Bosch Packaging Technology presented new approaches for sustainable packaging

Bosch Packaging Technology showed its innovative approaches in the field of sustainability at this year's Pack Expo from 23rd to 25th September 2019. "Sustainable packaging requires new solutions at a number of levels," explains Torsten Sauer, project manager for sustainability at Bosch Packaging Technology. "We are developing and testing various approaches and are already implementing concrete projects with customers." Primary packaging is mainly concerned with two aspects: the use of monomaterials in comparison to conventional films, and using paper packaging as an alternative to plastic. For secondary packaging, the focus is on both reducing packaging material waste and increasing the recyclability of packaging materials.

Vertical bagging with monomaterial

Due to their good sealing ability, barrier characteristics and formability, films are currently indispensable for primary packaging. "The trend is clearly towards monomaterials, which can be more easily and efficiently recycled," says Sauer. At Pack Expo, Bosch introduced its proven SVE 2520 DZ for vertical form, fill and seal with a polyolefin film for more sustainable packaging. The material is suitable for a wide range of products and achieves an output of up to 100 Doy Zip bags per minute.

"This means uncompromised speed using monofilm compared to conventional materials. In our test labs, we are able to test all kind of materials to find the ideal solution for each product. Depending on the bag dimensions and the specific product characteristics, we develop sustainable alternatives together with our customers that provide the same level of product protection as conventional materials," adds Sauer.

Paper packaging as an alternative

Paper packaging offers an alternative to flow wraps made of film. However, because the material is much stiffer than plastic films, folding at the transverse and longitudinal seams tends to be a challenge. In addition, at high speeds paper is more prone to tearing. Bosch is currently developing the optimum format part contours for paper forming, using systematic material and machine test series to do so. "Our goal is to manufacture product packaging that are completely free of cracks and wrinkles," says Sauer. "We can already provide our customers with solutions for types of paper commonly used on the market."

Even more sustainable secondary packaging

Secondary packaging made of paper and cardboard is sustainable per se because it consists of renewable and recyclable raw materials. Nevertheless, its full potential has not yet been exhausted. There are other ways of making production even more environmentally friendly, for example by preventing packaging material loss during production. This can occur e.g. when packaging material cannot be processed due to quality considerations. With the Elematic 2001, Bosch provides a system that is capable of processing slightly bent or recycled cardboard. Consequently, what machines previously sorted out as rejects can now be used thanks to the larger tolerance range. Customers can experience the machine at the show in a virtual reality demonstration.

In addition, Bosch is working on an alternative to hotmelt gluing for paper and cardboard. "Hot glue is a challenge in the paper recycling process. In addition, it consistently leads to disruptions in the production process," explains Sauer. "Ultrasonic sealing is a sustainable alternative. There is already considerable interest on the part of our customers, and we are currently running several pilot projects to implement this promising technology in real packaging."

In 2016, Bosch and BillerudKorsnäs presented their first major joint innovation: Sealed Paper Packaging on a vertical form, fill and seal machine (VFFS). The ZAP module from Bosch makes it possible to process mono-material Axello® ZAP paper from BillerudKorsnäs on VFFS technology with dust-tight sealing.

Pearl: the new paper-based packaging concept

With its Swedish cooperation partner BillerudKorsnäs, Bosch shows how uniquely formed and optimally-sized shaped paper pods can contribute to a more sustainable future. Together, the companies have developed a new packaging concept called Pearl. It demonstrates the unique formability of the FibreForm® material (the leading 3D-formable paper on the market, patented by BillerudKorsnäs). The material is processed on Bosch machinery and paves the way for creative and sustainable paper packaging solutions.

Services: refurbishing of machines

Bosch also supports customers with asset life continuation solutions. For example, the company offers upgrades for obsolete control systems and refurbishments of older machines. Two machines will be on display for visitors to experience the solutions first-hand – a refurbished JSL hand sealing machine and a Stratus wrapper with a new control platform as well as a stand-alone OEE dashboard. ◆

SVE 2520 DZ for vertical form, fill and seal with monofilm.