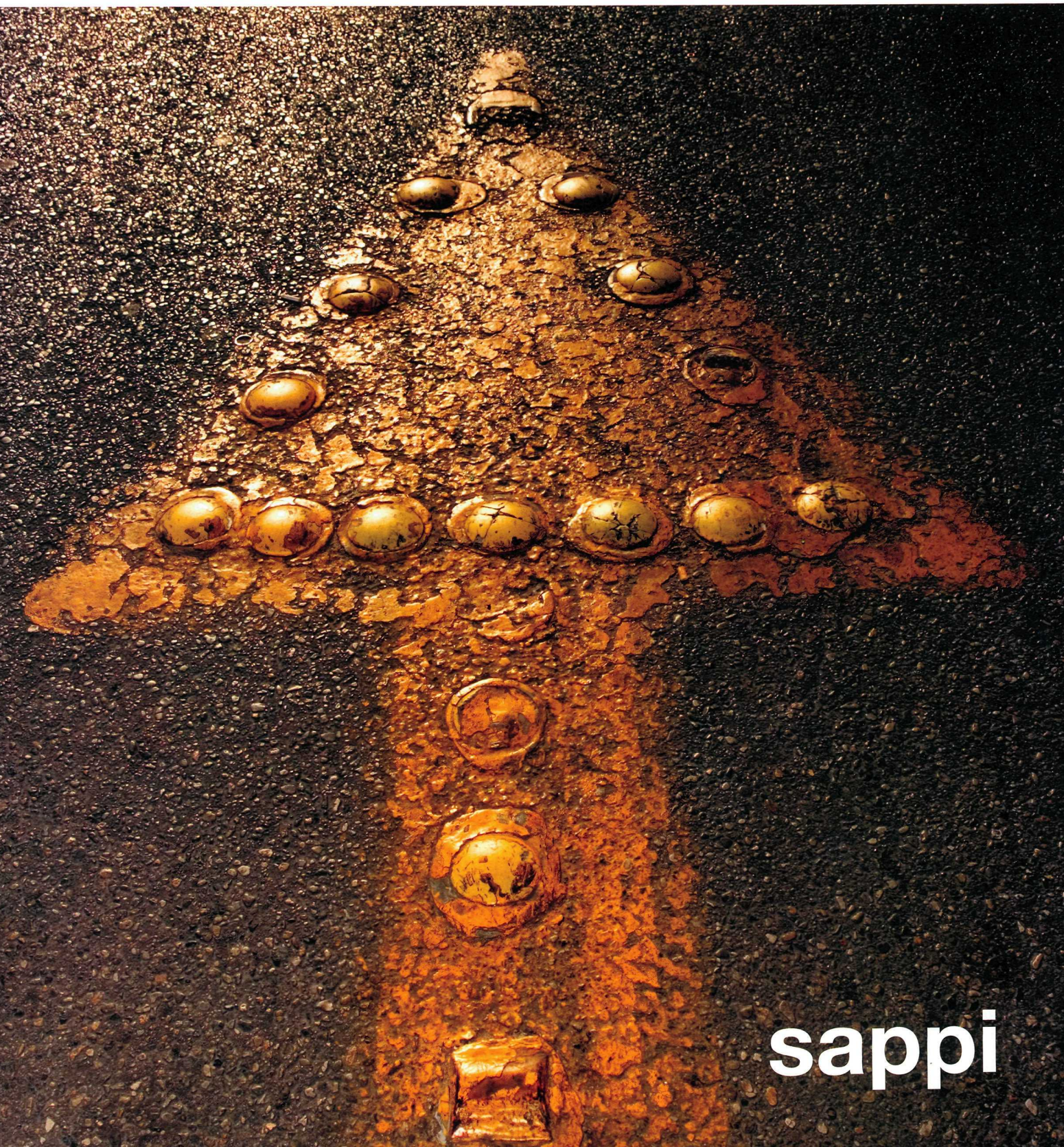
On-Press Troubleshooting

Tips for solving problems on press and documenting complaints

Sappi Technical Series



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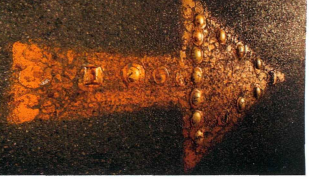

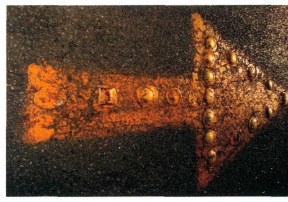

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Problems

Introduction

No doubt, paper problems are a hassle. But they do happen. And believe us, they are not something we at Sappi endure lightly either.

Our wish with this guide is to make troubleshooting as easy as possible for you. Consider this book a reference. It is full of useful explanations and problem-solving suggestions. We've also specified ways for you to document less-than-perfect performance, so we can respond promptly and equitably, and you can get on with your work.

But by all means, contact us if you need additional advice. We have experts on hand to see you through whatever challenges you face or concerns you have with your Sappi job.

Sappi is proud of the reputation we've earned for high-quality coated printing papers. We want nothing to get in the way of your experience with Sappi.
You have our promise.

Call the Sappi North America Printer Help Line for answers to print-related questions.

Former press professionals are available to answer questions about your paper performance during the print process. They can also offer advice on press-related issues involving inks, coatings and bindery processes.

1.877.SappiHelp (1.877.727.7443)

Visit www.sappi.com/Knowledge_bank for access to the Sappi Tech Tips troubleshooting guides.

For Your Information

Immediate Notification

As soon as a problem is judged to be paper related, the printer or converter should immediately notify the Sappi merchant who provided it or the local Sappi sales representative.

Documentation and Evidence

For all claims, the following documentation is required:

- Sappi invoice number or Sappi order number
- Product label from the job in question
- Completed Sappi or Merchant Complaint Report
- Detailed description of the problem
- Sufficient evidence of the problem, as stated in the guidelines in this booklet

All charges should be clearly stated at cost and detailed with regard to hourly rates for press time.

All claims are processed through the Sappi paper merchant.

Conditioning

Sappi paper is shipped in moisture-resistant packaging to ensure dimensional stability and flatness upon delivery. After the packaging is opened, however, Sappi cannot be held responsible for printing problems due to moisture imbalance or other environmental conditions in the printer's shop.

