



PACKAGING



Safe, Sustainable Solutions for Pallets

Stabilization by hotmelt spray application

Case Study: Boomex GmbH, Essen, Germany



Efficient spin spray application

As one of Europe's market-leading suppliers of fireplace and barbecue firelighters – mainly in cube form – as well as corresponding accessories, Boomex GmbH handles an enormous volume of shipments every day. Especially since the products are in demand across all seasons; be it for the summer garden party or for the cozy winter warmth provided by the home fireplace. In order to improve the transport protection on the pallets, a spray bonding of the outer cartons was recently implemented in close cooperation with the companies Nordson and Henkel, which brings considerable cost savings in several respects.

The Challenge

Boomex Produktions- u. Handelsgesellschaft Chem. Techn. Artikel mbH, founded in 1984 and headquartered in Essen, Germany, is present in Germany with its FLASH, FLASH GOLD and Fire + Deco ranges, as well as a number of own brands produced for the trade, in numerous DIY stores, large discounters and well-known chains in the food retail sector, as well as in many service stations. In addition, there is a wide-ranging foreign clientele, even as far away as New Zealand. In addition to the production facility at the Ruhr headquarters, there are production sites in Alsfeld, and soon also in Romania, where a subsidiary has already been maintained since mid-2022. Due to a major fire, a new 2,500 sqm warehouse was put into operation in Essen last August, which also houses two end-of-line packaging lines. They fill a high-bay warehouse with 2,300 storage spaces. On average, six truck trains leave the plant every day, each carrying 33 pallets leave the plant each day, with each load carrier containing 84 shipping cartons measuring 276 mm x 267 mm x 192 mm (H x L x W) is loaded. Approximately 400,000 fire lighters are fed daily from two production lines. In view of this considerable quantity of around 15,000 outer cartons, it was obvious to also look for optimization possibilities within the end-of-line packaging section in the course of the new construction.

The Nordson Solution

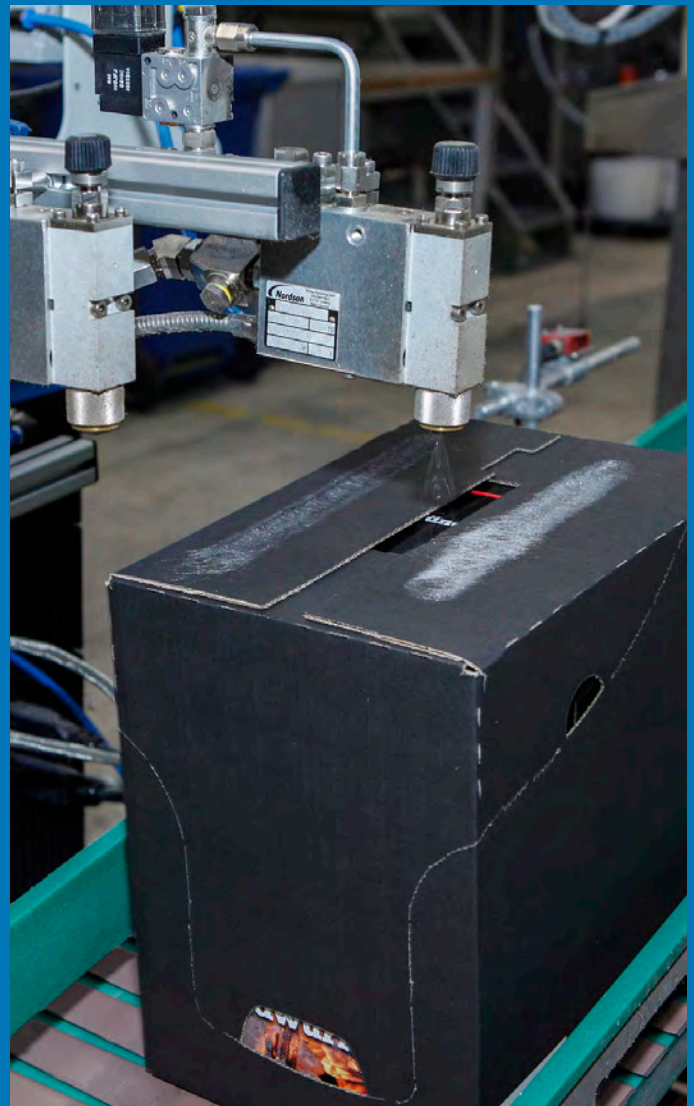
Stabilization by hotmelt spray application

An interesting solution was found in close cooperation with the US adhesive technology specialist Nordson and the Düsseldorf-based Henkel Group, one of the world's leading adhesive manufacturers. On the basis of a newly developed hot melt especially for palletizing and an innovative application system ideally matched to it, Boomex decided to fix the shipping cartons by means of a spray application. The stabilization now achieved in this way has a significant side effect. Due to the special product handling required – the lighter cubes are packed at 35 °C – the outer cartons were

previously stacked on the pallet “on air” with accordion-like folded corrugated spacers inserted by hand to create a cooling “chimney effect”. This time-consuming and material-intensive process can now be eliminated. For final shipping preparation, the load is wrapped as usual with an air-permeable net film without the cartons contracting during wrapping.

