# TECHNICAL GUIDE

SUPERYUPO

YUPO®

# PRINTING RECOMMENDATIONS

1. Let SuperYUPO acclimatise for at least 24 hours before unpacking it. It should be left to acclimatise for a longer period during the winter.

2. The ideal printing room conditions are relative air humidity: 50-60%, temperature: 20-25°C.

   Feeder: Use the settings for normal print paper.

   Delivery: Here it is important for the sheets to fall softly on top of the stack and not hit the sides as it may cause creasing. Turn it off if necessary and decrease the compressed air.

3. When printing on SuperYUPO, the tone value will increase by 10% over that of print paper. Please plan for this before it goes to press or for plate imaging.

4. Use ink suitable for printing on foils. Inks should dry oxidatively and comprise less than 3% mineral oil. For UV inks, please make sure that the ink series is suitable for foils. Please contact your ink provider. When using special colours, it is important to make sure they are colour-fast. It is especially important for the ink to be alkali-fast when it may be overlapped by dispersion ink, as it may otherwise bleed out.

## INKS RECOMMENDED FOR CONVENTIONAL OFFSET PRINTING

| MANUFACTURER | PRODUCT NAME |
|---|---|
| Brancher | Kromoplast |
| Colorgraf | Syntolith |
| Epple Druckfarben | Foil |
| Flint Group | Novaplast |
| Huber Group | ALPHA Foil |
| Siegwerk | Tempo Plastoffset Premium |
| Sun Chemical | SUNTEC®FOILS |
| Van Son | Thoughtex |
| Shackell Edwards | Multibond |

## INKS RECOMMENDED FOR UV OFFSET PRINTING

| MANUFACTURER | PRODUCT NAME |
|---|---|
| Brancher | Photon S LAM |
| Colorgraf | Deltacure Synt |
| Flint Group | XCURA EVOPLUS |
| Huber Group | Newv Poly |
| Siegwerk | Sicura Plast SP |
| Sunchemical | SunCure® |

The recommendations listed here are non-binding and do not constitute a guarantee. Please contact your ink manufacturer before the print run.

5. If SuperYUPO is used with normal paper in an offset printing job, we recommend printing the entire project with oxidatively drying foil inks in order to ensure that SuperYUBO is not damaged by off-gassing. If you print on SuperYUPO with UV inks, print the entire printing job with UV inks.

6. Dampening agents should be used sparingly. As the SuperYUPO surface cannot absorb dampening agent, an excessive supply of moisture will cause the dampening agent to build up on the printed sheet, which will progressively disrupt ink acceptance or adversely affect the drying process after printing. We therefore recommend reducing dampening in all units to such a degree that the print begins to scum/smear. Then gradually increase the dampening again until the “blotches/smears” disappear. Ink acceptance may be disrupted in the magenta printout, for example, even though there is minimal dampening on the magenta printing plate. Here it is important to check the dampening in the prior printouts (black and cyan) as dampening agents may accumulate on the printing sheet and the effects will only be seen in subsequent printouts. Observe the following: The more surface that is covered by each individual colour on the printing sheet, the easier it is to regulate the ink-to-water balance. When smaller areas are covered, an ink strip may remedy the situation.

7. For the best results with SuperYUPO, increase the surface pressure by 10 to 20%.

8. Increase the washing intervals when working with SuperYUPO. We recommend washing rubber blankets after approximately every 5,000 sheets.

9. We recommend using dispersion, print or UV ink to increase scratch resistance. When printing with dispersion ink, it is important to ensure the ink dries directly after removal from the printing machine. Repositioning the printed pallets later also helps to prevent possible sticking.

10. High stacks of SuperYUPO can be inserted into the delivery apparatus. Stacks up to 60 cm in height aren’t a problem with SuperYUPO. With UV offset printing, the printing inks are already cured in the delivery apparatus, which facilitates considerably higher printing stacks.

11 .When using anti-set-off spray powder, your experience with coated print papers can serve as a guide. The particle sizes should be 15-25 µm.

