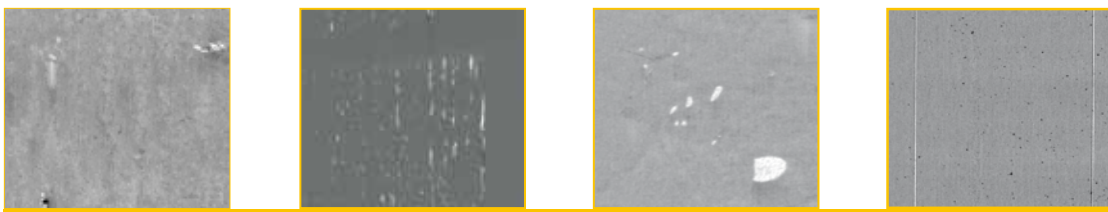


Quality and Process Control for Labels, Tape and Release Liners



Unparalleled Optical Inspection Solutions for Consistent Material Quality



EasyInspect & EasyMeasure

YOUR BENEFITS

Cost Savings with Superior Technology

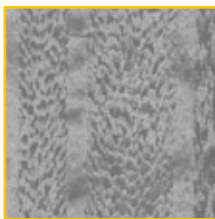
- Improved defect detection and classification through Multiple Image Defect Analysis (MIDA)
- Super-fast cameras allow multiple optical channels in one camera line
- Reduced costs and installation space through Twin-Line illumination – multiple optical channels in one illumination
- Histogram analysis for exact differentiation between real defects and artifacts

100% Monitoring of Material Quality

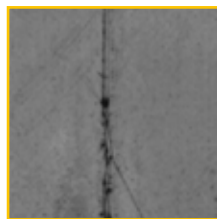
- Full monitoring of adhesive and silicone coating layers for high quality and reduced waste

Unparalleled User-Friendliness

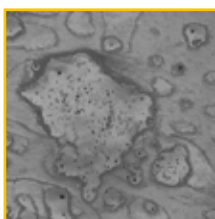
- Easy and automatic creation of defect classification rules with the Auto-Classifier
- Freely configurable reports with the Dr. Schenk Classification Toolkit



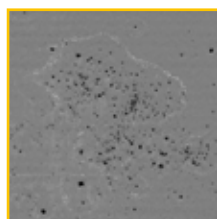
Flow marks (caterpillar footprints) in adhesive coating



Folding in PET film



Coating void and dirt particles in label stock, in brightfield transmission (left) and darkfield reflection (right)



Applications

- Pharmaceutical labels
- Food labels
- Barcode labels
- Office products (Post-its, folder labels...)
- Decoration products (stickers, wall tattoos...)
- Adhesive (PSA) tapes (duct tape, double-sided tape, gaffer tape, office tape, electrical tape, masking tape...)

