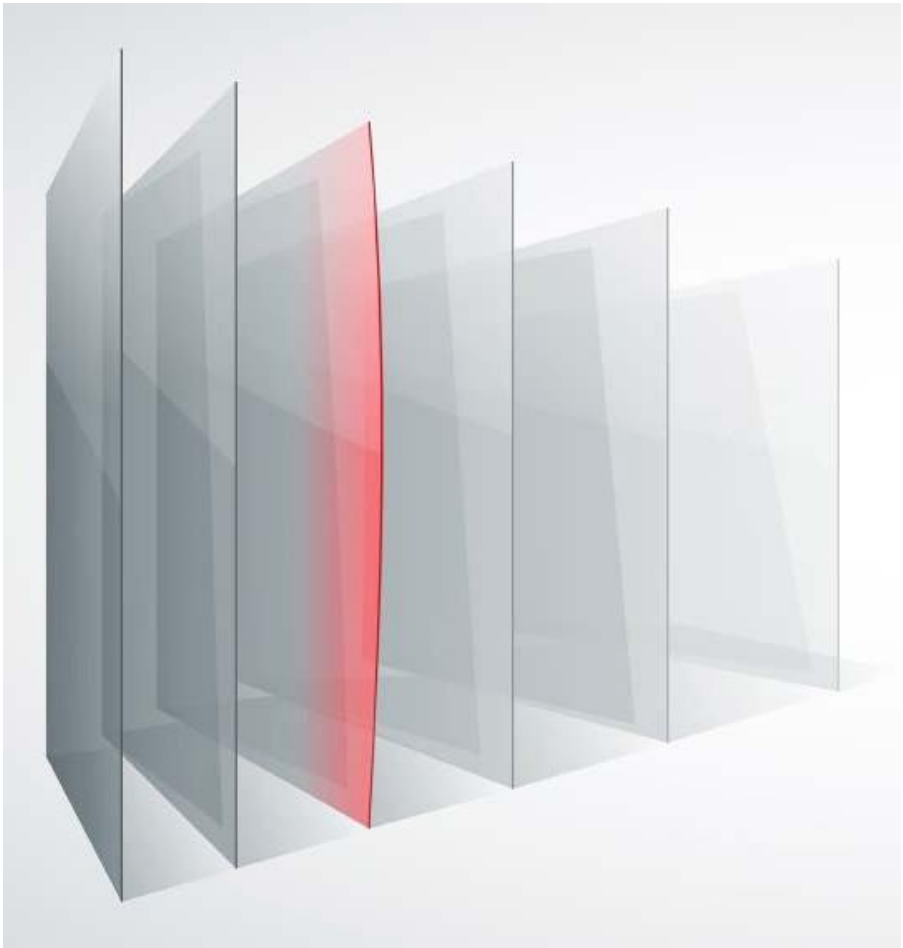
SOFTSOLUTION

How scanners can test the overall bending of glass panes

The requirements in terms of glass quality and dimensional precision continue to rise. Quality assurance systems in the glass industry have to reflect this process. The system provider Softsolution is exhibiting at glasstec not only surface, edge and dimensional control but also a further testing option of the LineScanner – namely testing the overall bending of glass.



Overall bending testing ensues with the glass in the vertical position, directly in the processing line. Thanks to the specially developed X-Light System, the latest LineScanner software from Softsolution detects the bending of glass.

Photo: Softsolution

Many glass-processing companies and glazing manufacturers still rely on manual, purely visual controls made by their employees. However, what works reasonably well with flat glass, is often susceptible to a high risk of error when checking curved glass. This can now be rectified.

This new technology for producers of flat and insulating glass offers a reliable quality control, which will significantly reduce the failure rate, while resulting in the minimisation of costly customer complaints by raising the quality of the (insulating) glass batches delivered. This new system now allows the far more precise testing of glass panes than is possible using standard sensors. The first systems for testing glass bending have been in use since April 2016.

The benefits of the new testing system

Overall bending testing ensues with the glass in the vertical position, directly in the processing line. At the same time, not only bending but also quality defects, such as surface defects, uneven formats and edge defects can be detected.

How, in turn, optical defects as well as tolerance deviations in relation to the dimensional accuracy of the glass (which are responsible for installation problems) of curved glass façades can be detected at an early stage.

By using the specially developed X-Light System, the latest LineScanner software detects the overall bending of glass, both along the x- and y-axis, thereby particularly supporting the glass processor by avoiding a whole series of error sources (refer to Infobox). Neither the space requirements nor the positioning of the scanner in the line is affected: for insulating glass lines, the system is installed downstream of the washing machine – as usual, or alternatively, up- and/or downstream of the press.

Following the scan, the result of the overall bending is visually displayed by means of a traffic light system. In addition, the information can be also transmitted as a signal or TCPIP message (network message) to the production software and/or line.
The new function of the LineScanner support quality controls across the whole production process and prevents glass or surface defects from being not (or too late) detected.

"We cooperate closely with leading global glass producers and work together to further optimise existing technologies, from which both glass manufacturers and end customers will then profit."

Peter Pfannenstill, Softsolution

CURVED GLASS IN PRODUCTION

Curved mono panes as well as insulating glass units are expensive products requiring not only extremely careful handling but also quality assurance. The following points should be noted:

- An automatic production line contains a very large number of sensors to detect a glass pane and thus control the production flow. If there is a curved (bent) pane, there is a risk of it either not being detected (in time) by the sensors, with the result that the glass is either stopped too late or passed too early. This can result in a collision with other glass panes. Consequence: high material damage and shutdown of the production line.

- There is another source of risk in the insulating glass press. A small bending radius can lead to the suction cups not fixing the glass securely in the press. Hazard: glass panes falling down and breaking during the pressing process. Consequence: high material damage, enormous expenditure of time for cleaning and the shutdown of the production line.

- If bent glass panes are pressed into an insulating glass unit, tension forces will exercise a bending effect on the complete element. Hazard: if one of the bending panes is not dimensionally accurate, then that element can come loose of the composite, resulting in unwanted gas emission. Consequence: reduction of the insulating effect of the insulating unit as well as fogged-up or "blind" panes.