



Post Polishing and Scorelines

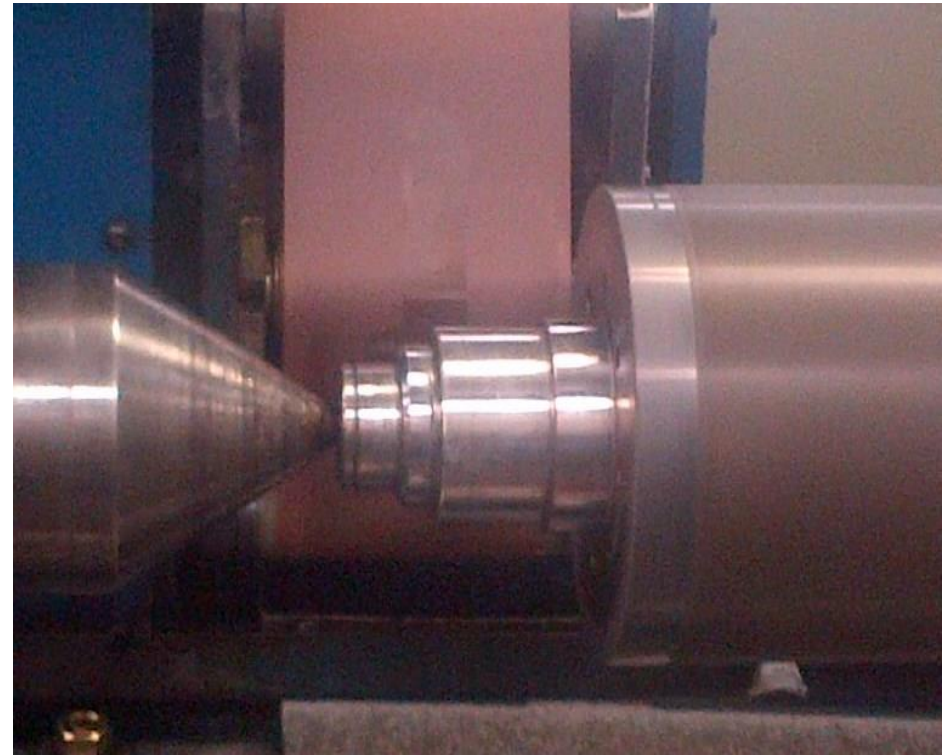
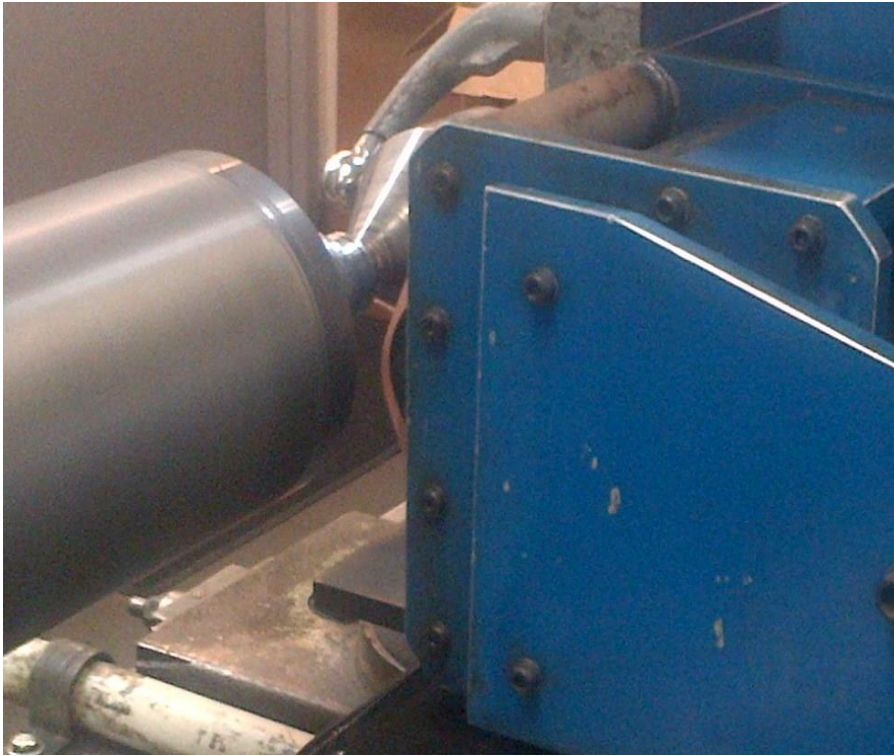


What differentiates Pamarco from the competition?

