Piling in the non-image areas of the rubber blanket (negative piling)

Appearance

Negative piling manifests itself as described in the title of this TI, namely, in the non-image areas of the blanket.

Where can negative piling occur?

In principle, this problem can occur in all inking and printing units. Due to its chemical characteristics, magenta is more susceptible. Substrates with a lower water uptake and systems that are run with a reduced isopropanol concentration or completely free of IPA demonstrate a greater tendency towards negative piling. A suspicion that ctp plates have the same tendency has not yet been proven conclusively.

Cause

Negative piling cannot be associated with a particular parameter. The cause often cited, namely “microscumming”, is in our opinion indeed not incorrect, but this does require closer consideration if the right remedial measures are to be taken.

Scumming, in the classical sense, is eliminated by increasing the level of fount solution applied. If the assumption were correct that negative piling is the result of a lesser form of scumming, known as microscumming, this phenomenon should be able to be eliminated by slightly increasing the level of fount solution. However, experience has shown us that increasing fount solution delivery actually increases and accelerates the occurrence of negative piling.

According to our findings, the problem has to do with the washing-out of fine ink particles that, via the plate, accumulate in the non-image areas of the blanket and therefore cause negative piling.

Since we are dealing with a washing-out process, that is, an excess of water (fount solution) that can be absorbed neither by the ink nor by the paper, increasing fount solution is counter-productive. This hypothesis is substantiated by the fact that negative piling occurs above all with coated paper grades. With uncoated, more absorbent grades, this problem is as good as unheard of, despite the higher level of fount solution.

Remedy

As already explained, negative piling has to do with interaction between the ink, water (fount solution) and substrate.

The ink manufacturer is obliged to choose his formulations such that the water that is not absorbed by the substrate can be absorbed by the ink to as great a degree as possible.

From the point of view of the paper used, highly absorbent grades are advantageous.

The printman is obliged to work with as low setting of fount as is feasible.

Whether, and if so, to what extent ctp plates influence the situation due to their smoother surface that is capable of retaining only smaller quantities of ink, cannot, as mentioned at the beginning, be answered conclusively.

Contact addresses for advice and further information: **www.hubergroup.de**