Print Control Wizard 20.0

Standard Operating Procedure:

How do I verify the plate quality?

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1. Dot Fail Test

To make sure a plate is properly imaged, exposed and processed some quality criteria are being used to check this. One of them is the so called Dot Fail (DF) test. It can be evaluated with a simple magnifying glass. The Dot Fail Test is designed in a way it independent of the used screen ruling and can be put as a screened element on every plate to become independent on the ripping and used curves.

The Dot Fail test looks like this:

| 4 | 9 | 16 | 20 | 25 | 30 | 36 | 42 | 49 | 56 | 64 |
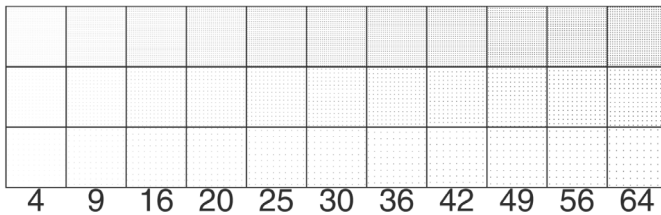
The number gives the size of the dot in Pixel. 2x2=4 Pixel etc. Since this is a squared function the steps are getting very big, so the numbers are increasing first in one orientation, then in the second orientation. From top to bottom the distance between the dots is getting bigger.

For checking the quality of a plate the center and the lower row are being checked. The smallest number where all dots are in position gives the resulting value. The result needs to be compared to the quality values that were found as good quality. For newer Software-versions this is being recorded within the XPS.

2. Mask quality

For checking the plate quality during plate making it makes sense to check the individual steps within. The first step is the imaging.

The mask is being checked at 6 different areas, all with the help of a mask densitometer (such as the Techkon DENS or the Techkon T120). Put the unexposed plates to a light table. Mark a spot on the light table and measure always at this spot. Make sure the light table is in a good and stable mode (not flickering or heating up). The Techkon DENS need to b in mode "T" (otherwise press the "mode" button until the device is in this mode)

Measurements calibrated on the clear area

On the **unexposed** plate remove a piece of the LAMS with sticky tape. Put the Densitometer on this spot and calibrate it by pressing the "CAL" button. Then put the according areas at the measurement spot and press "DENS" to measure:

- A real 100% area (no MicroCells)
- An area with 100% usage of MG25 MicroCells
- An area with 100% usage of MC16p MicroCells

## Measurements calibrated on Solid area

Put the real 100% area (no MicroCells) to the measurement spot and the Densitometer on top. Calibrate by pressing the "CAL" button. Then move the plate and densitometer to measure these areas:

- A 50% area (no curve applied)
- A 5% area (H34 curve applied, no bump)
- A 10% area (H34 curve applied, no bump)

The result needs to be compared to the quality values that were found as good quality.

3. Relief

A Flexo printing plate is different to other printing forms (such as offset or gravure) due to its 3D structure. The plate has a total thickness. The surface of this printing plate is transfering the ink, so those areas of the plate not transferring the ink need to have a lower height. These areas are called the floor and accordingly floor-height. For good printability it's important that the relief (difference between floor and full plate) is correct. If it is too flat the floor will become dirty on press and start to print as well. If the relief is too deep the highlight dots will become unstable.
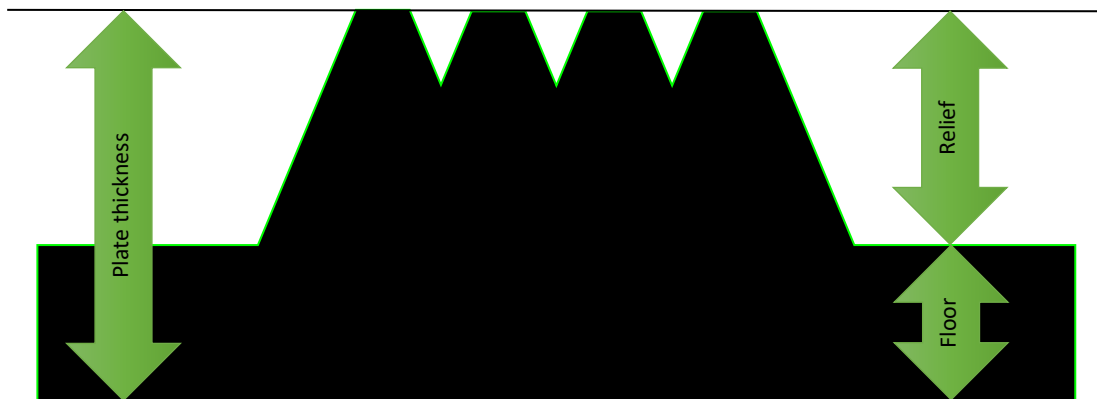

The result needs to be compared to the quality values that were found as good quality. For newer Software-versions this is being recorded within the XPS.

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4. Single Dot Test

To make sure a plate is properly imaged, exposed and processed some quality criteria are being used to check this. One of them is the so called Single Dot (DF) test. This is sometimes also called dot isolation test. It can be evaluated with a magnifying glass. The Single Dot Test is designed in a way it independent of the used screen ruling and can be put as a screened element on every plate to become independent on the ripping and used curves.

The Single Dot Test is an array of squares. Each square is labeled with a square number. Each square is containing 100 little squares in the size as the label e.g. the 64 is containing squares of 8x8 = 64 Pixel.

The smallest value needs to be determined, where all dots within one size are formed in the plate. The result needs to be compared to the quality values that were found as good quality. For newer Software-versions this is being recorded within the XPS.

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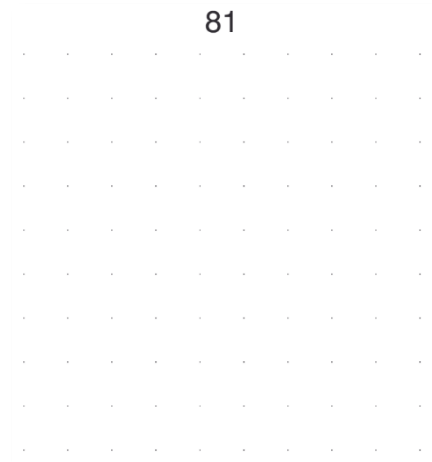
Quality criteria	Picture	
Not stable patch Single-Dot element		
Stable patch Single-Dot element		