

 **EFFE&CI**[®]
ANTONIO MAZZAROPPI

EFFE & CI:
moving into
"big business"
with new premises
and increased
production

At the beginning of July 2006, F&C invited Glass-Technology International to the inauguration of its new premises at Aprilia, near Rome. After three years, and continuously increasing demands for its products, the company has moved to a new location where it could carry on with its work – the construction of furnaces.

EFFE & CI: moving into "big business" with new premises and increased production

190

At the recent inauguration of the new premises of F&C, *Glass-Technology International* spoke to the key people of the company - Antonio Mazzaroppi, Tommaso Mazzaroppi and Orsola Abbate - who gave us some details regarding present and future production and developments.

F&C is not new to furnace construction. In fact, with 20 years of experience, Antonio Mazzaroppi has constructed and installed over 100 furnaces worldwide. Moreover, Mazzaroppi's first furnace, now 18 years old, is still up and running!

During the period of the inauguration, F&C was completing a medium to large furnace for a glassworks in the south of Italy, while another larger furnace was to be completed and shipped to central Italy in September and, in October, one of the biggest furnaces was to be delivered.

CONTINUOUS GROWTH AND DEVELOPMENT

Antonio Mazzaroppi

"Right from the start of the company, we needed new premises as the ones where we were at first were too small – about 600 square metres. The area of Aprilia did not give any opportunities at that time – there were and are lots of "factory" premises but most of them need work to be carried out, especially with regards to conformity to the European norms in force at present. Then of course, there was size to consider. When you build furnaces of the sizes of 25 metres in length and 4 metres in width, you need a lot of space – and we do especially to keep up with the orders that we have to satisfy at the same time! Obviously, you also have to consider that you need enough space around the furnaces that you are building to work comfortably, as well as adequate space to store the components and parts for the construction of the furnaces. The moving of production activities from the smaller premises to here, while we were also getting ready

to ship one of our furnaces was not an easy job! Here in the new premises, we have 1,800 square metres, the ideal space for our work, which involves not only the assembly of the furnaces but also of the construction of the same furnaces, which, for shortage of time, can also be carried out (as far as metalwork is concerned) by third party companies. These companies are certified by F&C, and testing of the components and metalwork is also carried out prior to assembly of the furnace.

Obviously, the "heart" of the machines - software - is manufactured in-house by F&C, using Siemens hardware.

All F&C furnaces are built using the most high-quality materials and high-tech. Just to give an idea of the number of furnaces it builds, by the end of this year we will have built about 20."

SPECIAL RECOGNITION

Orsola Abbate

"An important recognition has recently been given to F&C by the Lazio Region, which means that the company now has the "InnovaLazio" symbol, sign of the considerable innovations carried out by the company and a sign of its commitment and continuous improvements.

In these last three years, F&C has received a considerable payback on the work it has carried out. Many clients who are now acquiring the newer furnaces are those who already have an F&C furnace and for reasons of growth or change in production are now coming back for a second, often bigger, furnace. During these years, it was not always necessary to publicize the machines, they often "sold" themselves thanks to "word of mouth" and their presence. Now, with bigger premises and more orders continuously coming in, the company is ready to expand even more. Since 2005, there are two more office workers and four more workshop personnel, making up 18 people working at F&C, but the number is destined to grow even more by at least two or three by the end of the year."

TRANSPORT AND INSTALLATION

Tommaso Mazzaroppi

"Transport of a furnace all depends on size. If we consider the smaller furnaces, such as the *TP130*, they are manufactured so that they can



Personnel of Effe & Ci at the inauguration

be transported on a single large truck because they measure 13 metres x 2.4 metres. This means that by dismantling the furnace into two small parts, it can be loaded complete. This feature speeds up installation considerably and the furnace can be up and running in about a week from its delivery.

The larger furnaces need to be transported in "modules" and, therefore, need more time for assembly at the client's premises. At the moment, F&C is installing one of its big furnaces at a glassworks in Calabria, where four large road trains were needed for its transport.

