



Inkjet Explainer Series

Understanding Inkjet Media Qualification

March 16, 2021

Evaluate. Optimize. Grow.

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#inkjetexplainer



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Get the most from your time with us!

- **SEND US YOUR QUESTIONS DURING THE WEBINAR**
- Question control is in the lower left corner
- We may answer during the presentation
- There is a Q&A at the end
- **Video and audio archive will be uploaded later today along with PDF of slides**



Our Explainers

Mary Schilling, Inkjet Insight

Mike Todryk, IWCO

First Thing First

Schedule Properly



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4 Steps to Media Qualification



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Application Requirements

1

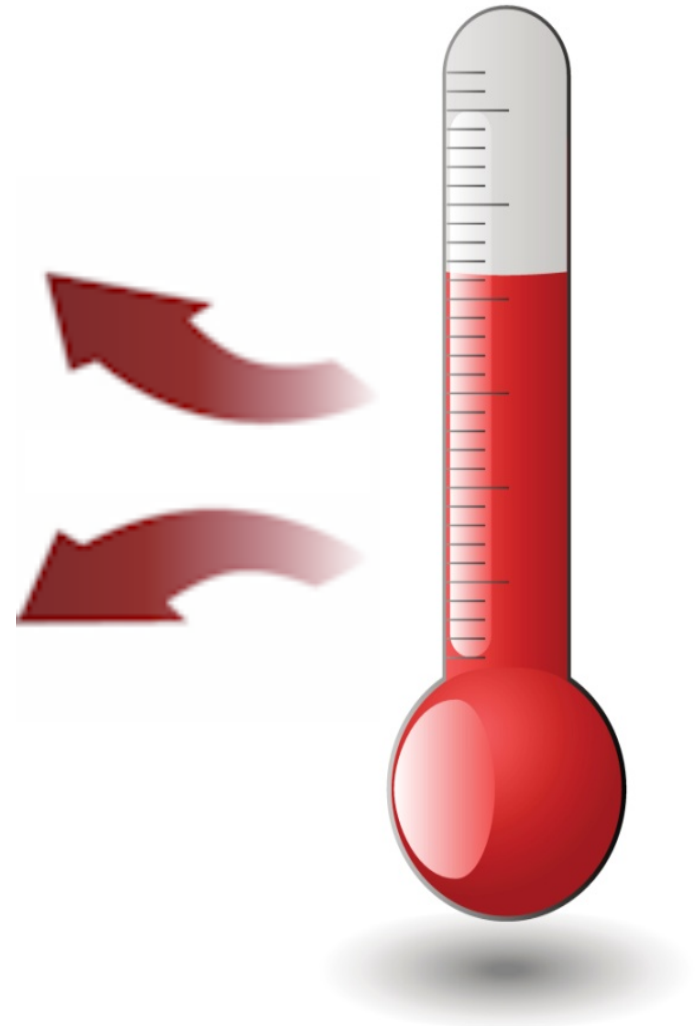


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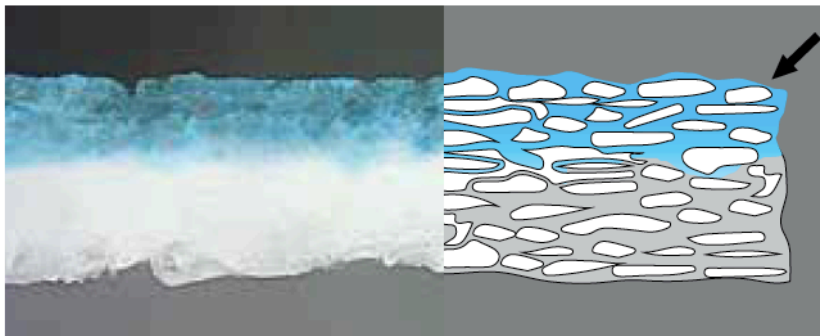
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FUN FACT

