Recent study highlights DELTAMAX defect detection excellence

High on today's list of priorities at DELTAMAX is the company's investment in research, which is deemed essential to increasing the portfolio of currently available solutions whilst improving the performance of existing products - all to satisfy the demands of some of its most exacting customers.

Following analysis of the past fifteen years of data collected from its customers, Deltamax's research team concluded recently that many defects leading to glass waste can be attributed to the production process itself - especially because irreparable bubbles and inclusions, also referred to as structural defects, can't be present in glass delivered to the final customer.

Similar observations come out in the following citations from a trio of voices among the company's customers: "Identifying structural defects in the last phases of the production process means

discarding glass that has already been cut, handled and grinded - signalling losses in terms of electricity, tools and labour costs while even having to start the entire production cycle all over again."
Nicola Marcantonelli, Operations Manager, Artigianvetro

"Using the GlassInspector scanner allowed us to identify defects before the glass was assembled into a IG unit, while reproducing the rejected sheet caused production inefficiencies. For this reason, our intention was to perform the inspection as far as possible upstream of the production."
Matteo Marzadro, Quality Manager, Vetrosistem

"In the last few years our customers have become more and more demanding, both in terms of quality and delivery schedules, which are increasingly tight to maximise the efficiency of their production lines. Any waste on the line therefore leads to slowdowns that have a chain effect, with misalignment of production and delivery schedules."
Massimo Imbrioscia, Production Manager, Predari Vetri

Reflections like these got the company thinking of ways to anticipate defect detection - potentially even at the very beginning of the production process. Here the most important problem, technically speaking, was to analyse the image of a sheet of unwashed glass sprinkled with lucite such that the latter could be distinguished from real defects in the glass.
Remarkable work by the team led to the identification of a methodology, since patented, which affords the company a new confidence in guaranteeing the reliability of its solution, i.e. that of accurately distinguishing between defects within the glass and elements present on its surface. This methodology allowed Deltamax to develop OPT - a system that's now used to the satisfaction of some of its most innovation-conscious customers.

OPT SYSTEM

The OPT system analyses large sheets as they pass from loader to cutting ta-

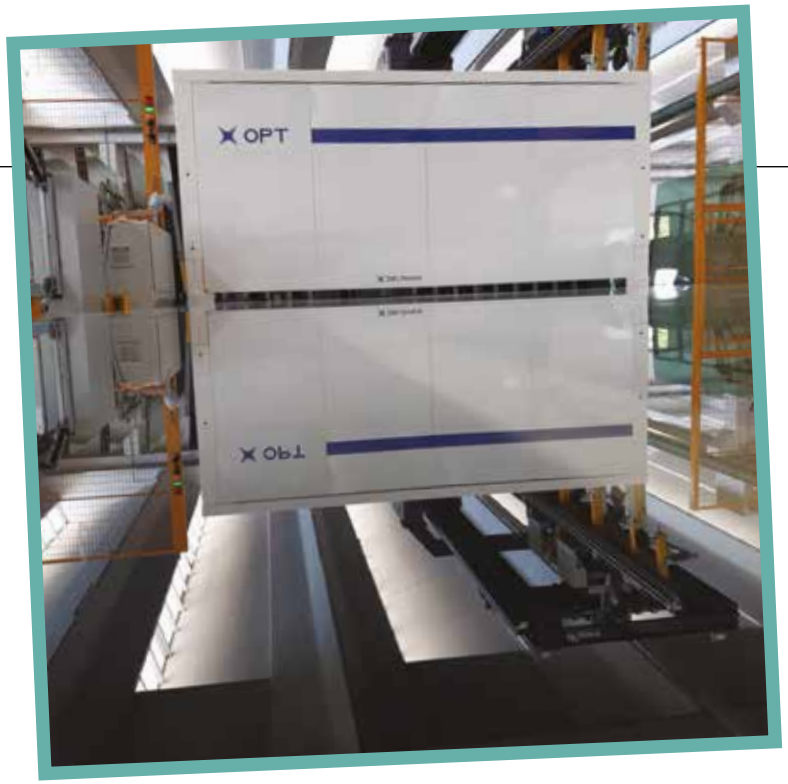
ble - essentially detecting non-conformities and evaluating them on the basis of user-defined parameters. In this way a defect map is created which is then sent to the cutting table to be either shown to the operator or used for automatic re-optimisation of the cutting plan.

"To re-optimise the cutting plan according to the defects detected there is clearly a minimum slowdown upstream in the process. But, on the other hand, there's also a huge gain in terms of waste reduction in the line."
Nicola Marcantonelli, Operations Manager, Artigianvetro

"The impact on the production cycle is immediately noticeable. The line can produce much more continuously and this has a positive impact on the quantity of insulating glass assembled as well as the work quality of the operators who find themselves beset by far fewer interruptions."
Matteo Marzadro, Quality Manager, Vetrosistem

"Historically, more than 50 percent of the defects found on the assembly line can be traced to inclusions and scratches directly attributable to the raw material - defects that were already present on the large sheets before they were cut. The insertion of scanners at the head of the cutting lines has enabled us to significantly reduce the identification of defects at the assembly lines."
Sabrina Ongari, Technical Manager, Predari Vetri.

The structure of the system is simple, operating independent of the line and avoiding modifications to it while hastening installation - a feature that's much appreciated, given that interference with the cutting process would compromise the entire production process. But it doesn't end there. Maintenance is limited to the cleaning of components, even if Deltamax recommends an annual visit by its technical personnel to check the correct alignment of all components.
After just a few months of



system use the team now reports a very positive initial outcome in results - indicating that the path taken has been the correct one. Needless to say, this also comes as a great satisfaction for Deltamax as it seeks to remain always focused on the needs of its customers.

"The main improvements can be attributed to the saving of wasted glass surface area and the reduction of cycle times, with a consequent increase in productivity."
Nicola Marcantonelli, Operations Manager, Artigianvetro

"Beyond the reduction in the amount of discarded glass, the biggest advantage is the continuity of processing in the line, with direct feedback in terms of productivity and turnover. I also believe that the use of two optical defect detection systems allows for significant improvement in quality - with important consequences in the relationship with final customers."
Matteo Marzadro, Quality Manager, Vetrosistem

"Our data revealed a drastic reduction in assembly line stops, making the process smoother and more linear. Each glass to be restored costs us more than three times as much time compared to a glass that follows the process without interruptions. After more than six months of use, having assessed the benefit it brings to production on a daily basis, we became increasingly convinced of the usefulness of this new system and so decided to install it on all our cutting lines."
Massimo Imbrioscia, Production Manager, Predari Vetri

Speaking to how the enthusiasm of Deltamax customers equals that of the company's will to improve the performance of its system, Nicola Marcantonelli, Operations Manager at Artigianvetro, said: "Alongside our satisfaction for the result obtained so far, we do not hide the hope of soon having updates and developments for the detection of other types of defects, something that Deltamax has accustomed us to with the other solutions we have already used."
To that end the Deltamax team reports that it's already hard at work in seeking to make OPT an even more important and efficient solution - convinced as it is that the product can revolutionise production among glass processing companies throughout the industry.