

X-ray inspection systems prove themselves in practice

Innovative X-ray inspection systems enable producers all over the world to carry out safe and reliable inspection of raw materials and packaged products. Continuous development of systems increases not only efficiency but also flexibility when it comes to selecting packaging materials.

by Dr Thorsten Vollborn,
Global Product Manager,
Minebea-Intec.
www.minebea-intec.com

In order to ensure higher and more consistent quality for consumers, one of the most important tasks is to prevent contamination of food and beverages. Undetected foreign objects can cause injuries, lead to costly product recalls and cause considerable harm to a company's public image.

Food producers all over the world go to great lengths to avoid these kinds of problems during production as part of industrial standards such as HACCP, IFS and BRC. Various technologies are deployed to detect contamination.

Metal detectors are ideal for detecting even the smallest metal foreign objects; vision systems help

to identify deviations from parameters such as size, shape and colour and hyperspectral imaging is used for the spectral analysis of food or packaging quality. X-ray inspection is another method for detecting foreign objects in a product.

The variety of foods and types of packaging that consumers can choose these days is wider than ever. As a result, food and beverage producers find themselves confronted with a vast number of potential sources of error during production and so will have numerous specifications for each of these processes, which can only be met in part by using combinations of the technologies described above.

Foreign object free sweeteners – guaranteed?

HCP Health Care Products Ltd has enjoyed great success in using X-ray inspection to detect contamination in the production of sweeteners and their packaging.

The UK-based company, which was founded over 25 years ago, is also known as 'The Sweetener Company'. It produces sweeteners for big brands and supermarkets in the UK and all over the world and in the UK it is one of the largest manufacturers



HCP Health Care Products Ltd has installed the Dylight X-ray inspection system from Minebea Intec for the safe identification of metallic foreign objects in packaged sweetener tablets.

in the industry. HCP was looking for a reliable inspection solution for one of its customers and their packaging. The packaging in question is sealed with a screw cap and metal foil. This foil prevented safe inspection with a metal detector, as any metallic foreign objects could not be clearly identified among the sweetener tablets.

In this situation there are two possible solutions. One option is to adjust the process so that the metal detection can be carried out before the final sealing of the packaging. However, this procedure would give rise to a risk of contamination that neither we nor the customer are willing to accept. The better option is to use an X-ray inspection device, which enables safe detection of any contamination in containers that have already been sealed.

Rapid solution with a reliable partner

The HCP team contacted a number of suppliers in their search for a reliable provider of suitable X-ray inspection systems. Following this, it was Minebea Intec who won them over. As a leading supplier of industrial weighing and inspection solutions, the company is able to call upon many years of experience in a wide variety of industries and

offers a wide range of X-ray inspection systems for various applications.

The decision in favour of the Dylight X-ray inspection system was taken very quickly. Minebea Intec's sales representative demonstrated the system's capabilities to the team from HCP during a realistic test scenario. Over 400 contamination-free products passed through the system, without a single one being incorrectly rejected and yet, defective products that were subsequently introduced were safely detected.

This impressive demonstration convinced the sweetener manufacturers that the Dylight system was the perfect solution for their requirements.

With a detection sensitivity of 1.2mm for all metals, the standard Dylight system was able to meet their needs at the required speed and with absolute certainty.

The team from Minebea Intec UK continued to impress as the collaboration developed. HCP were under a lot of pressure at the time and needed the X-ray system as quickly as possible. Minebea Intec was able to deliver the Dylight system within just two weeks, provided the company with installation support and was on hand to answer any questions they had.

Continued on page 12

The new Dymond D X-ray inspection system offers the food and beverage industry more design freedom for its packaging and helps producers to guarantee product safety and quality.



Continued from page 11

This was the sweetener manufacturer's first foray into the use of X-ray inspection systems and thanks to the excellent support from Minebea Intec in the start-up phase, the system was up and running in no time.

Bob Seaborne, Director of HCP, said later: "We were extremely pleased with this project. Everything worked as smoothly as we had hoped, from the quick delivery to the performance and reliability of the system in operation. We are extremely satisfied and will call upon the services of Minebea Intec again in the future."

X-ray systems for the most diverse applications

Alongside the Dylight solution implemented at HCP, there are many more options to choose from in Minebea Intec's portfolio of X-ray inspection systems.

With Dymond Bulk, the international supplier has developed an X-ray inspection system for bulk materials that enables efficient detection and elimination of all types of foreign objects when inspecting goods being fed into the production process 'directly from the field'. Dymond Bulk provides

excellent detection performance with raw materials such as vegetables, nuts, dried fruits or cereals.

Minebea Intec also offers extremely versatile solutions for the inspection of packaged products. Typical tasks include the inspection of cartons, boxes, bottles, bags, trays and portion packs, which can contain a variety of dry or liquid food products. Dymond systems are available with a belt width of up to 800mm and are designed for multi-track applications with up to eight

With double-beam inspection comprising two different viewing directions, Dymond D reliably detects foreign objects (including glass in glass) regardless of where and in which direction it is positioned.



tracks. To complement these X-ray inspection systems, Minebea Intec's product range also includes a wide range of high-speed product separation systems, certified test parts and the statistical process control software SPC Enterprise, thereby offering complete high-performance systems for food production.

In order to address the wide range of food products and packaging available, the company also offers customer-specific solutions to meet special requirements relating to product handling, contamination detection and quality inspection alongside its standard systems.

Innovations support current trends

Minebea Intec have also introduced its latest developments in side shooters for horizontal X-ray inspection: the Dymond D and a new version of its Dymond S.

Compared to previously available systems, these advanced developments offer the user improved performance for more throughput or higher-density products as well as simplified integration into production lines. The new systems are designed for the reliable inspection of tins, Tetra



The Dylight X-ray inspection system by Minebea Intec in operation at HCP Health Care Products Ltd.

Paks and other tall, upright packaging made from glass, metal or plastic.

Both developments have been designed by Minebea to help cut the amount of plastic packaging in the food industry in favour of more environmentally friendly materials.

These new X-ray inspection systems should open the industry up to more design possibilities for products, packaging materials and container sizes, without jeopardising consumer safety. ■