12. Average dry time of SuperYUPO for conventional offset printing with oxidative printing ink:

    100% ink coverage within 1 h
    200% ink coverage within 2 h
    300% ink coverage within 4 h
    400% ink coverage within 5-6 h

    The drying times given were calculated based on careful analysis of results from tests performed by YUPO Europe. As there may be differences in print results and drying times caused by the ink type and printing conditions, please test the printing quality before printing a stack.

| POSSIBLE REASONS FOR BAD DRYING | COUNTERMEASURES |
|---|---|
| Low room temperature (under 15°C). | Increase room temperature. |
| Too damp when printed. | Remove some of the moisture, placing absorption strips on the printing plate (end of the sheet) in order to increase ink absorption, increase alcohol content in order to reduce the surface tension of the water, visually inspect print plates when printing – print plates should always have a matte not glossy finish. |
| Rollers in the printing machine (especially in the dampening system) must be aligned. | Align the printing machine in accordance with the handbook. |
| Use of conventional offset inks or inks not suitable for YUPO. | Only use printing inks that are recommended for use when printing on YUPO. |

**13.** In order to prevent a ghosting effect, it is important to ventilate the stack within two days in order to remove any off-gassing resulting from the drying process. There is no need to ventilate the stack when using the UV offset method.

## FURTHER PROCESSING

It is important to test all glues, designs, laminating sheets or book binding work to ensure they are suitable for use with SuperYUPO before the actual print run.

### CREASING
Creasing should always run parallel to the feed direction of SuperYUPO. When producing folded pamphlets or maps, the feed direction should run parallel to the side with the most folds. Weigh down or bundle the creased products in order to keep them from flying away.

### STRING AND WIRE BINDING
There should be no free space between the individual folds. The feed direction of YUPO must be taken into consideration.

### ADHESIVE BINDING
We recommend using a PUR (polyurethane) or hot melt adhesive (with an EVA – ethylene vinyl acetate base). Use an additional hardener and reduce the adhesive amount. It is only advisable to use cold adhesives when YUPO is combined with absorbent materials. Longer drying times should be expected.

### ADHESIVE FOLDS
The feed direction of YUPO must be taken into consideration. The adhesive must be tested in advance.

### HOLE PUNCHING
Stacks must be 2 to 3 cm high. Only use sharp hole punches!

### PUNCHING AND PERFORATING
Punching tools and hole punches should always be sharp and free of notches. In order to prevent the formation of notches and corners (that could cause tears), the inner corners must be rounded. Take this into account when designing punch dies. YUPO should also be assigned a feed direction / stretching direction. Punch die stopping points should be mounted in the feed direction whenever possible in order to prevent tears when it breaks away during later usage. Perforations should always start with a cut on the outer edge of the material and continue in the feed direction.

### SPIRAL BINDING
Punched holes must be circular in order to keep YUPO from tearing.

### STAMPING
Do not use sharp stamping tools. Stamping pressure should amount to 100-200 kg/cm. The temperature of the stamping roller should be between 60 and 80°C.

### FOIL STAMPING
Avoid high temperatures as this may cause the material to warp. Ask your supplier about suitable film.

### HOT SEALING
Before the seal is placed, one side of YUPO should be coated or laminated with LDPE (low density polyethylene).

## NOTES

### LASER PRINTING
YUPO materials are not suitable for use in printing on laser printers such as those made by Xerox, Canon, Konica, Minolta, Kodak, etc. The high curing temperature of the dry toner causes deformation in the material.

### PHYSICALLY DRYING OFFSET INKS
YUPO is a synthetic material. It is incapable of absorbing physically drying offset inks as they are only suitable for highly absorbent materials. Chemically (oxidative) drying inks dry when a solvent in the colour is misted onto the material surface and is therefore ideal for printing on YUPO. However, it is necessary to process a printed pallet within two weeks as off-gassing from the solvents may cause a ghosting effect. Regular ventilation of the pallet is also recommended.

### FEED DIRECTION
The feed direction of YUPO is clearly visible on the label. It is always fed parallel to the initially given length information. When YUPO tears, the tear will also run straight in the feed direction. Tears occurring perpendicular to the feed direction are easily audible and will not run in a straight line.

