

SURFACEVISION

**THE ROLE OF
THE SMARTVIEW®
ADVANCED
WINDER ADVISOR
IN NONWOVENS
MANUFACTURE**

APPLICATION NOTE



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APPLICATION
NOTE ONLINE**

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SMARTVIEW® ADVANCED WINDER ADVISOR PROVIDES SYNCHRONIZED DEFECT DISPLAYS AND STOP FOR USE IN REWINDER OPERATIONS

INTRODUCTION

Advanced Winder Advisor (AWA) allows winders to be accurately and repeatedly stopped to remove defects while also increasing winder efficiency. AWA is designed to seamlessly integrate with SmartView inspection systems on the nonwoven production line to create a closed-loop quality control solution.

Proprietary synchronization technology enables automatic stops at the exact location of a detected defect. This same synchronization allows immediate resynchronization after a web break or material splice.

This enhanced stopping accuracy ensures that winder operations are more efficient, and defects are dealt with

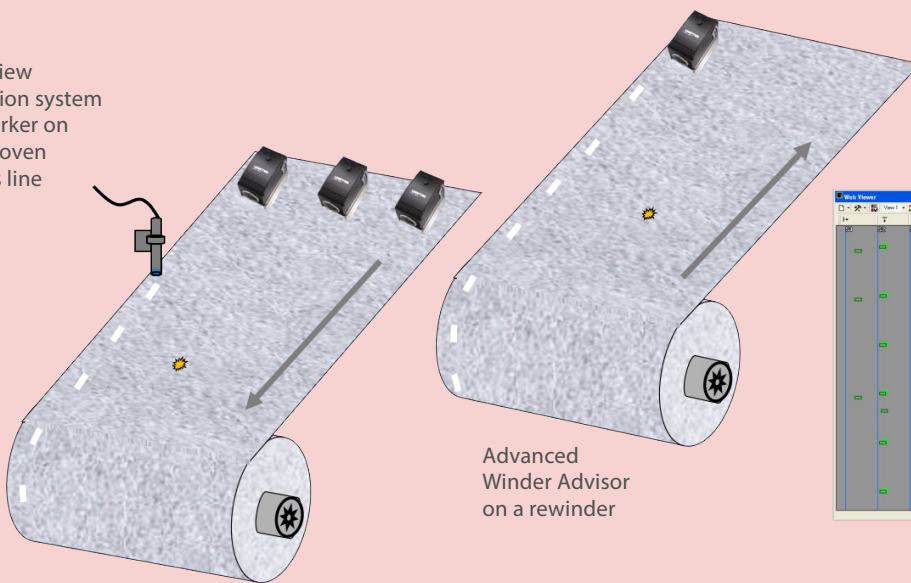
more quickly, increasing production speed and overall product yield.

Besides automatically identifying critical defects, AWA uses a simple operator interface that lets operators quickly review the defect images and details such as size and location and make changes to the target list as necessary.

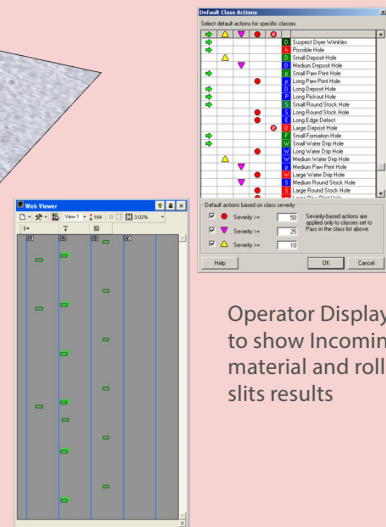
This enhanced stopping accuracy ensures that winder operations are more efficient, and defects are dealt with more quickly, this increasing production speed and overall product yield.

The AWA uses a simple interface link to automatically stop the winder at each defect. Synchronization codes correlate to the exact sheet position – AWA can repeatedly stop within centimeters.

SmartView inspection system and marker on a nonwoven process line



Advanced Winder Advisor on a rewinder



Operator Display to show Incoming material and roll slits results

THE AWA IN NONWOVEN REWINDER OPERATIONS

The AWA has three key functions: mark reading and position tracking, winder control, and inspection review and editing. Afterward, new reports can be printed to show the changes made to defects during winding.

MARK READING AND POSITION TRACKING

AWA reads the invisible synchronization codes and determines the position within the roll. Absolute (rather than relative) distance markings are used so that an accurate position can be determined no matter the amount of slab-off or splicing.

