Full Real-Time Control with EcoScan

The analysis of the scrap stream without time delay ensures maximum efficiency and quality in incoming inspection, process monitoring, and quality assurance.

For steel mills, a demand-oriented and well-defined scrap composition is essential, as only then can the quality of the produced steel be guaranteed. Unclear compositions of the raw material scrap—for example, the content of copper and other unwanted elements—not only risk causing process disruptions but can also endanger the quality of the final product. At the same time, accompanying elements such as chromium or nickel may be desirable, and knowing their exact content enables optimized management of alloying additions. In a special configuration, the EcoScan® Online can also be combined with an upstream, sensor-based detection and separation unit to produce crafted or "designed" scrap tailored to the steel mill's specifications.

This is where SICON's EcoScan® Online comes into play: the compact device delivers precise, continuous data on the chemical composition of scrap throughout the entire operation. This allows steel plant management to respond immediately to deviations in parameters—whether by adjusting the mix with pig iron or DRI/HBI, or by utilizing defined scrap qualities. In doing so, the entire process can be stabilized and made more efficient, with clear benefits for throughput and cost structure.

Fig. EcoScan ® Online

The EcoScan® Online Analyzer performs its task directly within the scrap conveying process.As the scrap stream passes through the scanner, the system applies X-ray fluorescence (XRF)—a non-contact material analysis method for the qualitative and quantitative determination of elemental composition—to examine the input material.

At the same time, the system records both weight and throughput, enabling the creation of an accurate chemical mass balance. The results are transmitted in real time to the process control system and can also be visualized on a display, for example in the form of a line chart. In addition, the EcoScan® Online generates automated daily and batch reports—fully customized to the customer's requirements.

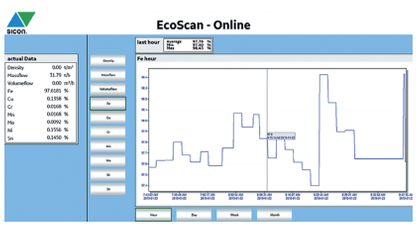

Fig. Line chart with live data

Flexible, economical, reliable

The EcoScan® Online impresses with both its cost-efficiency and flexibility.

The system is ideally suited for the precise analysis of a wide variety of input materials, including shredder scrap, sheared scrap, steel turnings, as well as aluminum and copper scrap. Beyond that, it can also be easily applied for the inspection of other material types. Integration into existing conveyor lines is quick and straightforward, requiring minimal installation effort.The EcoScan® Online gains an even broader range of applications when combined with an optical recognition system. This enables the identification and removal of organic or hard-to-detect impurities from the material stream at an early stage.

As a forward-looking company, SICON is also exploring new fields of application for its innovative solution and is currently preparing the use of the EcoScan® Online for HMS (Heavy Melting Scrap). By expanding the available data base, this will contribute to maximizing scrap utilization in support of the decarbonization of the steel industry.

Fig. EcoScan® Online in use

Conclusion

With its broad analytical spectrum, the EcoScan® Online provides steelmakers with the data they need to perfectly control scrap utilization and significantly increase their scrap input ratio.

Key advantages at a glance:

- Immediate quality control from incoming inspection through to the production process
- Optimized workflows thanks to live data and automated batch reports
- Accurate mass balance even with fluctuating throughput
- Early detection of deviations before problems arise

About SICON

Since 1998, SICON GmbH has stood for pioneering spirit and technological excellence in steel and scrap recycling. With innovative processes—from efficient scrap processing to the recovery of valuable metals—SICON delivers solutions that set new benchmarks. Our mission: conserving resources, boosting efficiency, and ensuring sustainable success for our customers worldwide.

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