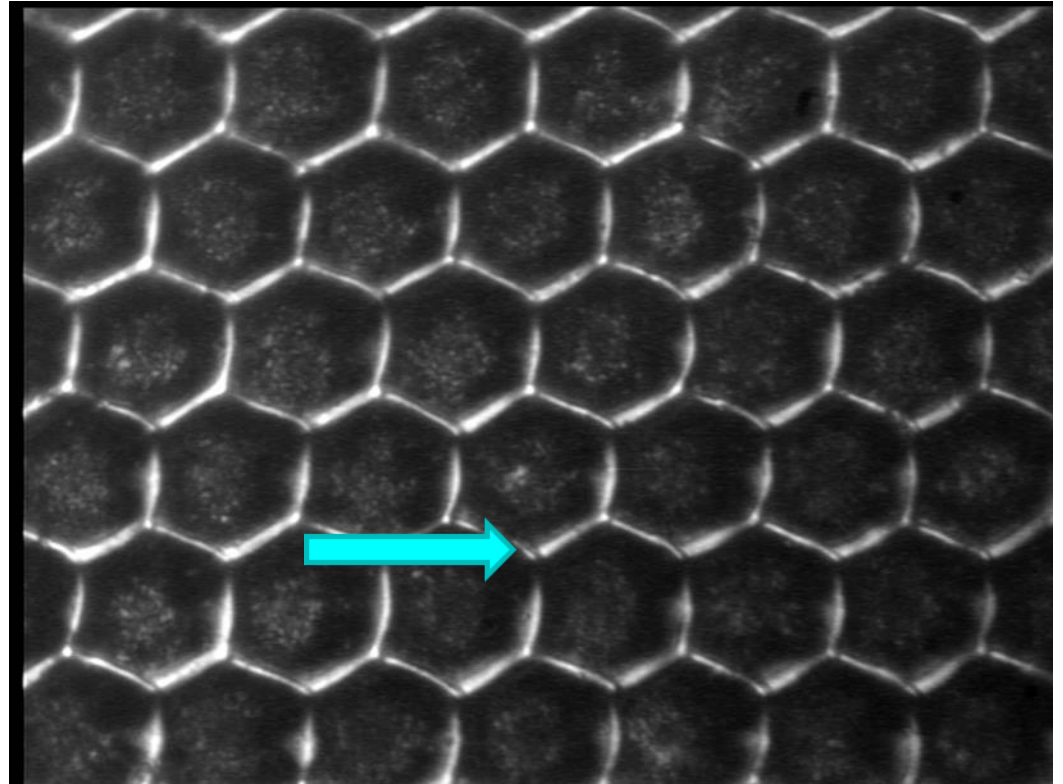
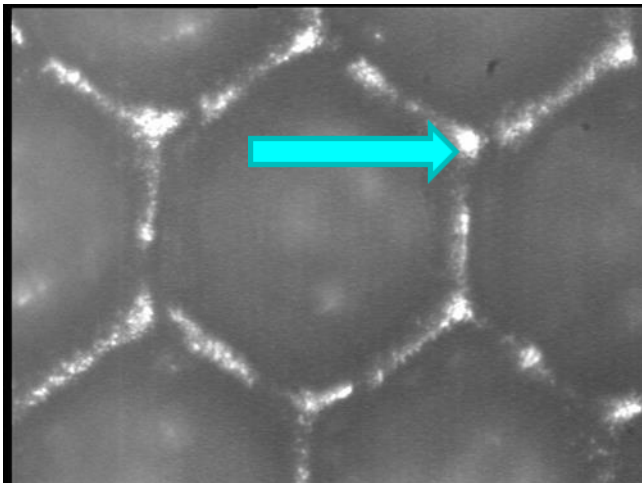
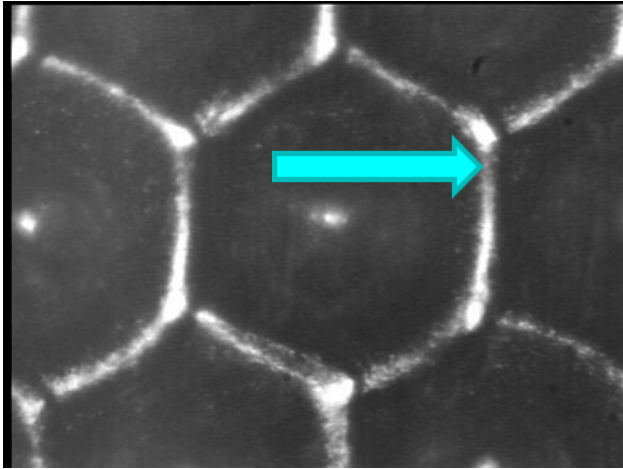
1. Machine post-polishing
2. Salesmanship. How can we better assist the customer in recommending an engraving best suited for their application
 1. Print quality
 2. Resistance to score line
 3. Durability
 4. Resistance to plugging.

Post Engraving Diamond Film Polishing

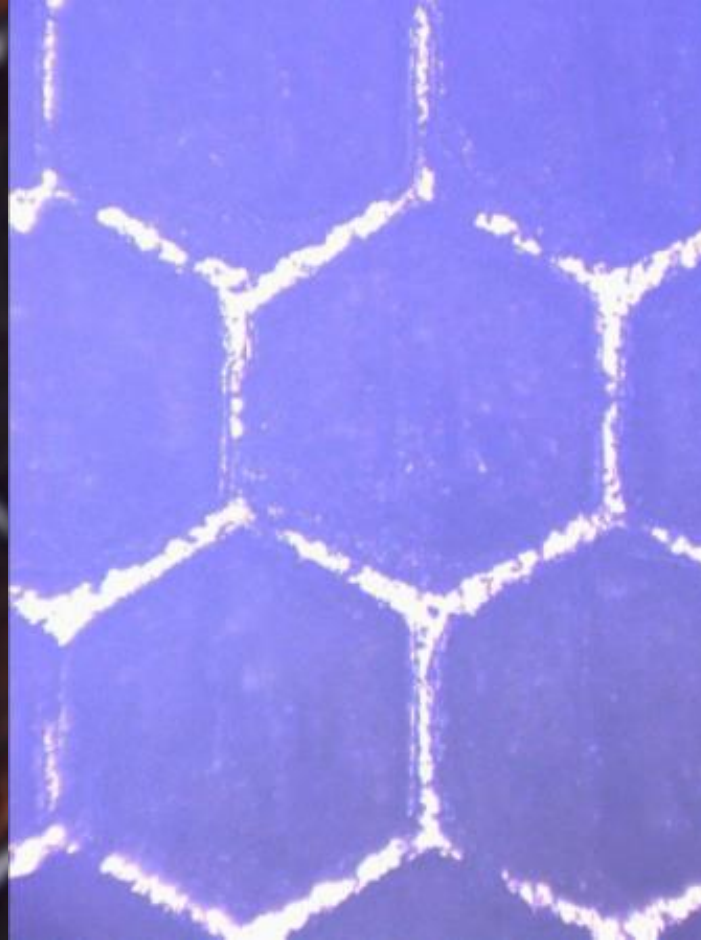
Reduction of Score Lines and improved Durability



