

GLOSS GHOSTING

3.5.2.2

Introduction

When printing on high quality and especially on gloss coated, but also on matt coated papers using the sheetfed offset process, oxidation-drying inks have to be used. This can lead to changes in the physical characteristics of the reverse side of the paper whilst it is lying in the delivery after the first print run. The paper can also lose its whiteness in those areas which have been printed with large quantities of ink (multi-colour printing) in the first print run.

Gloss Ghosting

Changes in the physical characteristics of the reverse side of the printing stock caused by volatile components of the printing inks released during the drying process can cause "gloss ghosting" when printing the reverse side of the paper.

Backside Yellowing

Partial loss of paper whiteness - "backside yellowing" caused by contact with the printed sheet in the delivery stack - on the reverse side can also occur where there are sections which have been heavily inked in the first print run.

Cause

Gloss ghosting and backside yellowing, which can occur on a small number of high quality coated paper types, are thus caused by the interaction of specific paper coating compositions and oxidation-drying printing inks, and triggered by volatile components released from the ink layers during the drying process. The thicker the ink layer, and the more direct the contact between freshly printed sheets stacked on top of one another, the greater is the risk of gloss ghosting or backside yellowing.

Prevention

There are no ready-made formulae for producing high quality sheetfed offset inks with which these quality-reducing side effects - whether gloss ghosting or backside yellowing - do not occur.

The perpetrators are the printing stock and the printing ink in equal measure, it being a matter of subjective judgement which of the two products is the primary cause.

Basically, it must be remembered that only very few, very high quality papers are affected by these types of problem. They are papers with a high degree of whiteness, i. e. with a highly pigmented coating, which contains protein products such as casein, or actual proteins.

Neither gloss ghosting nor backside yellowing can thus be prevented with absolute certainty by means of the ink quality.

Reduction of Effect

However, such side effects can be influenced by the ink quality thereby reducing their visual impact.

1. Roller fresh sheetfed offset inks are the greatest contributors to susceptibility to this type of problem.
2. Duct fresh sheetfed offset inks contribute less to susceptibility to this type of problem.
3. Sheetfed offset inks without "fresh" properties have the least effect.
4. Rapid-drying inks are more suitable than slow-drying inks.
5. Rapid-drying gloss inks are to be recommended, slow-drying ones are not.
6. Inks for package printing - cardboard quality inks - are not to be recommended.
7. Highly concentrated inks are more suitable than less concentrated inks (effect of ink layers).

The above classification is intended as a general guide and to provide suggestions as to how the problem may be tackled from the point of view of ink quality. There is no guaranteed method of solving the problem as far as the ink is concerned.