

SUCCESS STORY 65 LOW-E GLASS TEMPERING

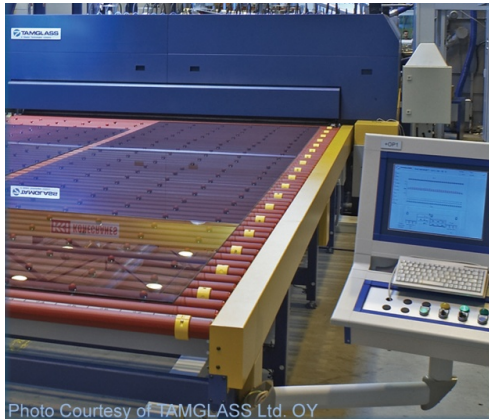


Photo Courtesy of TAMGLASS Ltd. OY

Q

How can a major glass manufacturer measure the true temperature of low emissivity glass during the tempering process?

A

Situation and background

Low emissivity glass is increasingly being used in the building industry due to its energy savings properties. One side of the glass, which is always on top to avoid scratching, has a special thin metallic coating which increases the energy efficiency of windows by reducing the heat transfer through the glass. During the tempering process, failure to achieve uniform heating can result in thermal tension, optical distortion and even glass breakage.

The winning solution

- The extremely low emissivity of the coating leads to inaccurate measurement results. To avoid this, a linescanner is placed underneath to measure the non-coated side from below. The linescanner is mounted at an angle, viewing the process from the side as there is not enough room to mount it directly below. In the past, the extreme angle towards the far edges would lead to errors caused by a phenomenon called angular emissivity. The GS150 software has special functionality to automatically adjust the emissivity of each pixel independently to avoid these errors.

Savings made

- Efficient management of the heat balance in the oven could lead to a reduced overall scrap rate from 5% to 2.5%. Given a monthly capacity of the tempering line of 1.6 Million ft² / month and float glass costs at \$1 / ft² the GS150 system could save \$40k/month.

KEY FACTS

Industry

Secondary Glass
Glass Tempering Facilities

Customer's End Product

Tempered Low-E Glass

Process Temperatures

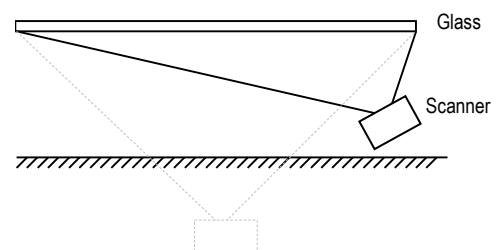
600 to 650°C (1112 to 1202°F)

Distance to Object

1.5 to 2 m (4.9 to 6.6 ft)

PRODUCT AND BENEFITS

GS150 Imaging System for Glass Temperature measurement



- Unique capability of angular emissivity correction
- Quickly find material defects and failed heating elements
- Significantly reduce setup time
- Automate quality monitoring for ISO 9000