The modular aspect of the furnaces gives clients the possibility, at a later date, to add an extra heating chamber, or a pressing and forming station as these extra "items" can be inserted in the line simply by "making space", adapting the modules. This is also valid for those clients who want to decide how their furnace has to be structured as per their particular needs.

In fact, our machines are a combination of our ideas and those of our clients. We have a standard line where the ideas of our clients are inserted as far as items and parts or positions are concerned.

Installation is carried out entirely by F&C's specialized technicians, but we also require collaboration from the glassworks with regards to the preparation of the area where the furnace is to be installed. This collaboration regards the preparation of the location of the machine and compressed air and electricity connections.

In fact, F&C advises its clients that two operators be present during the assembly and installation stages of the furnace so that they become acquainted with the same furnace, which will facilitate future maintenance operations.

Company technicians are present at the glassworks for about three weeks, followed by another two weeks

for larger furnaces. This time includes the delivery of the parts of the furnace right up to the start-up of the furnace itself. These five weeks also includes training of the personnel who will operate the furnace.

FLEXIBILITY OF THE MACHINERY

An important aspect, both for small and large glassworks, is the possibility to have a flexible furnace that enables to adapt to the different speeds and requests from the market and from the end users of the glass. Each day, it is less and less frequent that glassworks have large production batches of the same thickness and dimensions and, therefore, they must adapt quickly to changes in thickness and dimensions. With F&C's furnaces, production start-up is fast. In fact, heat-up of the heating chamber from ambient temperature to that of tempering takes about an hour. If, on the other hand, the furnace has been switched off at night, the furnace is ready for operations in about 30 minutes the next morning.

Thanks to the multi-zone heating elements, and to the management system of the heating panels, F&C's furnaces are able to adapt automatically and instantly to the various shapes that are loaded onto the rollers and to either a full heating chamber or a single, small piece of glass.

Moreover, thanks to the low thermic inertia and flexibility of the heating chamber, the furnace is able to carry out thickness changeover

instantly. This means that when the change is from a small to large thickness, it is possible to work continuously without any downtimes between batches.

If the change is from large to small thickness, due to cycle times for different thicknesses, it is necessary to wait that the first load is on the unloading rollers before proceeding with the next batch.

Effe & Ci's
new premises



EFFE & CI: moving into "big business" with new premises and increased production

192

GHBS

Tommaso Mazzaroppi

F&C has recently started a collaboration with *CNUD*, installing the *GHBS* (Glaverbel Heat Balance System) convection system on its furnaces. The *GHBS* system was created by *Glaverbel* and developed further by *CNUD*, and has now been integrated and installed on the heating chambers of F&C's furnaces. The combination of the *GHBS* convection system and the multi-zone heating system of F&C, has led to excellent tempering results.

The *GHBS* convection system, combined with the heating chamber of F&C furnaces, with multi-zone heating system, with the sophisticated management of the heating areas, and the management of the glass on the rollers, enables to heat the glass more uniformly and faster, obtaining considerable benefits in terms of quality of the finished product, in particular:

- tempering of the recent, last generation, magnetronic low-E glass (with remissivity of up to 0.02);
- reduction of optical distortions normally present on tempered glass, especially those of small thicknesses;
- the possibility of processing large single sheets of glass;
- a considerable reduction of the processing cycle time and, therefore, increased productivity.

HST – HEAT SOAK TEST

Furnaces built by F&C are principally for tempering but the company also manufactures systems for laminated, bent tempered and simple bent glass. Another important product of F&C is the *HST Heat Soak Test* furnace, which is, says Tommaso Mazzaroppi, essential for glassmakers who need to certify their products as per European Norms UNI EN 14179 that will come into force in January 2007. The *HST* heats the glass sheets up to 290°C in a controlled environment, maintaining this temperature for at least two hours. This process guarantees that there is a very minimum possibility of spontaneous breakages of tempered glass caused by inclusions of nickel sulphate.

