Pilkington Mirropane™

NSG GROUP

The NSG Group is one of the world's leading manufacturers of glass and glazing systems in three major business areas: Automotive, Architectural and Technical Glass. Automotive serves the original equipment, aftermarket replacement, and specialized transport glazing markets. Architectural supplies glass for architectural applications, solar energy and digital signage and displays. Technical Glass products include very thin glass for displays, lenses and light guides for printers, and glass fiber, used in battery separators and engine timing belts. NSG has major market shares in most building and automotive product markets of the world, with a broad geographic reach, enabling it to respond to customers whose operations, particularly in the case of Automotive OE, are increasingly global.

Today, NSG Group has manufacturing operations in around 30 countries on four continents and sales in over 100 countries. In the fiscal year ending 31 March 2019, the Group reported revenue of JPY 612.8 billion (approximately EUR 4.75 billion). Of this, 40 per cent was generated in Europe, 33 per cent in Asia including Japan and 27 per cent in Americas.



Chrome can be point-mounted, ultimately providing an extremely light and airy feel.

Toughened Pilkington Mirropane™ Chrome provides the strength that enables hinges to be directly mounted. The result is a frameless, ultra-slim profile for full-glass and furniture doors that create striking and elegant reflections from both sides.

Being particularly resistant to corrosion, the Pilkington Mirropane™ Chrome glass range is ideally suited to bathrooms and other areas of high humidity, which can often lead to unsightly black edge and spot faults.

