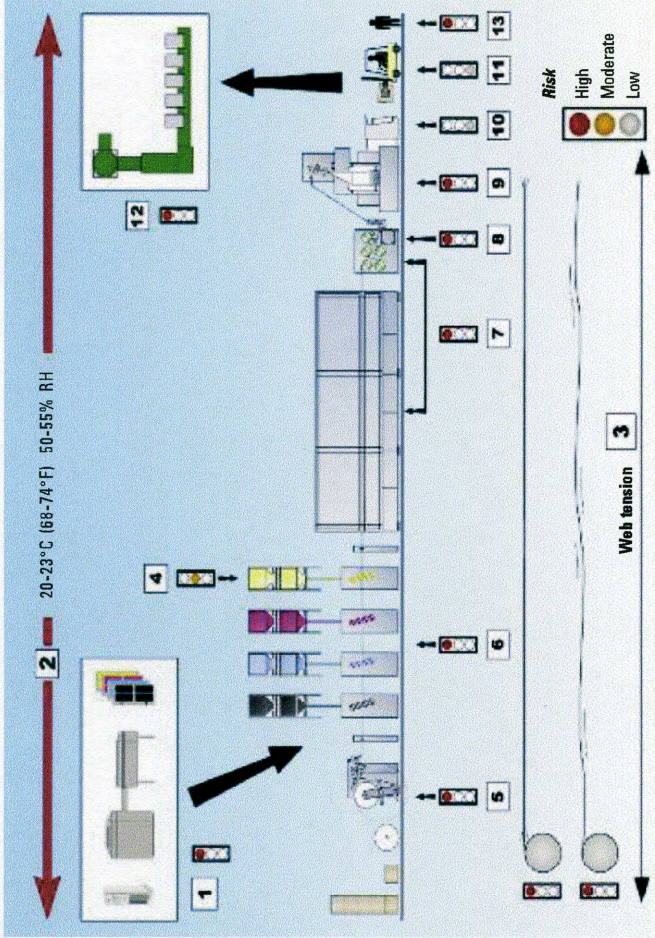


Process system

20 common problems when changing paper grades



Optimum results require production to be viewed as a total system in which the performance of key elements are inter-related: Pre-press, paper, ink, press, folder and finishing lines within their ambient environment. Best practice is the optimisation of the entire system to reduce avoidable performance problems when changing paper grades.

KEY SYSTEM ELEMENTS	PAPER GRADE VARIABLE
1 Pre-press profile on plate	High
2 Temperature and humidity	High
3 Web tension	High
4 Ink type	High
5 Paper roll conditioning & splice preparation	Low
6 Printing units	Low
7 Heatset system setting profile	High
8 Remoistening	High
9 Folder	Low
10 Stacking and bundling system	Moderate
11 Transport	Moderate
12 Bindery line	Moderate
13 Operating & maintenance staff competencies & training	High

SYMPTOM	CONSEQUENCES	PRINCIPAL CAUSES
1 Moisture wrinkles	▽ Q	Unwrapping roll too early/Poor environment
2 Baggy web	▽ Q ●	Poor paper mill manufacturing profiles
3 Paper ink absorption	▽ Q ●	Variable with paper grade
4 Paper gloss	Q	Variable with paper grade
5 Printed gloss	Q	Variable with paper, excessive dampening / drying
6 Tone Value Increase (TVI)	Q	Variable with paper grade, prepress profile
7 Printed ink density	▽ Q ●	Variable with paper grade, prepress profile
8 Ink consumption	▽ Q ●	Variable with paper grade, prepress profile
9 Ink/water balance	▽ Q ●	Variable with paper grade, prepress profile
10 Ink feedback	Q	Uncoated paper surface with loose fibres also incompatible ink, dampening & temperature
11 Fibre feedback	Q	Uncoated paper surface with loose fibres
12 Drying difficulties	▽ Q ●	Variable with paper grade, prepress profile
13 Linting, picking, piling	▽ Q ●	Uncoated paper surface with loose fibres also incompatible ink or poor inking adjustment
14 Web tension	Q	Variable settings with paper grade and weight
15 Folder	●	Variable settings with paper grade and weight
16 Signature delivery	▽ Q ●	Variable settings, problems from ink and static
17 Static on SC & LWC	▽	Dry environment or cold paper
18 Transit marking	▽ Q	Mismatched inks or incorrect silicone solution or poor chill roll heat transfer
19 Dry back on covers	▽ Q	Residual solvent from inadequate dryer dwell time
20 Blocking SC & LWC	▽ Q ●	Dryer temperature profile incorrect or poor chill roll heat transfer

Consequence (●) runnability, Q printability, ▽ economical

Rapid diagnosis & actions

1 **Moisture wrinkles:** Caused by a difference in relative humidity between paper rolls and the pressroom. Wrinkles create creases often leading to a web break. Uncoated papers have the highest risk.

- Rolls should be unwrapped just before paster loading and the belly wrapper removed as late as possible.
- Improve ambient environment conditions.

2 **Baggy web:** Mostly caused by poor mill manufacturing profiles. Runnability may be improved by changing press web tension. Increase tension for rolls with baggy ends; decrease if the centre of the roll is baggy. Run rolls from the same tambour (mother roll) position to minimise tension adjustment at roll change.

3 **Absorption of paper:** Too much ink absorption can result in poor print quality such as loss of detail or high colour saturation and filling in of shadow areas.

Match the paper to the type of work being printed. Printed images with a lot of fine detail should be printed on a higher grade of paper to avoid excessive absorption and loss of detail.

4 **Paper gloss:** Different papers have variable gloss from very high to little or none. Gloss affects the printed image. Very high gloss papers are smooth and slippery making signature handling more difficult.

- Match the paper to the type of work being printed.
- Take extra care to set-up signature handling of high gloss papers.

Rolls should only be unwrapped just before loading and the belly wrapper removed as late as possible to avoid moisture wrinkles.

