

deluxe



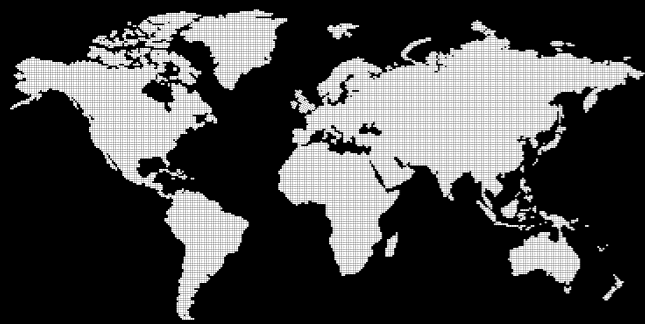
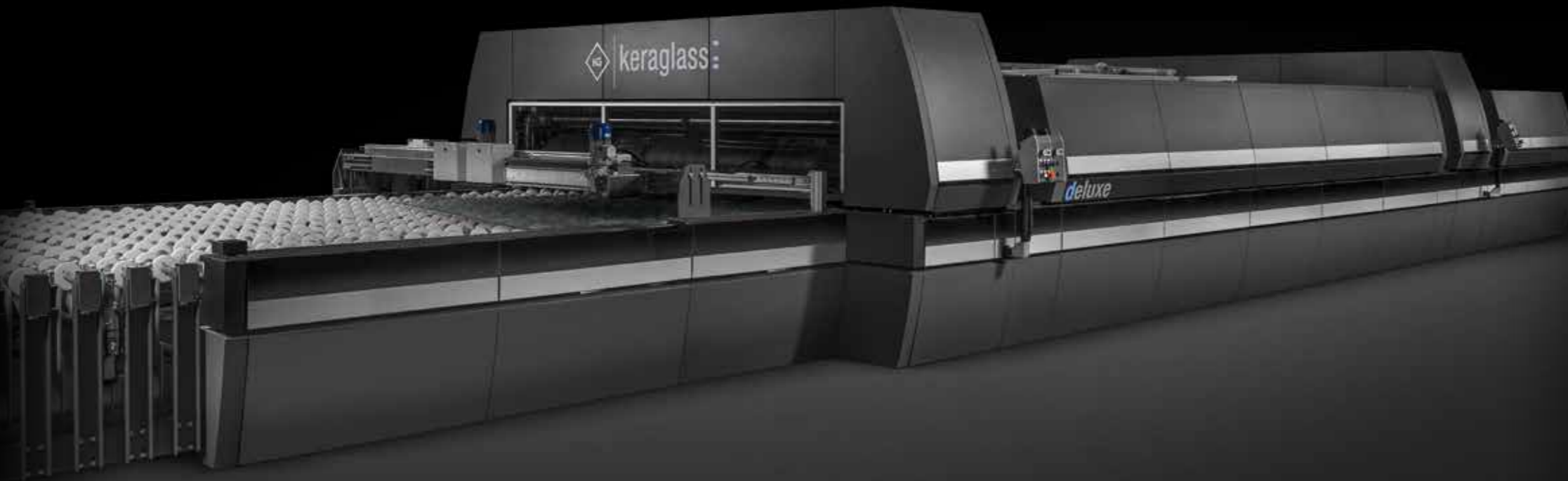
Specialised in lamination

Glass lamination technology has always been a key area of specialisation for Keraglass. With a diffused presence and consolidated leadership on the world market, Keraglass offers a complete range of lamination lines, all customisable to ensure the best possible fit with the production requirements of each customer.

Deluxe: high performance and customisable components

DELUXE is our new lamination line that is fully configurable in every detail, starting from solutions with manual loading up to completely automatic plants.

The line is ideal for medium-large companies with high quality standards, especially in the architectural glass sector, delivering tailored solutions to fit customers' needs.



Core Business

A global vision that makes the difference. The distinctive aspect of Keraglass and the factor that has propelled it to a position of world leadership in the sector is its "all-round" approach to the glass industry. With innovative, functional and targeted solutions. Developed starting from a practical and direct analysis of problems that may arise in glass processing. Especially with regard to flat and bent tempered glass, decoration and lamination.