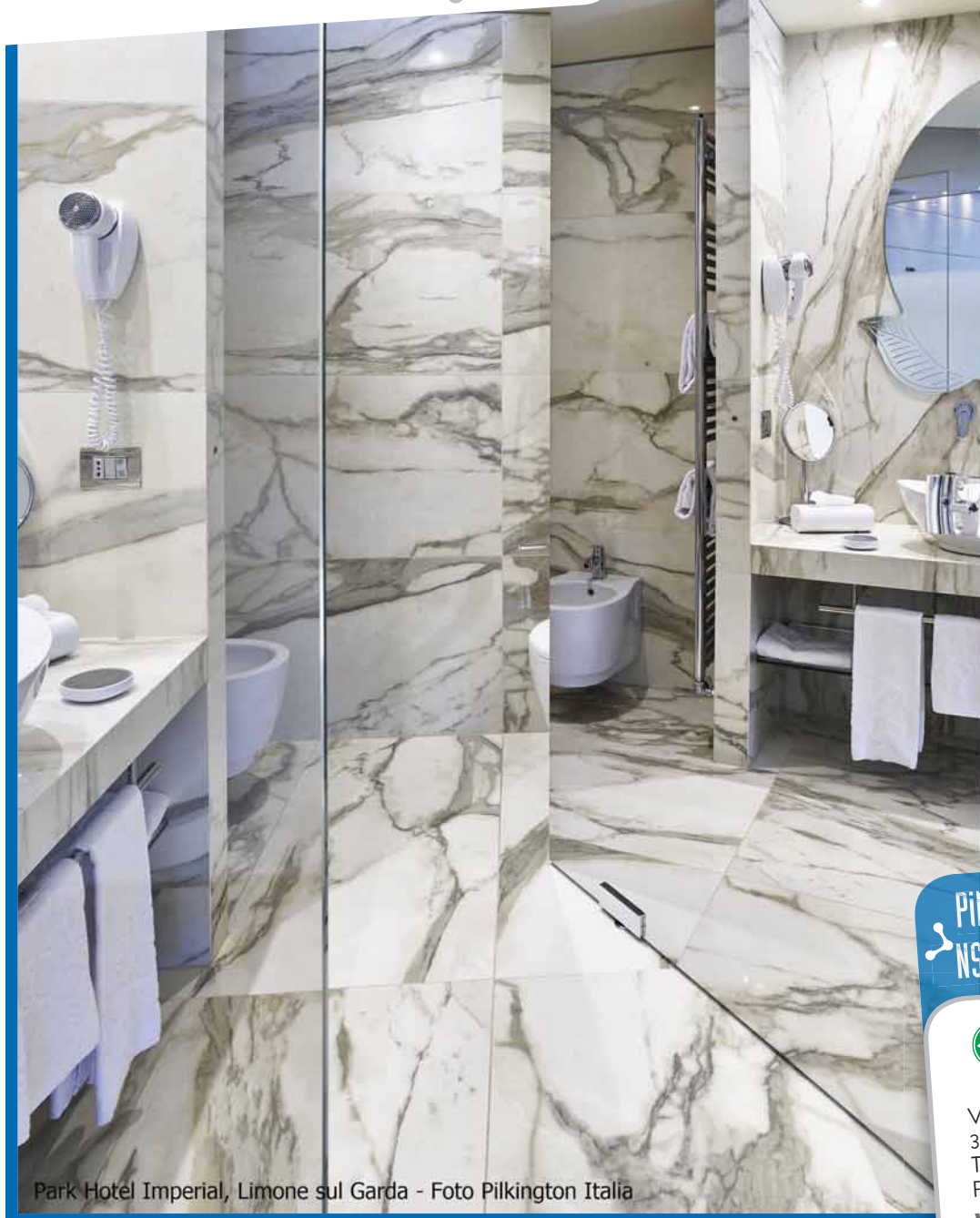
THE PRODUCT RANGE

The product range includes standard Pilkington Mirropane™ Chrome, Pilkington Mirropane™ Chrome Plus and Pilkington Mirropane™ Chrome Spy. Each type offers different degrees of transparency to choose from, depending on the desired effect.

Foto: Archivio Pilkington Poland

Pilkington Mirropane™ Chrome Plus glass is totally opaque, having practically zero light transmission ($TL = 0.1\%$), and therefore suitable for applications where the

objects behind the glass should not in any way be visible; Pilkington Mirropane™ Chrome Spy is slightly transparent for spy mirror applications (one-way mirror).



Park Hotel Imperial, Limone sul Garda - Foto Pilkington Italia

Pilkington Italia SpA
NSG Group



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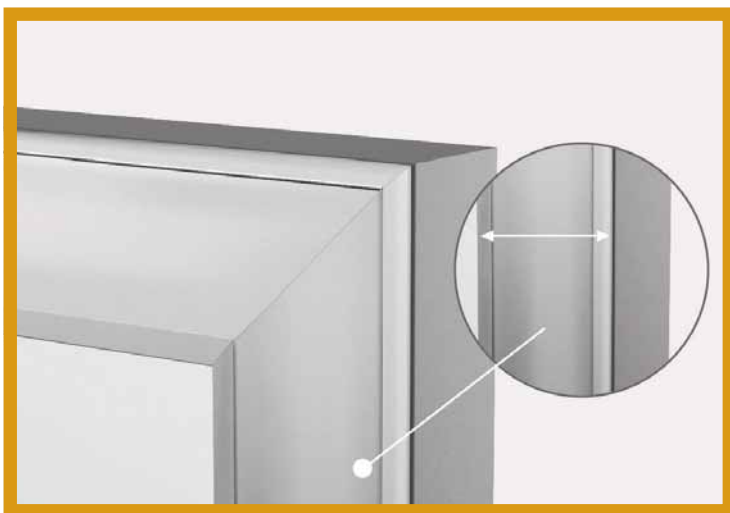
SCHOTT

GREATER VISIBILITY WITH NEXT-GENERATION FREEZER DOORS



From left to right: SCHOTT Termofrost® Slimline – 50 per cent slimmer frames for glass doors for freezer cabinets; conventional glass door for freezers

Next-generation glass doors: larger transparent presentation area for frozen food departments thanks to the revolutionary slim frame design of SCHOTT Termofrost®, which reduces the frame dimensions of glass doors for freezer cabinets by half and significantly improves the view of goods.



SCHOTT presented a trend-setting market innovation at Euro-Shop 2020: thanks to an innovative frame construction, the international technology group succeeded in reducing the dimensions of the profile structure for wall mounted freezer cabinets by 50 per cent, compared to conventional glass door systems. At the same time, the slim frame design of SCHOTT Termofrost® Slimline is much more energy efficient.

NEW GLASS DOOR SYSTEM

According to a study by the German Frozen Food Institute (DTI), frozen food products are becoming increasingly popular. With 1.3 billion contacts per year on chests and shelves, the frozen food sector is a driver for high store traffic in stationary food trade. In order to make shopping in these aisles an enjoyable customer experience, new incentives are increasingly

necessary at the point of sale, for example, features for easy orientation and improved comfort.