Recast Nodules

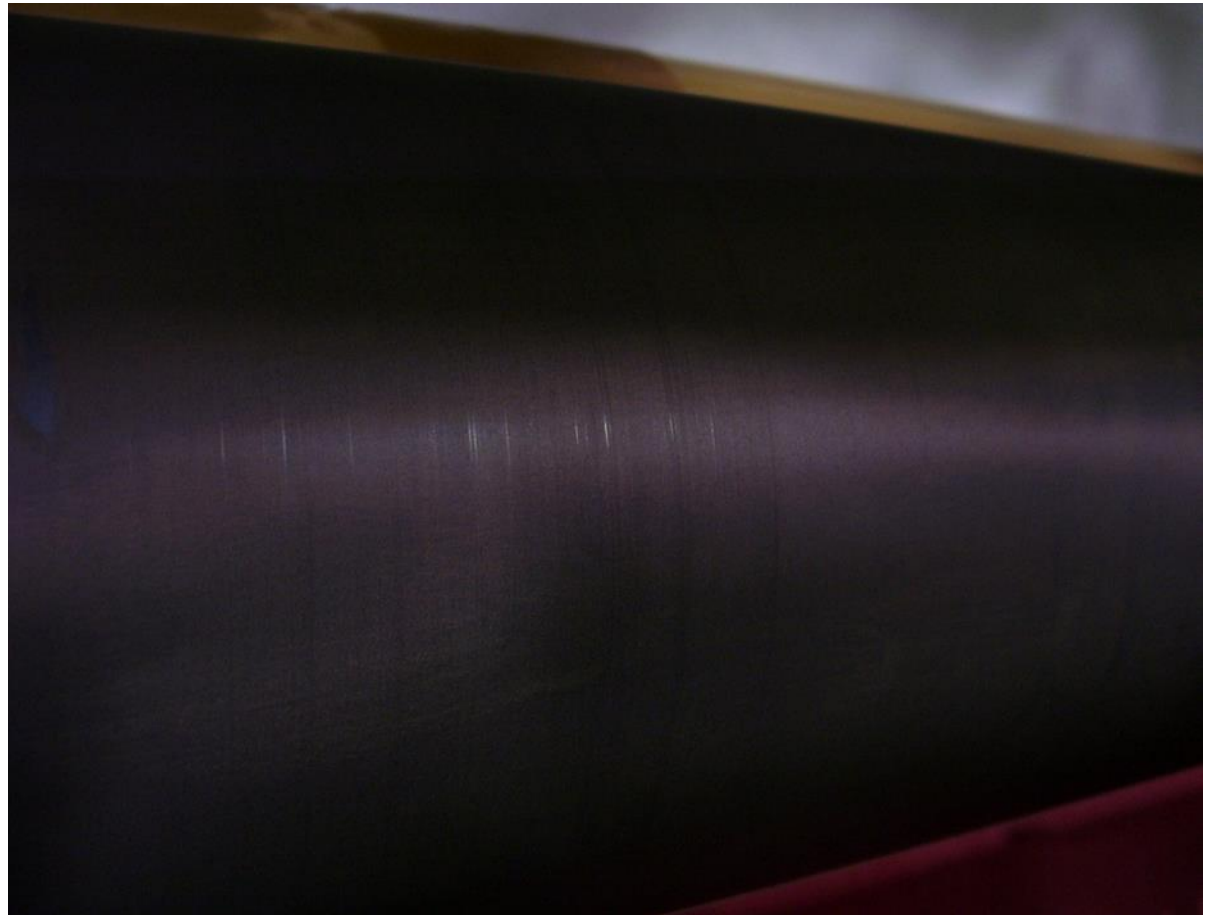
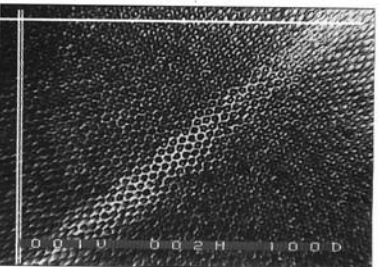
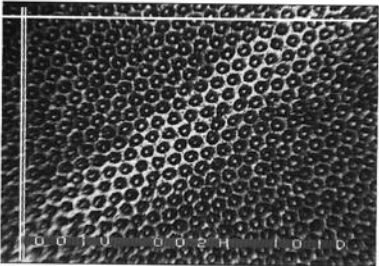
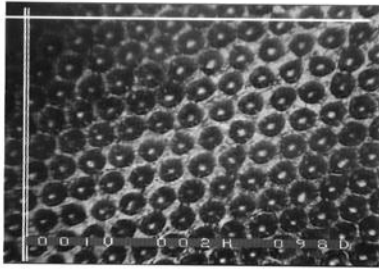


Machine post-polishing – 70% W&H contact spec

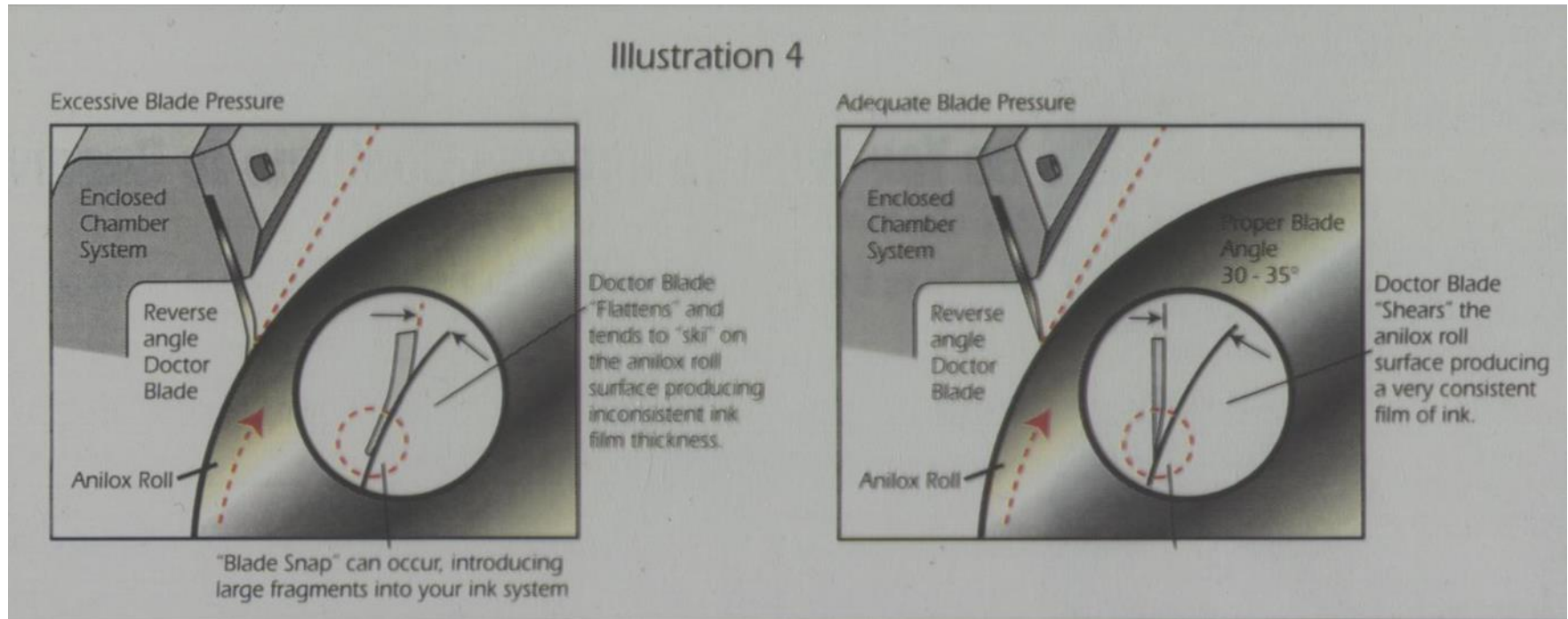


What are the benefits of post polishing?

