

GHOSTING

3.5.2.1

1. Explanation of Term

Ghosting is an undesirable effect which can occur with complex printing formes.

- 1.1 If a printing forme has text before or after solids, a faint image of the text may appear in the solids in a lighter shade. The same effect may occur with line elements.
- 1.2 If solids have indentations, the image of the indentations may appear in the solids in a darker shade.

The phenomena described in 1.1 and 1.2 occur only if the different elements of the printed image follow one another in printing direction.

- 1.3 If borders are printed, differences in the level of inking at the edges between lengthways and transverse printed area may occur. In printing direction = lighter colouration, parallel to cylinder axis = darker colouration.

2. Causes

2.1 Inking Unit

Ghosting, is more likely to occur with a shorter inking unit than with a more complex inking unit.

Incorrect lateral spreader setting also increases the risk of ghosting.

Feedback effect in the inking unit:

Before the printing forme is inked for the first time, there is an even layer of ink on the inking rollers. After ink transfer, the ink layer thickness varies in keeping with the pattern of ink transfer to the printing forme. This uneven ink layer should be smoothed out again by the ink spreaders which are in contact with the inking rollers and by the ink feed rollers.

Since the circumference of the rollers is less than the length of the printed sheet format, the variations in ink layer thickness cannot be fully evened out, with the result that with certain printing formes and ink colours, ghosting occurs.

2.2 Printing Ink

If the printing ink is not sufficiently water stable, there will be a greater tendency towards ghosting.

With overinking or underinking there will be a greater likelihood of ghosting.

Dark mixing colours - brown, olive, anthracite, dark blue - make ghosting more obvious.

2.3 Dampening Unit

The dampening unit must be precisely adjusted, since the incorrect setting will promote ghosting.

2.4 Fountain Solution

Transfer of too much fountain solution promotes ghosting.

3. Remedies to Inking Unit Problems

- 3.1 If the cause of ghosting is identified as too short inking unit, it is advisable to print the job on a press with a more complex inking unit, if this is a possible alternative.
- 3.2 Set the ink spreaders to maximum setting, in order to even out the thickness of the ink layer.

- 3.3 The rollers in the inking unit must have a good texture which promotes ink acceptance. Worn or smooth rollers are not capable of properly carrying out the job of ink transfer and ink splitting, and should therefore be replaced with reconditioned or new ones.
- 3.4 Carefully check and adjust the setting of the inking rollers, especially in relation to the ink spreaders. Too low a pressure favours ghosting.
- 3.5 Printing press manufacturers offer special rollers or roller systems which counteract ghosting. Such systems usually consist of redistribution rollers for evening out the ink layer or spreader-form rollers. These types of special roller can help to reduce ghosting.

4. Remedies to Printing Ink Problems

- 4.1 Use water-stable printing inks which do not emulsify and thus give even ink flow and continuous ink separation.
- 4.2 Use inks with which it is possible to print without over- or underinking.

5. Remedies to Dampening Unit Problems

- 5.1 Set the dampening system rollers carefully and evenly. Check that covered rollers are clean and have good absorbency.

6. Remedies to Fountain Solution Problems

- 6.1 Employ all possible measures for reducing the amount of fountain solution used. This includes setting the pH level to a value between 5 and 5.5 - this value is adjusted by means of a fountain solution additive that is buffered and which keeps the pH value constant.

Adding or increasing the amount of isopropyl alcohol is to be recommended, since this allows the amount of fountain solution transferred to be reduced.