In the face of rising global electricity bills, companies begin to wrestle ever more with high tempering furnace consumption - especially in cases where furnaces are either low-tech or obsolete. Glass manufacturers are consequently unable to ignore the impact of such significant cost increases upon the price of the final product.

# Saving costs with MAZZAROPPI tempering furnaces


Any industry expert experienced in the field of tempered glass would be aware of some of the classic problems associated with tempering furnaces: the sizeable electrical installation necessitated by machinery running, the lack of flexibility respecting any consecutive change in production typology and the high production costs - not to mention those incurred by a lack of productivity owing to some dated concept that tempering furnaces can never be turned off.

A solution to such problems -and one with which manufacturers have been grappling for decades- lies in the use of newly-designed machinery that's fully-integrated within the Industry 4.0 context and which, being focused upon energy saving, aims to challenge any old notions associated with 'legacy' tempering equipment.

## A HISTORY OF ENGINEERING EXCELLENCE

Since 1958, Mazzaroppi Engineering has dedicated itself to the construction of innovative machinery that's designed to offer significant cost savings to customers while maintaining a high final product quality. Now, following years of investment in research and development -including numerous tests and several registered patents- the company seeks to provide its customers with innovative machinery that's all linked by a single thread, i.e. the energy-saving approach.

Indeed, a strong claim by Mazzaroppi is that it's enabled customers to achieve energy savings of up to 70 percent as compared to typical glass tempering furnaces – all of which would translate into tens of thousands of Euros in annual savings.

Here the energy-saving approach is backed by:

- intelligent 4.0 software;
- multi-zone CNC control;

- mazzaroppi ultimate convection;
- fem research;
- material and geometry studies;
- just-in-time ignition, flexibility of use and reduced electrical system.

After analysing all tempering plant-related costs, it's clear that purchase price represents only one component to be included in the investment plan. Why so? Because upon considering the high energy consumption and, by extension, the economic investment required by these machines, energy costs would far exceed those of the initial investment over a 10 or even 20-year period. Then, considering the huge increases in the cost of electricity, and as the years of use progress, this gap would get always wider.

## COMPARISONS WITH LEGACY TECHNOLOGIES

Factoring all this in, Mazzaroppi takes the line that it's no longer cost-effective at this historical moment to purchase a tempering furnace with a technology that's not wired for energy saving - especially some second-hand plant that's obsolete and inefficient from that point of view. Here the company insists that, though one might identify some apparent initial saving, energy costs during the production life of the plant would nonetheless be far higher, thus rendering any return on the investment practically impossible.

Returning to the "energy saving approach" of Mazzaroppi's plant technology -by which the company also promotes cost savings- significant advantages are offered in terms of:

- reduced electrical system;
- less energy expenditure in production;
- total elimination of unproductive costs;
- cancellation of the long waiting times for thickness change;
- the "just in time" quick-start mode.

By this reasoning, a tempering furnace would mean significant cost savings already from the outset - in terms of the reduced electrical installation needed by the machinery to contain absorption peaks, and all without necessarily quantifying the ease and speed at which it requires a far lower electrical cabin than others.

## THE 'JUST-IN-TIME' INNOVATION

Once in operation, any classic tempering furnace would force the company to incur costs in both production and unproductivity. However, thanks to the 'just in time' rapid start-up system, machinery yielded by Mazzaroppi's engineering would allow for total elimination of unproductive costs, coupled with a possibility to turn the furnace completely off every evening and then turn it on again the next morning while considering only 45 minutes of waiting time to get from room temperature to operating temperature. By this technology, present in all Mazzaroppi's plants, the company firmly believes it has revolutionised the production life of its customers, who are said to report great satisfaction, not only at being able to save 15-16 hours per day in energy costs -even when not producing- even as the furnace is kept at maintenance temperature, but especially because they can use the plant, as desired, in much the same way as any other machinery within their glassworks.

