



CASE STUDY

SMART SEAL INSPECTION OF CHEESE PACKAGES

IN-LINE, 100% SEAL INSPECTION LEADS TO BETTER QUALITY AND HIGHER PRODUCTIVITY

The sealing of flexible packages is a critical phase in the packaging process for cheese makers and packagers. Wrinkles, folds and contaminants in the sealing area of packages, such as product in seal are the main causes of open packages. As cheese is often under modified atmosphere conditions, leaking packages reduce shelf life, induce changes in taste, pose health risks, but may also lead to expensive re-calls with potential brand damage. **SealScope™** offers inline, 100% seal inspection of flexible packages enabling customers to realize better packaging quality, higher productivity and elimination of manual inspection.

Many seal inspection processes are today still based on off-line and manual inspection, but with increasing quality demands and higher productivity requirements, these systems are no longer adequate. Better alternatives are in-line, non-destructive inspection technologies, but for flexible packaging these are challenging. For example, camera inspection systems are inadequate due to often non-transparent films and the deformation of the packages. Enters Engilico, who offers **SealScope™**, an in-line, non-destructive seal inspection and process monitoring device for flexible packages such as pouches, pillow bags and flow packs, all frequently used in the cheese packaging industry.

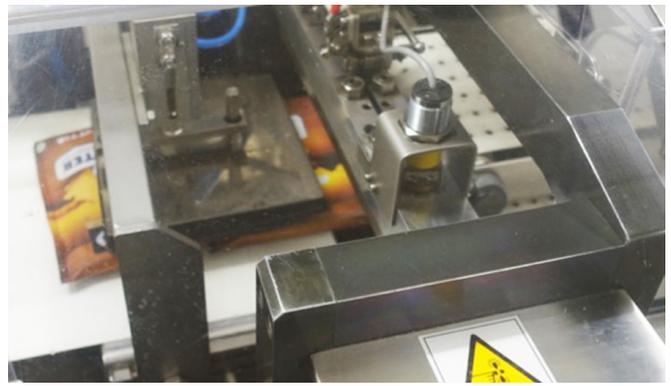
SealScope™ offers a unique approach to in-line seal inspection. Sensors are installed on the sealing jaws of the packaging machine and measure during the closing of the sealing jaws. Every time a package is sealed, the actual measurement is compared to a reference model of correctly sealed packages. In case the deviation is higher than a user defined limit - due to product in seal, or wrinkles or folds in the seals-, **SealScope™** will issue a rejection signal and the package is excluded via an ejecting system. This automated 100% inspection leads to immediate benefits: Every single package is inspected, so manual inspection can be eliminated. By rejecting the defective packages, the outgoing quality is instantly increasing, inducing less rework and lower scrap. As **SealScope™** continuously monitors the sealing process and generates early

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Sensors on a Vertical-Form-Fill-Seal (VFFS) packaging machine



Sensors on a horizontal flow pack machine

warnings, operator can take corrective actions -for instance preventive cleaning of the sealing station. As such **SealScope™** helps to avoid further process drift and to keep the machine in optimal shape.

Grated cheese producer reduces defective product returns from tons to zero

Packaging grated cheese is typically done using vertical machines (VFFS) and requires powder additives like starch. Additionally, it is done under modified atmosphere to preserve the freshness of the cheese. Therefore, package integrity is important to warrant shelf life. The critical points of the packaging process are the filling and subsequent sealing of every bag. The sticky nature of cheese and starch can easily contaminate the top seal. Also wrinkles and folds during the sealing can result in open packages, leading to product returns and shorter shelf life.

Schoeps a Belgium grated cheese producer faced critical quality issues with micro-leaks in the sealing of their grated cheese bags which causes dramatic problems for a product that is packaged under modified atmosphere conditions. When they appointed a new general management in 2018, one of the first objectives was to increase outgoing product quality. They opted for **SealScope™** to 100% inspect their grated cheese bags for defective seals. After installing **SealScope™**, the results were impressive.