#1 - Post-polishing adds Resistance to Scoring



Scoring is never the fault of the roll, but you can make a roll more susceptible to scoring



Besides post-polishing, how do we address score line issues?

1. "Kiss Impression" (1Bar = ~14.5 psi)
2. Magnetic filters
3. Dr. blade alternatives
4. Network with other suppliers

#2 Post-polishing adds Durability



Less need to “pad” the volume

Proven by Pamarco Dr. Blade “wear” tester



What did we test?

- Ceramics
- Spray Equipment
 - Harder is not Always Better
- Engraving Techniques
 - Multi Cycle – Multi Pulse – Multi Beam
- Cell Shapes
- Post Engraving Polishing
 - Hand verses Machine Polishing

Additional benefits of post-polishing?

- Smoothness
- Lubricity
- Dr. Blade wear
- Better plate support

Salesmanship – Engraving Recommendations

1. Salesmanship. How can we better assist the customer in recommending an engraving best suited for their application
 1. Print quality
 2. Resistance to score line
 3. Durability
 4. Resistance to plugging.

Most Important!

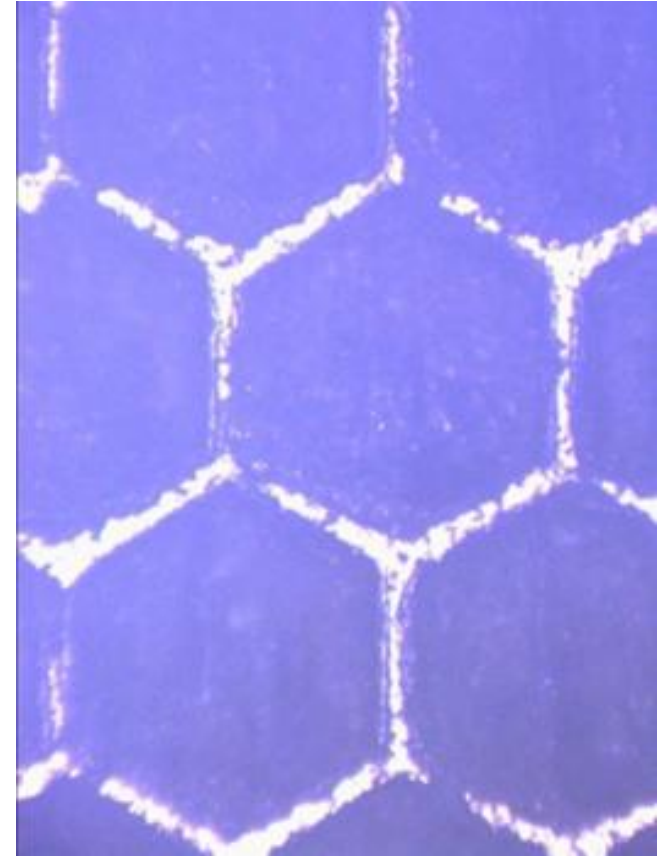
The anilox roll and print quality

1. Think volume first, not line screen
 1. Need to produce target densities / color strength
 2. Strongest, thinnest film of ink prints best
2. What happened to 23-33% D/O ratios???
 1. Choose the highest lpi with an acceptable d/o%

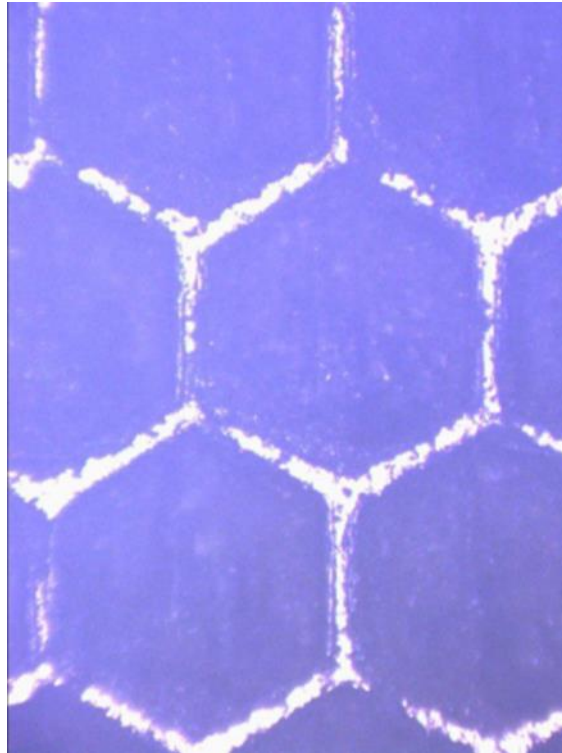
Is it time to go back to this basic “Flexo 101” principle?
How do we tie the benefits of post-polishing to our engraving recommendations?

Why proper D/O?

- Cells will stay cleaner at proper d/o ratios
- Density will remain more consistent
- Cells will stay cleaner
- Cells can be machine post-polished
- Engravings will be more durable



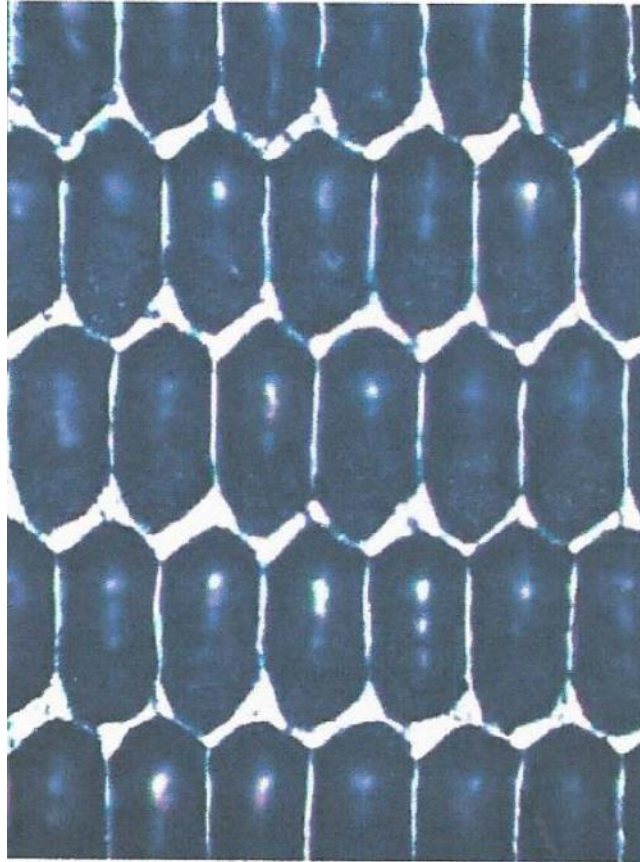
What would be the benefits of using a 450, 3.4 instead of a 600.4.0?



