

Title story

# Safety for the Leo line

Particularly clever

Leo is the trade name for the milk-chocolate-covered, cream-filled crispy waffles that are produced as part of the Milka

range by the foodstuffs company Mondelez

International (formerly Kraft Foods) at their Belgian location in Herentals. The company operates worldwide, but production in Herentals is mainly for the local market. Glueing of the secondary packaging was recently optimized using the innovative Freedom tank-less hotmelt application system from Nordson.



Particularly clever: the box is turned into a mini-display by folding

■ The bars, which are primary-packaged as flow packs, are first grouped into 6, 10, 12 or 14-item bundles and inserted into cartons by a cartoning machine made by Langenpac B.V, Wijchen, a company in the Langen Group. After this, two adhesive dots are applied to close the two box side flaps. The packaging machine, which is fitted with a top-loading picker robot and runs five days a week in three-shift operation, runs at a throughput of between 50 and 70 packs per minute depending on the format. This rate is below the machine's maximum capacity, but the processing speed is limited by the capabilities of the downstream check weighing station.

The Mondelez International plant in Herentals – one of the four Belgian production locations belonging to the group – was, in December 2012, one of the first European users to start operating one of the prototypes of the Freedom system which had been introduced onto the market shortly before. After a successful one-year trial run, this was replaced by a production series model in January 2014. The so-called Leo line is one of the five main production lines

at the location, which mainly produces chocolate products and employs between 150 and 200 people depending on the season. It is located together with its sister plant, which specializes in biscuit products, in the town of 27,000 inhabitants.

The US American adhesive technology specialist, with its headquarters in Westlake/Ohio and its European headquarters in Erkrath, Germany, has been equipping the facility in Flanders for many years. There are a total of 12 end-of-line solutions from Nordson currently in operation there. The Freedom system installed most recently is not only the most modern, but also uses a completely new concept that is defined by its compactness and the enclosed nature of the system.

## Short Paths

The central component is the melter and its included pump which does away with a conventional tank and only keeps the adhesive quantity actually required at the processing temperature. It works with a melting capacity of up to 12 kg per hour in a similar manner to a flow-through heater and only re-

quires a short warm-up time of around 15 minutes. The melting section is fed automatically from a 60 kg storage tank which is located immediately behind the device in the Mondelez works.

The flow paths to the applicators are also short since the compact central unit weighing around 45 kg can be individually fitted in the vicinity of the applicators with the help of the included mounting adapter. The central unit has dimensions of 838 x 533 x 279 mm (W x H x D). In Herentals the feed hoses are just under 2 m long.

The melter itself is mounted at head height above the product outfeed belt.

## Decision criteria - workplace safety

The enclosed nature of the system results in considerable benefits. Since the hot adhesive is not subject to any influences from the environment, residual charring, which is unavoidable in the case of tank melting devices, is eliminated. Apart from this, job safety is increased for the machine operators. For the Mondelez technicians this was the main reason for the investment decision. The dan-



Nordson at  
interpack:  
Hall 14,  
stand D15

ger of being burnt due to carelessness when refilling hotmelt could never be completely excluded when using the previous tank-based device.

A further positive effect of the tankless hotmelt adhesive application system is that a 30 per cent reduction in energy consumption was also achieved due to the as-required melting process. Savings in adhesive consumption on the order of between 30 and 60 per cent are also possible, in particular through use of the integrated EcoBead pattern control system, which is however not being used in this particular case. Due to the low applied quantity material savings are not at the centre of attention for Mondeléz, but nevertheless are not insignificant at just under 16 per cent. It should also be pointed out that one filling of the storage tank often lasts for months.

### Self-cleaning applicators

Placement of the four adhesive points is carried out by two pneumatic applicators of the new MiniBlue II SureBead type. The series was introduced into the market in December last year and represents a further advancement of the applicators, which are known as "endurance sprinters". They are now equipped with a needle-seat module and are self-cleaning. This means that they prevent contamination, and, because they are completely insulated, they also contribute to workplace safety. The applicators work with a minimum cycle time of 2 ms and achieve a service life of more than 100 million cycles, depending on the hotmelt adhesive being used.

The electronic Optix controller is worthy of special mention. It has been equipped with a clearly laid-out 7" color touchscreen for simple operation and continuous process monitoring. The display not only provides detailed diagnostics of the entire processing sequence, including error messages, it also features component detection which includes the corresponding part numbers for use when purchasing spare parts.

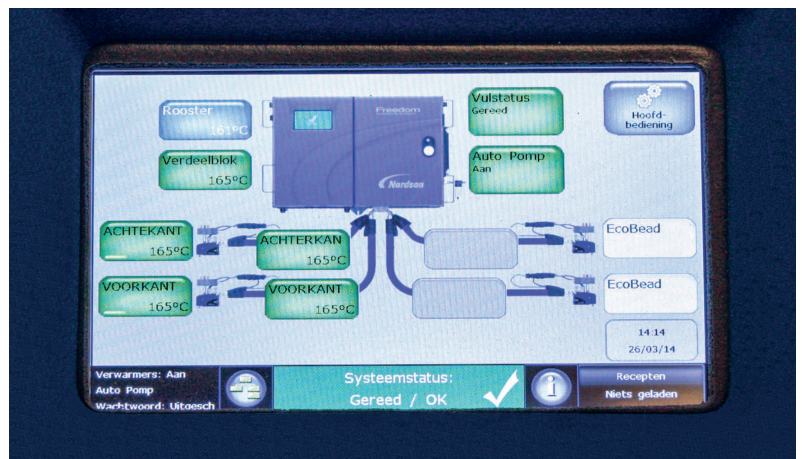
The Freedom application system is completed with the new RediFlex hoses. Because of their significantly reduced diameter they are considerably more pliant. They also feature a patented chlorine-free insulation. To give flexible mounting options, special brackets that can slide along the hose were developed.



Two self-cleaning applicators of the new MiniBlue II SureBead type apply two adhesive dots to each side.



The Freedom tankless hotmelt application system has been installed at head height above the product outfeed belt.



All process-relevant data is displayed on the generously-dimensioned Optix display.

Photos: Kimberly Wittlieb

### Positive practical results

Gert Janssens, Technical Maintenance Coordinator at Mondeléz International in Herentals, and his colleague Wim Bruynincks, Technical Team Leader, both with many years of practical experience, are extremely happy with the newly installed end-of-line adhesive application: "The Freedom system has completely fulfilled our main aim of increasing

workplace safety for the operating personnel. The units work without any problems and the time required for handling has been considerably reduced.

A particularly positive point is the substantial decrease in contamination. The bond quality is very good. Even the irritating fine threads, which we call angel hair, hardly ever appear anymore." Bernd Neumann