

C & S Glaziers, Buckley, Flintshire

Encouraged by the high demand for toughened glass, the UK tempered glass processing market is currently being targeted by Chinese and European equipment manufacturers. Glass processors, tempted into installing low cost imported equipment, may find this a false economy as new developments and the 'peace of mind' provided by UK manufacturers bring significant cost and quality benefits.

The Customer

Brian Clarkson, Managing Director of C & S Glaziers has, through hard work and by keeping abreast of trends in the glass industry, seen business grow since it was formed in 1967. Originally just supplying replacement glass and single-glazed units to the general public and building contractors in Wales and North West England, the company moved into double glazed unit production in the 1980's – taking advantage of the growth in new-build housing.

The Problem

The demand for glazed units fitted with toughened glass grew steadily but Brian was unwilling to install his own toughening facility because of the noise complaints he knew would inevitably follow. C & S Glaziers' facility is surrounded by houses and having visited sites where glass is toughened, he knew the high levels of noise the equipment generated.

Glass was therefore sent out for toughening but controlling production and quality was a problem. Delays, breakages, variable quality, remanufacturing, and delivery / collection costs were damaging the company's reputation and profits.

"Matters came to a head when Document L began to be fully implemented", said Brian. "This really pushed the boundaries out. Demand for units with toughened float and Low 'E' glass rose dramatically, so I knew we had to toughen our own glass or face the consequences."

The Solution

He did not want to move production, so when he visited a glass exhibition last year he made a point of meeting all the glass tempering machine manufacturers. "We then received proposals from UK, Italian and Chinese manufacturers. Most just wanted to sell us a machine – only EFCO Furnaces



The EFCO glass-tempering system with a 3000mm x 1500mm load area



The loading area

seemed willing to work closely with us to first understand our problems, then supply a tempering system that would meet our requirements.”

“As an example, our primary concern was that we must contain the noise. By using their experience and by working with us and acoustic specialists, along with their proposal for a glass tempering machine, EFCO presented us with a customised design for a booth which they were confident would reduce noise to acceptable levels.”

“This is typical of the ‘extra mile’ they were prepared to go and although they were not the cheapest tender, their willing attitude, track record and the fact they were a UK company with an excellent nationwide service network, swung it for us. An oscillating glass-tempering system with a 3000mm x 1500mm load area, capable of producing toughened glass from 4 –19mm thick, was therefore ordered.

EFCO was able to assure this customer that the running costs and throughput would be comparable with competitive equipment. As it transpired, throughput was well in excess of that promised thanks to a number of new product developments.

“Our primary concern was that we must contain the noise. Along with their proposal, EFCO presented us with a customised design for a booth which would reduce noise to acceptable levels.”

Aspirated Convection System

In order to enable processing of the latest generation of toughenable hard and soft coated Low ‘E’ glass, at rates almost comparable to float, and increase the quality and processing speed for other glasses, the EFCO machine included a recently developed air aspirated convection system.

This comprises an air compressor and receiver which feeds dried and filtered air onto the glass being processed through aspiration tubes located in the upper and lower furnace section. The pressure, position and duration of the air streams is controlled by an integrated software package via proportional control valves.

Operator Interface Screen and Software

The system is supplied with EFCO’s newly upgraded graphical Windows based operator control station and system software to optimise throughput and produce high quality glass. Up to 1000 recipes can be

identified as descriptive file names and screens provide the operator with information on plant condition with pyrometric graphs assisting quality control. Enhanced and simplified fault alarm and machine condition pages

ensure that the operator always has full knowledge and control of plant status.

Insulation and Heating Element Design

Developments in low thermal mass insulation materials and increased side wall insulation where rollers pass through the furnace side walls, has reduced heat losses.

This has resulted in more stable furnace temperatures, lower energy costs and quicker heat up times. In C.S. Glaziers case, the heating elements

“Only EFCO Furnaces seemed willing to work closely with us to first understand our problems, then supply a tempering system that would meet our requirements”

automatically switch on at 6am each morning and when operators start work some two hours later, the furnace is ready to start producing toughened glass.

In conclusion Brian says: “We are delighted with our new toughener. With EFCO’s help we have created a facility which is so well protected, acoustically that even when standing next to the booth, you can hold a perfectly normal conversation – our neighbours don’t even know we have a temperer running.”

“We are also achieving throughput well in excess of EFCO’s promises. Toughened 4mm thick soft coated glass in just 204 seconds, ‘K’ glass in 157 seconds and float in 142 seconds.”

“And the quality is so good – Even we find it difficult to tell between our toughened and standard float glass and our breakages are insignificant. When Saint Gobain engineers used the furnace for toughening tests on Solaglas, they couldn’t fault the results.”



Brian Clarkson inspects newly toughened glass.



The upgraded graphical Windows based operator control station

"We are also achieving throughput well in excess of EFCO's promises."

- Toughened 4mm thick soft coated glass in just 204 seconds
- 'K' glass in 157 seconds
- Float in 142 seconds.

"We have such confidence in our product that we have decided to mark and sell it under a new brand – Tuff Cymru Glass – with a red dragon logo of course. We expect a return on this investment of under five years, but this is only one issue for us. We were seeking to regain control of our production and enhance our reputation for fast turnaround and quality and we have achieved this."

"I have only one complaint – Why didn't I talk to EFCO five years ago!"



The new Tuff Cymru Glass logo.



EFCO Furnaces

5 Piper's Wood Industrial Park, Waterlooville,
Hampshire, PO7 7XU, United Kingdom

Tel: +44 (0)2392 241458

Fax: +44 (0)2392 232358

E-mail: admin@efcofurnaces.co.uk