Headquarters

The 10,000 m² Baiso headquarters (RE) include executive offices, production workshops, R&D department, warehouse, and technology showroom. Together, all these aspects form a jewel of excellence in terms of technology and innovation.



- + Maximum flexibility**
- + Customisation**
- + Double load**
- + Aluminium and acetal resin wheels**



Manual single side loader



Single side automatic loader for large sheets

The tilting table with suction cups picks up the glass automatically from the racks. The tilting table can also be controlled manually if necessary.



Single side loader with pop-up

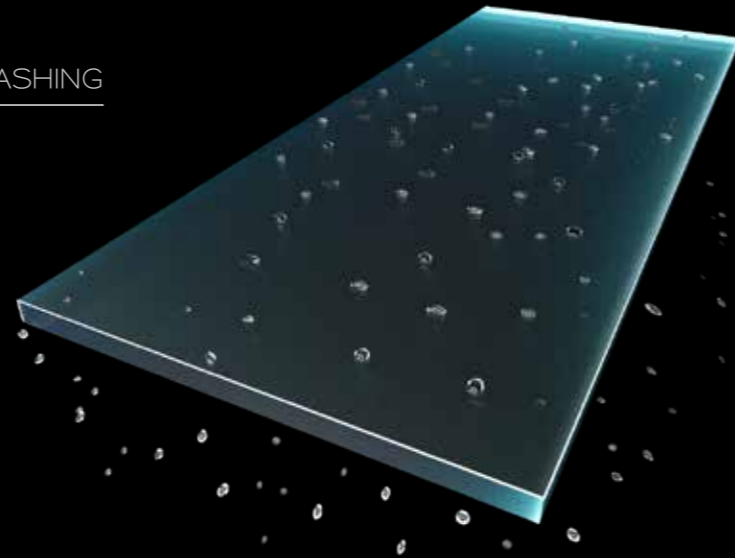
The conveyor is designed for the glass loading zone and is equipped with a fixed stop for sheet positioning and a pneumatic ball transfer table for loading/unloading and positioning of small sheets.



Double side manual loader

With two opposing tilting tables for automatic and independent loading of two sheets of different types in the same production cycle without requiring any form of operator intervention.

- + Prewashing
- + Stainless steel
- + H₂O conductivity and temperature control
- + Soft bristle brushes for low emissivity glass