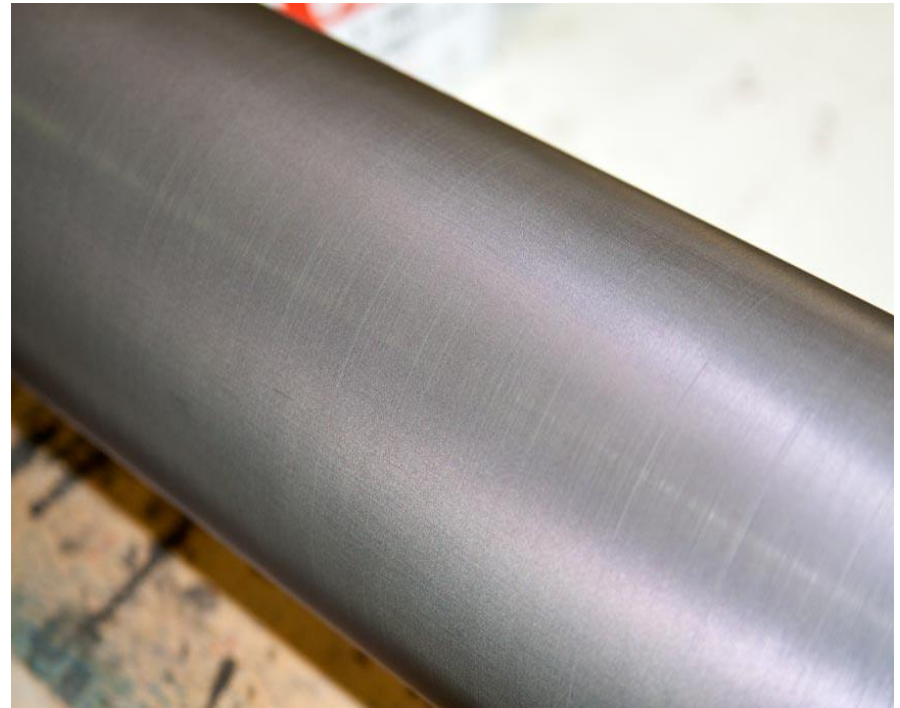
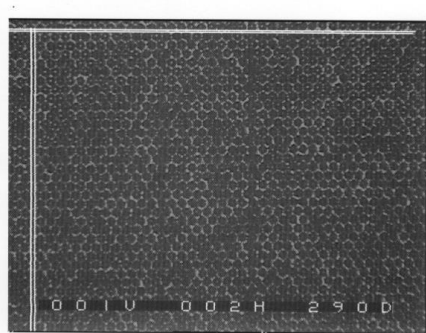
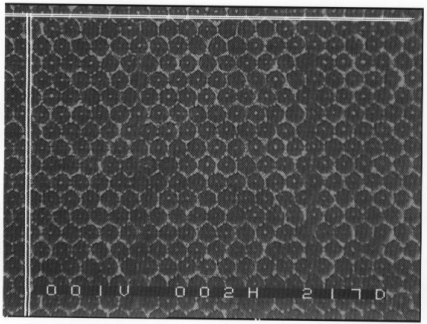
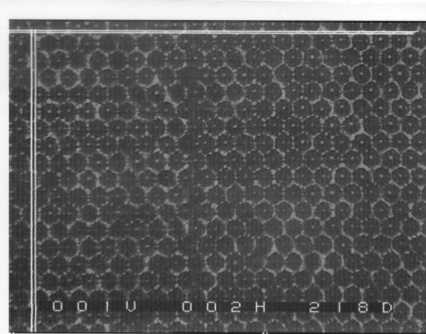
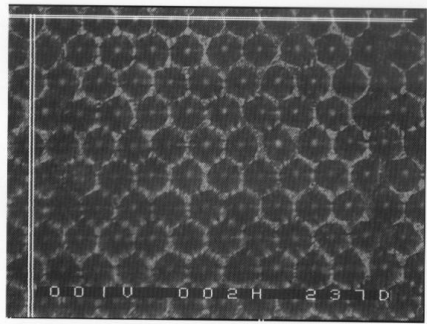
The Effect of good anilox selection?

1. Color strength is achieved
2. Dot gain is reduced
3. Type print cleaner
4. Anilox that re-wets, releases, is easier to keep clean, is more durable and resistant to score lines

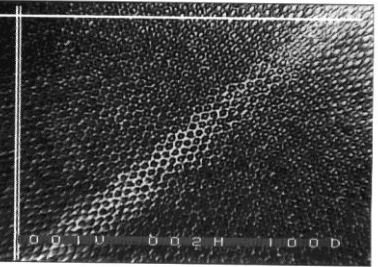
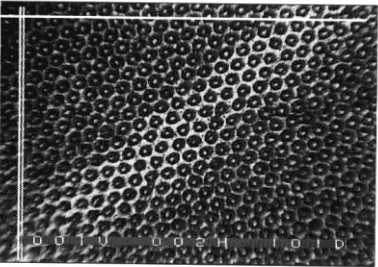
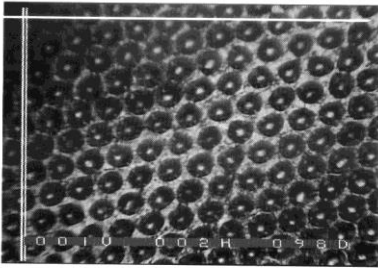
Example of proper anilox selection