Printed Ink on
porous media
responds faster to
heat settings than
air flow

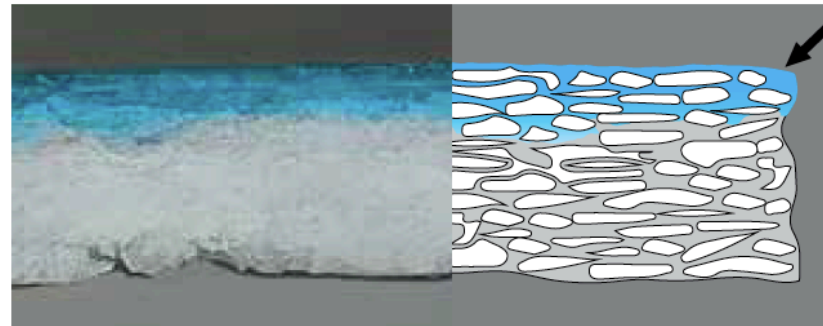


Media Requirements - Porous



Uncoated allows colorant to flow deeper into the paper fibers.

Uncoated



Treatment of surface and paper fibers traps colorant closer to the paper surface.

Inkjet Treated

Images from "The Designer's Guide to Inkjet"

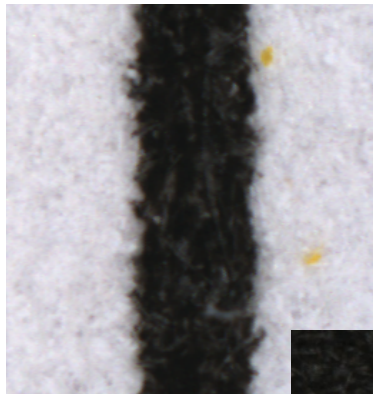
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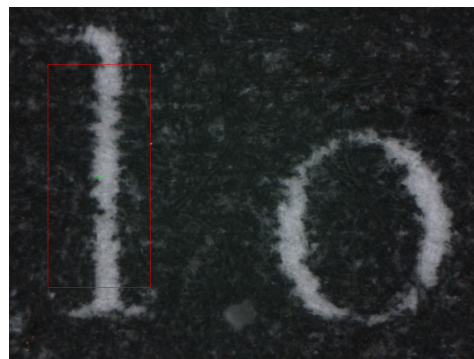
Scanning Electron Microscopy (SEM) Cross Section Scan 3 Papers, Aqueous Inks

Porous Media. Here's the challenge.

Edge Clarity



Text Clarity



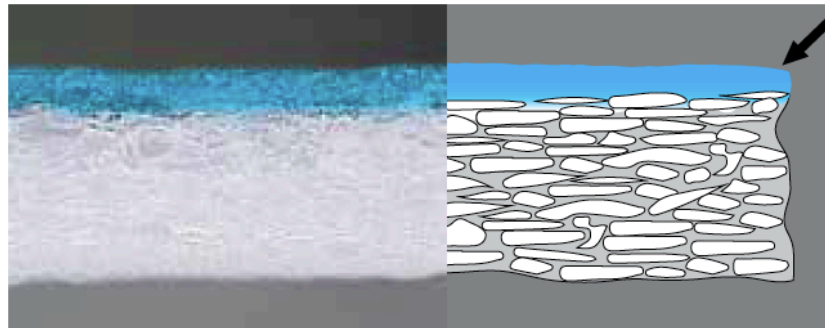
Mottle



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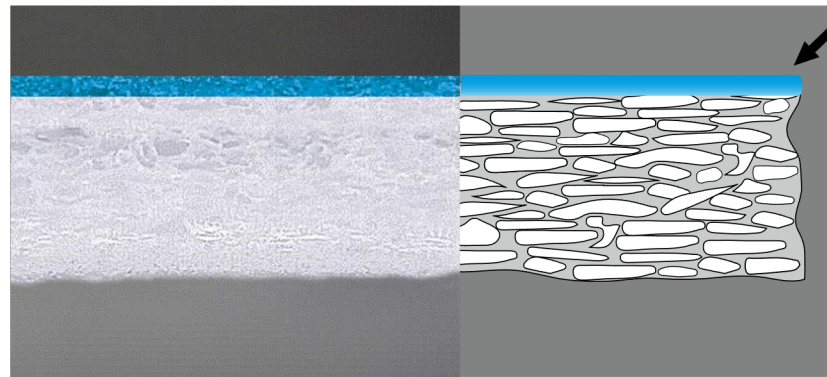
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Media Requirements – Non-Porous



A semi-porous coating layer quickly binds colorant on paper surface.

