ENSURING ALUMINUM QUALITY

Improving productivity while reducing quality claims

AMETEK Surface Vision supplies Italcoat S.r.l. with an inspection solution for aluminum color coating lines.

As a manufacturer of coated rolled aluminum products based in Pignataro Maggiore, Italy, Italcoat S.r.l. takes coils of rolled aluminum from its mother plant, Laminazione Sottile, and applies a color coating to the metal surface. There are several hundred colors of coating that are applied, ranging from matte to glossy finishes.

However, rising customer requirements for high-quality products drove Italcoat to improve productivity while reducing quality claims to a minimum.

Italcoat needed a surface inspection system to maintain product quality on its LV1 and LV2 organic color coating lines. These lines produce color-coated aluminum chiefly for use in pharmaceutical applications, construction, fin stock, food packaging and general use. The speed of these lines is approximately 150 meters per minute.

THE NEED FOR CONTINUOUS SURFACE INSPECTION

For its surface inspection requirements, Italcoat used human eye inspection and periodic checks. However, these methods were inefficient in the face of an increasing market demand for defect-free material.

The company wanted to replace manual inspection with a continuous surface quality checking system that covered 100% of the material being processed. The aim was to keep the production of scrap material to a minimum.

There are numerous defects to monitor the metal for: scratches, spots, stains, uncoated areas, coating voids, uneven coating, lacquer drops, streaks or discrete contaminations, and coating solvent issues such as microbubbles. Additionally, there may be repeat defects caused by the coating process or previous process steps. The new quality control system needed to provide visibility of defect distribution, and immediate alarms for prompt operator action.

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Antonello Ferone, Italcoat Process Engineer, said: “The demand for high quality material has risen over the past few years. We were looking for an inspection system that was reliable and could be easily adopted into the production process. Our goal was to minimize the time and cost of physical checks, which were increasing the downtime of the line. “The demand for high quality material has risen over the past few years. We were looking for an inspection system that was reliable and could be easily adopted into the production process. Our goal was to minimize the time and cost of physical checks, which were increasing the downtime of the line.

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The different markets served by Italcoat have varying requirements for surface quality, and the quality of the final product must be highly detailed to reduce the scrap after slitting. Italcoat needed to reduce scrap material at an early stage, with the option to take immediate action to remedy any defects. The solution had to provide a detailed map of the defect distribution over the material surface in order to manage yield optimization.

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AMETEK Surface Vision is a world leader in automated online surface inspection solutions with a broad product portfolio optimized for web and surface inspection and monitoring and process surveillance applications. Its product portfolio includes two distinct product lines: SmartView® systems and SmartAdvisor® systems. Each product line uniquely enables customers to inspect the surfaces of materials processed in a continuous fashion across the metals, paper, plastics, nonwovens, and glass industries. Learn more by visiting ameteksurfacevision.com.

Marco Saitta, Sales Account Manager at AMETEK Surface Vision, explained: “The SmartView system’s modular nature allowed Italcoat to quickly install it for immediate quality advantages, while allowing for control integration options in the future.”

The system fully met Italcoat’s expectations, delivering significant benefits to the coating lines. Once SmartView was installed and operational, the visibility of the surface quality and increased knowledge of the defect types helped Italcoat optimize the product quality and improve the process.

“The increase in product quality has secured our repeating business, while significantly reducing scrap production,” Antonello said. “We have also reduced quality claims, resulting in significant cost reductions.”

Once SmartView was installed and operational, the visibility of the surface quality and increased knowledge of the defect types helped Italcoat optimize the product quality and improve the process. The SmartView system reliably detects defects on Italcoat’s many different colors and surfaces, requiring only a small number of detection settings and parameters to manage the inspection system. Streaming video capabilities provide a full, real-time overview of the surface in high resolution and full width.

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AMETEK Surface Vision is a unit of AMETEK Process and Analytical Instruments, a division of AMETEK, Inc., a global manufacturer of electronic instruments and electromechanical devices with annual sales of approximately $5 billion.

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