Precautionary Measures

- 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 makeready and prior to approval
- Remove the top and bottom sheets, which may have been damaged during packaging, handling or transit
- Save 16 consecutively numbered printed and unprinted sheets with DEFECT CIRCLED.
- Flip 50 sheets prior to production run to assess side-to-side print consistency
- Cover press loads between passes to help maintain sheet integrity and stability

Recommended Pressroom Environment

It is important to monitor relative humidity and temperature. The ambient temperature and humidity of the pressroom may be too high or too low, which may affect ink tack and drying, and cause static, tight or wavy edges, paper picking and delamination.

Ideal pressroom climate control is 45% (+/-5%) Rh at 72°(+/-5°) F for North America, 52% (+/-5%) at 21° C in Europe.

Allow paper to acclimate to pressroom temperature.

> Paper will acclimate in skids, cartons and reams. **Do not open until going to press.**

> Paper acclimation time is relative to environmental extremes. The industry accepted best practice is 24–48 hours, or even longer depending on temperature differential and volume of paper.

> Properly conditioned paper runs with a broader operating window on press. Cold paper in a warm pressroom is prone to condensation, which can lead to wavy edges. Cold paper also has greater susceptibility to picking, delamination and slow ink dry.

Troubleshooting Guidelines

The following section outlines the troubleshooting process for some of the more common issues that paper suppliers are often asked to address. If these problems cannot be overcome on press, we have also included guidelines for submitting the necessary evidence to file a claim when paper is suspect.

We encourage the submission of additional information and/or evidence that may be available so that our technical experts can most effectively understand the problem, then identify and eliminate the source of the defect.

Required Documentation

The following documentation is required for all claims:

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> Product label from the job in question

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> Detailed description of the problem

> Sufficient evidence of the problem

All claims are processed through the Sappi paper merchant.

Simple Steps for Clear Communication of Problems

> Identify all samples clearly

> Circle any defects

> Identify press model, press size, number of passes and ink color sequence

> Provide pressroom humidity and temperature

> Send samples FLAT when appropriate (e.g., misregistration, wavy edges, corrugation or ridges)

> Send competitive samples if referenced (both printed and unprinted)

> Use transparent pull tape to take contaminant samples from a blanket, a plate, or the side of a skid or roll

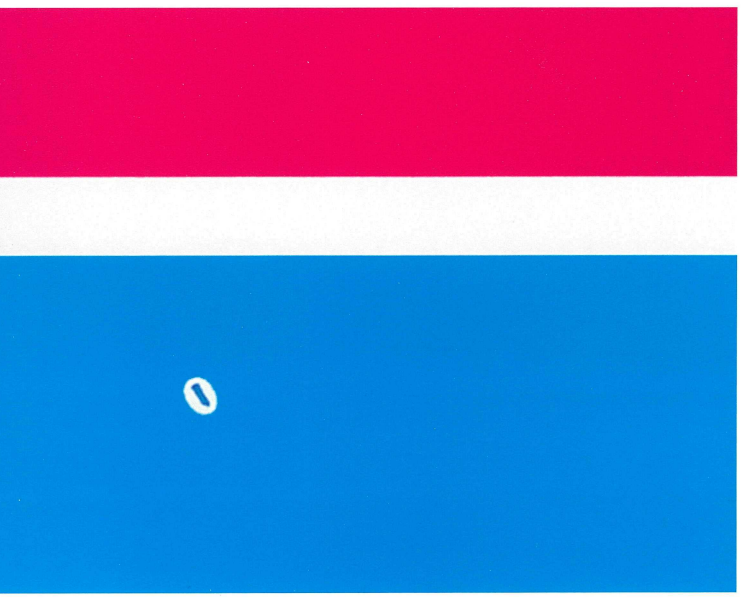
> Put tape on clear acetate; DO NOT FOLD TAPE OR ATTACH TO PAPER SAMPLES

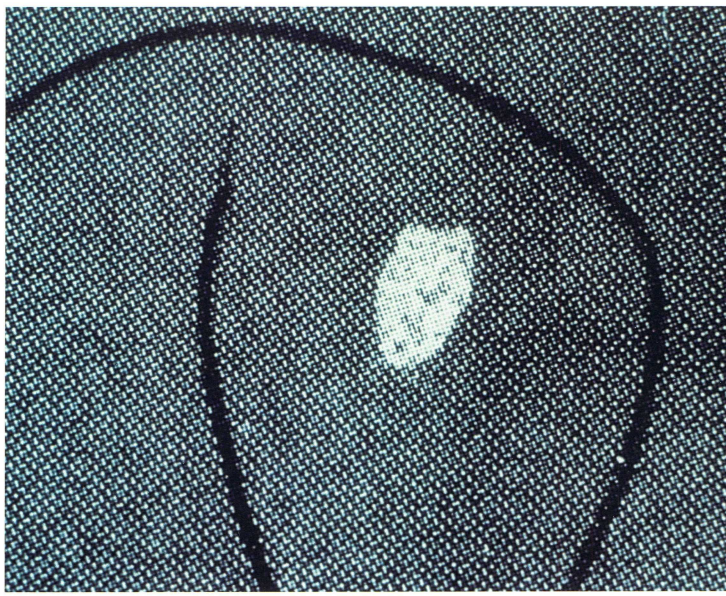
Hickeys

Hickeys occur 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.

Suggestions: Dip out ink fountain; drop fountain blade and clean; inspect roller condition; add fresh ink from new can or change inks.

For further information on *Picking/Contamination* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.





Documenting the Problem

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Send 16 consecutively numbered printed and unprinted sheets or 10 feet (3 m) of unprinted web lead with DEFECT CIRCLED. Write run number from skid, carton or ream on sample or roll number from roll label on sample.

Remove particles of contamination from blanket or plate using transparent tape. Put tape on clear acetate or film. DO NOT FOLD TAPE or attach to paper. DO identify the unit on a multicolor press.

Picking/ Contamination

If ink is too tacky, or if the coating is defective, bits of coating/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.

Suggestions: Clean blankets, change contaminated ink, reduce impression cylinder squeeze or reduce ink tack. Try a different production run of paper.