Inkjet Coated



A low-porous coating layer with slow drying properties keeps colorant on top of paper surface .

Offset Coated

Images from "The Designer's Guide to Inkjet"

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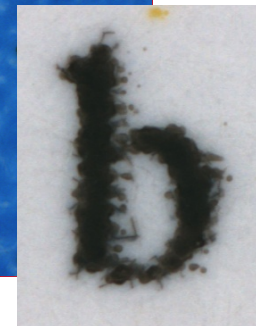
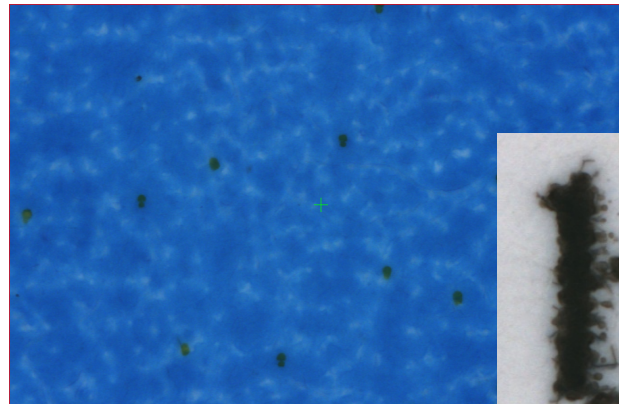
Scanning Electron Microscopy (SEM) Cross Section Scan 3 Papers, Aqueous Inks

Non-Porous Media. Here's the challenge.

Color to Color Bleed

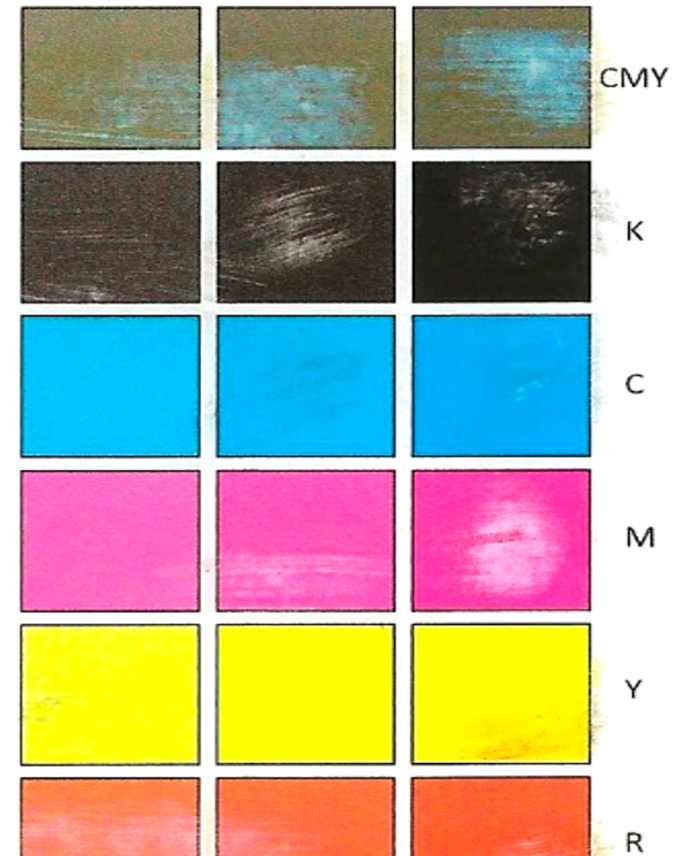


Coalescence



Non-Uniformity

Adhesion



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FUN FACT

Printed Ink on **non**
or low-porous
media responds
better to increased
air flow than higher
temperature.



Light Weight Media. Here's the challenge.

