



Customer Information Note: Delamination of board in sheet fed offset printing

Definition

Primarily the phenomenon "delamination" describes a large-scale detachment of the cardboard cover layer or the cardboard coating. This can be manifested by visible bubbles on the board surface or actually by a large-scale detachment of the cardboard cover layer. The latter then sticks to the rubber blanket, causing a stop of the printing machine and resulting in extensive manual cleaning. In the worst case the rubber blanket can be damaged irreparably.

However the punctual removal of the cardboard coating is known as "picking". Printing ink in the delivery form, which has a higher tack as emulsified printing ink, is without damping not able to detach the top layer of a cardboard. This illustrates that delamination is not only triggered by a single factor or by a single consumable. Delamination is a multi-parameter phenomenon.

Possible causes and interactions

- Poor board stability, also within the different layers of the board
- Too low picking resistance of the top layer
- High printing speed
- Unsuitable use of dampening solution
- Increasing number of inking units in the printing press and therefore repeated wetting of the board with dampening solution
- Increased stickiness of the rubber blankets on long term
- Unsuitable cleaner of rubber blankets
(the stickiness of rubber blankets may also be increased by an aggressive cleaning agent)
- Printing ink with a high tack value
- Temperature: cold printing machines ("Monday morning") cause increased tensile load on the board cover layer
- Poorly conditioned board
- Reduction of the structural stability of the cardboard layers caused by dampening
- The degree of compressibility of rubber blankets connected with the speed of the machine may lead to an increased strain onto the cover layer.
- Increased tensile force acts to a greater extent on full tone areas, particularly at the sheet end.



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Corrective actions

- Allow the machine to warm up
- If applicable, check the quality of the board
- Check dosing of the dampening solution
- Usage of an ink suitable for the board quality
- Reduce the tack of the ink by additives
(Note: This may disturb the transfer of the ink as well as the ink-/water balance, which requires a reduction of the printing speed)
- Reduce printing press speed
- If possible, do not place full tone areas at the end of the sheet
- Check the condition of the rubber blankets, if necessary change the blankets
- Check printing process and printing pressure
- Usage of rubber blankets with "quick-release" properties

Individual measures can reduce delamination. However, often they are insufficient to eliminate the problem completely. Only the combination of different measures leads to a long-term success.

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