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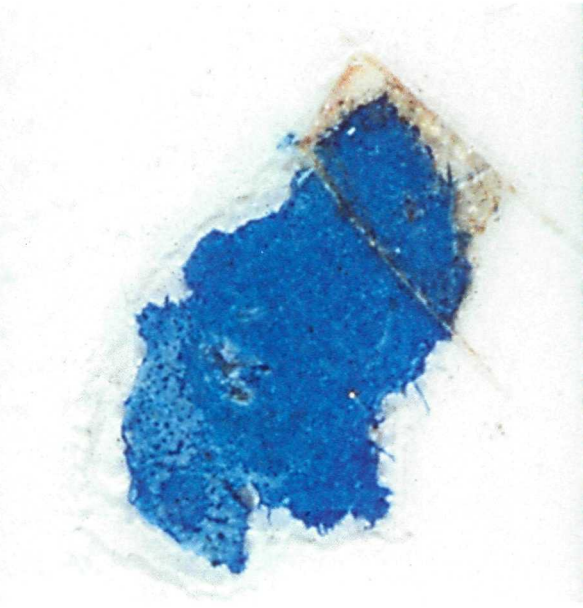

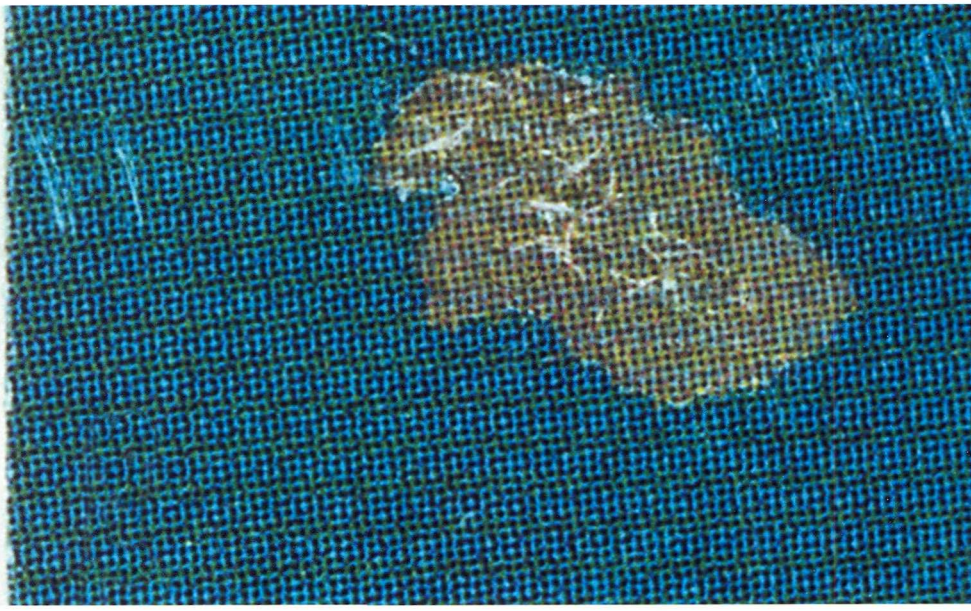

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Piling

Piling/Tail-edge pick occurs when ink builds up on the blanket until it eventually lifts off a portion of the image or pulls the fibers or coating from the sheet. This can be caused by defective paper coating, wrong ink consistency, inadequate film of fountain solution, improper fountain solution mix, excessive impression cylinder squeeze or blanket wash that renders the blanket sticky.

Suggestions: Try a lower tack or lower set rate of ink, and/or increase fountain solution to plate. If above suggestions do not work, replace the blanket or try a different production run of paper.

For further information on *Image Area Piling/Tail-Edge Pick* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.

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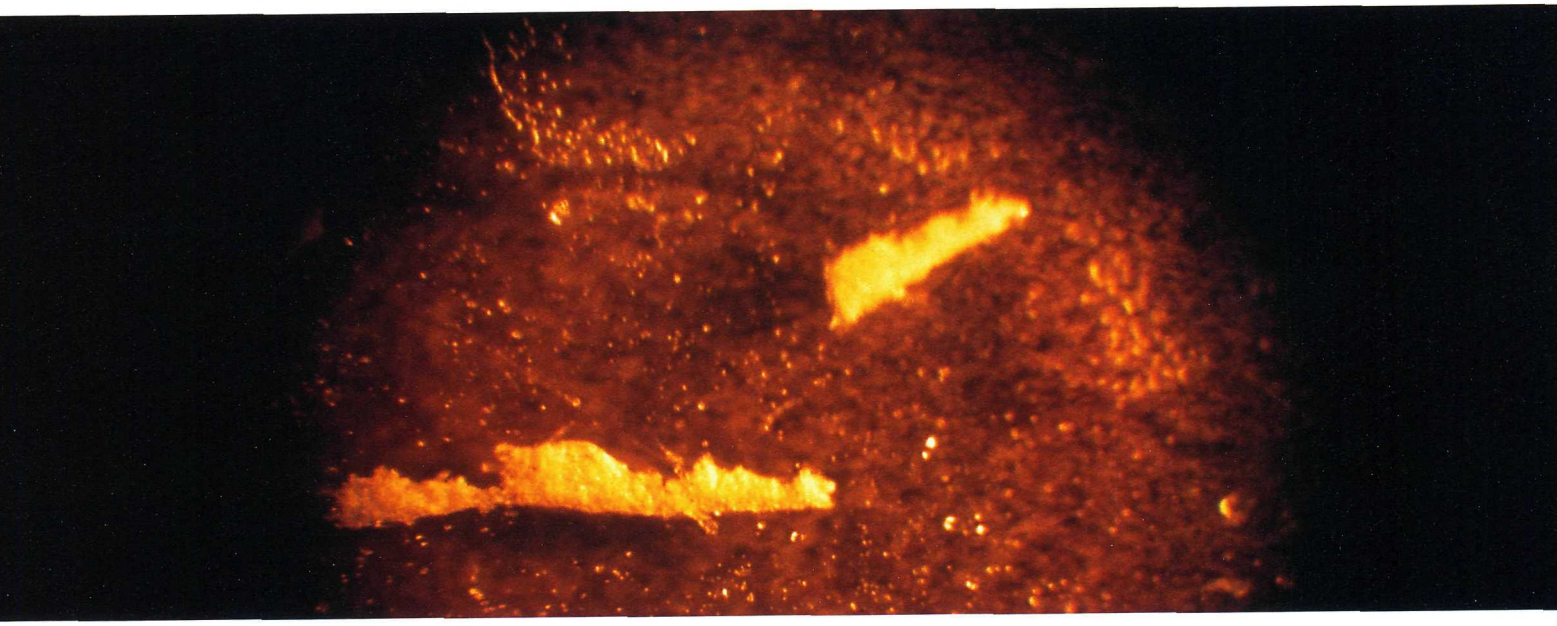
Dust

Loose dust particles on the paper surface adhere to the blanket, take on ink and print as dark specks, or show up as voids in print.

