

# Printing Recommendations



## Paper stabilization previous to printing

Hygroscopic in nature, paper is constantly changing to reach equilibrium with its environment. It absorbs or loses moisture relative to the extremes of exposure and the surrounding atmosphere. The hygroscopic properties of paper vary from grade to grade, but dimensional stability and superior press performance are best assured when paper is fully acclimated and stabilized to a properly controlled and acclimatized pressroom.



### Ideal climate control

	Relative humidity	Temperature
	%	°C
Ideal Conditions	52±5	21

- Even if climate is not controlled in the pressroom, it should be monitored for both temperature and relative humidity to determine the length of time needed for paper to acclimate

### Acclimatization hours

ΔTemp. °C	Volume, m <sup>3</sup>			
	0,5	1	1,5	2
5	8	12	15	18
10	18	22	25	28
15	28	32	35	38
20	40	45	50	55
25	50	55	60	65

- All our grades and products are shipped in moisture-resistant packaging to ensure dimensional stability and flatness. Since temperature extremes vary during transit and storage, paper should be allowed to acclimate to pressroom environment in original wrapping and should not be opened until going to press.
- Acclimation time is relative to the temperature differential between pressroom and paper in conjunction with the volume of paper in question. The basic consideration for minimal differences is 24 to 36 hours.

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## Precautionary Measures

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- ✚ Allow time for paper to acclimate to pressroom environment before opening packaging.
- ✚ Avoid cutting paper for press any sooner than necessary.
- ✚ Rewrap cut paper as soon as possible.
- ✚ Open no more paper than necessary during make-ready and prior to approval.
- ✚ Remove the top and bottom sheets, when its suspected that they may have been damaged during packaging, handling or transit.

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## Printing tips


Problem	Description	Possible solutions
Hickeys	Occurs when contaminating particles adhere to the plate or blanket, causing either a doughnut effect (small solid printed island surrounded by a white halo) or an unprinted void surrounded by printing.	Dip out ink fountain; drop fountain blade and clean; inspect roller condition; add fresh ink from new can or change inks.

Problem	Description	Possible solutions
Picking / Contamination	If ink is too tacky, or if the surface is defective, bits of fiber are pulled from the paper's surface. This material adheres to the blanket and leaves a color void or surface crater in the printed sheet where the pick-out first occurred. Subsequent sheets show partial filling, or may continue to show absence of one or more colors.	Clean blankets, change contaminated ink, reduce impression cylinder squeeze or reduce ink tack.

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Problem	Description	Possible solutions
Dust	<p>Loose dust particles on the paper surface adhere to the blanket, take on ink and print as dirt spots, or show up as voids in print.</p> <p>Dust deposits can occur during sheeting or trimming operations.</p>	<p>Predust on impression with a blank unit without ink; inspect all four sides of paper for cut quality; wipe edges with a glycerin or tack cloth; trim paper on all four sides or replace with a different production run of paper (different making order).</p>

Problem	Description	Possible solutions
<p>Misregistration</p> 	<p>Printing dots do not precisely align, causing a blurred image or color variance; register marks are out of sync.</p> <p>This can be the result of gripper slip, loose blankets, high ink tacks, misalignment on the feed table, bowed/scalloped/wavy sheet edges, quality differences between the consecutive sheets or off-square paper.</p>	<p>Adjust and clean grippers, torque blankets to spec, lower ink tack, readjust feed table, reduce impression squeeze, check sheet for wavy/tight edges and relief-cut blanket packing outside image area.</p>


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Problem	Description	Possible solutions
Offsetting	<p>This occurs when ink transfers to the back side of the next sheet, sometimes causing the sheets to stick together.</p> <p>Offsetting can be due to slow drying ink or paper, a combination of water/ink balance and humidity conditions, excessive ink film, delivery pile that is stacked too high ,insufficient spray powder.</p>	<p>Run a stronger pigmented ink with less ink film, use an ink drying additive, adjust ink/water balance, decrease height of the delivery stack, increase or change spray powder.</p>

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Problem	Description	Possible solutions
Mottle 	Mottle occurs when the ink lies unevenly on the sheet, especially in an area of uniform color, or a closed trap.	<ul style="list-style-type: none"><li>Pull single prints to identify problem printing unit(s). Reverse ink sequence and tack accordingly.</li><li>Run tack-graded inks with the highest tack down first.</li><li>Trap heavier coverage down last and put solid colors in latter-down units.</li><li>Increase press speed.</li><li>Change blanket and/or plate.</li></ul>