The *HST* can be installed in a tempering line at any time, a benefit to those glassmakers needing to update their production line at a later date. The *HST*, integrated with filing and supervision

systems, is now a standard feature of F&C's furnaces, enabling to respond fully to the needs of certification of glass as per the requests for CE marking and to retrace the glass sheets up to their use - an added value for architects and builders.

COMPLETE COLLABORATION

Antonio Mazzaroppi

For us, the sale of a machine is just a small part of the work and collaboration between us and our clients is very important. We are speaking about the initial phases that can last about eight months to one year, that include the first contacts, the sale, installation of the machine, start-up and training of personnel. However, collaboration does not end here, it continues for the entire working life of the machine. This means that we do not just stop at selling a machine – we give a complete service. This also includes post-sales and complete technical and technological





The TP150 furnace

assistance in the shortest time possible, enabling clients to reduce to a minimum possible problems. Satisfied clients will not only call you if they have a problem, they also call if they are content with what you have sold and given them and to inform you that things are going well. The way in which you work and collaborate with your clients is also a way of gaining important information about the machines you supply - evolving and improving the performance of the machinery.

Our machines need to do their work well, which means working in a repetitive way, with reduced costs and must save money and energy compared to other machines. Our machines do just that. They do the same job consuming a lot less electricity than other machines on the market today. This is not always an "easy-to-see" saving as you need to compare two different machines to see the difference. We often consider our best clients to be those who have tried to work with other machines - they always come back to us!

Another aspect of our clients is that they come to us convinced that they want and need the biggest furnace on the market. It is our job to advise them on the type and size of the furnace that they really need. We manufacture a furnace that is the smallest on the market - the TP130 - that is the ideal tool for small- and medium-sized glassworks that temper different, often small batches of glass. In fact, it sells very well among those glassworks who want to start tempering for the first time and that, up to that moment, had to put off this kind of investment because they did not have the space or the financial possibilities. It is also requested by larger glassworks that want a smaller machine to temper smaller batches of different types and sizes of glass.

The TP130 furnace occupies about 50 square metres and does not need any particular foundations as it is positioned on the floor of the glassworks. It consumes only 100 kw - ideal for a small glassworks. Even if it is small, the TP130 is equipped with the same technology of

the larger furnaces: it has seven NC controlled axes, 40 control areas, extremely simplified operator interface, enabling any person to work with it, as it is completely automatic. Visitors at this year's edition of *glasstec* fair will be able to see the TP130 up and running. Dimension of the processed glass sheets are 1.3 x 2.60 metres.

COMMERCIAL ACTIVITIES

Antonio Mazzaroppi

At present we are working well with Spain, thanks to our consolidated clients there. F&C also has agents and representatives in German speaking countries such as Switzerland, Austria and Germany, and has recently sold its first furnace in Austria.

After considerable growth in space, employees and order book, it is now time to concentrate on further expansion - one step at a time - into "big" business.

Another recent installation of F&C took place in Mexico, the first tempering furnace for flat glass of 2.8 millimetres at an altitude of 1,500 metres and with temperatures of over 35°C.

In order to obtain good fragmentation of glass thicknesses of 2.8 millimetres, the tempering process needs a considerable air pressure during the tempering phase. With high altitude, the air becomes rarefied and, moreover, the climate in Mexico is hot, complicating the possibility of obtaining sufficient pressure for tempering.

Thanks to its technology and experience, F&C has created the *TP150* furnace with bi-turbo that, thanks to a special ventilation system, has enabled to increase the air pressure to optimal levels, able to guarantee perfect fragmentation, satisfying this client to the full. ■



Effe&Ci Srl

Via Cagliari 49
04011 Aprilia - Latina
Italy

Tel: +39 - 06 - 92854602
Fax: +39 - 06 - 92730082
E-mail: info@effeeci.com