Brushes for glass of the latest generation

Drying with angled blades



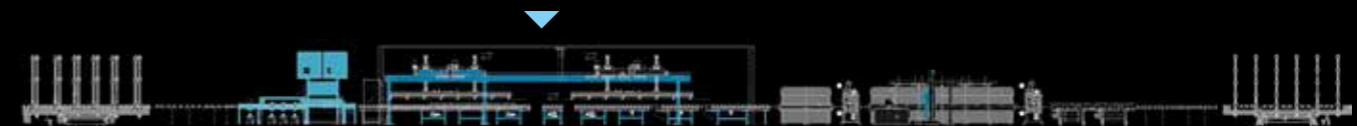
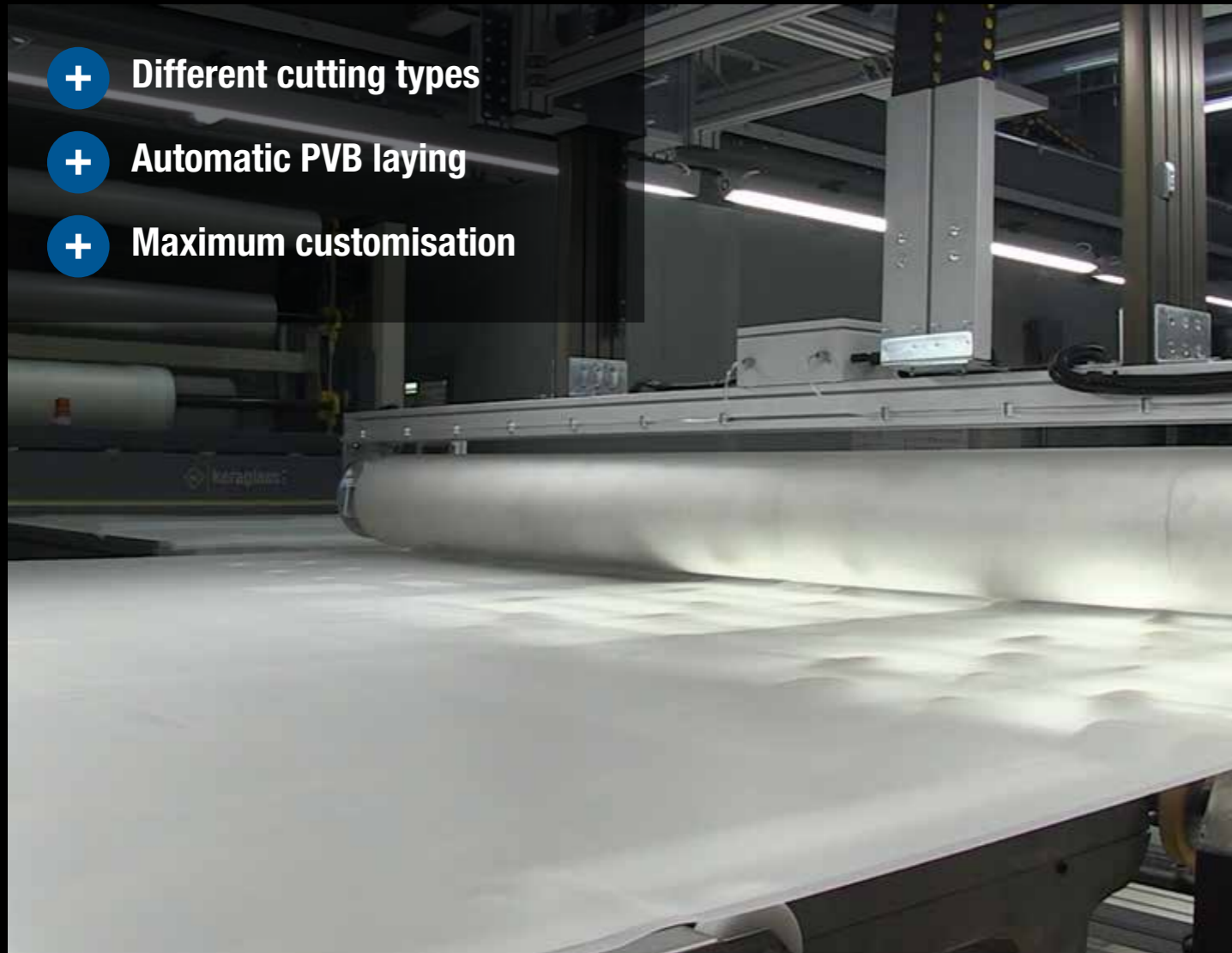
FOCUS: scanner
 Thanks to the quality scanner incorporated in the infeed roller conveyor in the work area, located down line from the washing machine, each sheet in the production cycle can be checked to ensure the maximum finished product quality.



The integral pre-wash function significantly increases cleaning quality and also the lifetime of the brushes. Includes 3 pairs of brushes, 4 washable cartridge filters, and a wave protection system in the water tank. All water contact surfaces are made of stainless steel to guarantee the maximum durability of the machine.



- + Different cutting types
- + Automatic PVB laying
- + Maximum customisation



PVB rolls magazine and in-line cutting
Configurable with 3 / 6 / 8 roll holders; the roll is installed and unwound automatically. Roll rotation is driven by a gearmotor. Includes the gripper to pick up the PVB and automatic cutting on the X axis.



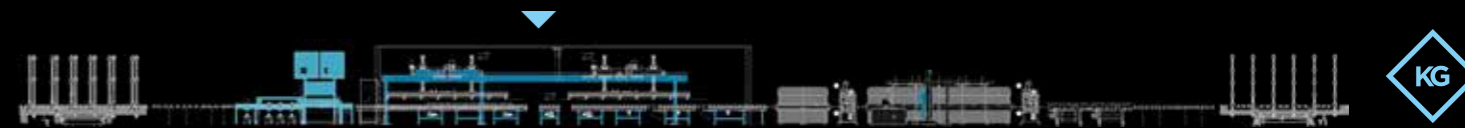
PVB cutting table (off line)
Composed of a rotary rolls magazine configurable for up to 8 rolls, the table picks up the required length of PVB by means of an automatic gripper. This system is designed to allow advance preparation of PVB sheets cut to measure to offer the maximum production flexibility.



