

Smurfit Kappa Zedek upgrades production line with safety services

A complete one-stop solution from OMRON ensures upgrading the safety of a folder-gluer machine

When manufacturing companies need to automate and streamline their operations, it makes sense to partner with another company that can provide a wide range of products and services. However, it's important that the chosen partner has all the resources, technical expertise, and experience to fulfil any needs. When Smurfit Kappa Zedek, a leading producer of corrugated packaging material and high-quality displays, needed to upgrade the safety aspects of one of its key machines, it found the perfect fit with OMRON Industrial Automation.

Smurfit Kappa Zedek is part of the Smurfit Kappa group, a world leader in paper-based packaging, that has 350 manufacturing sites worldwide and operates in 36 countries. It has a total workforce of some 48,000 employees worldwide.

Smurfit Kappa Zedek's manufacturing operations are based in Deventer, the Netherlands. The company, which was founded 60 years ago, specialises in the design and production of corrugated cardboard packaging and point-of-sale displays. It has a strong focus on innovation and sustainability and can produce high-quality packaging in a single pass, using any type of corrugated board. The packaging can be printed in full colour using either offset or digital printing.

A need to upgrade machine safety

One of the key machines at Smurfit Kappa Zedek's production facility folds and glues the corrugated cardboard packages. This machine is over 22 years old, so needed upgrading to comply with current safety standards. Huib van de Made, Manager of Safety and Quality at Smurfit Kappa Zedek, explains: "In line with our philosophy of continuous improvement, we wanted to





ensure that we're using the latest, state-of-the-art technology that can provide the highest levels of safety for our operators. At a seminar at Smurfit Kappa Benelux, OMRON spoke about functional safety. Their ideas exactly matched what we had in mind."

Following this, the company carried out a safety upgrade review of the folder-gluer machine. This was completed in conjunction with OMRON, who were invited to see how the machine could be modified and upgraded to meet the latest regulations. The different legal requirements, CE approval and the validation of the machine were key priorities for the company. Following the review, OMRON helped Smurfit Kappa Zedek to develop a completely new safety concept.

Devising a total solution

OMRON's total safety services solution included machine risk assessment analyses and the design of the safety solution. The latter involved analysing the work of operators using the machine and taking into account the maintenance plans, in order to maintain production efficiency throughout. OMRON also arranged for the remediation of the solution through the delivery and installation of all the required electrical and mechanical components. Finally, OMRON provided full validation of the installation and training, including all of the relevant technical documents and reports.

The key components of the new safety solution included the safety control solution; a trapped key system; the manual control, including position detection; and various safety items for the different production zones and the delivery belts (including emergency stop buttons and sensors).

While OMRON was the main contractor for all aspects of the project, the installation of the electrical elements of the safety solution was carried out by OMRON's partner, MDE Automation. Smurfit Kappa Zedek's Technical Services team undertook the mechanical part of the installation. The entire implementation was completed in four days, including the validation of the solution by OMRON on the final day.

Huib van der Made continues: "One of the main challenges involved ensuring that people would be able to do their jobs safely, effectively and quickly. This meant that our workforce needed to be open to new developments." OMRON's safety services ensure that maintenance and production are part of the project team, and both machine operators and technical engineer from Smurfit Kappa Zedek were involved from the start. This ensures that people can work safely and well within the new framework.

One of the important safety aspects of the new solution was the incorporation of safety fencing, and the smart automated safety system that was designed around it ensuring that the doors cannot open while machine is running and machine cannot start when two doors in two different zones are open. This ensures that if people are working together in the same section, no-one can enter another section at the same time. The safety fence around the folder-gluer machine is operated by individual control buttons in each sector that open and close the doors.

To run the machine, the operator is in contact with their colleague, and they signal to each other when it's time to initiate the machine. It's started by pressing two buttons, which involves using both hands – ensuring that the operators can't come into contact with the machine during the adjustment process.



Enjoying the benefits of OMRON's safety solution

John Spa, Smurfit Kappa Zedek's Lead Operator, comments: "The users of this solution now have more confidence in all of the machine's safety components. They can see each other, and the operations that can and can't be done with the machine are now carefully regulated."

One of the reasons that Smurfit Kappa Zedek chose OMRON was because it was able to act as a one-stop solution partner – covering everything from the identification of the key issues through to the successful implementation of remedial actions. Indeed, Huib van de Made is delighted with the new solution: "OMRON's team have proved to be the perfect partner for us, as they have a strong knowledge of the regulations and an in-depth understanding of the technology. This enabled them to design this safety solution. It meant that we were able to work with a single vendor that has a strong grasp of both safety laws and automation technology and could execute the full machine safety cycle."

Huib continues: "This was the first project we've evaluated in this way. With this collaboration - including the analysis reports and the ability to build an action plan on how to make changes - we'll be able to adapt other machines in the future to enhance the safety of their operations."

"We've also started the next step, which has involved assessing our corrugated cardboard machine in the same way, in collaboration with OMRON. Next year, we'll continue this evaluation process by extending it to our die cutting machines. We believe that we need to continue upgrading the safety of our machines with the help of a good partner like OMRON."

About Smurfit Kappa Zedek

Smurfit Kappa Zedek with approximately 250 employees has all the in-house knowledge and facilities required to develop and produce the perfect displays and packaging. Services ranging from design to the production of the end-product, as well as support and advisory services within the chain, are all part of the company's core tasks. The design studios in Deventer (sales and production site), as well as in Münster (DE) and Leicester (UK) (sales organisations), focus daily on deepening the level of creativity and innovation. For more information, please visit <http://www.smurfitkappa.com>.

About OMRON

OMRON Corporation is a global leader in the field of automation, based on its core technology of 'Sensing & Control + Think.' OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to social infrastructure systems, healthcare and environmental solutions. Established in 1933, OMRON has about 30,000 employees worldwide, providing products and services in some 120 countries and regions. In the field of industrial automation, OMRON supports manufacturing innovation by providing advanced automation technologies and products, as well as extensive customer support, to help to create a better society. For more information, visit OMRON's website at <http://industrial.omron.eu>.