New Melter Generation

The innovative hotmelt applicators are basically available in two versions: as end-user or OEM models. With the same size, they differ essentially in terms of their control system. While the former are equipped with a large, clear OLED display for stand-alone operation, for example at the cartoner, the versions specially developed for the line manufacturer have only a few function buttons and do without a display, as they can be integrated into the main control system of the parent machine via LAN or fieldbus.



Two Nordson EP 34 S spray nozzle applicator heads are used to apply two strips of hot melt to the top of the outer cartons along the length of the carton

Efficient spin spray applicators

Boomex installed two ProBlue® Flex melters, one of which is a melt-on-demand (MoD) solution, which is a closed system that supplies the hotmelt adhesive directly from a generously sized 240-liter reservoir. Two EP 34 S spray nozzle applicators apply the adhesive onto the cartons. In contrast to bead application or glue dots, the spray nozzels produce two full-surface strips approx. 200 mm long x 20 mm wide on the top of each carton by swirling the hot melt. Only 0.15 g of adhesive is required per unit for this process. The multi-module head of the applicator is generally designed for coating widths of six to 20 mm. For even wider jobs, there are models within the EP series that allow up to 200 mm.



The closed hotmelt application system: the ProBlue Flex melter with MoD version fed from a 240-liter reservoir.

Flexible application pattern control

Control of spin spray bonding is provided by the Spectra 30 application pattern control system, which is characterized by ease of use and high flexibility. It is equipped with the intuitive Optix graphical user interface and has four control inputs, four pattern channel outputs and a USB port on the front panel for data backup. If needed, the Spectra 30 can also be used at high line speeds and can have up to eight bead sequences per channel, and a large number of different adhesive application patterns. There is a memory capacity for 50 programs. Incidentally, the entire system is installed on a stable, compact ASC console. Not only does it ensure optimum placement of the ProBlue Flex melter directly on the conveyor, but it also has a swiveling arm for mounting the Spectra control at viewing height and for easier routing of its connecting cables.

Special pallet securing adhesive

As an important component of the configuration at Boomex, the Henkel Adhesive Technologies hot melt adhesive deserves special mention. This is Technomelt Supra 7220 PS Easyflow®, which was developed specifically for palletized cartons, multi-packs, and paper or plastic bags and is still relatively new, having been launched in April 2021. The emphasis is on the term Easyflow, which underlines the optimized flowability of the hot melt produced not as conventional granules but in the form of non-sticky “mini-cushions”, making it ideal for closed systems. The transparent hotmelt, designed for processing temperatures of 150° to 180 °C, is also suitable for bead application. The savings effects that result from load securing via bonding can be quite different. In the case of Boomex, for example, there is no need for corrugated board spacers and in other palletizing processes there is no need for intermediate layers or anti-slip mats, or there is a significant reduction in the amount of stretch or wrapping film required. In addition, the adhesive behavior of Technomelt Supra 7220 PS Easyflow favors fast and damage-free depalletizing.

Voice of Customer

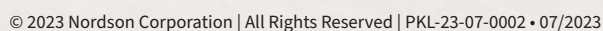
First positive practical experience

After initial experience in operation, Markus Spilles, who has been production manager at Boomex for many years, is extremely satisfied with the transport security solution that has now been achieved and is particularly pleased about the optimized cost-effectiveness in several respects. “First and foremost, of course, the considerable cost reduction achieved by dispensing with the corrugated board intermediate pieces should be emphasized. Projected over the year, the savings are likely to be in excess of 100,000 euros. Since the spacers used to be inserted by hand, the reduced workload also has a positive impact.” In addition, the spray bonding of the outer cartons, which was implemented with minimal glue consumption, has proven to be very efficient. “The complaint rate has de facto gone to zero and is hardly measurable. The ProBlue Flex system runs without any problems and is also easy to operate.” In this context, he emphasizes the good cooperation with the Nordson employees involved in the project. And last but not least, he praises the competent advice provided by the Henkel Adhesive Technologies team.





Packaging applications are often judged equally by how they look and how well they perform, so application systems must apply the right amount of adhesive to be structurally sound and without messy stringing, tailing or squeeze out. Whether using hot melt or cold adhesives, Nordson is a world leader in packaging and converting application technology.



Supporting and collaborating with
customers worldwide.



Extensive capabilities to deliver on customer promises.



Consistently creating customer value
with innovative technology



Direct offices in over 30 countries with local application experts nearby to help.