The new glass door system from SCHOTT that promotes sales in store relies on a particularly thin and elegant door and frame profiles design to improve the visibility of the goods. As a result, SCHOTT Termofrost® Slimline offers a much larger display area and therefore enables faster orientation in the frozen food department.

VISUAL INTERRUPTIONS REDUCED BY HALF

Compared to previous door-frame systems, the visual interruptions are reduced by half.

“A good view of products and thus quick orientation at the retail shelves are essential triggers for sales in the food trade,” explained Dietmar Nilles, Sales Manager Food Display at SCHOTT. “We completely revised the frame technology of glass door systems for freezer cabinets intending to provide an enhanced view of the goods. Our new system not only looks much better but also consumes much less energy.”

REDUCED HEAT TRANSFER

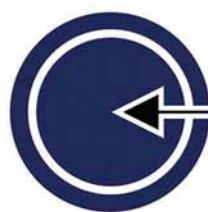
Freezer cabinets, therefore, also benefit from the new glass door system in terms of energy efficiency. Thanks to an entirely new design, the heat transfer through the glazing unit into the freezer cabinet is reduced by up to 25 per cent and the energy consumption of the frame structure is minimized. Besides, SCHOTT Termofrost® Slimline can be configured according to the customer's specific needs to adapt it to the existing shop design. For example, several colour options are available, or the door construction in the 'Skyline' version allows covering of the complete front of a refrigerated cabinet, including the head area.

Schott AG

SCHOTT
glass made of ideas

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Cockpit



The reorganisation of manufacturing into holistic processes will in future simplify and improve the interfaces between machines as well as their communication with humans.
Photo: Hegla GmbH & Co. KG

Engineering has made enormous advances over the past few years. Machines boast increasingly higher output, they operate more precisely and as a rule consume significantly less energy than just a few years ago. This last parameter is becoming more and more important, especially against the backdrop of sustainability.

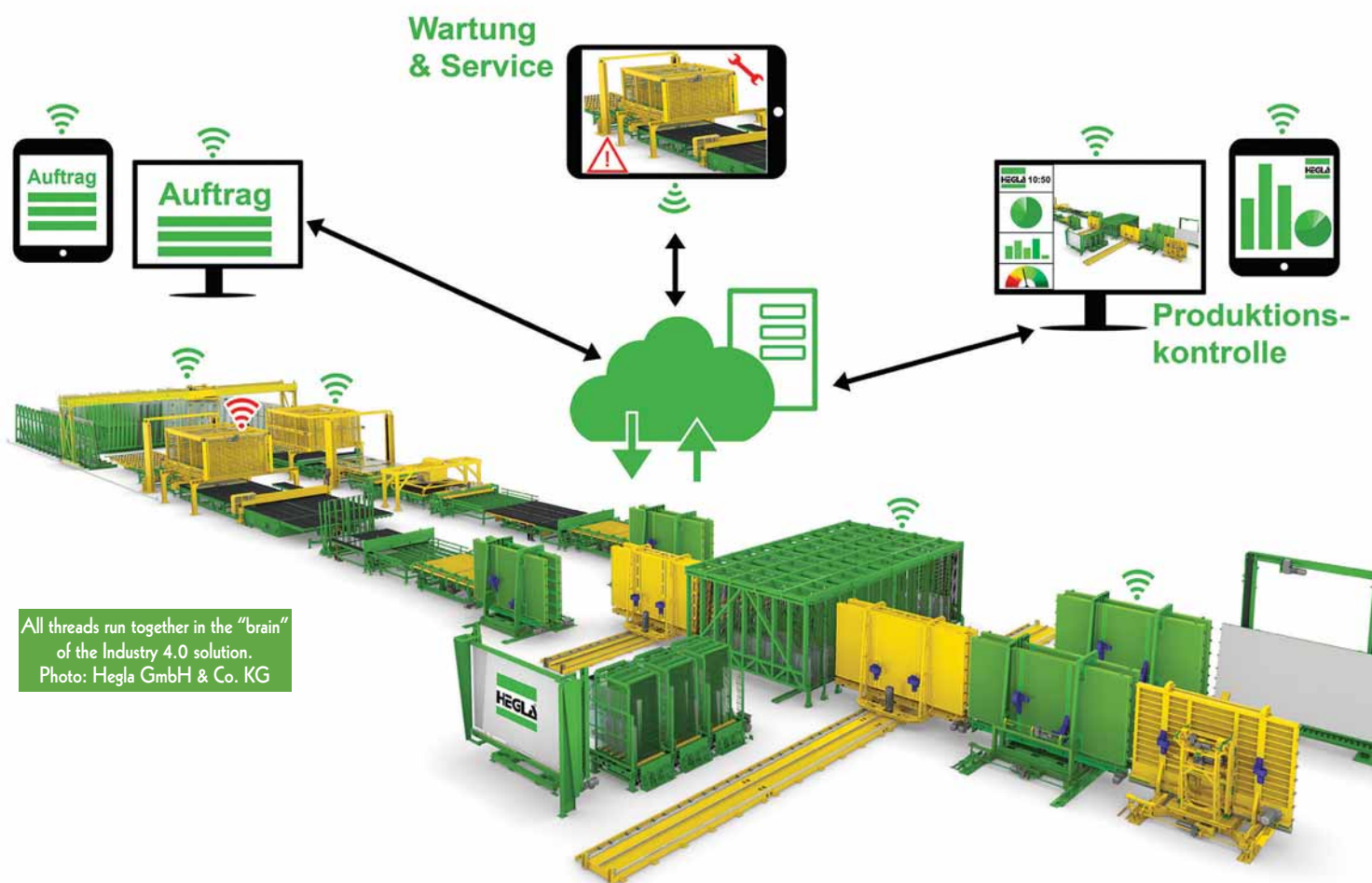
In the course of events new technologies achieve market readiness while other technical solutions become obsolete and vanish from the market. One example of this trend is most definitely laser technology, which

