AGFA

Synaps™ XM Synthetic Paper

Recommendations for printing and finishing

version 1.7
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Synaps XM is a synthetic paper based on a high grade polyester substrate.
It is coated 2-sided with an ink/toner receptive layer. Synaps XM has no grain direction.

Printing
Synaps XM is optimized for use in dry toner electrophotographic printers and copiers. It can be pre-printed in offset printing. It is also suitable for UV curable inkjet printing. It is not suitable for non-UV inkjet printing.

Environmental conditions
Make sure that Synaps XM has had ample time to acclimate to your printer's environment before printing.
Sheets should be placed inside the print room at least 24 hours prior to printing for optimum acclimatization.
Storing conditions should be approximately 45 - 60% relative humidity and 18 – 23°C temperature.

Electrophotographic printing recommendations
Synaps XM has been tested on a number of platforms from different suppliers.
Sometimes specific settings are required or recommended for best results.

Xeikon printing
We have successfully tested Synaps XM135, XM230 and XM300 on a Xeikon 8000QA-P engine at Xeikon HQ.
You can find Synaps XM on the Xeikon website as 'authorized media for Xeikon 8000QA-P.
See link http://www.xeikon.com/resources/print-media
Note: Depending on the application, Xeikon prints on Synaps XM can be sensitive for scratching and marking.

Offset pre-printing recommendations
Offset pre-printing is possible but should be limited to single colour solids and/or 2-colour images. In case of 2-colour printing, total ink laydown should not exceed 100% (e.g. 30% cyan and 70% yellow is ok).
We recommend to use inks formulated for use in xerographic devices. Please note that oxidative inks generally will have a stronger tendency to ink set-off.
Use ink densities as for uncoated paper, or lower. For black ink, do not exceed density 1.50.
For printing pantone colours or other spot colours, use the (pantone or spot) colour sample book for uncoated paper as a maximum density reference; print a somewhat lower density preferably.
Important ! Use Synaps XM make-ready sheets to adjust accurate ink/water balance and density. Print with minimum dampening level and ink film to achieve the recommended density. Do not use anti-set-off spray powder as it will contaminate the printer/copier engine. Limit printed stack height (maximum 10 cm) and air the stacks a few times after the ink has set to facilitate drying of the ink.
We recommend to not pre-print areas that afterwards need to be printed with toner, as no guarantee can be given on print quality, nor on possible negative effects on the printer/copier engine.

Synaps XM will feed like coated paper. For optimum press feed reliability ensure that sheets are aired (fanned) prior to printing.
Important ! To avoid marking, minimize pressure of suckers and feeder-board wheels/brushes or move them outside the print area if possible.
Synaps XM has a very smooth surface. Only minimal squeeze (0.05 - 0.10mm) is required to ensure uniform coverage.
For an optimum hardening of the ink layer, the printed sheets should be aired regularly.

For best scratch resistance
To increase protection of the printed image, Synaps XM can be coated with UV lacquer (with online or offline UV coating device).

Converting and finishing
Static adhesion
Static adhesion after printing can make sheet separation and stack alignment difficult. It helps to leave the pile of printed material on a conductive, grounded surface e.g. a metal table for some time to allow static charges to disappear. Higher environmental humidity also helps to avoid or reduce static problems.

Die cutting
Use sharp hard steel blades with rounded inner corners. Avoid inside die-cuts less than or equal to 90 degrees. Keep retention points small and few. The best results are obtained on cylinder type presses. Platen type presses are less suitable especially for complex die cut shapes.
Always do a test before deciding to use Synaps XM for a specific die cut job.

Guillotining
Use sharp and clean blades. Do not cut lifts higher than 5 cm (2 inches).

Drilling
Use sharp and clean drill bits. Drills have to be free of nicks. Use short dwell times during drilling to eliminate heat generation. Don't drill too high lifts. Recommended drills are steel drills coated with Teflon (to prevent sticking). If possible, lower the speed of the drills to prevent heat generation.
Intermediate spraying on the inside and the outside of the drill with 'dry silicone spray' or intermediate drilling in wax paper (lubrication inside the drill bits) will facilitate drilling and will extend the life and sharpness of the drill significantly.
The best results or obtained with drilling equipment that have drill bit lubrication and drill bit cooling.

Laser cutting and engraving
Laser cutting works well. The power of the cutting device needs to be adjusted according to the thickness of the substrate. Laser engraving is also possible on Synaps XM.

Rolling trimmers/cutting plotters
Rolling trimmers work well with lighter versions of Synaps XM. Heavier versions may give problems, depending on the equipment used. Always test beforehand.
Heavier versions of Synaps XM can be cut on flatbed cutting plotter devices as this type of equipment can cut thicker substrates.

Folding and scoring
All versions of Synaps XM can be folded on a regular folding machine. Folding can be difficult, especially with the heavier versions of Synaps XM. Scoring is recommended to obtain a tight fold with the heavier versions of Synaps XM.
Cross folding (superimposed or transverse fold) is not recommended.
With machine folding, the ridge of the score should be on the outside of the fold.
Avoid folds that cause air entrapment, since Synaps XM is not permeable.
It is recommended to apply pressure after folding to keep the fold tight.
Important ! Always do a folding test before deciding to use Synaps XM for a specific job!

Perforating and spiral binding
Synaps XM can be perforated. Keep hole punches sharp and clean.

Laminating
Synaps XM can be laminated with PET/PE film and OPP film. The operating temperature should not exceed 120 ℃ (248 ℉). Tests with PVC film were not succes sful.
Be aware that some lamination films are prone to give poor adhesion onto toner images. Very good results were obtained with GMP Perfex Gloss Ultrabond PT lamination film.
Always do a test before deciding to use a Synaps XM for a specific lamination job.

Hot foil stamping
Hot foil stamping is possible.

Embossing
Embossing on a cylinder press works well with all Synaps XM weights.
On a platen press the pressure and evenness of pressure can be a problem especially with higher Synaps XM weights and more complex embossing forms.
Lighter Synaps XM weights can show a tendency to deform at the edges of the embossment.
A test prior to deciding to use Synaps XM with embossing is strongly recommended.

Binding
Synaps XM is a perfect material for Wire-O©, Unicoil-Spiral© and comb binding. Use round holes to avoid tearing.
For book covers, we recommend applying a top coating on Synaps XM to avoid scratching or guillotine pressure markings.
For 'perfect binding' book covers, we recommend to use Synaps XM135. Thicker Synaps XM is prone to cause cover gapping on the book spine. As glue for perfect binding books, we recommend to use EVA or PUR glue.

Important ! Always do a binding test before deciding to use Synaps XM for a specific job!

IMPORTANT!

Please consult www.agfa.com/synaps
1/ for the most recent version of this document!
2/ for the printer compatibility overview!