Scratch Lines & Premature Wear



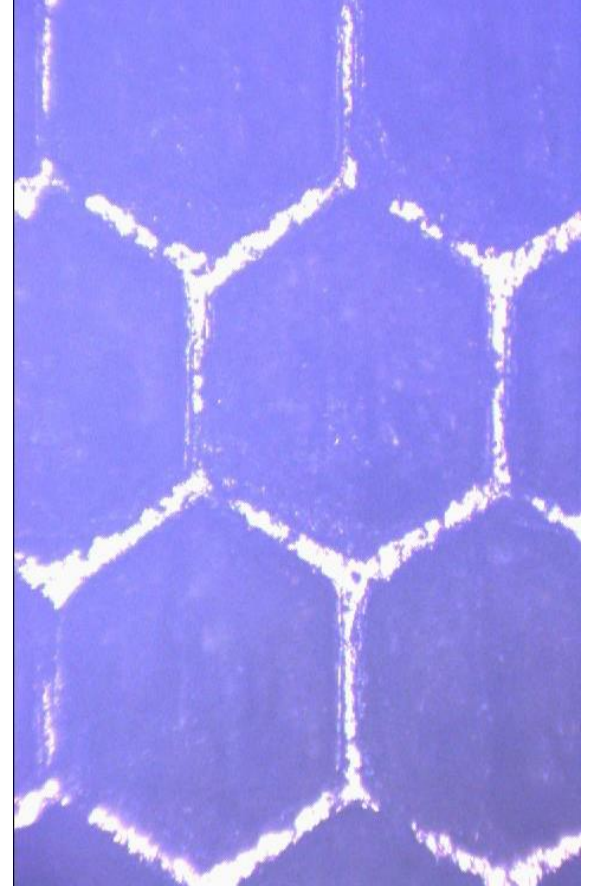
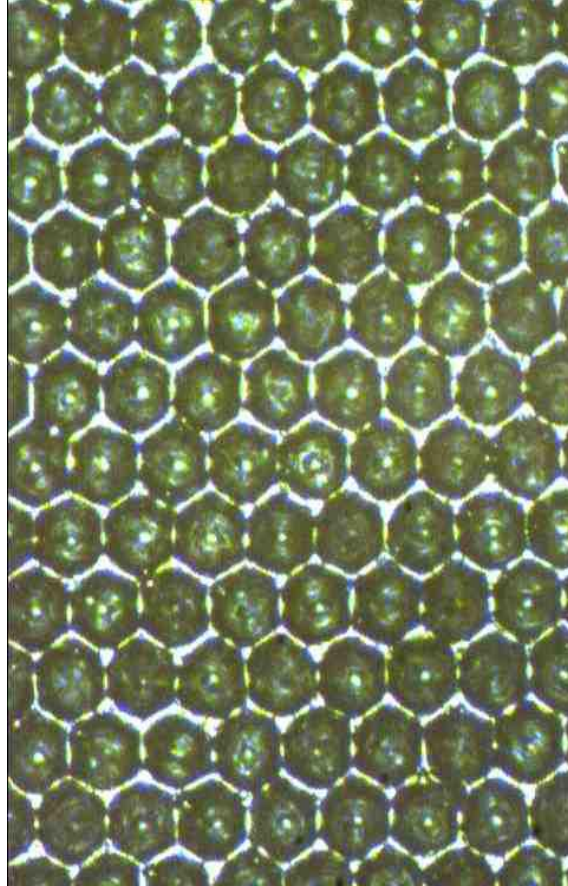
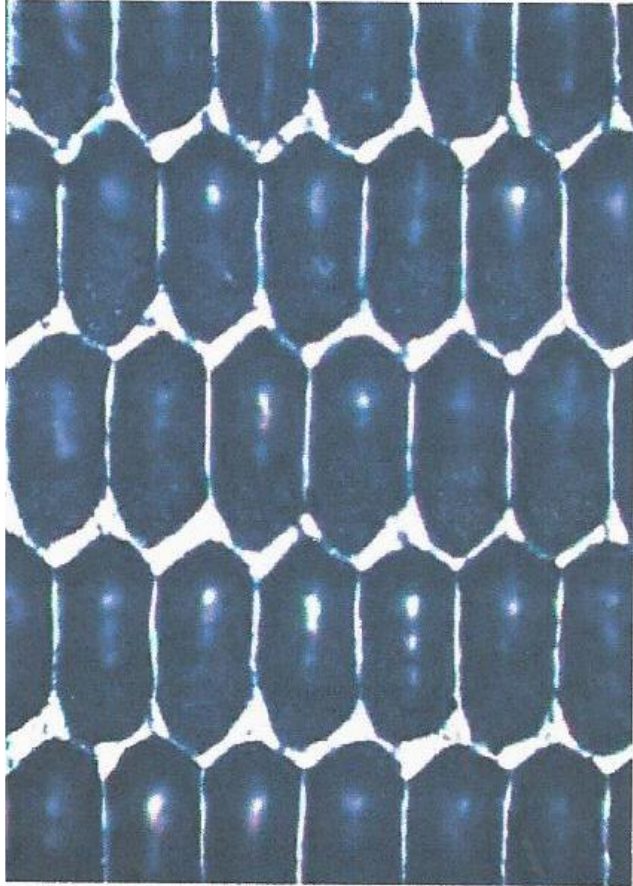
Score Lines – Debris In Ink