was considered exotic and too expensive especially for glass finishing until a few years ago. However, machines became cheaper and more efficient so today they can be economically used for drilling and drill intercepts or for sizing display glass. Even laser-based surface finishing is growing more worthwhile, now offering more possibilities than sandblasting, for example.

DRASTIC DIGITALISATION

While for years automation was in the foreground, the focus has now shifted to

When we speak about technological progress in mechanical engineering in general terms, conversations often revolve around Artificial Intelligence (AI) and the Industrial Internet of Things (IIoT). In modern glass production there are also numerous respective developments that have outgrown the research stage. However, there are also other aspects in this respect that we would like to shed some light on in the following article.



other areas thanks to the ever-new possibilities of digitalisation. As a result, manufacturing is reshuffled into a holistic, overarching process geared to further optimising the transitions and interactions between machines and machine operators, cycle times and material flows. "So as to fully leverage the potential of this equipment, the tasks associated with, and the correlations of, internal glass logistics in manufacturing must also be identified as the degree of automation rises. The term 'Shop-Floor Logistics' aptly describes this change process occurring in classic production: after

all, with up-to-date equipment, efficiency in production is no longer decided by machine output but rather by the speed and precise cycle time needed for the glass to arrive at the various finishing stations," explains Bernhard Hötger, General Manager of the Hegla Group. The volume of glass and great time pressure require a smooth, precise and transparent material flow in order to reduce or avoid downtimes caused by manual handling or missing sheets.

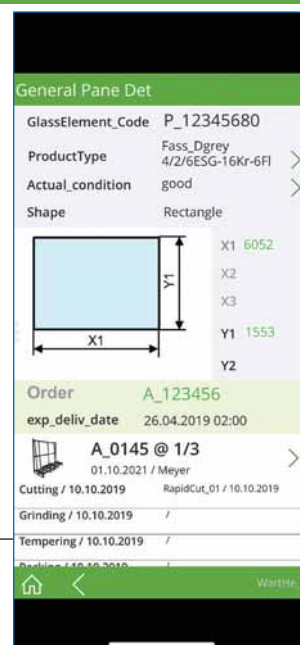
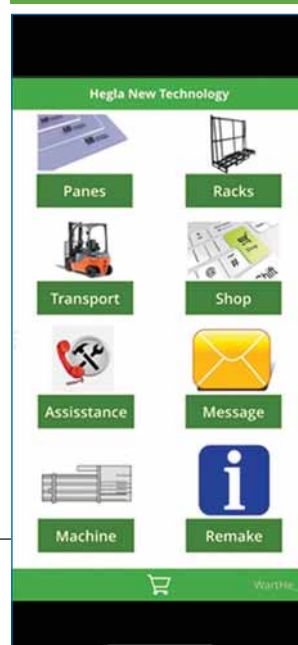
NEW CHALLENGES FOR ENTERPRISES