As for costs during production the company claims that by taking advantage of the above-mentioned energy-saving features, one of its tempering furnaces will consume considerably less for the same output than other glass tempering plants, apparently allowing customers several thousand euros in savings per month - here presented as translating into very significant figures when considering a suitable timeframe

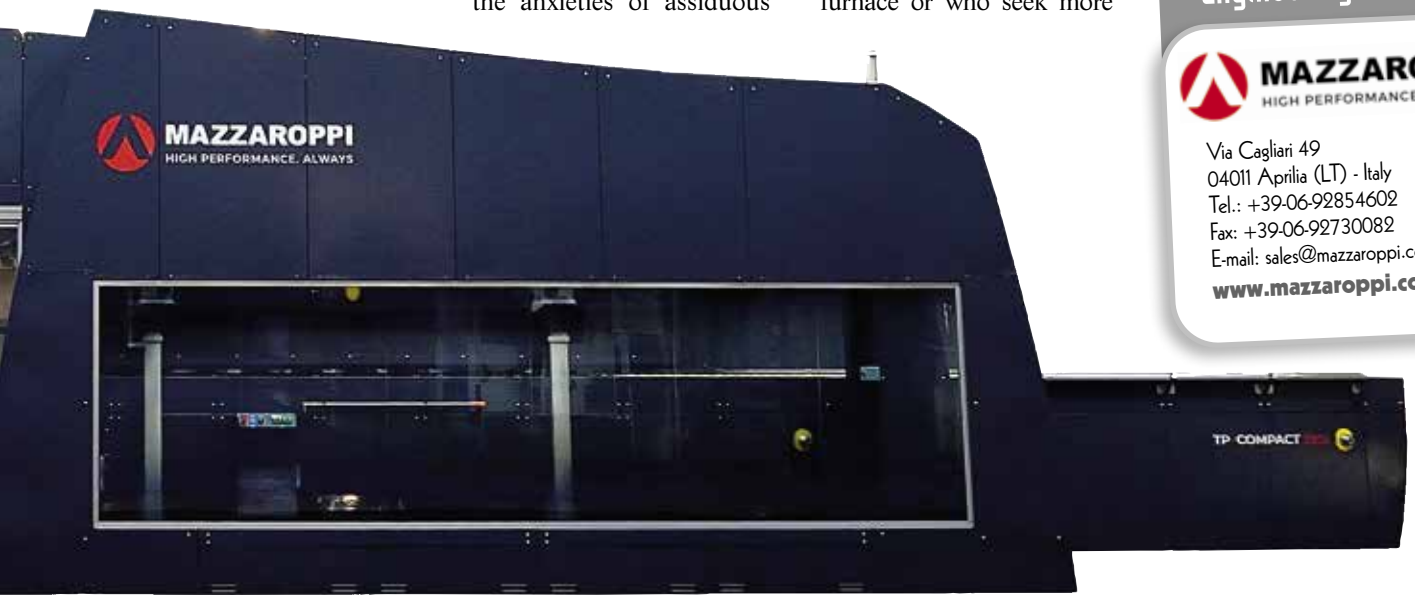
for such an investment.

Mazzaroppi also counts flexibility among the essential features of its plants respecting total elimination of waiting times during the thickness change. This a question of plants that meet customer production needs semi-automatically while contributing still further to energy consumption reduction during production.

As the company reports: for such a long-term investment as a tempering furnace, running costs far outweigh those of the initial investment. Here Mazzaroppi Engineering has laboured to secure an energy-saving technology that has customers incurring lower tempering furnace running costs than previously envisaged - thereby affording even small and medium-sized glassworks a chance to internalise the tempering process while being free of the anxieties of assiduous tempering to repay huge monthly plant costs.

## VIRTUAL TRADE FAIR

Starting, then, from its "energy saving approach" technology and philosophy, Mazzaroppi is set to showcase new ways of using modern furnaces for tempering glass at its upcoming virtual trade fair – among other things. In the meantime, all readers who're planning a new glass tempering system purchase, who wish to replace some old outdated furnace or who seek more information on fresh opportunities in the world of tempering are invited to register for this online event via QR code - all to learn more about cost savings with one of Mazzaroppi's innovative furnaces.




Mazzaroppi Engineering

MAZZAROPPI
HIGH PERFORMANCE. ALWAYS

Via Cagliari 49
04011 Aprilia (LT) - Italy
Tel.: +39-06-92854602
Fax: +39-06-92730082
E-mail: sales@mazzaroppi.com
www.mazzaroppi.com