Dust deposits can occur during sheeting or trimming operations.

Suggestions: Predust on impression with a dry, blank unit; 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.

For further information on *Picking/Contamination* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.



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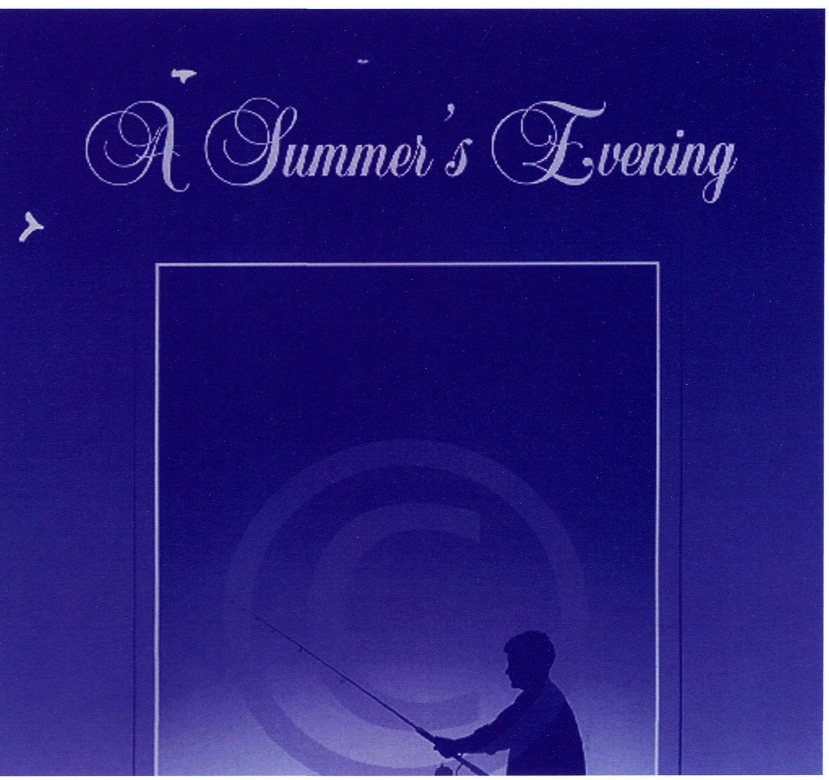
Remove particles of contamination from blanket or plate using transparent tape. Put tape on clear acetate or film. DO NOT FOLD TAPE or attach to paper. DO identify the unit on a multicolor press.

Smashed Blanket

Sometimes a foreign object or a paper defect can actually smash, or render useless, a blanket or a plate.

The only remedy is to clear away whatever has caused the damage, spot-check the remaining paper and replace the blanket or plate.



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Send 16 consecutively numbered printed and unprinted sheets or 10 feet (3 m) of unprinted web lead with DEFECT CIRCLED. Write run number from skid, carton or ream on sample or roll number from roll label on sample. Also include paper or material causing the smash/damage.

All blankets and plates should be held for Sappi inspection.

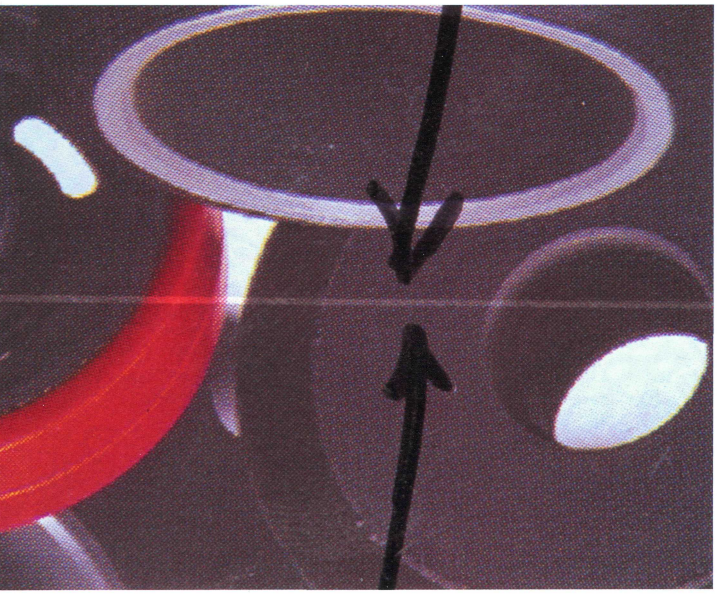
Identify the printing unit or units involved.

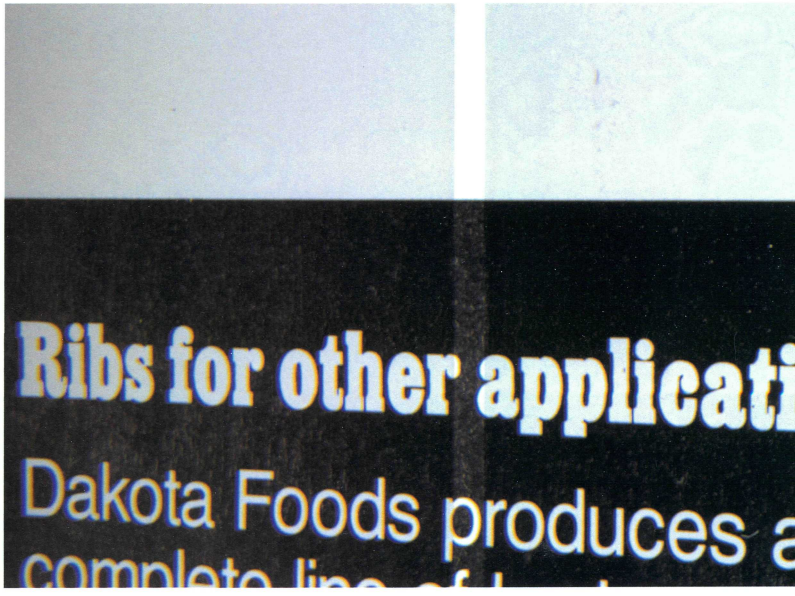
Scratches/ Blade Streaks

Scratches or blade streaks are generally of short duration and are usually isolated to a small portion of the paper order.