Curl

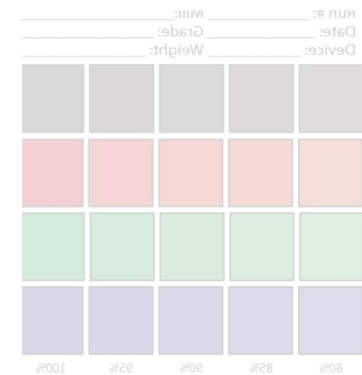
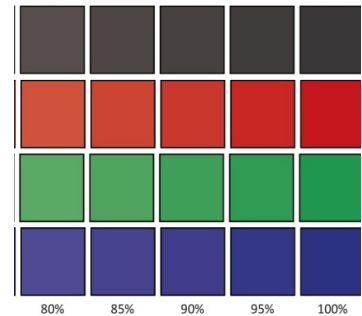


Cockle



Strike Through

Run #: _____ Mill: _____
Date: _____ Grade: _____
Device: _____ Weight: _____

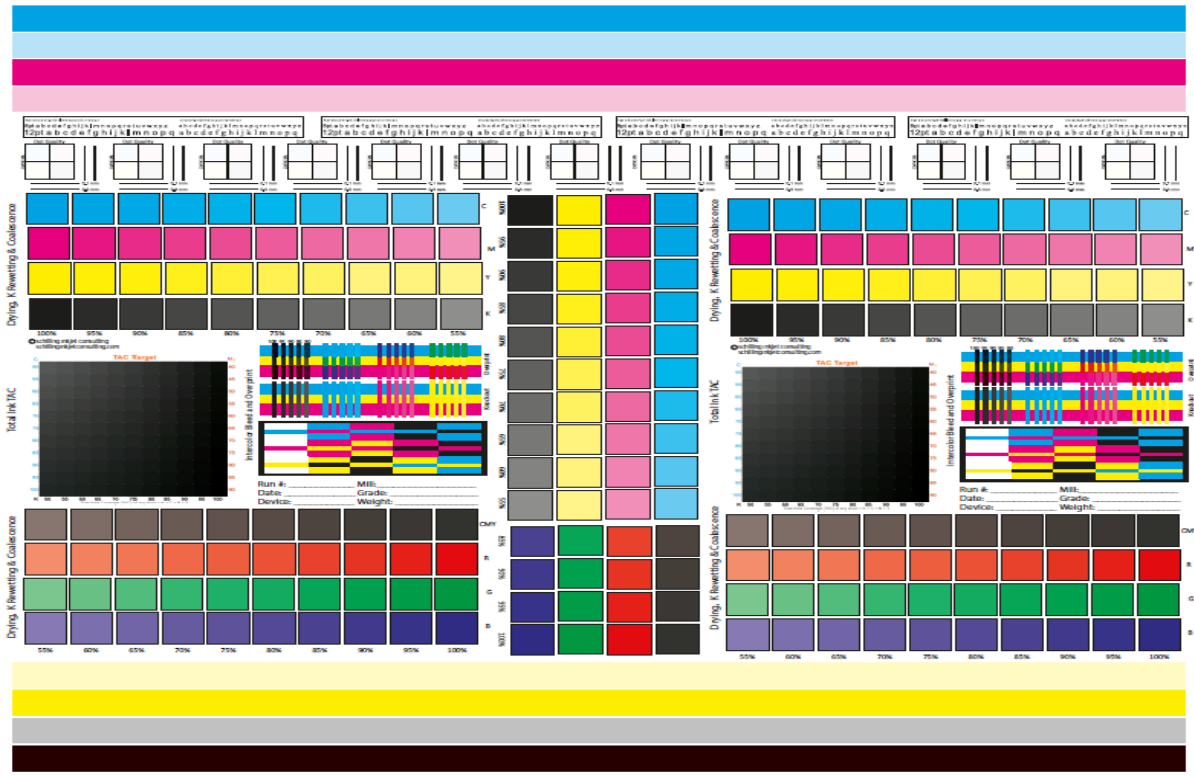


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Printing with Inkjet

2

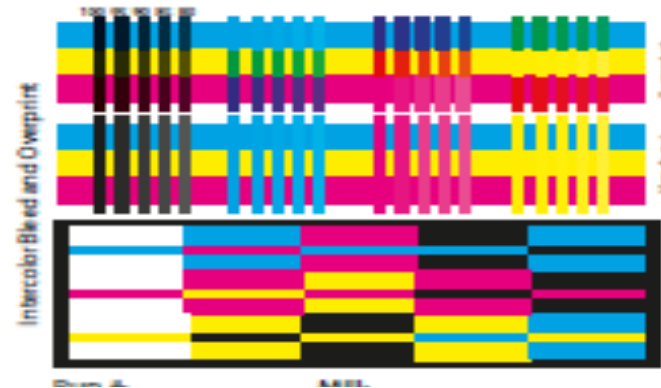
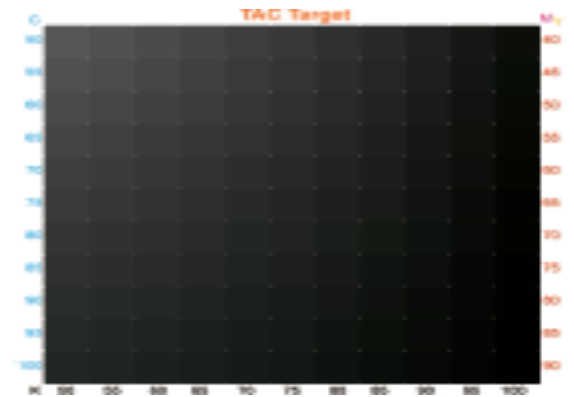
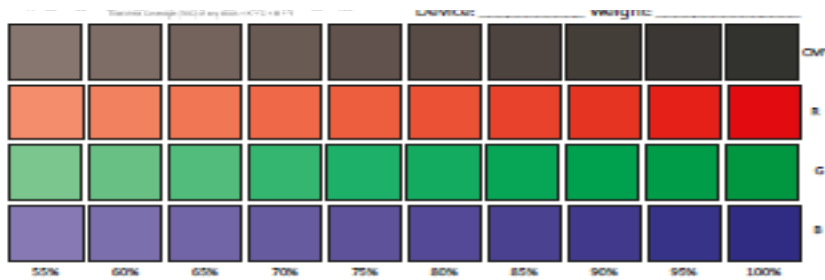
