

TECHNICAL BULLETIN 7.3

Printing hints and tips for Films

issued: 30/01/2017

Introduction

Non absorbent film material like Offset Vinyl require special inks because ink drying is not achieved by absorption but mainly by oxidation. Advanced ink technology, and the ink-receptive surface of Films, ensures successful printing if the recommendations are followed.

Ink

Ink suppliers' instructions should be followed strictly. Some ink allows the addition of specific additives to speed up drying and improve hardening of the ink surface, which in turn creates increased rub resistance. For thinning the ink, never use mineral oils as they can adversely affect the drying process. Any ink additive not recommended by the ink supplier might cause drying or keying problems.

Several European ink manufacturers thoroughly tested the different Materials and as a result can recommend successfully tested ink. However, their recommendations do not imply any guarantee either by Fasson or by the ink manufacturers and must be considered purely as a guide for printers, who are always advised to test ink prior to printing.

Your regular ink supplier can probably recommend suitable ink for printing on the different Materials. We advise that you send detailed information about the material you want to print, preferably with samples of the material for print tests, with your order for ink.

Films which are offset printed offer possibilities for high print quality (e.g. four-colour process/halftone), with saving in cost. Reduced ink anchorage and lower light fastness limit suitable end-use applications, however. Varnishing or overlaminating will give extra protection. Always refer to the ink supplier's recommendations when choosing varnish. If an overlaminating film, e.g. clear polyester, is used, the print surface will additionally be protected from scratching.

The judgement of the degree of ink adhesion is subjective. The so-called "Tape Test", utilising a special pressure-sensitive tape, gives a qualitative judgement of ink bond. The tape is firmly pressed on to the printed surface, then rapidly pulled off, and the amount of ink removed is noted. Ink removal of not more than one per cent is generally regarded as satisfactory.

Scratch resistance can be established by simply scratching the printed surface with the thumbnail and judging the result. Scratch and rub resistance can more accurately be measured by using an abrasion tester.

Dampening water

Try to avoid the use of additives in the fountain solution and never use additives containing glycerine as this liquid cause ink-rejection and promotes emulsifying. The use of distilled water with acidity not under pH 5.5 is preferable. Isopropyl alcohol (up to 20) can be added to improve wetting and drying characteristics.

Plates

Plates requiring minimum plate dampening are preferred, such as those with an anodised fine grain or with special chromium finish.

Printing

Prior to printing, allow the sheets to condition to print shop temperature: this will prevent wavy edges and condensation on the print surface. Start printing with as little water as possible, so as to obtain the so-called "drying point". Water may then be added gradually in order to obtain the required balance.

As oxidative-drying inks dry more slowly than conventional inks, the possibility of set-off is greater. Sheet delivery must be flat and the stacks must be kept low. It is important that sufficient oxygen can penetrate between the sheets to dry the ink. Dry spray powder may be used.

UV-drying

The UV-drying process may generate high temperatures. Depending on the temperature level, printing speed, lay-flatness, and thus conversion may become critical. It is therefore essential to conduct tests prior to a production run.

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