

Tomorrow's Technology Today

FIC has some disturbing news for the glass industry

Our Bubbler Systems can reduce fuel consumption, increase productivity and quality.

FIC offers a Pulse type Bubbling System as well as its more favoured Variable Bubbling System. We can supply Bubbler tubes in a range of materials.

As the bubbles rise, the glass is disturbed and cold glass is taken to the hotter regions of the furnace.

■ *Reduced fuel consumption: up to 5%.*

■ *Reduced furnace temperature: decrease in firing temperature can be as much as 30 degrees C.*

■ *Increased production: usually around 5% but greater increases recorded.*

■ *Improved homogeneity: improves glass flows in the furnace; improved quality; helps in the elimination of cords.*

■ *Decrease in stone loss: especially important with coloured glass.*

■ *Down time reduction: much quicker colour change.*

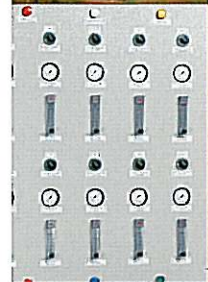
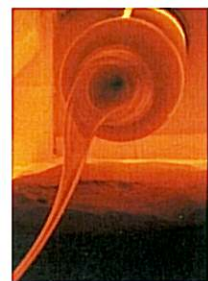
■ *No unmelted batch in the refining area.*



- Design and Build
- Electric Furnaces
- Electro Boost
- High Q Holders
- Electrode Holders
- HVP Forehearth
- Iso-Thermal Unit
- **Bubbler Systems**
- Electrode Maintenance Unit
- Drains
- Mathematical Modelling
- Engineering Services



**The World's
Number One
in Furnace Technology**



FIC has some disturbing news for the glass industry

A bubbling system promotes a controlled disturbance in the glass flow, bringing the cooler glass from the bottom of the furnace towards the surface in a mixing action where it can absorb the heat from the flames without the use of excessive crown temperatures. The benefits are not only decreased fuel consumption and firing temperature but also a notable increase in production and quality promoted by the improved homogeneity. The superior glass flows within the furnace help to eliminate cords.

The system also has major advantages for the melting of coloured glass. The product loss due to stone inclusions in a furnace melting dark green glass could be as high as 7%.

An FIC Bubbler System will normally reduce this figure to less than 1% by stimulating the convection currents so that stones are lifted into the hotter zone at the top of the furnace and so become molten.

Down time is also reduced with an FIC Bubbler System. The bubbling in float furnaces causes disturbance at the bottom of the furnace thus promoting a much quicker colour change.

Quality is ensured and no unmelted batch can enter the refining area as the bubbles from our systems 'break' on the surface of the glass and produce a physical barrier to the batch/foam blanket.

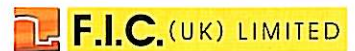
FIC can offer the following types of Bubbler Tubes:

- *Ceramic*
- *Water-Cooled*
- *Platinum/Platinum Coated*
- *Inconel*
- *Super Kanthal®*

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