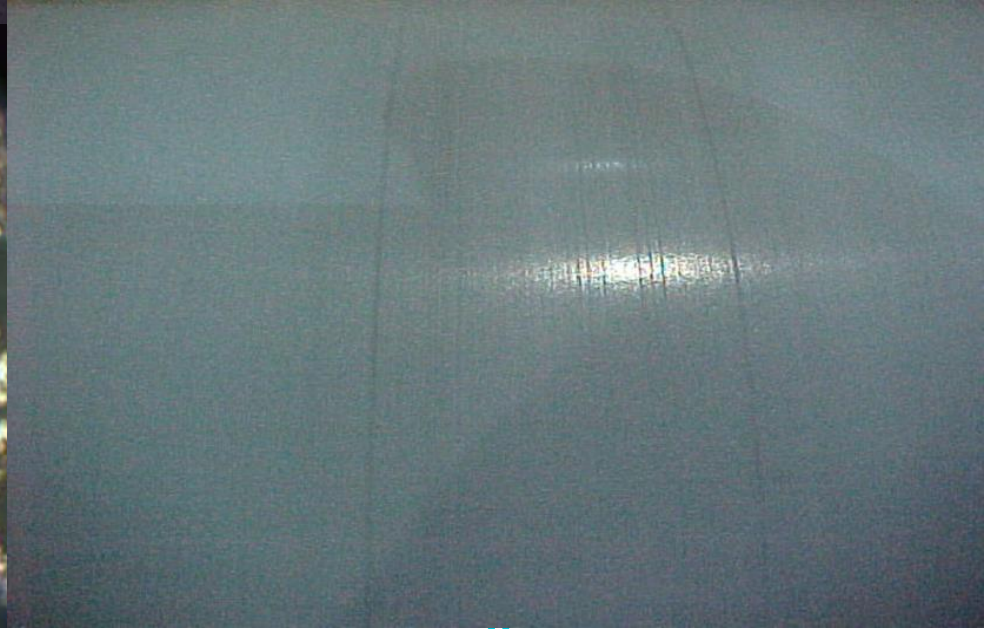
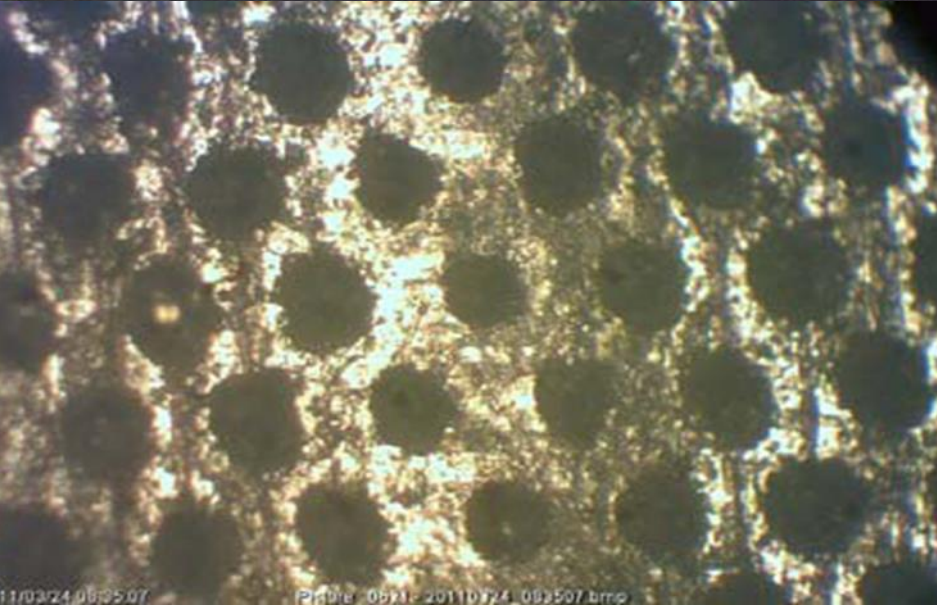
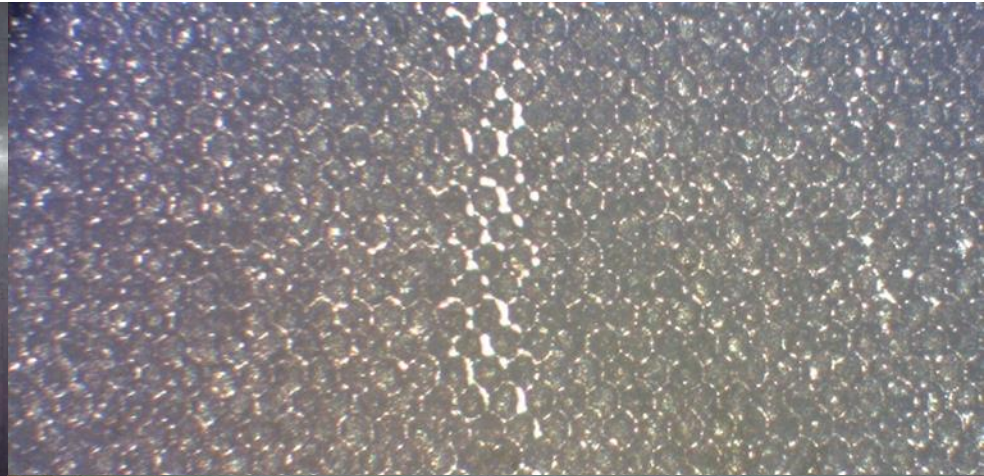
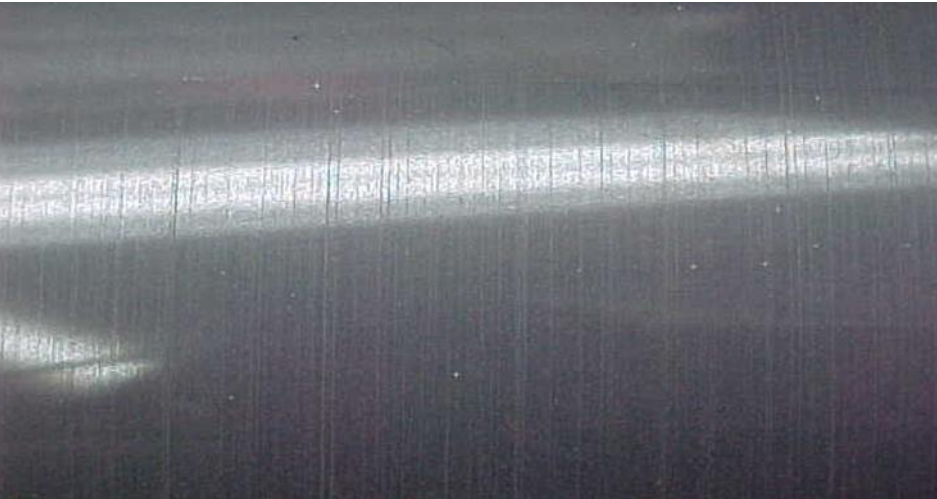
What Did We Test? (REPEAT)

- Ceramic Particles
- Ceramic Spray Equipment
 - Harder Ceramic Is Not Always Better
- Engraving Techniques
 - Multi Cycle – Multi Pulse – Multi Beam
- Cell Shapes
 - What Happened To 23-33% Depth To Opening Ratios?
- Post Engraving Polishing
 - Hand Versus Machine Polishing