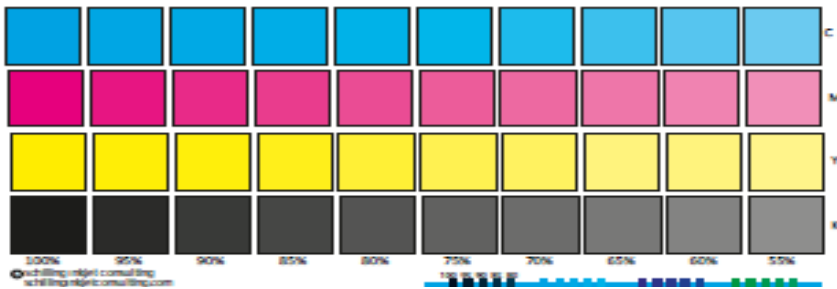


Understand how the printer is performing

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Printing with Inkjet



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Running Through Finishing

3



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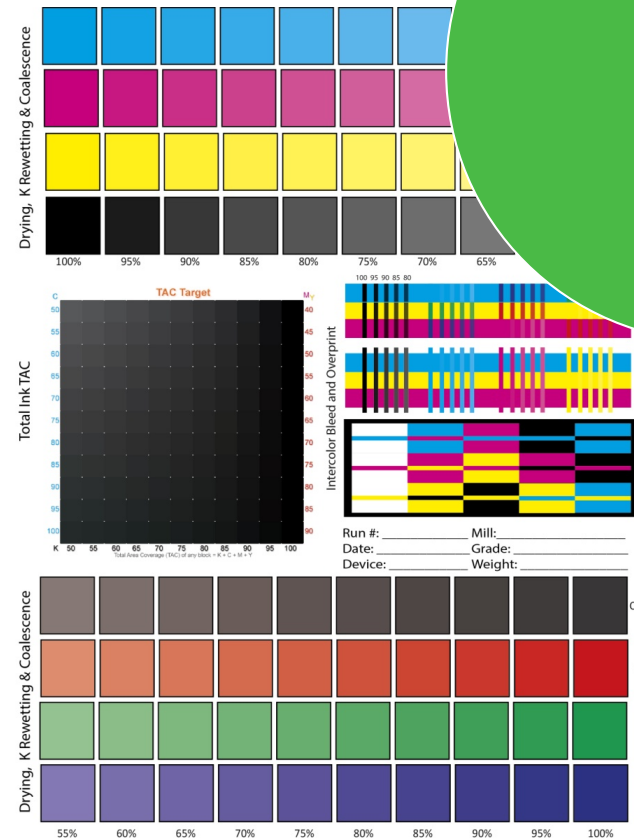
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Measure Performance