Despite plenty of optimisation and a high degree

of automation, companies come up against their limits time and again. One reason is the current la-

bour market because many companies are already today lacking skilled labour. Even though companies'

In future operators will no longer depend on local access to data via their operator's console but will also use Apps. Photo: Hegla GmbH & Co. KG





The field service team is also connected to the digitalised company via an App.
Photo: 3E Datentechnik GmbH

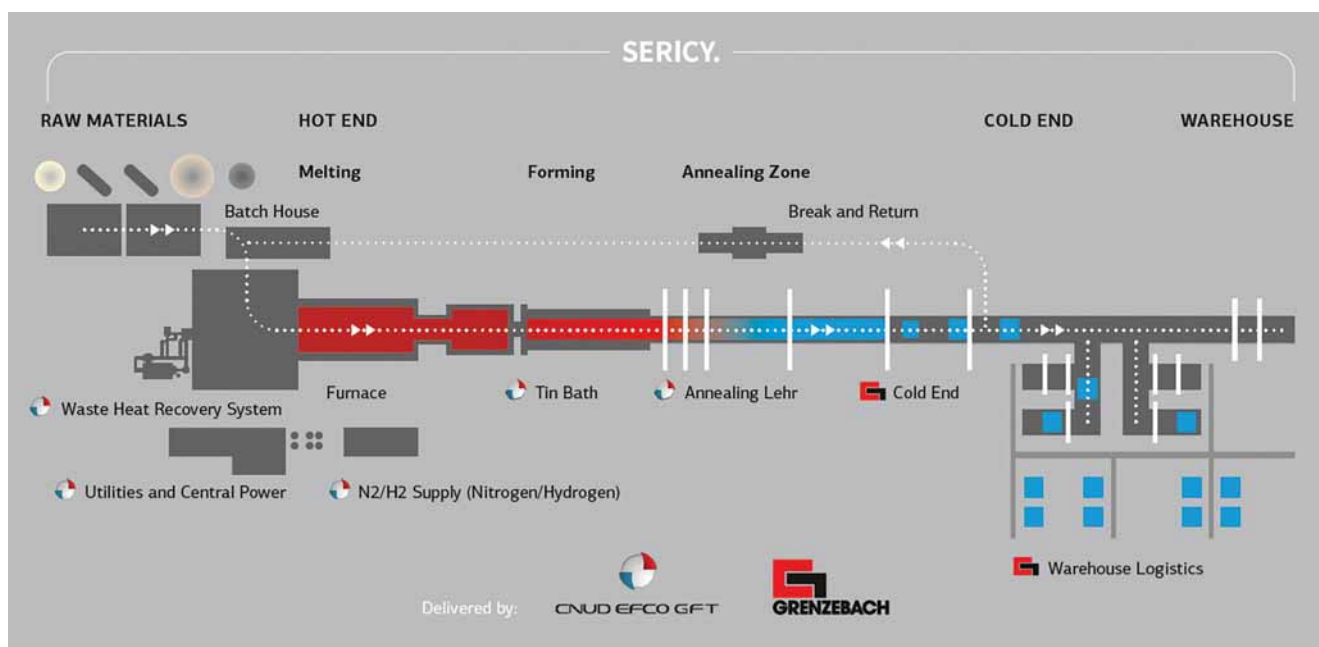
machinery and equipment capacities are frequently sufficient to process customers' jobs in theory, the increasing shortage of

skilled labour paired with often high demands made on coordination plus rising time and cost pressure causes bottlenecks in many

firms in practice. Digitalisation that ideally covers a complete company promises to bring improvements here. Modern

software in manufacturing can – depending on the control concept and integration depth – not only map parts of production but even display individual 'slices' digitally and optimise their workflow.

