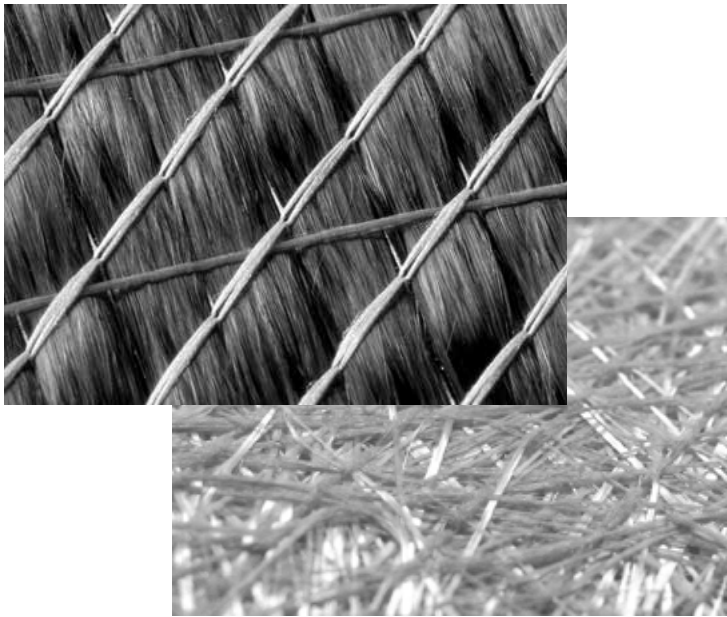


Automatic Quality & Process Control for Carbon and Glass Fiber Composites



Applications

- Rovings, tows
- Carbon fiber / glass fiber mats
- Carbon / glass uni- and multi-directional weaves
- Carbon fiber / glass fiber textiles
- Prepregs

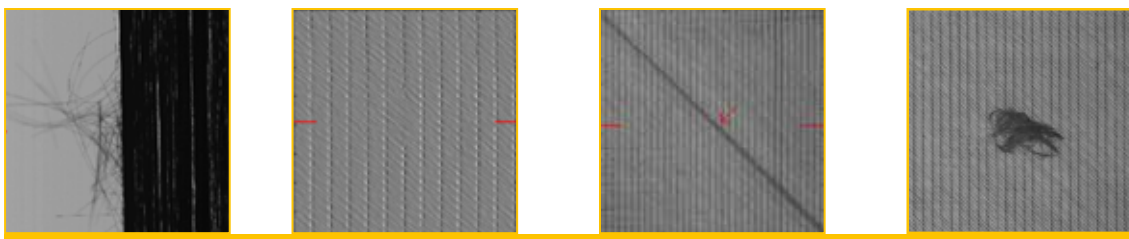
Composite material defects

- Gaps / outstanding fibers in rovings and tows
- Contaminations, e.g.
 - Particles
 - Foreign fibers
- Missing / wrong stitches
- Fuzz balls
- Irregular fiber distribution:
 - Thick spots / thin spots
 - Holes / gaps
 - Missing / broken threads
- Streaks
- Wrinkles
- and many more...

Highest quality for carbon and glass fiber composites

The superior Dr. Schenk EasyInspect and EasyMeasure are the state-of-the-art automated optical inspection solutions for carbon and glass fiber composite materials used in high-quality applications such as airplanes, automobiles, light weight structures, and more. Both multi- and uni-directional weaves can be inspected for all relevant defect types, so that faulty production is identified quickly and can be addressed with the appropriate quality measures, preventing costly waste and customer complaints.

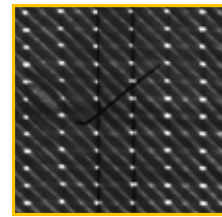
The Dr. Schenk inspection systems are IP65 compliant, guaranteeing smooth operation in demanding production environments.



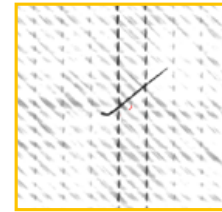
New inspection technology - Adaptive Background Illumination and Virtual X-Ray

Adaptive Background Illumination (ABI) is a completely new concept tailored specifically for the demands of composite inspection. A background illumination in transmission is combined with a reflection illumination for optimal inspection results. The background illumination intensity can be adapted to every material density and characteristic, offering a perfect optical compensation of the material noise for all products.

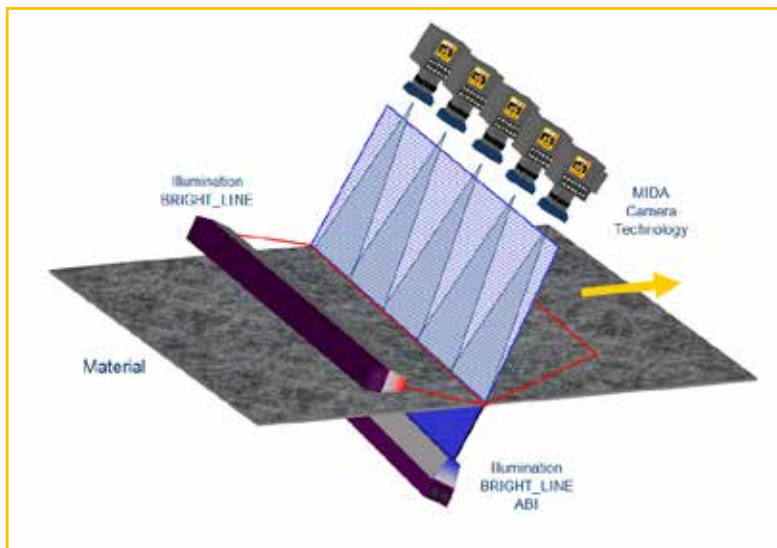
ABI can be combined with Virtual X-Ray, which offers an illumination with ultra-high light intensity using modern high power LEDs. This is especially effective for detection and classification of e.g. small foreign material inclusions on the top and bottom sides of the composite material. ABI and Virtual X-Ray can be used on the same scan line by multiplexing between them.



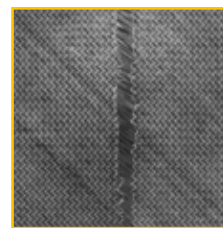
Conventional inspection



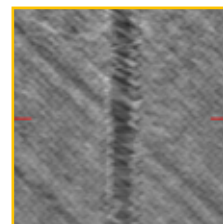
Inspection with Virtual X-Ray



Optical setup of Virtual X-Ray and ABI



Missing stitch in unidirectional carbon weave...



...detected and classified by Dr. Schenk EasyInspect

EasyMeasure monitoring

Material homogeneity, grammage and mechanical stability are important properties of a composite material. Dr. Schenk's EasyMeasure offers complete monitoring of these aspects for the full material width with more than 65.000 gray levels. The high performance of the inspection system allows the detection of large-scale inhomogeneities (like material cloudiness) in high resolution and great detail.

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

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