



Tested: OnV FlocSpotter already successfully measures the formation at the headbox at Voith Paper Technology Center in Heidenheim, Germany.

Uniformity right from the start

OnV FlocSpotter measures formation already on the forming wire

The latest image-processing innovation from Voith Paper Automation is the OnV FlocSpotter. This is the first system that enables the evaluation of the paper web uniformity already in the wire section.

Formation is one of the most important quality parameters in the papermaking process. It is decisive for constant paper quality, since fluctuations here have an effect on a number of other parameters. Accordingly, sufficient strength and good printability are only obtained with very uniform paper. Voith has now succeeded in developing a sensor that already measures the formation on the forming wire. This enables the papermaker to intervene in and regulate the process at the earliest possible stage: after sheet formation. In the production of multi-ply products, it also enables to determine reliably the formation of individual layers (Fig. 1). This is not possible with the so far common formation measurement at the reel.

Faster than lightning

To enable the formation to be measured at speeds of more than 1,700 m/min (nearly 5,600 feet/min),

a camera delivering high-resolution data at a shutter speed of less than 10 microseconds had to be found for the OnV FlocSpotter.

For the sake of comparison: This is faster than an electrostatic flash discharge. To ensure adequate exposure at such a short shutter speed, OnV FlocSpotter was equipped with a powerful LED illumination system (Fig. 2). The OnV FlocSpotter camera housing was also adapted to the harsh conditions of the wire section. It was designed to prevent accumulation of dirt particles.

Thinking software

With the help of a software program, the images taken by the OnV FlocSpotter can be classified into familiar formation categories (e.g. normal, coarse, and fine) and evaluated. Together, these recorded images form a “formation map” that can be used for rapid and simple

comparison of the formation values for different machine operational statuses by operators. The program enables a visual representation of the formation to be linked to the respective operational status. Therefore, the formation can be optimized in a targeted way during production.

Infobox: Formation

Uniformity of paper web determined by distribution and alignment of fibers in the paper.

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Fig. 1: On multi-ply cardboard machines, measurements can be made on the different headboxes.

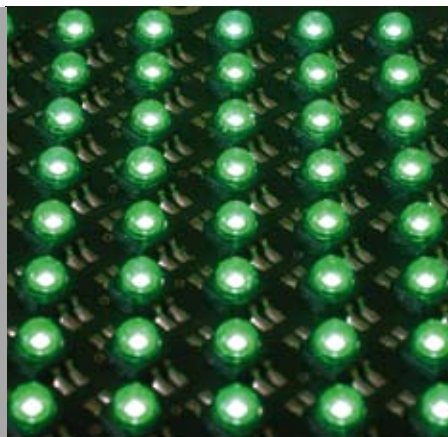


Fig. 2: Good exposure performance is achieved thanks to LED flash system.

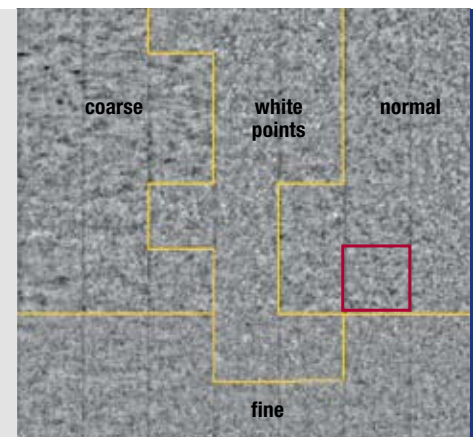


Fig. 3: The formation map puts the current measurement (red field) into a historical perspective.