



# Mappi

## PIONEERING THE INNOVATION OF INDUSTRY 4.0

**M**appi's philosophy is – and has always been, since 1993 – focused on the desire to make the work of their customers ever simpler and more

effective, with user-friendly machines and the ability to control and manage production in a timely and predictive manner, with ever greater quality and efficiency. Mappi



Industry 4.0 is a constantly evolving world, providing important opportunities, especially for the glass industry. Furnace manufacturers are using this innovation to ensure that their customers become more and more efficient. In this article, Mappi gives us an idea of some of the exclusive solutions that each of its furnaces offers, 'Powered by Siemens'.

furnaces have been going beyond standards, with ever greater integration with industry 4.0 the company wants to continue to do so.

### **FINDING A SOLID PARTNER**

Mappi has found a solid partner in this evolution: Siemens. Initially Siemens was only a supplier of quality components, but this role has continued to increase, hand in hand with the growing importance of electronics in managing the tempering process. Mappi furnaces have numerous sensors that control the temperatures, the movement of the plates, the furnace set-up.

This enormous mass of data is managed in real time by very advanced hardware and software, in many cases supplied or developed in collaboration with Siemens.



All this translates into ease of use for the customer and consistent quality of tempered glass. The new generation of Mappi furnaces have made a significant new leap into the future. Now they are, first in the entire glass industry, recognized as ‘Powered by Siemens’. This means that they are ready to implement all MindSphere applications.

**MINDSPHERE**

MindSphere is the interface that connects the Mappi tempering furnace to the entire management system of the company that uses it, and which, through dedicated software, allows to perform typical Industry 4.0 functions, such as the

control and coordinated management of production, maintenance needs, order planning, etc.

This is a substantial enhancement for machines already rich in innovations and capable of offering performance far above standards. Furnaces ATS 4.0 and Fox are different in size but share as many innovations and functionalities as possible, to guarantee same levels of quality.

In the words of Robert Miklus of Formator, a Mappi customer from Croatia: “tempered glass in the Mappi furnace comes close to perfection. We have tested it with different shapes, complex glass and abnormal situations, then passing the

result to tolerance quality tests as well almost zero.”

Semco, from Germany says “We are very pleased with these toughening machines. We achieve results that enable us to lift the performance of our toughening plants up to a higher level.”

**ATS 4.0 PROFESSIONAL FURNACES**

ATS 4.0 is the series of professional furnaces that contains all the Mappi International technology; their use guarantees great production and qualitative results through innovative solutions that respond to the most demanding requests of the market.

ATS 4.0 has dimensions

Powered by

**SIEMENS**



from 1500x3800mm to 3300x6000mm, and is also available in customizable sizes. The ATS 4.0 series hardens glass with the highest optical and flatness standards, thanks to





cutting-edge technologies that manage the tempering processes. ATS 4.0 increases productivity in a virtually continuous cycle with no downtime for the regulation of operating temperatures and most of the operating parameters.

#### **Fox compact furnaces**

Fox is a series of compact furnaces, with loading dimensions starting from 1050x2300 mm, designed for the needs of medium-small glassworks. Despite its small size, each Fox series machine has the most advanced features offered by technology in the sector, and guarantees high quality and cost-effectiveness even in small series processing.

#### **Exclusive solutions – increased efficiency**

Each Mappi furnace offers a series of exclusive solutions allowing customers

to become more and more efficient.

#### **MHS, Multizone Heating System**

Automatically manages the temperature of the furnace through a network of electronically controlled sensors that allow temperatures to remain constant and focus only in areas where there is glass.

#### **HIS, Intelligent Heating System**

The internal temperature of the furnace is controlled with an accuracy of  $\pm 1^\circ\text{C}$ , preventing overheating of the ceramic rollers and avoiding downtime for the adaptation of the furnace temperature.

#### **ESS, Energy Saving System**

Heating and forced ventilation stages are coordinated and managed by a computerized system optimizing the consumption and allows

to significantly reduce the installed power required by the entire system.

#### **Syncro Transmission Technology**

Automatic speed management of the ceramic rollers oscillation avoid distortions and damage of glass surface. Full ceramic rolls, can be easily replaced. This eliminates the need of SO<sub>2</sub>.

#### **AC, Advanced Cooling**

A peculiar design of the blowing system that allows even more specific control while tempering and substantially decreases the iridescence of the glass.

#### **GHBS, Xtreme Profile Convection**

This solution allows to process all the latest genera-

tion coated glass, including low-E with 0.01 Emissivity.

#### **Heating Chamber Extraction**

Mappi is the only tempering equipment manufacturer that has the feature for an easier maintenance and a better finish product quality. This is an exclusive feature for ATS 4.0.

Mappi International Srl



**MAPPI**  
BEYOND GLASS PERFECTION

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