One prerequisite for this is to select, capture and collect the required data and output parameters thereby making them actionable insights. Furthermore, staff on the machine side of the business must be consistently supported in their efforts. This is done by providing assistance for workflow, supplying data for jobs, by control instructions and information on the equipment state or by even more





In modern factories employees can perform their tasks from almost any place: in addition to stationary control panels machine applications are available on mobile devices.
Photo: Grenzebach Maschinenbau GmbH



user-friendly and intuitive controls.

INCREASED DIGITALISATION AND CONNECTION

As digitalisation and connection increase, additional possibilities for digital support and process control will emerge. Machine operators will be less and less dependent on local data access at the machine or the control panel, and will be able to use an App to trigger a new job order for a damaged glass sheet, find

the storage place of a glass rack or establish the downstream process, retrieve maintenance information, report malfunctions or re-order consumables.

In modern manufacturing man and machine virtually work hand in hand. The system sets the cycle in this process and man supports it.

“Of course, this encompasses the complete value chain from the batch plant and furnace, the cold end to the warehouse and downstream processing. In a nutshell: A consistent digitalisation of all processes speeds up the workflow, makes it transparent, thereby ensuring

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A high number of international exhibitors and the top percentage of decision-makers among visitors to the trade fair have been hallmarks of glasstec for years now. It is the platform for launching innovations at all levels of the value chain, from production and processing through to finishing and final applications. The right instinct for trends and tomorrow's themes is also reflected in the extensive line-up of side events. With all this glasstec confirms its position as the global No. 1 trade fair for glass.

20-23 October will see the world's No. 1 trade fair for glass, glasstec 2020, held at the Düsseldorf Exhibition Centre. In 2018 the trade fair registered 1,276 exhibitors from 50 countries who presented their latest products, machines, developments and visions to 42,306 visitors from 126 countries.



that all required information is highly available at any time,” stresses Egbert Wenniger, Senior Vice President Business Unit Glass at Grenzebach.

APP-BASED ACCESS

Of course, digitalisation does not stop at the company premises. The field team at digitalised companies naturally also has App-based access to all required data when talking to customers or working on site. Many larger companies have already jumped on the ‘digitalisation bandwagon’. But there still are many

SMEs that view this development with a critical eye. They probably shy away from the associated investment. But just like in people’s everyday lives where digitalisation is on an unstoppable advance, the digitalisation of processes is indispensable for glass manufacturers to remain competitive and future-proof in their business.

In digitalised manufacturing upstream supply is fully automatic; and, of course, each individual glass sheet boasts gapless traceability.
Photo: Grenzebach Maschinenbau GmbH



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IOCCO Group
Schiavo
Schiatti Angelo
SKG - Skill Glass

DRILLING MACHINES WITH OPPOSITE DRILLING HEADS

B Solution Licensee of BF Project
Bando Kiko
Bavelloni
Bottero
Bystronic glass
CMS
Fenzi

Forvet

Hiseng Glass Machinery
Intermac - Biesse
IOCCO Group
Schiavo
Schiatti Angelo
SKG - Skill Glass

COLUMN DRILLING MACHINES

B Solution Licensee of BF Project
Bottero
Fenzi
Schiavo

PORTABLE DRILLING MACHINES

CMS
Fenzi
Schiavo

DRILLING AND MILLING MACHINES

Bavelloni
Bottero
CMS
Forvet
IOCCO Group
Schiavo
SGLASS

DIAMOND DRILLS

ADI
Bovone Diamond Tools
Diamant - AR Nunziata
Diamut - Biesse
Fenzi
Glaston
Mole Moreschi
Schiavo
Tyrolit Vincent

ACCESSORIES

CMS
Fenzi
Schiavo

Other equipment and plants

TURNKEY PLANTS / ENGINEERING - FOR BUILDING GLASS

Bando Kiko
Bottero
Bystronic glass
Cugher Glass
Horn
Intermac - Biesse
IOCCO Group
Keraglass
Lisec Group
Torgauer Maschinenbau

TURNKEY PLANTS / ENGINEERING - FOR AUTOMOTIVE GLASS

Bando Kiko
Bottero
Bystronic glass
Cugher Glass
Easy Automation
Horn
Intermac - Biesse
IOCCO Group

