

calculations and simulations, and its laboratories offer testing facilities for performance assessment and qualification. Even before producing a physical prototype, SIPA carries out a deep technical assessment of the existing production environment, and can simulate preform and bottle performance. SIPA R&D specialists can quickly conduct advanced performance simulations. Also with the use of Finite Elements Analysis, they are able to check package technical feasibility and identify potential improvements for cost-effectiveness at the prototype stage. Design ideas created in-house and in partnership with customers undergo rigorous testing and development via process engineering and SIPA's highly advanced prototyping operations before any metal is cut on production molds. SIPA designers balance creative inspiration with technical, safety, and cost considerations. They know exactly what properties PET containers must have to succeed in production and how to stretch the limits.



SIPA GETS A GRIP ON LARGE WATER BOTTLES FOR DISPENSERS

Large water bottles in PET intended for use in dispensers in the office or the home – so-called HOD bottles – have lots of advantages in terms of convenience and cost. But if they have a down side, it is in their handling: big bottles full of water are heavy. A typical 5-US-gallon PET bottle when full weighs close to 20 kg. And while it is true that dispenser bottles in PET are much lighter than glass ones, which weigh much more than the water they hold, handling full bottles is no child's play. Picking up HOD bottles, carrying them around, and putting them into position on the dispenser may not be back-breaking work, but it is close to it.

VERSATILITY IN DESIGN

SIPA has created two new designs, which it calls GripEasy, that make the job much easier. One has a handle built into the bottle itself, and the other has a thin waist into which a separate handle is easily inserted after the bottle has been blown. In both new designs, the container can have a transversal cross-sectional area of various types (circular, square, polygonal, etc). The new designs contrast with designs already on the market with a separate vertical handle, which is



often inserted in the blowing mold. This type of handle certainly aids in the transport of the container, but it is a little awkward to use when lifting the bottle from the ground and placing it on the dispenser.

FULLY INTEGRATED HANDLE

The first of SIPA's latest designs has fully integral handles near the shoulder of the bottle and also in the base. The handles are formed during the blowing process of the bottle, and no inserts are requi-

red. The handles near the shoulder are diametrically opposite to each other, as are those in the base, with top and bottom handles in vertical alignment. The vertical location of the upper handles is around the center of the body of the container. The position of the handles is such that the container can be carried by a person holding the container with one hand in the upper handle and one in the base handle. This new design has numerous advantages, not only in terms of handling. Being a single-piece design, for example, it is easy to clean in the washing cycles. And there is a large area for the label.

RING AROUND THE BOTTLE

SIPA's second new design has a separate horizontal handle in the form of a circumferential ring that is inserted into a groove designed into the bottle. It can be put in place either automatically on the blow molding machine after the container has been blown (a system that can be retrofitted to any existing equipment), or clipped in place manually away from the machine. It is made in two halves, which join together with a simple snap-fit mechanism once they are in place. The bottle and handle are designed



to leave space on either side of the bottle to enable the user's fingers to wrap around the handle and hold it tightly.

EXTRA STRENGTH

Once again, the handle is in an optimum position for removing the container from the rack and also

for transporting the container and aiding positioning on the dispenser. The design has the additional advantage that the handle reinforces the container, helping to avoid bulging, and making possible a reduction in the weight of the container (but even without the handle, the bottle has sufficient strength for

use on its own). There is still plenty of room on the bottle for labels. The handle is molded in PET, so once the container's useful life is over, the two can be recycled together or the handle can be removed and re-used.