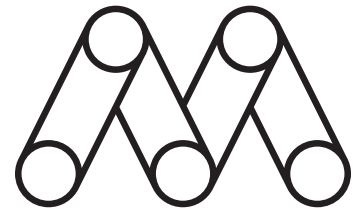


PRINTING TIPS FOR UNCOATED PAPERS



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It is essential to keep in mind the physical characteristics of uncoated papers when planning your printing job. Uncoated papers are absorbent, so inks, varnishes and coatings perform differently than on coated papers. New technology in the pressroom and pre-press area has enabled designers to use premium uncoated papers in exciting new ways. With current pre-press technology, the natural surface of these papers becomes a perfect background for four-color process printing.

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SEPARATIONS

Good, well planned separations are crucial for successful printing on uncoated paper. Because inks soak into the paper, precise halftone dots spread and deform—a feature called dot gain. By opening the separation, the actual dot size is decreased and the space surrounding the dot is increased. Opening the separation allows the press operator to print to normal ink densities. This results in truer color fidelity, image brightness and detail. Opening the separation also allows the use of finer line screens—175, 200, even 300 or more.

It has been our experience in working with a wide range of printers that printers using Mohawk Options, with the benefit of Inxwell, may open the midtones from 9-15%. For other traditional uncoated papers, the midtones can be opened slightly more, from 16-20%. Please note, these are targets only.

The amount the printer opens the separations depends on a variety of factors including:

- Paper surface - Does it have the additional benefits of Inxwell?
- Type of press - Conventional or UV?
- Blankets and plates
- Screen types - Conventional or stochastic?
- Original image - Lots of Shadows? Bright colors?
- Customer expectation: Are they looking for a sharp, crisp print or a softer look?

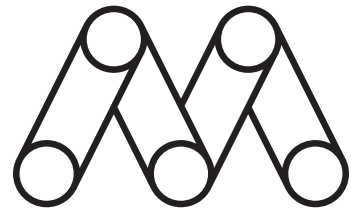
All factors mentioned above can affect the exact amount you should open or pinch back the dot size when printing on uncoated paper.

Keep paper shade in mind when reviewing color proofs. For warmer stocks like a cream white, you might want to reduce yellow, particularly in skin tones. For a shade like blue white, you might want to reduce the cyan. These changes are best done in scanning, although slight adjustments can be made on press. Many printers can sometimes proof on actual printing stock, which makes it easier to anticipate the effect of paper shade on printed color.

PRINTING

Printing on uncoated paper can be as straight-forward as printing on coated papers if the separations are properly prepared. The adjustments will allow the press to carry more ink, thus increasing color saturation, clarity and contrast.

continued



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Printing tips for uncoated papers, continued

After a wet press sheet has been approved, all ink colors should be increased by 5 to 10 points based on densitometer readings. This increase will help compensate for any dryback. Density readings for both wet and dry press sheets should be taken and recorded for reference later in the run, or for anticipated re-runs.

INKS

Process inks for uncoated paper or quick setting inks, if back-up time is limited, are suggested. Most ink manufacturers offer these. Uncoated paper normally needs more drying time than coated paper so stacks should be kept small—500 to 700 sheets—to prevent offsetting.

Depending on the image, you may achieve better results with the addition of up to 50% fluorescent ink to the magenta and yellow process colors. The fluorescent inks will increase the perceived reflective light of the paper surface, increasing brightness and clarity. Adding fluorescent magenta to process magenta will enhance red, violet purple, magenta and orange. The addition of fluorescent yellow to process yellow brightens yellows, oranges, reds and greens. Contact your ink supplier for assistance.

PAPER

Mohawk papers are formulated to strike the delicate balance between ink holdout and ink receptivity. Printers choose Mohawk's uncoated papers because they provide superior ink holdout and are dimensionally stable. There is an extensive range of uncoated papers on the market, all manufactured to varying quality standards. It is vitally important to specify not only that you are choosing an uncoated paper, but also the manufacturer and the grade.

Mohawk Options is made with Inxwell®, a proprietary process that provides greater ink holdout and opacity. Please read Printing Tips for Inxwell Papers before printing this grade.

For more information and samples, please call your local merchant or Mohawk at 1 800 the mill.
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