KEY PLANTS / ENGINEERING - FOR DISPLAY GLASS

Bando Kiko
Cugher Glass
Torgauer Maschinenbau

WORKING CENTRES - CNC CONTROLLED

Bando Kiko
Bavelloni
Bottero
Bystronic glass
Glass Company
Glasstech Inc.
Hegla
Intermac - Biesse
SKG - Skill Glass

FLOAT PLANTS/LINES (EQUIPMENT & ACCESSORIES)

Bovone Elett.
Horn
IOCCO Group

CULLET HANDLING SYSTEMS

ECOL

COMPLETE BATCH PLANTS

Zippe

VACUUM COATING EQUIPMENT AND PLANTS

Glass Company
Shanghai North Glass Technology

ENAMELLING EQUIPMENT AND PLANTS

Giardina Finishing + HS Glassprinting
Glass Company
Rollmac division of GeMaTa

HOT- AND COLD-END COATING SYSTEMS AND MATERIALS (CVD, ROLLER, CURTAIN COATERS, DRYERS)

Giardina Finishing + HS Glassprinting
Goldglass Technologies

SANDBLASTING SYSTEMS, EQUIPMENT AND PLANTS - OPTIMIZERS

Fenzi
Fratelli Pezza
Glass Company
Schiavo
SKG - Skill Glass

DIGITAL INKJET PRINTERS

Glass Company

SCREEN PRINTING EQUIPMENT AND PLANTS

Ayrox
COMSS
Cugher Glass
Deltamax Automazione
ECOL
Giardina Finishing + HS Glassprinting
Glass Company
Guangdong Northglass & Juisun Technology Industrial
Keraglass
Rollmac division of GeMaTa
Shanghai North Glass Technology
Softeco

SCREEN PRINTING FRAMES

COMSS

SCREEN PRINTING DRYING SYSTEMS

COMSS
Cugher Glass
Glass Company
Guangdong Northglass & Juisun Technology Industrial
Rollmac division of GeMaTa

ACIDING GLASS EQUIPMENT AND PLANTS

Lisec Group
Rollmac division of GeMaTa

LASER DECORATING MACHINES

Ashton Industrial Sales
Glass Company

LASER MARKING

Ashton Industrial Sales

Artistic glass production

CERMAMIC INKS

Glass Company

CHAMBER ELECTRIC KILNS

Glass Company
Keraglass

Tekno Kilns

Satinal - Strato - TK

ACCESSORIES

Deltamax Automazione

Helios Quartz

Miscellaneous

AUTOMATION

Ashton Industrial Sales

Goldglass Technologies

Horn

IOCCO Group

Torgauer Maschinenbau

Zippe

AUTOMOTIVE GLASS APPROVAL SERVICES

Ayrox

Softeco

AUTOMOTIVE GLASS QUALITY CONTROL

Ayrox

Bando Kiko

Bystronic glass

Cugher Glass

Deltamax Automazione

Easy Automation

Glaston

IOCCO Group

Softeco

CE MARKING - QUALITY CONTROL EQUIPMENT FOR GLASS IN BUILDING

Ayrox

Softeco

COATING OF GLASS SHEETS - SYSTEMS & MATERIALS - HOT / COLD END

Goldglass Technologies

COLOURS & ENAMELS - OTHER APPLICATIONS

Ayrox

Goldglass Technologies

DEIONIZING AND WATER SOFTENING EQUIPMENT

Fenzi

Forel

Glass Company

Idrotecnica

Lisec Group

Triulzi

FLAT GLASS QUALITY CONTROL DEVICES

Ayrox

Deltamax Automazione

Forel

IOCCO Group

Softeco

FURNACES

Glass Company

Horn

FURNACES / HYDROGEN GENERATORS (WATER ELECTROLYSERS)

Nel Hydrogen

GLASS COATING AND TINTING

Giardina Finishing + HS

Glassprinting

Glass Company

Goldglass Technologies

Rollmac division of

GeMaTa

GLASS TREATMENT FILMS

Glass Company

HEATING EQUIPMENT - STANDARD (GAS FIRING, BURNERS, AIR GAS MIXERS, SAFETY DEVICES, ELECTRICAL RESISTORS)