They sometimes occur during the coating operation in the paper mill when a particle of grit or other contaminant becomes lodged between the coating blade and the paper. This cuts a groove into the paper's coating in the grain direction. Very light scratches can be caused by sheeting equipment.

Suggestions: Isolate and replace affected paper.





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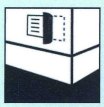

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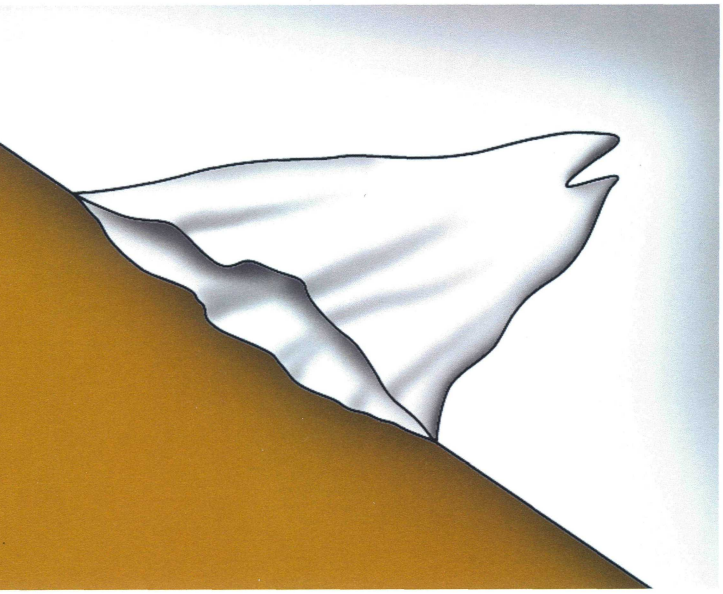
Delamination

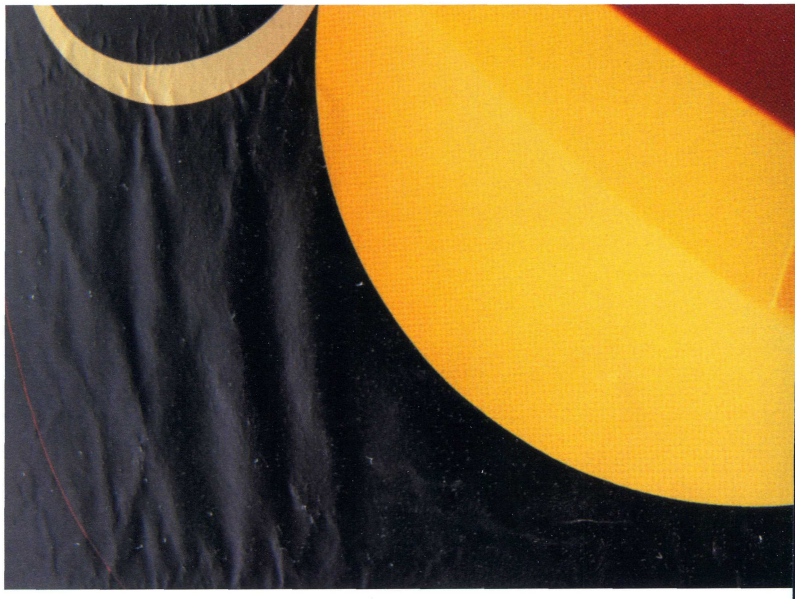
Delamination occurs when the paper itself pulls apart during printing. The surface of the paper may appear bubbled or lifted. There can be numerous causes of this problem: high-tack inks, partially dried ink on the rollers/blanket or high impression squeeze.

Delamination is not to be confused with blistering, which occurs almost exclusively in the dryer unit of a web press.

Suggestions: Reduce ink tack on the rolls, reduce impression squeeze or try a different production run of paper.

For further information on *Delamination* and *Considerations for Printing Web Cover* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.





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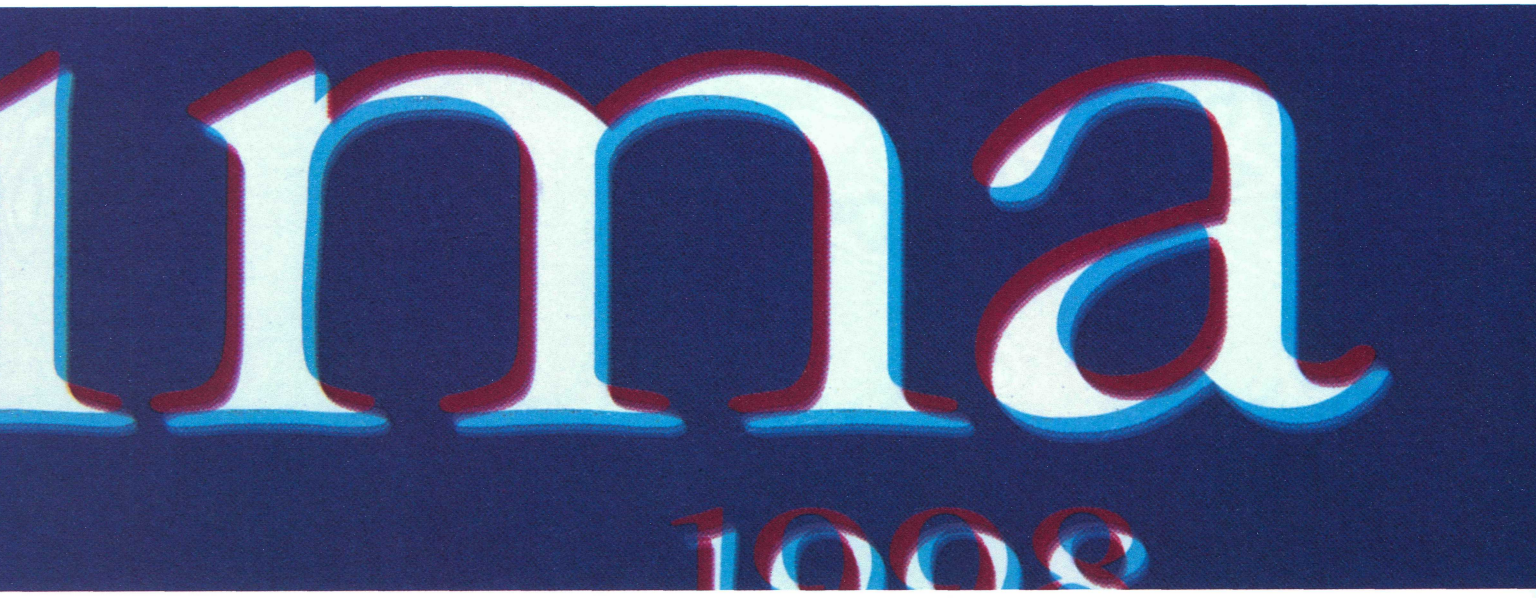
Misregistration/ Slur

Printing dots do not precisely align, causing a blurred image or color variance; register marks are out of sync.