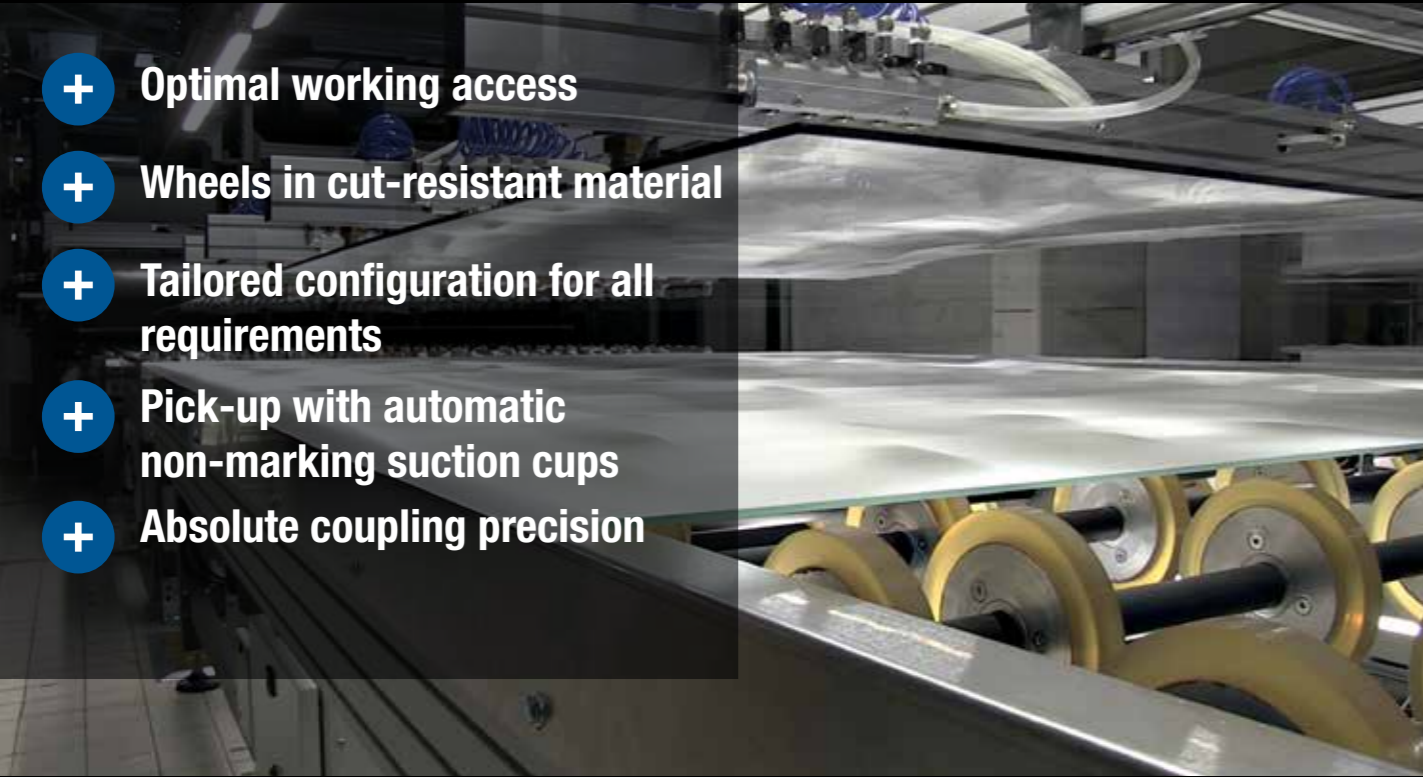
Automatic cutting table
The innovative automatic cutting table makes it possible to prepare the PVB quickly, also for shaped cuts. The table transports the PVB by means of a special belt that guarantees low friction movement without damaging the film thanks to an air cushion, and simultaneously assures precise positioning at the time of cutting. Computer controlled axis movements mean that any shape can be cut with extreme precision and repeatability to give savings in production times. This system is ideal when the size of the sheets to be coupled changes constantly using a dedicated cutting optimisation software application.



