

## Sheet fed offset – print quality and set off

Sheet fed offset printability is difficult to evaluate in lab scale, since laboratory methods usually evaluate the paper concerning a certain isolated phenomenon. Only at a trial at a printing machine the effects of printing speed, ink setting, back trapping and fountain solution are all taken into account at the same time.

### Description

The SFO printability trials at FPC can be carried out as a constant printing conditions or a constant print density trial

#### Constant printing conditions

The printing conditions are determined by printing the reference paper to the targeted print density. After fixing the printing conditions the ink feed isn't varied between different trial points, whereby conclusions about the surface structure and ink need of the paper can be drawn based upon the obtained print density.

Some 300 sheets per trial point are required for a constant printing conditions trial when printing only on one side of the paper. Some 700 sheets of reference paper are required. If the target is to print on both sides of each trial point, the amount is doubled.

If there are a lot of different trial points, washing of the rubber blankets might be needed in between. In this case the right printing conditions can again be sought with the reference paper.

#### Constant print density

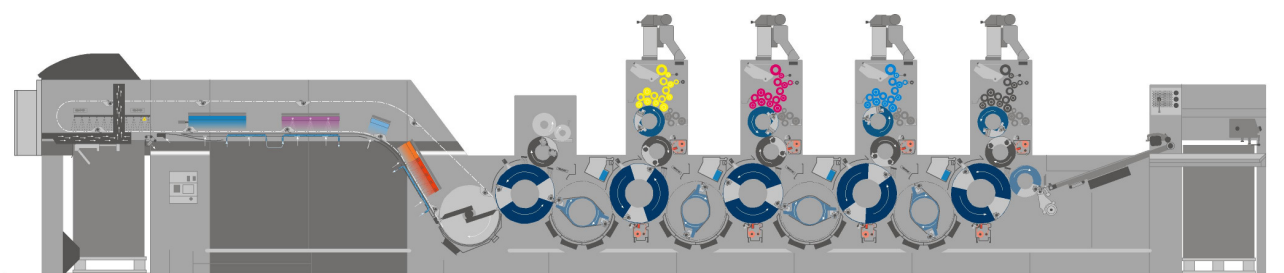
When printing to a constant print density, the ink feed is adjusted in the beginning of every

trial point, so that all trial points are printed to the same density. Conclusions about the differences in ink need of the various papers can be drawn based on the changes in ink feed.

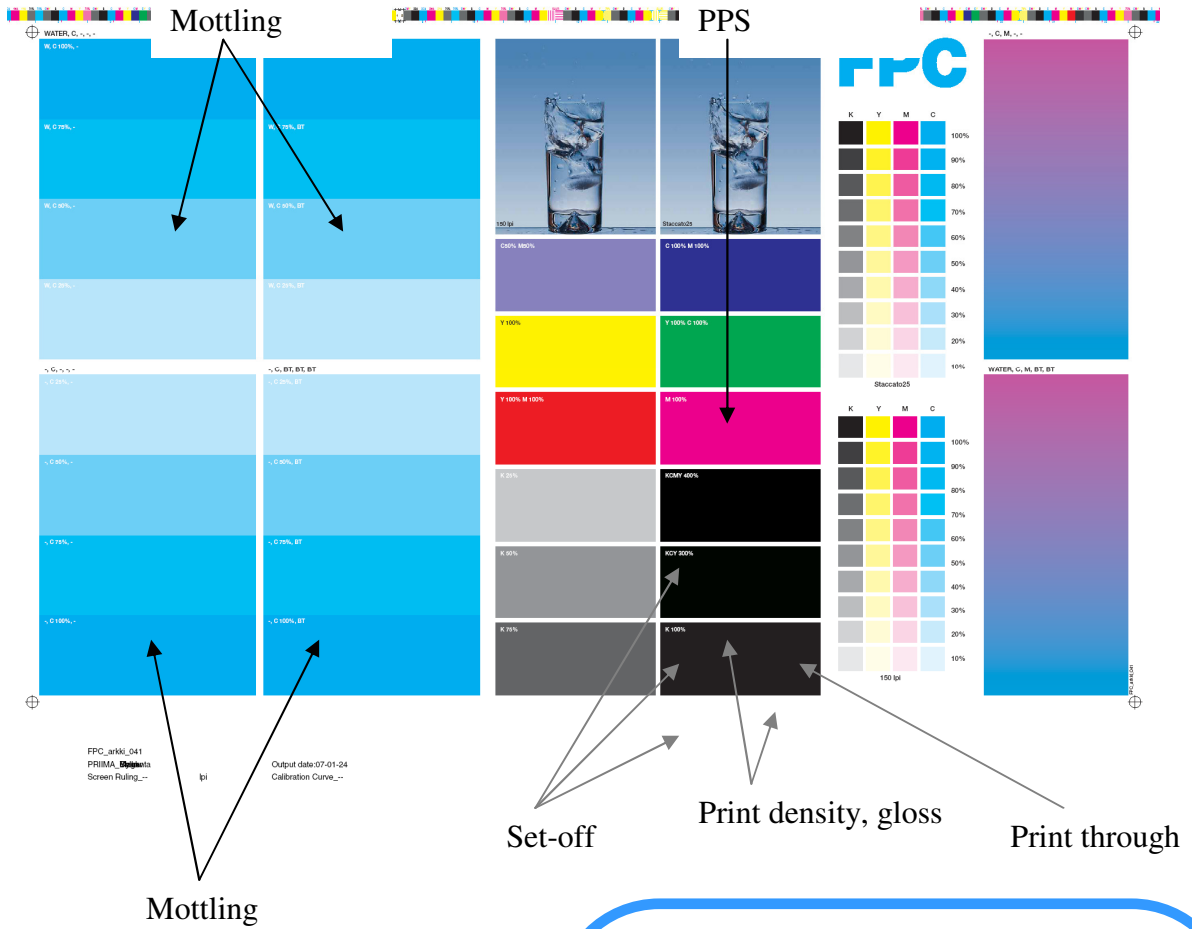
Some 500 sheets per trial point are required (printing for one side only) to ensure that the adjustments for achieving the target print density can be made for each trial point. If the target is to print on both sides of each trial point, the amount is doubled.

#### Measurements from the printed papers

- print density
- gloss
- print through and evenness of print through
- fiber roughening
- mottling (PapEye)
- dot gain and contrast
- color gamut
- set off (the setting of the 3- and 4-colour black as a function of time



Layout



**Amount of paper needed (one side printing):**

- const. conditions: 300 sheets/trial point (reference trial point: 700 sheets)
- const. density: 500 sheets/trial point

**Measurements:**

- print density
- gloss
- print through and evenness of print through
- PPS roughness
- mottling (PapEye)
- dot gain and contrast
- color gamut