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.

Suggestions: 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. Try a different production run of paper.

For further information on *Misregistration/Dot Slur* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.



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Send 16 consecutively numbered printed and unprinted sheets with DEFECT CIRCLED. Write run number from skid, carton or ream on sample and ship samples flat.

Provide temperature and relative humidity of the pressroom.

If samples appear to be wavy, provide low-angle, edge-on picture of a load of unprinted sheets.

Blocking/ Offsetting

This occurs when ink transfers to the back side of the next sheet, sometimes causing the sheets to stick together. Offsetting can be due to insufficient spray powder, delivery pile that is stacked too high, excessive ink film, slow drying ink or paper, or a combination of water/ink balance and humidity conditions.

Suggestions: Increase or change spray powder, decrease height of the delivery stack, run a stronger pigmented ink with less ink film or adjust ink/water balance.

For further information on *Sheetfed Ink Offset/Scuff Precautions* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.

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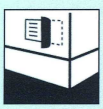

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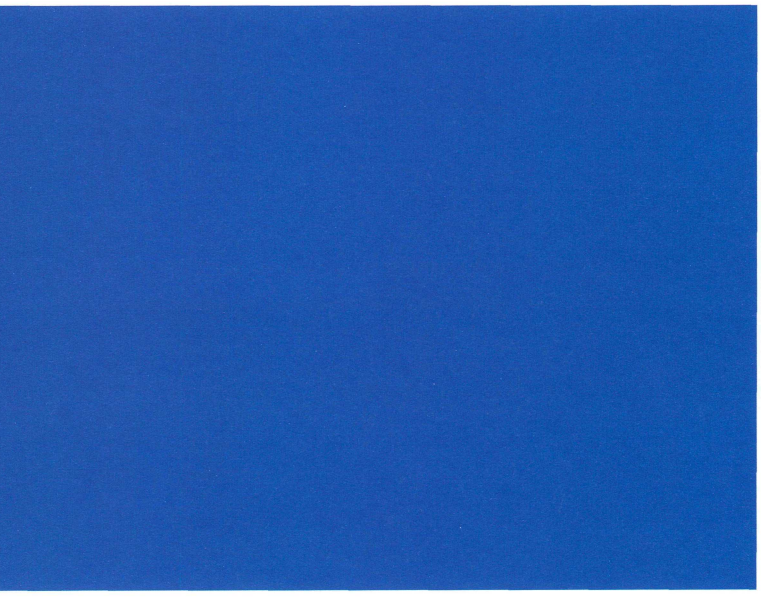
Provide temperature and relative humidity of the pressroom.

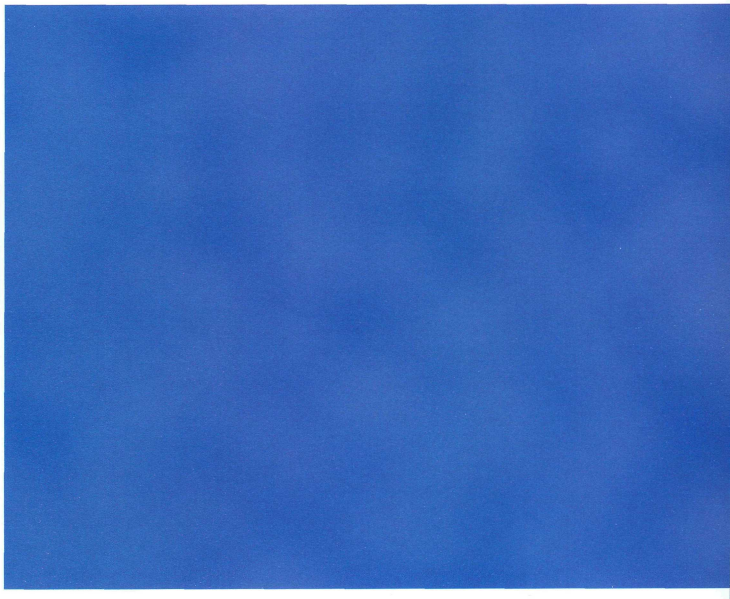
Mottle

Mottle occurs when the ink lies unevenly on the sheet, especially in an area of uniform color, or cyan/magenta ink trap, like a blue sky.

Suggestions: Pull single prints to identify problem printing unit(s). For cyan/magenta mottle, reverse ink sequence and tack accordingly. Run tack-graded inks with the highest tack down first. Trap heavier coverage down last and put solid colors in latter-down units. Increase press speed, flip sheets or try a different production run of paper.

For further information on *Print Mottle* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.





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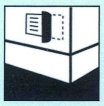

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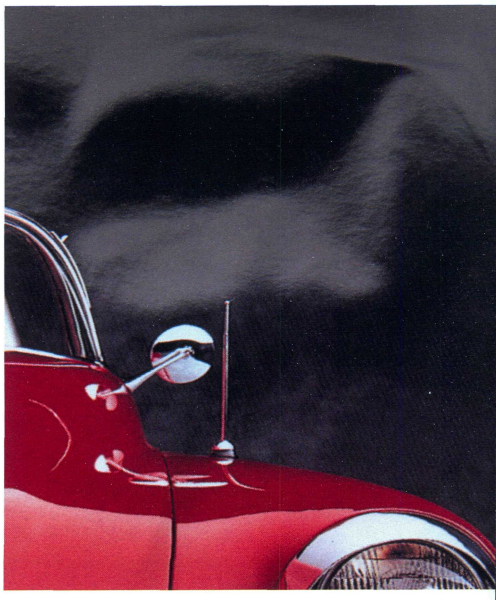
Blistering

Blistering, the occurrence of small bubble-like formations on both sides of the web paper, can occur when trapped moisture vaporizes as the printed paper is passing through the dryer on a web press. Causes vary, but are often traced to excessive dryer temperature, slow press speed and/or high-flash/high-solvent inks, paper moisture or form design. Heavyweight coated paper is more susceptible to blistering.

