

SURFACE VISION

The leading automated surface inspection partner for fast and accurate materials checking.

DETECTING DEFECTS IN
**PERSONAL
PROTECTIVE
EQUIPMENT**

DELIVERED THROUGH

**SMART
VIEW**[®]

Online detection, classification
and visualization of surface defects

**SMART
ADVISOR**[®]

Synchronized real-time process
monitoring and inspection

AMETEK[®]
SURFACE VISION

**GIVING YOU THE
WHOLE PICTURE**

The leading automated surface inspection partner for fast and accurate web inspection and monitoring.

NONWOVENS AND PPE

Personal Protective Equipment (PPE) is essential to a range of workplace applications, particularly Healthcare. Many of these PPE items are partly or wholly manufactured from nonwoven materials.

Since nonwovens protect against airborne particles while providing air permeability, this quality must be safeguarded in order to produce effective PPE that is safe to use.

Our systems combine advanced software and proven hardware to detect and classify nonwoven defects in real-time. Flaws in the material are located by synchronized, high-resolution cameras and LED lighting arrays which

together capture high-quality color or monochrome images from multiple inspection angles. They are capable of detecting down to 100 microns or below, providing critical detection of holes that, in many processes, can indicate issues with converting and efficiency in throughput.

Our color-camera systems provide extra features that benefit defect description, including easy detection of burned texture (such as that caused by going through hot calendar roll stacks), and detecting insects that get into the manufacturing process, carrying bloodborne pathogens and introducing colored defects.

TYPICAL DEFECTS FOUND IN NONWOVENS INCLUDE:

- Holes
- Contamination
- Hard spots
- Married fibers
- Overall quality defects, such as bad formation



AMETEK SURFACE VISION AND PPE

AMETEK Surface Vision has served the nonwovens market since the company was set up in the late 1990s. There are now hundreds of our systems successfully operating at major nonwoven producers around the world.

This extensive experience ensures that nonwovens manufacturers receive the most effective solution for each application. Our experts work with the customer to ensure each system monitors and detects the defects you are looking for.

The inspection and monitoring solutions we supply support nonwoven quality and consistency for a range of processes, delivering defect detection that can easily handle the high-speed production of single-use PPE items.



OUR SOLUTIONS FOR PPE

SMART VIEW®

The SmartView® system monitors continuous manufacturing processes across a range of industries – beyond nonwovens, it also operates in paper, metals, glass and plastics manufacturing processes.

Using line scan camera technology, the system creates high-resolution images of the products as they move beneath the cameras under a very bright light. SmartView has a tightly-controlled optical geometry, and records images of the material to locate defects.

Our advanced algorithms are at the core of the inspection system. As the nonwoven material is scanned, its texture is translated into optical noise, so the system examines the variability of this texture as it passes through the line.

In addition to color defects, SmartView also detects gaps or light spots. On spunlace, spunbound, meltblown and SMS material, for example, these indicate that the density of the material is not ideal for converting, barrier performance

or rigidity. Other issues such as spinning, edge defects or hard spots are also identified and classified. Our proprietary SmartView software also helps ensure the material is manufactured to recognized international standards, including:

- EN14683, Type I, II and IIR
- ASTM F2100, Level 1, 2 and 3
- Respiratory masks defined in USA as N95 mask and in Europe FFP (Filtering Facepiece) masks

Every SmartView system is customized to meet your unique production conditions and inspection requirements, and this is often an ongoing process in the early days after installation.

As you provide samples of the defects you encounter, we can optimize the optical configuration. Information obtained from inspection is passed on to SmartView's powerful self-learning software, which takes the noise, defect data and images, and makes it meaningful to the overall operation.

Reports can be generated from this data, or it can be sent to your quality control systems, allowing you to directly integrate it into your business intelligence process.



SOFTWARE

Our proprietary Windows-based software integrates seamlessly with "off the shelf" system hardware to provide continuous detection, classification, visualization and reporting, accessible across the network.



CAMERAS

High-precision, continuous-operation cameras are located across the process, using resolutions and optical technologies best suited to each specific application.



LIGHTING

Powerful, long-life LED lights brightly illuminate the web for inspection and monitoring, delivering uniform lighting levels.



DATA CAPTURE & ANALYSIS

Windows-based computer systems store and analyze data from the cameras, supporting video streaming and defect classification capabilities.



APPLICATION SUPPORT

Our expert applications knowledge helps you to run your system more easily, providing the optimal solution for your process.

SMART ADVISOR®

SmartAdvisor® is a simple, reliable vision system for monitoring and inspection that maximizes machine efficiency and yield rates. Versatile and easy to use, it delivers high-speed, multi-dimensional video monitoring and process analysis to a range of industries. In the nonwovens sector, SmartAdvisor can work alongside our

SmartView system to create an integrated solution or may be used as a standalone defect detection system.

Within PPE manufacturing applications, SmartAdvisor is typically most effective installed towards the end of the line, to guarantee quality. SmartAdvisor cameras are best used towards the front of the process, looking for the origin of detected defects. This allows the system to provide multiple upstream videos showing the same area of product where the defect is found, enabling your operators to locate the exact point where the defect started.

SURFACEVISION

ABOUT AMETEK SURFACE VISION

AMETEK Surface Vision is a world leader in automated online surface/web inspection and monitoring solutions. Our broad product range is optimized for the monitoring and inspection of webs and surfaces, and for process surveillance applications.

The SmartView and SmartAdvisor product lines deliver robust, flexible solutions to continuous production processes across a variety of industries, with more than 2,500 installations worldwide.

Our systems have become vital to increasing efficiency, streamlining operations, improving product quality, reducing waste and lowering costs in industrial processes. Manufacturers in the metals, paper, plastics and nonwoven industries rely on our solutions to detect surface flaws or defects, and optimize process efficiency, at their production facilities across the globe.

We continue to innovate, providing cutting-edge technologies and world-class technical support that delivers highly accurate defect data, high-definition video, intelligent grading, archiving and detailed reporting. Customers who use AMETEK Surface Vision's services get the benefits of:

- > **Reduced operational costs**
- > **Reduced material waste**
- > **Process optimization**
- > **Improved product quality**
- > **Maximized yield**
- > **More thorough and objective grading of material**
- > **Detection, classification and visualization of defects**
- > **Minimized need for manual inspections**
- > **Inspection reports you need, in a form you can use**

Based in Hayward, California, AMETEK Surface Vision has offices and sales representatives around the world. We are part of the Process and Analytical Instruments Division of AMETEK, Inc., a leading global manufacturer of electronic instruments and electromechanical devices.

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