WINDER CONTROL

AWA controls the winder by sending digital outputs to the winder's motor control. The multiple signals are "slow speed", "crawl speed", "stop" and "secondary stop." Installation includes calibration for the actual stopping performance capability of the individual winder. Separate round-in and round-out acceleration and deceleration times can be selected.

INSPECTION REVIEW AND EDITING

AWA includes interfaces for inspection review, target list editing, defect viewing, and defect reclassification during the winding process. Each time the AWA automatically stops the winder at a defect, operators can manually enter the slit pattern or use an industrial interface to the Roll Handling System.

Splices can also be entered into the inspection results to reflect material removed during winding. When the reel is finished, the inspection data reflects the actions of the operator.

FEATURES

Two models of the AWA are available: synchronized defect tracking with or without control of the winder.

WITH WINDER CONTROL

Offers synchronized defect tracking and displays during winding with automatic stopping or slowing signals to the winder motor control system. Example: patch holes before sending the roll to the rewinder until a thin spot passes to avoid a sheet break.

Before and during the winding process, operators can review the entire inspection record from the process in list and defect map formats, edit the default target list, determine which defects the rewinder stops at and which ones it just slows down for.

Operators can also specify "manual" slow or stop targets at any position in the roll. These targets can be used, for example, to slow the winder in an area where the paper quality is suspect, or to automatically slow or stop the winder at the end of a reel, freeing the operator to perform other tasks.

On the nonwovens process line, the SmartView inspection system and high precision marker create synchronization marks invisible to the human eyes. On the rewinder, the AWA reads these marks to determine the current location in the reel.

These marks can be read in either a forward or reverse direction. It updates the data displays, and it automatically compares the web location to defects in the stop list. AWA displays the next defect and its distance from the winder. With the control model software, AWA signals the winder to slow and then crawl as a defect approaches. When the defect arrives at the operator stand, the winder is signaled to stop if that was selected in the target list for that defect.

WITHOUT WINDER CONTROL

Offers synchronized defect tracking and displays during winding or other processes downstream of a process line. Operator decides what winder control action to take. Example: slow a rewinder until a thin spot passes to avoid a web break.

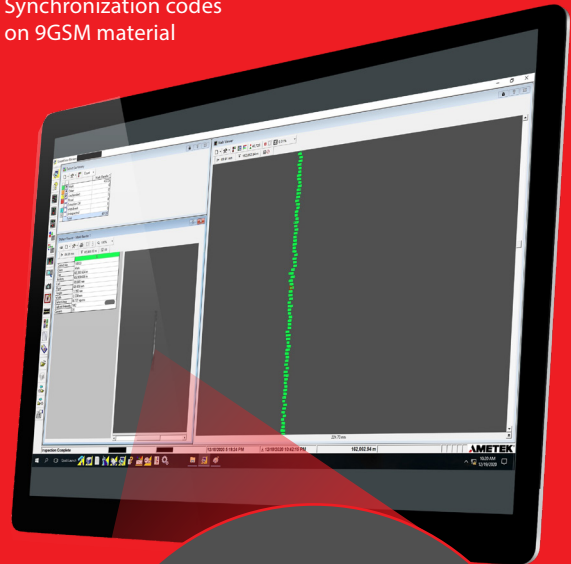
INSPECTION SYSTEM AND NONWOVEN REQUIREMENTS

A SmartView inspection system and high-precision marker (sold separately) must be operating on the nonwovens process line. AWA installation includes configuration of synchronization marking in the inspection system. The AWA marking system is qualified for invisible marking concept.

KEY BENEFITS:

- Process optimization
- More thorough and objective grading of material
- Automated stopping or slowing at critical defects
- Absolute web location tracking
- Automated re-synchronization
- In-process inspection data review
- Target list editing
- Defect reclassification
- Forward and reverse mark reading
- Inspection reports you need, in a form you can use

Synchronization codes on 9GSM material



SMART VIEW®

Online detection, classification and visualization of surface defects

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SURFACE VISION

ABOUT AMETEK SURFACE VISION

AMETEK Surface Vision is the world leader in automated online surface 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 number of industries, with hundreds of customers and more than 3,000 installations worldwide.

Our systems have become vital to increasing efficiency, streamlining operations, improving product quality and reducing costs and waste in industrial processes. Manufacturers in the metals, paper, plastics and nonwovens 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**
- **Process optimization**
- **Reduced process upsets (breaks, wash-ups, etc.)**
- **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 Newark Delaware, 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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