Suggestions: Increase press speed and/or decrease oven temperature, reduce ink/varnish film or use a lower flash ink so oven temperature can be reduced. Isolate problem rolls by machine reel or roll position. Try a different production run of paper.

For further information on *Considerations for Printing Web Cover* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.



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Provide roll label.

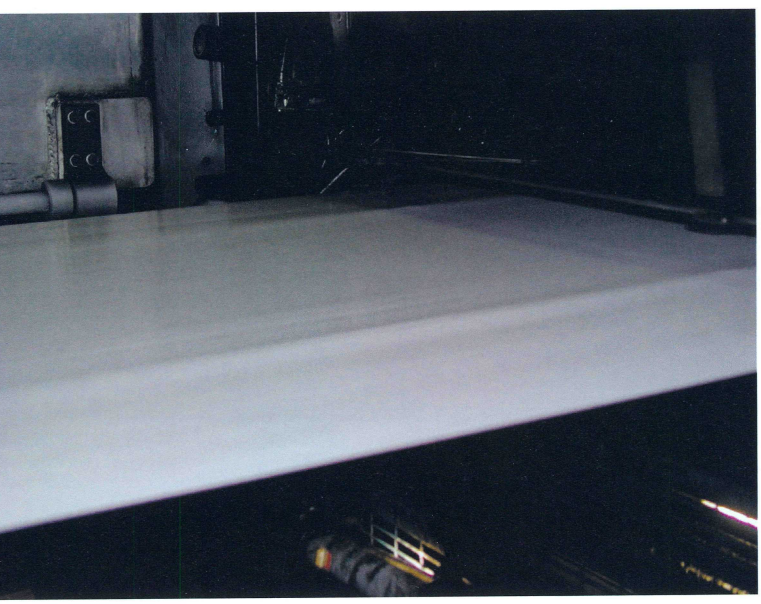
Send 16 consecutively numbered printed signatures and
10 feet (3 m) of unprinted web lead with DEFECT CIRCLED.
Write roll number from roll label on sample.

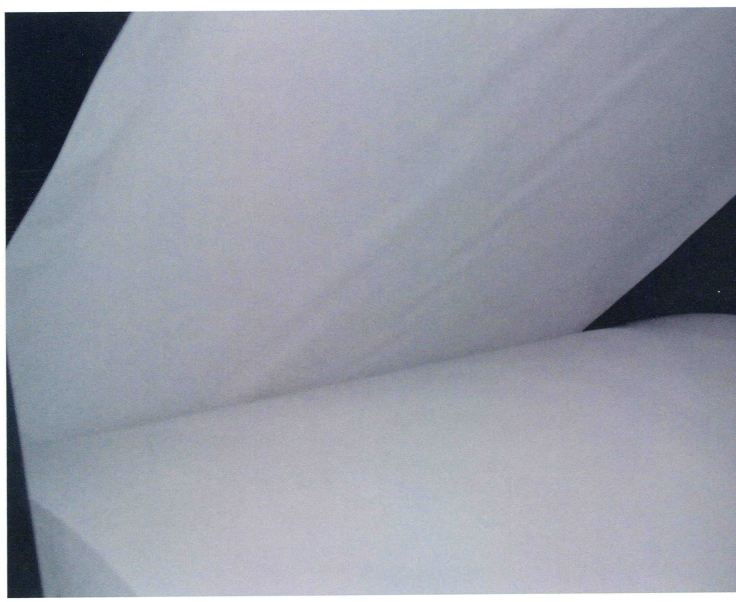
Record dryer temperatures of the separate sections,
web exit temperature and web speed.

Baggy Rolls

A roll with a soft or loosely wound edge or center that creates non-uniform tension across the web. Hardness profiles across the roll vary from soft to hard.

Suggestions: Increase web tension, flop suspect rolls to move the slack edge to the more forgiving side of the press or isolate suspect rolls by roll position by measuring delta-hardness with a Schmidt Hammer. Try running rolls by position number in consecutive order to reduce roll-to-roll variability.





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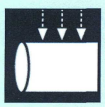


If possible, submit a printout of the Schmidt Hammer delta-hardness readings measured 3 inches (8 cm) apart across the roll, beginning 3 inches (8 cm) in from each edge.

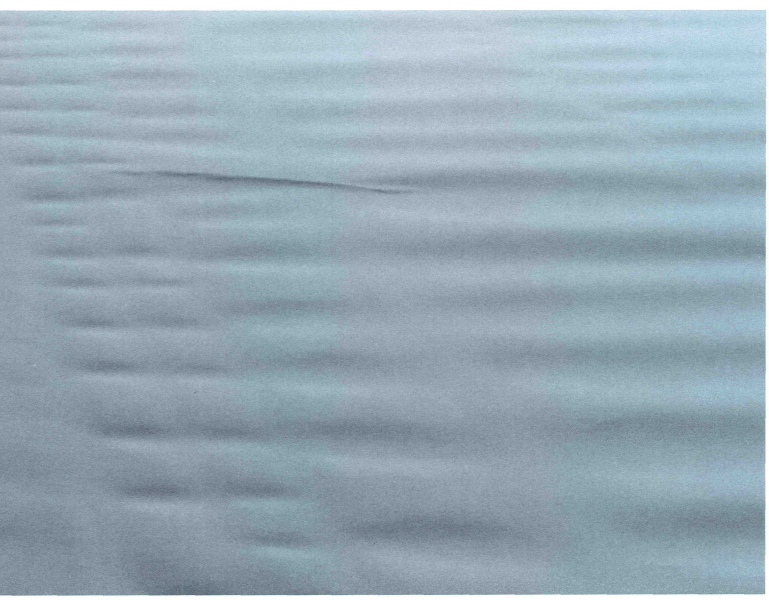
If Schmidt Hammer readings are not an option, provide pictures of either web edge flutter under tension, non-uniform tension across web, pencil penetration into roll edge or finger pressure compressing roll edge.