- Ink Adhesion
- Non-Uniformity
- Color to Color Bleed (rewetting)
- Dryness/Tackiness
- Adhesion
- Appropriate Density/ $L^*a^*b^*$

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Measure Performance




 CGATS21_CRPC3_Matt Uncoated

 CGATS21_CRPC4_Super Calendared

 CGATS21_CRPC5_Coated

 CGATS21_CRPC6_GRACol_Coated Lg Gamut

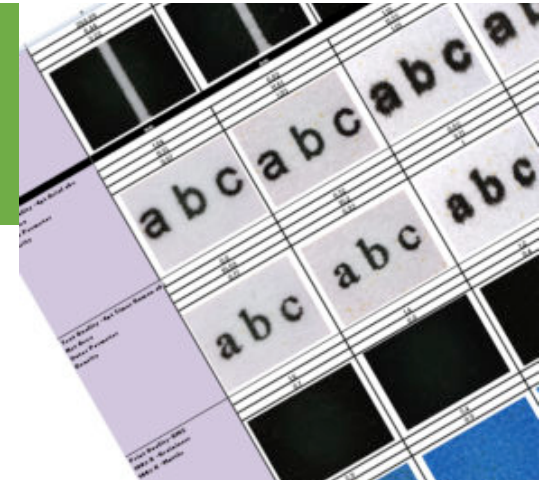
 CGATS21_CRPC7_Coated ExLarge

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Performance Characteristics



Non or Low-Porous Media

- Drying
- adhesion
- Coalescence
- Color to color bleed
- Coating Uniformity
- Surface tension differences
- Small text clarity

Attribute	Spec Boundary	Commercial		
		IJ Treated	IJ Coated Gloss	IJ Coated Matt
		Various Media	Various Media	Various Media
Color Gamut	lower	220000	280000	280000
	upper	300000	360000	360000
C Density	lower	0.96	1.15	1.15
	upper	1.10	1.30	1.30
M Density	lower	0.90	0.97	0.97
	upper	1.02	1.20	1.20
Y Density	lower	0.84	0.93	0.93
	upper	0.90	1.00	1.00
Gloss K Density	lower	1.15	1.35	1.35
	upper	1.40	1.60	1.60
K Mottle	<	1.5	0.5	0.5
K Graininess	<	0.2	0.5	0.5
Show Through - 60# (single measurement)	<=	2.50	1.50	1.50
Water Resistance		Yes	Yes	Yes
Scratch Resistance		Yes	Yes	Yes
Small Text Clarity		Yes	Yes	Yes
Completely Dry on Exit		Yes	Yes	Yes
Highlighter Test		No	No	No

Porous Media Issues

- Ink Dive
- Mottle
- Show through
- Strike through
- Small text clarity
- Curl
- Cockle (light weights)
- adhesion
- Coalescence
- Color to color bleed
- Coating Uniformity
- Small text clarity

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Upcoming Explainers

- April - Inkjet Ganging and Imposition Explained by Pat McGrew and Elizabeth Gooding
- May – Understanding Inkjet Drying Technology

Questions?

Inkjet Insight provides valuable tools and resources to help companies objectively **evaluate** the potential of inkjet for their business, **optimize** their operations and **grow** their businesses using production inkjet.

Our Message to Printers, OEMs and the Industry at Large
**Evaluate. Optimize. Grow.
Repeat**



Need something explained?
Let us know.

For more information please contact:

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Elizabeth Gooding

Elizabeth@inkjetinsight.com

Thank you for your time and attention.

We look forward to the opportunity to help you reach new customers through valuable technical and educational content and to grow your business through market analysis and expert media qualification support.