PACMAN automatic cutting and laying system
Our PACMAN automatic cutting and laying system automatically picks up the PVB from the rolls magazine and cuts it to the required size. The PVB sheet is then picked up by the PACMAN and spread automatically and accurately on the glass, without requiring any operator action. If necessary, the PVB can be laid ready-cut to the required size manually without difficulty, thanks also to optimal accessibility to the laying zone.



- + Optimal working access
- + Wheels in cut-resistant material
- + Tailored configuration for all requirements
- + Pick-up with automatic non-marking suction cups
- + Absolute coupling precision



Centring roller conveyor

An automatic belt system moves the coupled sheet to the centre of the line before entering the pressing section; this ensures the maximum precision in heating and in the pressure applied by the mangle with no loss of productivity.



Coupling section designed for the maximum flexibility and ease for processing glass of different formats.

Thanks to specifically configured roller conveyors with tilting sections and telescopic supports, switching from processing large sheets to coupling small sheets is very rapid, providing operators with agile movements and easy access for PVB trimming.

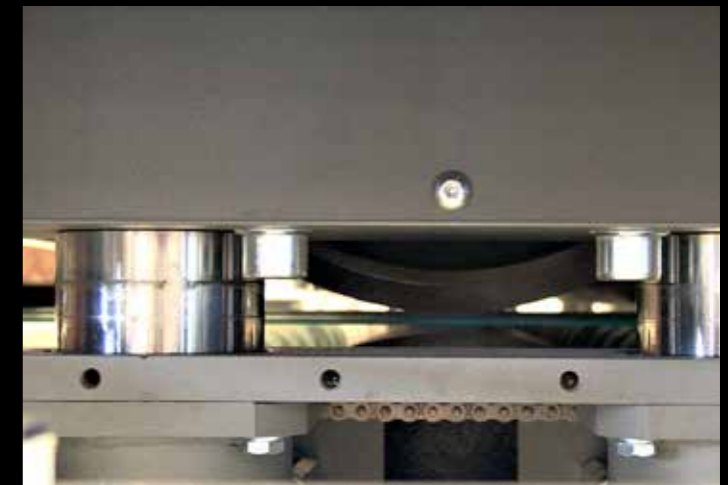
The first roller conveyor of the section is equipped with a retractable frontal reference stop and one or two mobile lateral fences to guarantee absolute coupling precision.

The automatic pick and place assembly system is operated by a vacuum pump. The non-marking suction cups can be selected individually from a PC, while the use of vacuum sensors assures a rapid and secure grip. The system is equipped with laser controlled safety systems to give the operator peace of mind.



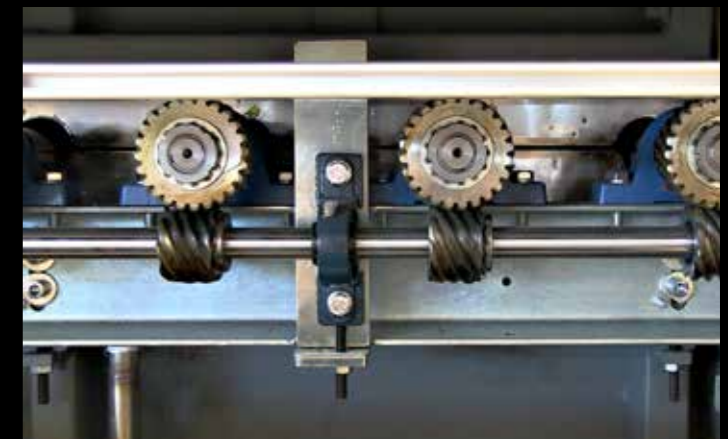


- + Pre-furnace
- + Electronically controlled mangle
- + Irradiation + convection system
- + Differentiated heating zones
- + Easy and safe maintenance access



Mangle

The mangle is composed of two rubber covered nip rollers driven by independent gearmotors. The upper roller is positioned automatically at the required height by the recipe selected on the PC. Includes a software safety control to check glass thickness at the inlet to avoid breakages.