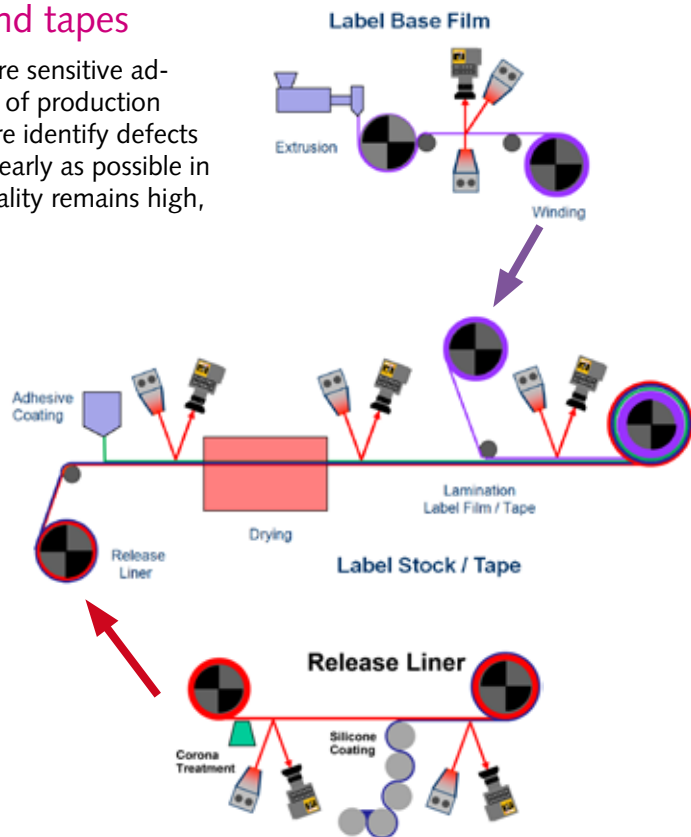


Inspection of release liners, labels, and tapes

The production of labels on a release liner / pressure sensitive adhesive (PSA) is a complex process, running the risk of production defects at each stage. EasyInspect and EasyMeasure identify defects - especially at the adhesive and silicone layers - as early as possible in the production. This way, the resulting product quality remains high, while downstream waste is reduced.

Typical material inspection tasks for primary product labels, point-of-sale labels, functional or security labels include:

- Base label material (gels, burnt spots, orange peel, scratches, streaks, foldings, inclusions...)
- Silicone coating on release liners (missing coating, silicone voids, particles...)
- Release liner base (inclusions, variations in structure...)
- Adhesive film (uncoated areas, coating streaks, drying marks, bubbles...)
- Finished label stock (lamination defects, paper folds, bubbles...)



MIDA solution

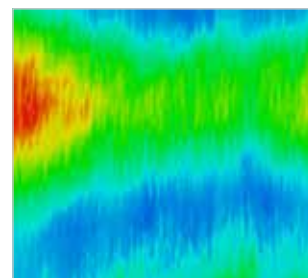
Dr. Schenk's Multiple Image Defect Analysis (MIDA) enables viewing a defect in multiple ways at the same time: Using different channels, different perspectives (brightfield/darkfield, reflection/transmission) and different illuminations (diffuse/focussed, multiple wavelengths), as many as eight distinct optical channels can be achieved - with only one camera.

As a result the top and bottom side of all material layers can be inspected for defects simultaneously in different optical channels, with fewer cameras than other inspection systems need. In addition and in parallel, layer properties, for example thickness of silicone coating and adhesive layers, are monitored with EasyMeasure.

EasyMeasure

Monitoring options for the coating process:

- Layer Thickness:** Thickness variations of silicone & adhesive coatings
- Haze:** Scattering behavior
- Reflectivity:** Reflectance of materials and coatings
- Formation:** Fiber dispersion variations in paper



False color images reflect layer thickness variations



Dr. Schenk's production site

Dr. Schenk GmbH, established in 1985, is an innovative high-tech company based near Munich, Germany. Dr. Schenk develops, produces and markets optical surface inspection and measurement solutions for automated quality assurance and production process monitoring. This includes high-quality, customizable handling solutions. Our products are a key success factor in the making and converting of many materials, e.g. plastics, textile materials, nonwovens, paper, metal, or glass, for a multitude of markets like display glass, automotive, packaging, medical, renewable energy, and many more.

Throughout the world Dr. Schenk's over 300 employees continue to set new standards for the inspection of surfaces. More than 12,000 m² of modern, cleanroom-capable production and testing facilities are available to research, development and production to apply cutting-edge optics and electronics to customer applications.

Dr. Schenk offers extensive from-lab-to-fab knowledge. Customers benefit from our expertise in the translation of lab applications to large scale productions. Our sophisticated handling solutions complete the one-stop-shopping experience.

The company's objective is complete customer satisfaction. This is achieved through innovative and practical solutions that can be implemented into new and existing production lines. Local sales and service facilities around the world ensure fast support, technical service, training and consulting at any phase of a project.

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

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