

REFERENCE: B4U

Flourishing from the furnace

B4U implements integrated automation architectures for large float glass plants in MENA and beyond to deliver stable, efficient furnace operation.



In glass production, the melting furnace is the deciding factor for everything – glass quality, energy consumption, carbon footprint, and how cost-effectively recycled glass can be used. By achieving optimum control of their furnaces, companies can truly flourish when it comes to efficiency and competitiveness – especially when running large float glass production lines continuously. This is where expert Mohammad Sadeghi – CEO of engineering company B4U, which has sites in Dubai and Türkiye – comes in. For around two decades now, he has been opting for the Simatic PCS 7 process control system from Siemens for projects in the Middle East, North Africa, and further afield. What's more, he always pursues the same aim, namely plant-wide automation. This approach generates practical benefits, as shown by numerous examples, including the float glass plants belonging to Orda Glass in Kazakhstan and Düzce Cam in Türkiye.

It's no secret that the melting furnace is the beating heart of every glass production facility. Operating at extremely high temperatures, it melts silica sand, soda ash, limestone, and recycled glass down into a homogeneous, low-bubble molten mass with exactly the right viscosity for the subsequent shaping process. Featuring precisely adjusted temperature zones, the furnace not only controls the quality and optical clarity of the glass, but also regulates process stability during continuous operation – which often amounts to non-stop use over many months and years. The design of the furnace also plays a key role in determining energy consumption, CO₂ emissions, and how cost-effectively recycled glass can be used. It stands to reason, then, that anybody who wants to manufacture or treat glass, or produce it more sustainably, first needs to understand the furnace.



Orda Glass Ltd. started up Kazakhstan's first float glass plant in October 2022 in the city of Kyzylorda. The company operates a float glass production line that is the biggest glass production line in Central Asia.
Image source: Orda Glass

This is exactly where expert engineer Mohammad Sadeghi comes in. He is the CEO of B4U, which was founded in 2012 and has sites in Dubai and Türkiye. Over recent decades, Sadeghi has built up a wealth of expertise in process automation in general and furnace control in particular. For around 20 years, he has been putting his trust in Siemens automation and drive technology for his projects, which he primarily carries out in the Middle East and North Africa (MENA). He has always been particularly impressed by the Simatic PCS 7 process control system. "I've been using it for around 20 years now – and there are various reasons for that. I see it as the internationally established control system for the process industry. Ongoing updates are provided, and we engineers and system integrators find it really user-friendly. What's more, the system is robust, versatile, and adapts to suit all kinds of glass plants. Besides controlling processes throughout the entire lifecycle, it improves availability and boosts efficiency, so glass manufacturers are happy, too," Sadeghi explains. As a long-standing Siemens Solution Partner, Siemens Technology Partner for Process Control Systems & Advanced Factory Automation, and Industry Partner Glass, B4U, with its team of around 30 employees, consistently pursues a plant-wide automation approach that glass manufacturers also appreciate. All systems and subsystems in a glass production plant are integrated into an end-to-end automation architecture with central data storage, which is based on the process control system. Below are two practical examples that highlight the advantages.

Orda Glass Ltd. in Kazakhstan

Orda Glass Ltd. started up Kazakhstan's first float glass plant in October 2022 in the city of Kyzylorda. The company operates a float glass production line that is the biggest glass production line in Central Asia. It boasts a maximum daily output of 600 metric tons and an annual production capacity of some 197,100 metric tons of float glass. Its main products

Düzce Float Glass runs a factory with integrated production facilities in Düzce that extends across an area of 468,000 m² and employs over 500 members of staff.

Image source:
Düzce Cam



Düzce Cam currently sells 21 different types of product, including flat glass, colored glass, coated glass, laminated glass, and mirror products for the architecture and automotive sectors. Image source: Düzce Cam

are colorless, transparent float glass, colored float glass, and coated glass. In June 2024, the company launched its second project in Kyzylorda – the production of energy-saving glass with a low E coating. Sadeghi and his colleagues were responsible for the Simatic PCS 7 (V9.1) process control system, which ensures optimum control of the melting furnace, the tin bath, and the lehr. “We opted for the CPU 410H high-availability, high-end controller for the Siemens process automation,” Sadeghi explains. “When combined with the scalable ET 200SP HA (High Availability) I/O system, it offers a compact, redundant architecture for large-scale applications, such as those in place at Orda Glass,” he continues.

Düzce Cam in Türkiye

Düzce Float Glass runs a factory with integrated production facilities in Düzce that extends across an area of 468,000 m² and employs over 500 members of staff. Its current maximum daily output is around XXX metric tons, with this

figure set to rise to up to XXXX metric tons in the long term. To achieve this, the company has plans for three production lines with three melting furnaces. One is already up and running, the second is under construction, and future plans are being laid for the third. The company currently sells 21 different types of product, including flat glass, colored glass, coated glass, laminated glass, and mirror products for the architecture and automotive sectors. B4U was given overall responsibility for the process control system in this project, too. PCS 7 also controls the melting furnace, the tin bath, and the lehr at this factory.

“We always strive to achieve the very best results for our customers – and that often means a complex interplay of maximum quality, capacity, and energy optimization. Thanks to our in-depth knowledge of interdependencies in the process industry and the support we receive from Siemens as our partner, we feel ideally equipped for the coming years,” Sadeghi says.

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