

Symposium discusses glass packaging industry

Emhart Glass* held a presentation and discussion session for glassmakers during the Glasstec show in Germany. Glass joined the delegates.

With the exception of Owens-Illinois, no other company offers the breadth of products and services to the glassmaking industry that Emhart Glass does. From gob forming through to inspection systems, Emhart Glass provides expertise, services and solutions to enhance the success of glass container makers.

Its main product categories include forehearth, feeders, shears, gob distributors, IS machines; mechanisms; mould cooling; pushers; conveyors; and a wide range of inspection equipment and service offerings. Bucher Industries, the parent group of Emhart Glass, says first half results in 2002 confirmed the upward trend in business.

The worldwide market for glass machines remains stable and the firm's new generation of glass forming and inspection machinery has been received by the market as reliable and future-oriented. Emhart Glass has improved its market position further, and Bucher Industries expects it to further improve its sales and results for the whole of 2002.

It has become a tradition for Emhart Glass to organise a seminar for customers during Glasstec. The 2002 seminar was held at its German branch in Neuss and included presentations by Stefan Scheuch of Kraft Foods and Oliver Wiegand of Wiegand-Glas.

Delegates were also able to tour Emhart Glass' branch and to examine Veritas iM multi-station servo-motion star wheel and iB multi-station camera-based inspection systems; servo-electric invert and take-out mechanisms; an 860 pusher mechanism; T6000 forming controls; and an NIS section with TNIS controller. They also got the chance to discuss their experiences with the NIS section machine developed by Emhart Glass.

The firm is concentrating on 5" double gob and 6.25" triple gob machines at present, but could look at 8" and 10" later. An NIS

user group meets regularly to help both Emhart Glass and its customers to meet the challenges of the new equipment, and early users are already ordering more. In particular Rexam, in the United Kingdom, is to install two more after its experiences with the first production NIS.

Big glass packaging user

Kraft Foods uses glass jars for instant coffee and for powdered soft drinks. It uses nine different types of glass jar in Europe.

Stefan Scheuch, from Kraft Foods RD&E, says purchasing demand still varies between countries in Europe. "Jars for mayonnaise are now pan-European and coffee jars are becoming standard but bottles for dressings and sauces still vary by country," he says.

Mr Scheuch says Kraft prefers glass because of its high barrier properties and because of customer expectations- it conveys quality. "But new design opportunities are needed for glass to compete with plastic," he says.

"Further weight cuts are needed to lower its costs and we need to see increased stability of glass for less breakages to get better line efficiency and safety. We would like a shatter-proof container." Last June Kraft Foods recalled some glass jars of peanut butter in Canada, because it found they might be cracked or broken beneath their labels.

"Glass seems to have fewer options for pack designs but it does have a positive image with consumers because of its recycling capabilities," Mr Scheuch says.

Independent glassmaker moves on

Wiegand-Glas is one of Germany's last independent glass container makers and it specialises in wine bottles for the German market. It has two factories, one with four furnaces serving seven lines and the other with two furnaces and four lines, and it installed the prototype NIS machine from Emhart Glass.

Its joint managing director is Oliver Wiegand, a member of the

founding family. "Bottle makers reject a lot of bottles," he says. "It takes an hour for a bottle to get from the hot end to the cold end so information about defects can be one hour old before it can be acted upon."

Data about bottle defects must be available on line, Mr Wiegand believes. The firm uses an AFIS article defect information system to relate mould numbers to defect statistics to control and track problems.

Information is exchanged between the cold and hot end to support operators in their work and to locate quickly defects so problems can be solved. "But information at the cold end is still an hour old and that mean's one hour's worth of production can have defects," Mr Wiegand says.

The firm has installed a hot end inspection system, XPAR Vision's IR-21, on two lines to monitor and stabilise the hot end. Process patterns that could affect the customer are shown to operators earlier. "It is now much easier to find thin bottoms and birdswings," Mr Wiegand says.

Wiegand-Glas uses an Emhart Glass 540 forehearth with indirect heating and cooling so that only the sides are heated. "Control is very important and we use ABB equipment and the machine is 99.5% efficient."

Gob weight also needs to be controlled and the firm has Gedevelop's gob image analyser system. "It gives instant gob weights as well as reproducibility of gob dimensions, with weight controlled to ± 1 gram at 500g per gob," Mr Wiegand says.

Process stability is essential when it comes to forming. Movements must be reproduced precisely, and both movements and positions must be adjusted precisely. "Lot sizes are getting smaller and that means more frequent job changes must be done faster," Mr Wiegand says.

"We need faster and easier mechanical changes because we take advantage of job changes to perform maintenance." The NIS machine has cut cycle times because it has faster and more

accurate take-out movements and faster start-up. Wiegand-Glas has been using the prototype triple gob 10 section 5" NIS machine for three years, and has noticed less shaking of the bottle when they are removed from the moulds.

"Forming needs more computers to support operators' work," Mr Wiegand says. "I want to see an integrated system to show information to operators and to take corrective action throughout the manufacturing process."

The firm adds a polymer coating to help cut the weight of a 330ml bottle from 140g to 120g using two polymer applications at the cold end after the lehr. Its equipment grips the bottles in rows and dips them in a polymer bath to receive a 0.005mm coating. Bottles are then UV-cured and inspected.

"Up to 30% lighter bottles are possible without losing internal pressure strength," Mr Wiegand says. "The coating costs are compensated for by the weight reduction."

Hot end coating is still needed, but can now be cut by 50%. Coating and frosting can be applied at the same time and the whole bottle is recyclable, but colours and coating add costs even though on-line coating is still cheaper than off-line.

"We can't use any colours that have to be burnt on because the polymer coating will not take the high temperatures needed," Mr Wiegand says. "You have to use a label with glue." The firm originally introduced polymer coatings for soft drinks bottles but then its client changed to PET bottles. Wiegand-Glas spotted the need for bottles with frosted coatings for wine, and changed over. "We are developing coatings with UV protection, and other properties," Mr Wiegand says. "So far as we know we are the only glassmaker to use technology so far, but it is available commercially and was developed by the IPGR research group."

