

OptiTopo – a unique method to correlate surface topography and print defects

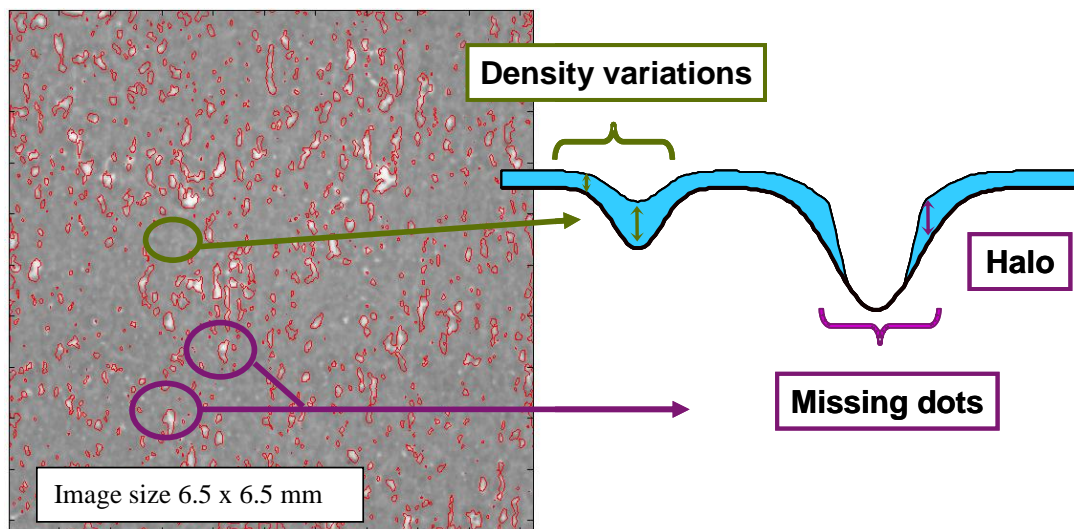
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Is there a match between topography variations and print defects? How is the surface topography affected by different calendaring, coatings and base papers? Are topography differences between centre- and edge rolls acceptable?

OptiTopo will help you when answering these questions by providing additional information when compared to classical air-leak devices (e.g. PPS, Bendtsen). Acquisition and processing time are much faster than current mechanical stylus or laser instruments.

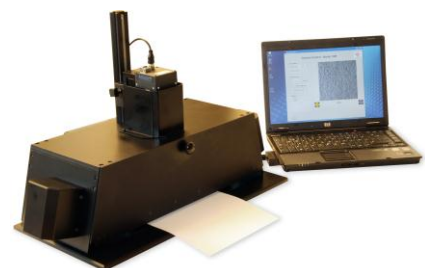
Example

Flexography print defects (uncovered areas in full tones) on carton board. The uncovered areas correlate well to valleys deeper than $-1.2 \mu\text{m}$ from the average height (see the red contours). Valleys wider than 0.25 mm are excluded.



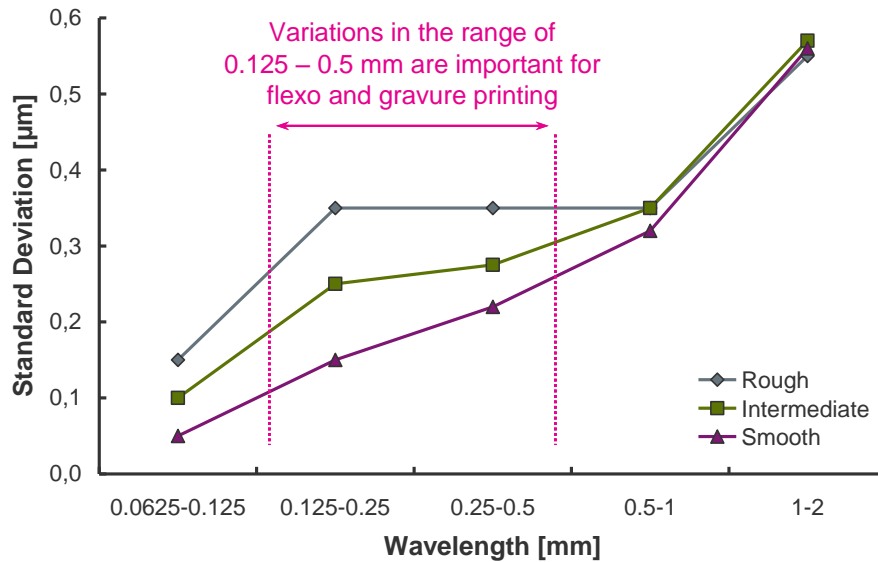
How this is made

Two images of the same exact region of a paper sample are acquired, illuminated in low angles from opposite directions. A height map is calculated using a “photometric stereo” technique. Frequency analysis is applied on the height map to separate the small-, mid- and large scale variations and their respective contributions when predicting print quality. It is currently possible to measure areas from 6.5x6.5 mm up to 30x30 mm. Normally 8 areas are evaluated for better statistics. Both printed and unprinted samples can be measured.

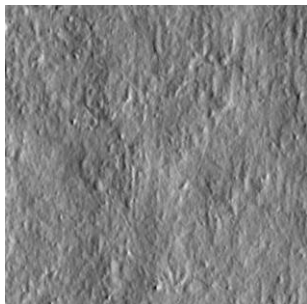


What you get

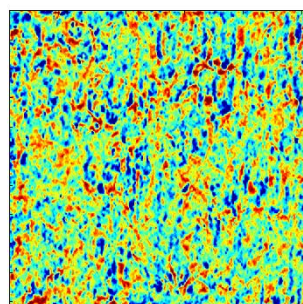
- The topography variations are divided into wavelength classes (saved in Excel-file). The example below clearly illustrates how three different calendering conditions can affect the surface. Variations in the class range of 0.125 – 0.5 mm are important for flexo and gravure printing.



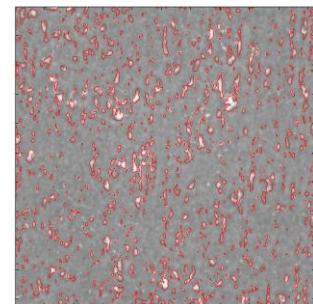
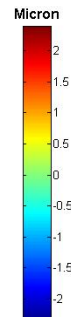
- Amount of surface area below a specified depth, which is useful to predict ink skips.
- Images (see below) are saved in a Word-file.



Appearance of the surface
(gradient map)



Height map colour-scaled in
microns



Combination of intensity image
and valleys of a specified depth

Contact

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