

In-line Inspection for Coated Paper: Quality and Process Control for Higher Yields



Coated paper production line

Dr. Schenk's reliable in-line inspection solutions detect defects and irregularities in coated paper during all production steps. Thanks to the innovative MIDA concept even the smallest defects are detected.

Automated quality assurance and process control with EasyInspect and EasyMeasure ensure fast process optimization and increased yield combined with minimized rejects for coated paper manufacturers.

Quality challenges for coated paper manufacturers

Controlling coating layers: During the coating processes microscopically thin layers of, e.g. polycarbonate, polyester or acrylic, are deposited on paper substrates. To guarantee their full functionality, these coating layers must be free from defects, contaminations or unacceptable thickness variations. With the combination of EasyInspect and EasyMeasure, defects of all sizes and all characteristics can be detected accurately and fast, so that process improvements can be made before significant losses are encountered.

Detecting repeating defects in coatings: Residue and foreign particles on rollers of a coating line can generate a repeating defect in subsequent material sections. EasyInspect recognizes the equal distance between defects and automatically diagnoses contaminated or damaged rollers (streak detection). This reliable detection of repeating defects helps to ensure a consistently high quality level throughout the production process.

Large-Scale Coating Inhomogeneities

- Paper thickness variations
- Coating thickness variations
- Layer surface topology variations (gloss)
- and many more

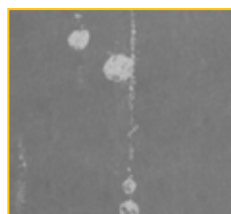
Coated Paper Defects:

- Wrinkles
- Holes
- Paper tearing / Web Break
- Particles / Inclusions
- Stains / Spots
- Dents
- Scratches
- Overcoated Particles
- Coating agglomerations
- and many more

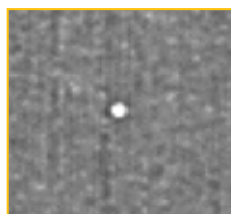
Broken Coating Layer



White Spot



Coating Pinhole



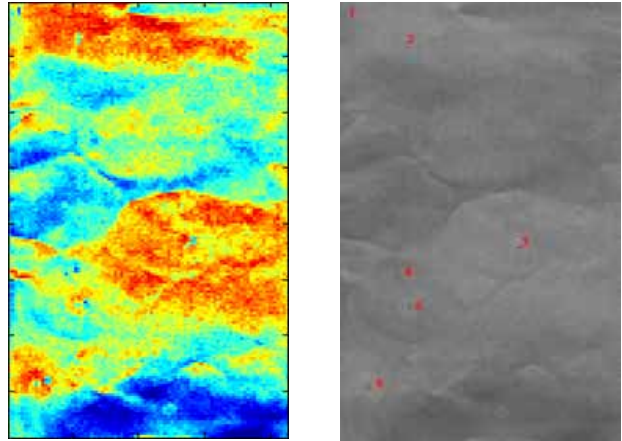
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Monitoring material properties with EasyMeasure

Correct monitoring of material properties is a crucial component for the quality of coated paper. Dr. Schenk's EasyMeasure generates a homogeneity map of layer properties (i.e. coating thickness, surface structure, reflectance, transparency) for the full width of the material. This allows to identify irregularities both in the paper substrate and all aspects of the coating.

A range of false color displays is available to highlight different aspects of the material homogeneity.



The above images show a material map of the coating surface (gloss) for a whole paper sheet in false color display (left) and gray levels (right). Problematic areas can be identified clearly with EasyMeasure.

YOUR BENEFITS

Cost Savings with Superior Technology

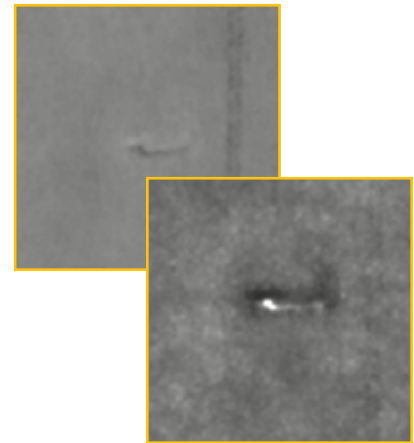
- Improved defect detection and classification through Multiple Image Defect Analysis (MIDA)
- Super-fast cameras allow multiple optical channels in one camera line
- Reduced costs and installation space through Twin-Line illumination – 2 optical channels in one illumination

Unparalleled User-Friendliness

- Easy and automatic creation of classification rules with the Auto-Classifer
- Configurable reports with the Dr. Schenk Reporting Tool

100% Material Monitoring

- Easy Measure for 100% monitoring of the material properties e.g. gloss, thickness, and many more



Unique MIDA inspection

With Dr. Schenk's unique Multiple Image Defect Analysis (MIDA) all kinds of coated paper defects can be fully analyzed in one inspection run. Thanks to ultra-high speed illumination multiplexing and multiple optical channels per camera line all issues can be detected and classified with more information per defect, at higher production speed, than any other inspection technology can.

About Dr. Schenk

Dr. Schenk GmbH offers inspection and measurement solutions for automated quality assurance and production process control - a key success factor in the making/converting of plastics, glass, metal, PV modules, textile materials & non-wovens, and the semiconductor industry.

From modular standard units to highly customized systems – Dr. Schenk's solutions have precision in focus!

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