The heating system is an "Irradiation + Convection" integrated system, which makes possible to heat glass of the latest generation.

The radiant system is provided by IR lamps, while the convection system is composed of steel hot air tubes. The heating zone temperature is controlled by thermocouples that can be monitored by an advanced supervision system. The zones can be set individually in terms of both temperature and power in order to obtain a specific heating profile for each glass type. The PLC controls the On-Off strategy in such a way as to avoid a high concurrency factor for reduced energy usage.

There are two sensors to check glass temperature at the heating zone outlet.

The heating structure is composed of metal tubing, thermally insulated with low thermal inertia panels with an internal coating for constant cleaning over time.

The chamber can be raised to allow easy access to the interior for maintenance purposes.

Drive transmission is provided by gear trains for perfect roller movements and lasting durability.





- + Maximum flexibility
- + Customisation
- + Double unloading
- + Automatic unloading



Automatic single side unloader

The unloader is tiltable by means of hydraulic cylinders driven by a hydraulic power pack, which is inverter controlled to follow the departure and arrival acceleration and deceleration ramps. The conveyor is designed for the glass unloading zone. The tilting table with suction cups unloads the glass automatically onto the racks. The tilting table can also be controlled manually if necessary.

Single side manual unloader

The unloader is installed at the end of the line, and it is composed of rubber covered steel rollers; the roller conveyor is manually controlled and tiltable in order to unload the sheets. The unloader is tiltable by means of hydraulic cylinders driven by a hydraulic power pack, which is inverter controlled to follow the departure and arrival acceleration and deceleration ramps. The conveyor is designed for the glass unloading zone.



Semi-manual unloader with pop-up

electronics and software



The line is equipped with industrial PLCs and dedicated programming software for control and synchronisation of all production phases in order to optimise processing times and energy consumption. Management is handled entirely by a supervision program with self-diagnostics to guarantee easier set-up of all the functions, check the various sections and, in case of faults, rapidly and accurately identify the failure point or reason for stops.

There are colour-screen control panels located in the loading zone, in the glass assembly zone and in the ovens zone; input of processing parameters is simple and intuitive. A specific application reads the glass temperature at the inlet, interior, and outlet of each oven, the mangle pressure, the temperature and humidity inside the climatic chamber, basic parameters together with monitoring of raw materials and finished

product tests. The data are saved for each product batch; they are then linked to data concerning the characteristics of the raw materials used in the batch in question: sizes, thicknesses, type of glass and PVB, thereby guaranteeing total traceability of all parts produced.

All the conveyors are controlled by inverters for easy adjustment. The positions of the suction cup transfer table axes and the oven doors are controlled by absolute encoders.

Communication between PLCs and inverters takes place via an IP ETHERNET network.

REMOTE ASSISTANCE. Our assistance service can interact with the line PLCs for program updates and troubleshooting tasks.





safety






There are safety lasers installed in different areas of the line to obtain positive safety levels and greater accessibility.

This system makes it possible to configure areas with different safety levels based on requirements, maintaining high standards at all times.

All the above parameters are managed by means of the safety PLC.



	 Glass Size	 Glass Thickness	 Required Power	 Total Length
	mm	mm	kW	mm
DELUXE	2300x3600	2.8-19	150	39350
DELUXE	2300x4200	2.8-19	160	43350
DELUXE	2600x4200	2.8-19	190	43350
DELUXE	2600x5200	2.8-19	195	49950
DELUXE	2600x6200	2.8-19	200	56750
DELUXE	2900x6200	2.8-19	210	56750
DELUXE	3350x7000	2.8-19	230	63620
DELUXE	3350x9000	2.8-19	235	77020
DELUXE	3350x12000	2.8-19	400	97020
DELUXE	3350x14000	2.8-19	440	110420