Yannick Baudoux, General manager of Schoeps comments: "We are very pleased with the **SealScope™** solution. We drastically re-

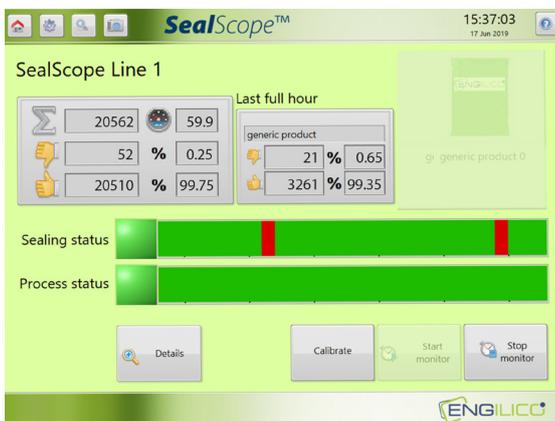
duced our customer complaints on badly sealed packages. About 1% of the total 3.500 ton outgoing production had micro-leaks and was returned. This has now dropped to a few packages. We fully rely on this system that checks every individual product. This automated inspection is so much more effective than an operator that manually checks samples from the production."

Optimizing the packaging process for sliced cheese

Another application involves packaging of sliced cheese, often horizontally flow wrapped under modified atmosphere. To avoid product in seal, the positioning of the trays, the stacking of cheese on these trays and the relative positioning within the packaging film is crucial. Wrinkles in the fold-over must also be avoided to warrant seal integrity, especially for gas flushed products like cheese.

Hazeleger Kaas, an independent packaging company of Dutch cheese opted for **SealScope™** to monitor the performance of its horizontal flow wrap machines. When Hazeleger launched a new re-sealable package for sliced cheese, **SealScope™** revealed that sealing process optimizations were possible. The sealing process showed a too high variance and by inspecting the rejected packages, the production line was finetuned. As such, using **SealScope™** as an objective measurement device, the balance between packaging speed, tray positioning and cheese stacking was gradually optimized.

The immediate role of **SealScope™** is to detect and reject residual packaging defects, optimizing the outgoing packaging



SealScope™ UI is operator-friendly and provides basic information on individual seals and the sealing process status.



SealScope™ touchscreen monitoring console in the packaging line



Cheese rind in the seal eliminated by **SealScope™**



Wrinkles or folds in the seal can lead to leaks in the cheese package



Cheese parts in the seal are retrieved in a package that is rejected by **SealScope™**

quality. Typical rejects include cheese trays partially stuck in the seal, product in the sealing area, wrinkles or folds. The sensitivity of the rejection level can be set according to the customer's quality policy to find the right balance between outgoing quality and rejected packages.

The benefits of **SealScope™** at Hazeleger Kaas are measurable in both increased output through a higher first-time-right ratio and better package quality, creating a sustainable competitive advantage:

"We made a huge step forward in mastering our packaging line to guarantee our high outgoing quality", says Wim van Rijn, owner of Hazeleger Kaas. "We fully trust on the **SealScope™** application for our packaging quality."

Easy-to-integrate on new or existing packaging lines

The **SealScope™** solution consists of one or multiple sensors that are connected to the sealing jaws, an industrial cabinet with touchscreen UI and the intuitive **SealScope™** software. This compact layout and Engilico's global cooperation with leading pack-

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aging manufacturers such as Leepack, Omori, SN, Toyo Jidoki, MesPack, Fuji, BW Packaging Bosch guarantee an easy integration of **SealScope™**. **SealScope™** today is running on 150+ packaging lines at international customers in the food, pet care and other industries where seal integrity is critical.

For cheese packaging, **SealScope™** delivers increased packaging quality, higher productivity and reduced packaging cost at customers such as FrieslandCampina, Vandersterre, Hazeleger Kaas, Grozette, Kaasbrik, Schoeps SA, Noordhoek and many more.



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Yannick Baudoux, General manager of Schoeps s.a.

More information

- Download Schoeps case story
- Download Hazeleger case story
- Watch video at Hazeleger Kaas

About Engilico™

Engilico™ is an innovative technology company that specializes in developing, manufacturing and marketing package sealing inspection and monitoring solutions. Engilico's products improve packaging quality, increase machine output and reduce scrap. **Engilico™** is based in Rotselaar, Belgium and is operational worldwide via a combination of direct sales and a growing distributor network.

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