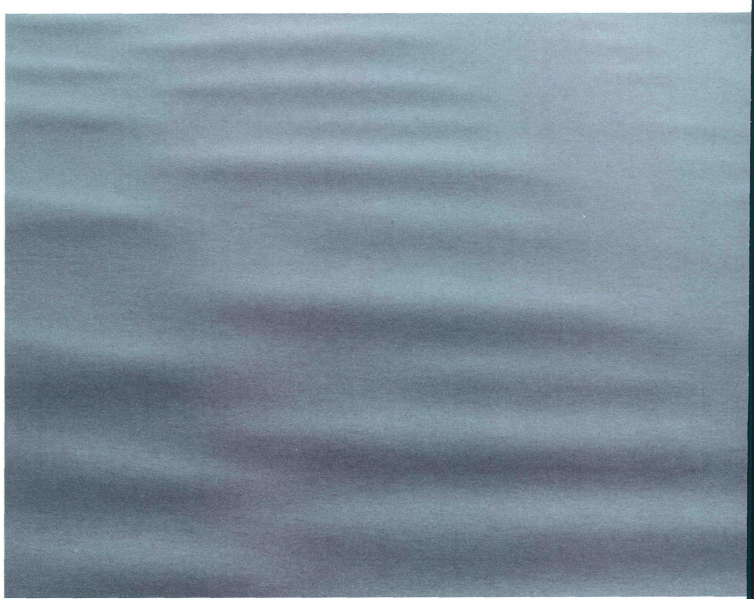
Wavy Paper

Wavy paper can cause problems with wrinkles, mis-registration, dot slur or the aesthetics of the final printed sheet. This condition can be aggravated if the paper is exposed to extreme temperature or humidity changes.

Suggestions: Keep the paper wrapped until time of printing and cover loads between passes on press. Maintain proper temperature and humidity in pressroom. Try a different production run of paper.

For further information on *Paper Conditioning & Characteristics* refer to Sappi Tech Tips or visit www.sappi.com/Knowledge_bank.





Documenting the Problem

Provide Sappi invoice number or Sappi order number.

Complete the Merchant or Sappi Complaint Report.

Provide roll or skid/carton/ream label.

Send 16 consecutively numbered printed and unprinted sheets with DEFECT CIRCLED. Write run number from skid, carton or ream on sample and ship samples flat.

Provide temperature and relative humidity of the pressroom.

If samples appear to be wavy, provide low-angle, edge-on picture of a load of unprinted sheets.

Documenting the Problem

When in doubt, provide as much evidence as possible.

	Provide Sappi invoice number or Sappi order number.
	Complete the Merchant or Sappi Complaint Report.
	Provide roll or skid/carton/ream label.
	Send 16 consecutive printed and unprinted sheets and/or 10 feet (3m) of unprinted web lead with DEFECT CIRCLED. Write run number from skid, carton or ream on sample or roll number from roll label on sample.
	Remove particles of contamination from blanket or plate using transparent tape. Put tape on clear acetate or film. DO NOT FOLD TAPE or attach to paper. DO identify the unit on a multicolor press.

sappi

Complaint Report

Printer Help Line
1.877.SappiHelp

Date Submitted: | **Date of Occurrence:** | **Submitted by:**

Description of Problem

- ○ Picking/Contamination
- ○ Scratches/Blade Streaks/Surface Defects
- ○ Piling
- ○ Mottle
- ○ Delamination
- ○ Blistering
- ○ Misregistration/Slur
- ○ Baggy Rolls
- ○ Wavy Paper
- ○ Wrinkles
- ○ Other _____

Explanation of Lost Press Time

Resolution

Merchant Information

Merchant

Contact/Sales Rep

Phone No.

Address/Location

Merchant P.O. No. | Sappi Order No. | Sappi Invoice No.

Printer Information

Printer

Printer Contact

Phone No.

Address/Location

Job Name/No. | Printer P.O. No.

Problem Discovered

- ○ At Printer
- ○ At End User
- ○ First Pass
- ○ Subsequent Passes
- ○ After Printing
- ○ Bindery
- ○ Other: _____

Paper Shipped:
Direct ○ Merchant Stock ○

Paper Cut by

- ○ Mill ○ Other: _____
- ○ Merchant
- ○ Printer

Was paper wrapped until printed?
○ Yes ○ No

Action Taken

- ○ Job Completed
- ○ Job Pulled
- ○ Paper Replaced
- ○ Paper Replacement Grade: _____

Paper Details

Grade

Sheet Size/Roll Width

Basis Weight

Other Grade for Comparison

Grain

Package/Skid/Carton/Roll No.

Quantity/No. Sheets

Unprinted

Printed

○ Packages ○ Cartons ○ Skids ○ Rolls

Plant Conditions

Pressroom: ○ Climate Controlled

Ambient Temperature/Rh

Storage: ○ Climate Controlled

Ambient Temperature/Rh

Weather: ○ Dry ○ Humid ○ Extended Dry/Wet Weather

How long did paper acclimate?

Printing Details

○ Conventional ○ Digital ○ Dry Offset ○ UV ○ Other: _____

Press Manufacturer/Model _____ Size _____ No. of Units _____ No. of Colors _____

Color Sequence:
Side 1 (1) (2) (3) (4) (5) (6) (7) (8)
Side 2 (1) (2) (3) (4) (5) (6) (7) (8)

Press Speed: IPH _____ FPM _____ No. of Passes _____ Type of Blanket _____

Ink Tack _____ Ink Additives _____

Fountain Solutions: pH _____ Conductivity _____

Oven Type/Length _____ Web Temperature _____

Printed: ○ Work/Turn ○ Grain Long ○ Tumble ○ Grain Short ○ Sheetwise

Costs Associated With Claim

Type of Cost:	Quantity:	Unit Cost:	Total Cost:
Lost Press Time			
Makereadies			
Unprinted Paper to Return			
Blankets			
Plates			
Printed Spoilage			
Other			

All submitted claims must include a label from the product and sufficient evidence necessary to document, with defect clearly circled.

Please sign and submit to your distributing merchant for processing:

Signature

Total Amount of Claim

Provide temperature and relative humidity of the pressroom.

If samples appear to be wavy, provide low-angle, edge-on picture of a load of unprinted sheets.

All blankets and plates should be held for Sappi inspection.

Identify the printing unit or units involved.

PRODUCTION NOTES

FRONT COVER

Opus Gloss Cover 100lb/270gsm

4-color process, black, spot gloss varnish.

BACK COVER

Opus Gloss Cover 100lb/270gsm

4-color process, black, spot gloss varnish.

INSIDE FRONT COVER

Opus Gloss Cover 100lb/270gsm

4-color process, spot gloss varnish.

INSIDE BACK COVER

Opus Gloss Cover 100lb/270gsm

4-color process, black, spot gloss varnish.

INSIDE PAGES

Opus Dull Text 100lb/148gsm

4-color process, match blue, spot gloss varnish.

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