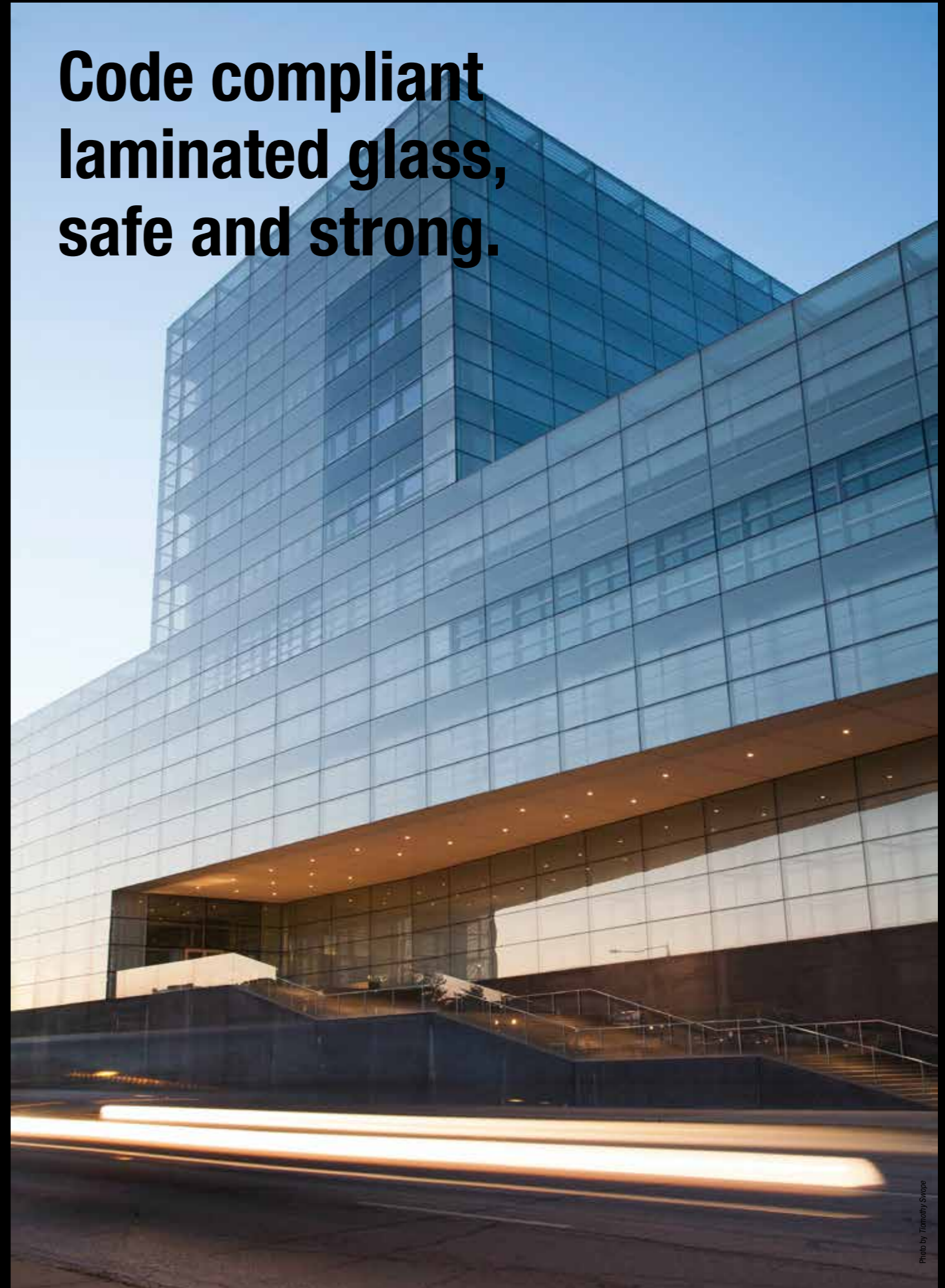
	 Speed*		 Line speed range	 Pre-oven temperature	 Oven temperature	 Thickness		Laminatable glass types	Film material types
	Single mangle	Double mangle				Max	Min		
	m/min		m/min	°C	°C	mm			
DELUXE	3.5	4	1-12	120-160	160-270	100	3+3	Low-E tempered float glass	PVB EVA SentryGlas

Note: The above productivity data, corresponding to 100% effective plant load, are based per hour on constant production and with standard glass sizes. Real output depends on the skill of the operators, the glass dimensions and shape and the quality standards required by the customer

* Speeds can vary in accordance with the heating temperature and the type of laminated glass



**Code compliant
laminated glass,
safe and strong.**





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