Horn

Keraglass

INFRARED TUBES

Helios Quartz

Deltamax Automazione

KILNS

Glass Company

Keraglass

Lisec Group

Tekno Kilns

Satinal - Strato - TK

METAL ACCESSORIES

Fenzi

METALLIC SECTIONS

Fenzi

NUMERICAL CONTROL SYSTEM (CNC) FOR ALL GLASS PROCESSING MACHINES

Glass Company

IOCCO Group

Prodim

OPTICAL DISTORTION ANALYSERS FOR AUTOMOTIVE GLASS

IOCCO Group

Keraglass

OPTICAL INFRARED THERMOMETERS

Optris

POWDER OR LIQUID APPLICATION SYSTEMS FOR PROTECTING FLOAT GLASS

Cugher Glass

Giardina Finishing + HS

Glassprinting

Glass Company

PUMPING AND APPLICATION SYSTEMS (AUTOMOTIVE GLASS)

IOCCO Group

PURIFIERS FOR REFLUENT WATER

Dieffe Macchine

Forza G / G. Tech

PUTTIES AND SEALANTS

Fenzi

QUARTZ EQUIPMENT

Helios Quartz

SHAPE CHECKING DEVICES

Easy Automation

IOCCO Group

SIC HEATERS

Helios Quartz

SOFTWARE DATABASE, PROPERTY PREDICTOR

Synerglass Soft

SOFTWARE SYSTEMS FOR PRODUCTION CONTROL

A+W Software
CMS

Cugher Glass

Deltamax Automazione

Edgetech Europe

Forel

Lisec Group

Optima

Prodim

Synerglass Soft

SOLDERING EQUIPMENT FOR ELECTRICAL CONNECTORS FOR WINDSCREENS AND BACKLITES

Ayrox

Easy Automation

Softeco

SORTING SYSTEMS

Bystronic glass

Lisec Group

SURFACE STRESS MEASUREMENT INSTRUMENT

Ayrox

Glass Company

Jeffoptics

TESTING FOR SOLDERINGS

Ayrox

Easy Automation

Softeco

TESTING DEVICES OF BACKLITES ELECTRICAL HEATING

Ayrox

Softeco

THERMAL IMAGING SYSTEMS

Easy Automation

Glass Company

Optris

TIN FLOAT BATH FURNACES

Horn

IOCCO Group

UV LAMPS

Helios Quartz

UV PORTABLE MACHINES

Helios Quartz



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GLASS MACHINERY PLANTS & ACCESSORIES is a bi-monthly periodical with about 100 pages of product news, current world news, focus on..., technical articles and dossiers, worldwide exhibitions, glassworks in the world, Yellow Pages, etc.



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GLASS-TECHNOLOGY INTERNATIONAL is the leading international magazine for professionals involved in the flat and bent glass industry, from building to automotive, and from furniture to household appliances. **G-TI** is useful for those working in float glass plants as well as glass processors/fabricators, glazing contractors, automotive glass installers, window and door manufacturers, glass merchants, wholesalers, etc. With about 100 pages per issue, it is the bi-monthly tool for keeping abreast of new technology, new products, company life and all innovations in the world of flat and bent glass.



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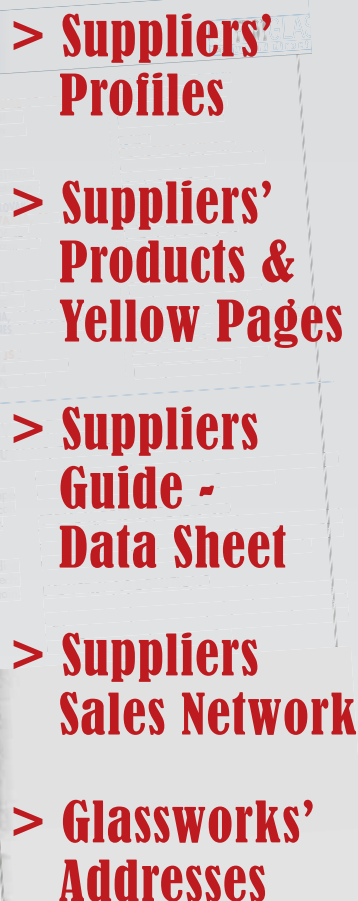
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