### STATIC CHARGE
YUPO has a special antistatic surface. Problems associated with electric charges are rarely seen when printing on YUPO. Optimal conditions should be maintained in the printing room all the same (20-25°C, 50-65% RH). YUPO should have at least 24 hours to acclimatise before printing and should be unpacked no more than one hour

before printing commences. Static charge may be higher in winter as the temperatures and relative humidity are low. In such cases, an antistatic spray or antistatic strip can be used to reduce the static charge.

## TENDENCY TO LINT

YUPO may have an increased tendency to lint as the anorganic filler may come out under pressure and be visible on the rubber blanket. Countermeasures: Position the extractor and roll on the feeder so that they are outside of the print layout. Adhere material to the extractor on the feeder. Use the first printout to "dust off" the machine (Caution! This could result in increased static charge).

## "SOLVENT ATTACK"

If YUPO will be bound in a product (e.g. adhesive-bound brochure) together with normal paper, it is important to ensure that the entire job is printed with oxidative drying ink. Otherwise, solvent off-gassing from conventional offset inks could cause ripples in YUPO!

## HEAT RESISTANCE

YUPO shrinks when heated. We recommend using YUPO at temperatures between -40°C and 80°C. YUPO is capable of withstanding higher temperatures for a short period of time (e.g. during the printing process). The melting point of YUPO is approximately 160°C.

## RESISTANCE TO TEAR PROPAGATION

YUPO is highly resistant to tear propagation and is rather durable. However, when the surface is damaged (notch) YUPO will tear very easily. For this reason, all machines used for cutting, hole punching or punching must be sharp and free of notches.

## SERVICE LIFE

The characteristics of the surface of YUPO change after a certain period of time. It can be stored for up to a year without a problem. However, if this time is exceeded YUPO may no longer be suitable for: UV printing, TTR printing, coating. Materials for offset printing generally last much longer and can be printed without a problem after being stored for a few years.

## WEATHERING RESISTANCE

We guarantee the durability of our outdoor products for at least one year, even when subjected to strong UV rays.

## SUPERYUPO – DISCOVER A FASCINATING PAPER WORLD

SuperYUPO combines the best of both the synthetic and paper worlds. This results in an extremely gentle surface, outstanding printing properties, highest colour fastness andincredible resilience. Buckling, tearing, folding – SuperYUPO is stronger than strong. Bring more brilliance to your artwork on SuperYUPO.

| VERSION SUPERYUPO | THICKNESS µm | GRAMMAGE g/m² | ROLLS mm × m | CORE mm | SHEETS mm × mm | UNIT per ream | PRINT METHODS |
|---|---|---|---|---|---|---|---|
| **FEBG 95** | 95 | 73,2 | 1050 × 3000 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 250 | Offset, UV offset, Screen print |
| **FEBG 110** | 110 | 84,7 | 1050 × 3000 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 250 | Offset, UV offset, Screen print |
| **FEBG 130** | 130 | 100,1 | 1050 × 3000 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 250 | Offset, UV offset, Screen print |
| **FEBG 150** | 150 | 115,5 | 1050 × 3000 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 250 | Offset, UV offset, Screen print |
| **FEBG 200** | 200 | 158,0 | 1050 × 1500 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 125 | Offset, UV offset, Screen print |
| **FEBG 250** | 250 | 200,0 | 1050 × 1500 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 125 | Offset, UV offset, Screen print |
| **FEBG 300** | 300 | 234,0 | 1050 × 1500 | 76 | 640 × 450<br>640 × 900<br>1000 × 700 | 125 | Offset, UV offset, Screen print |
| **QFF 350** | 350 | 340,0 | | | 720 × 1020 | 100 | Offset, UV offset, Screen print |
| **QFF 400** | 400 | 390,0 | | | 720 × 1020 | 100 | Offset, UV offset, Screen print |

Unless otherwise stated, the running direction is parallel to the first dimension.

PRINTED ON **YUPO**BLUE YPI 300, 2021

YUPO®

**YUPO Europe GmbH**
WILLSTÄTTERSTR. 30 | 40549 DÜSSELDORF
TEL. +49 211-520 54 30 | WWW.YUPO.EU

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