Machine Polishing Results

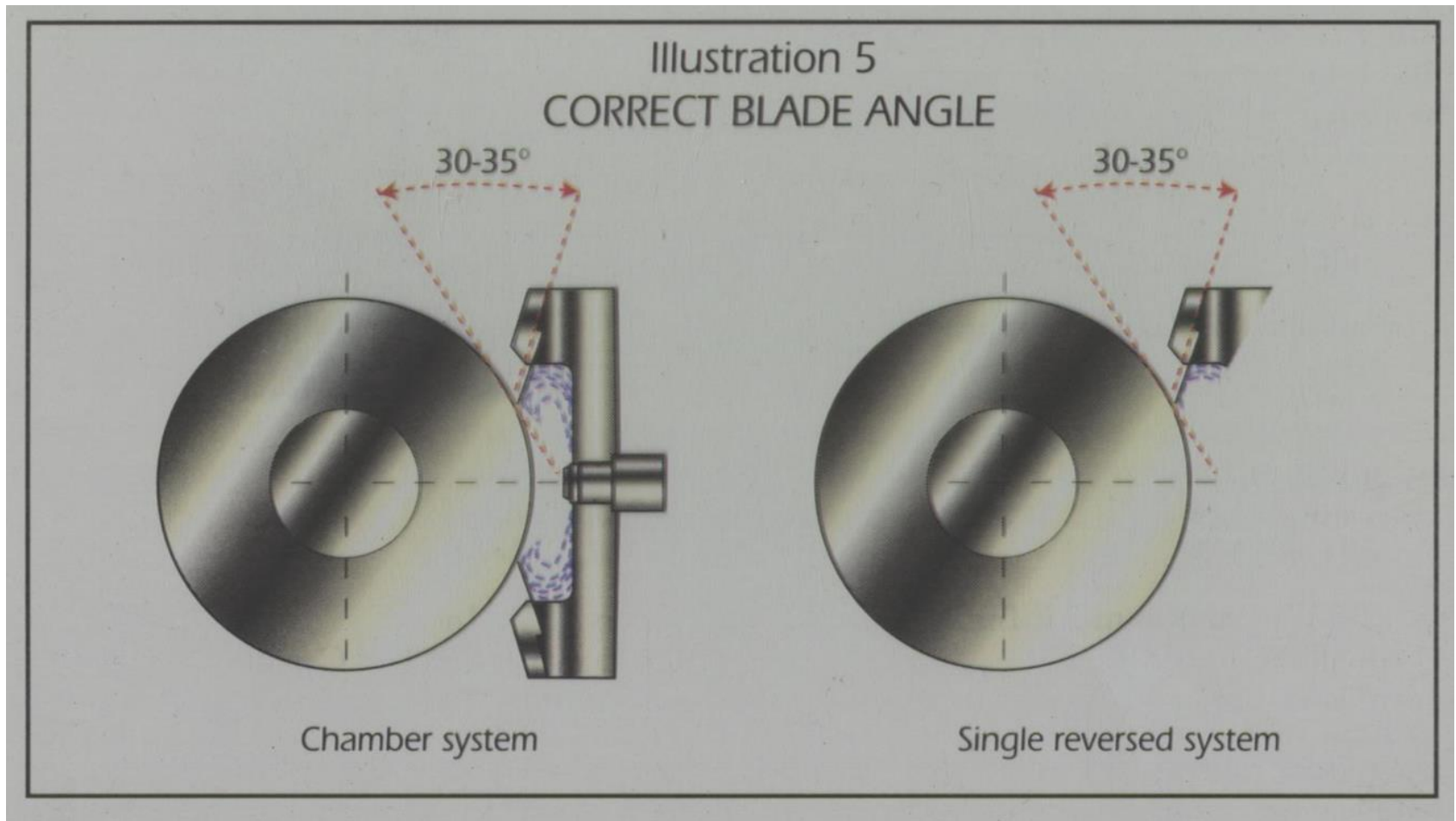


Anilox Roll Damage Score Lines



11/03/24 08:35:07 Profile_0521_20110724_083507.bmp

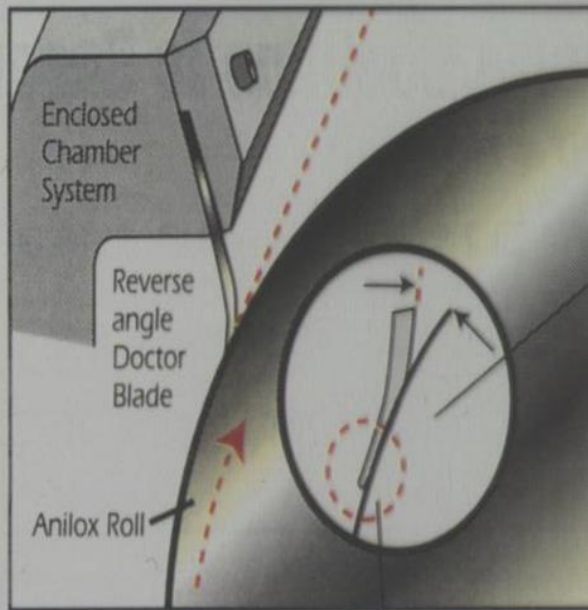
Correct Blade Angle



Excessive Doctor Blade Pressure

Illustration 4

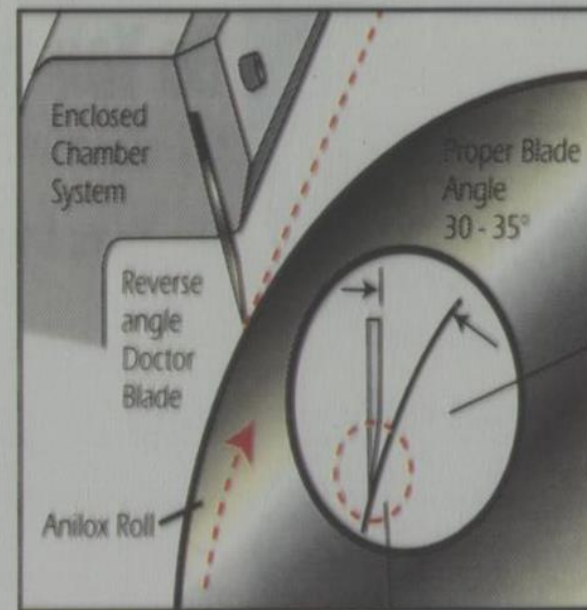
Excessive Blade Pressure



Doctor Blade "Flattens" and tends to "ski" on the anilox roll surface producing inconsistent ink film thickness.

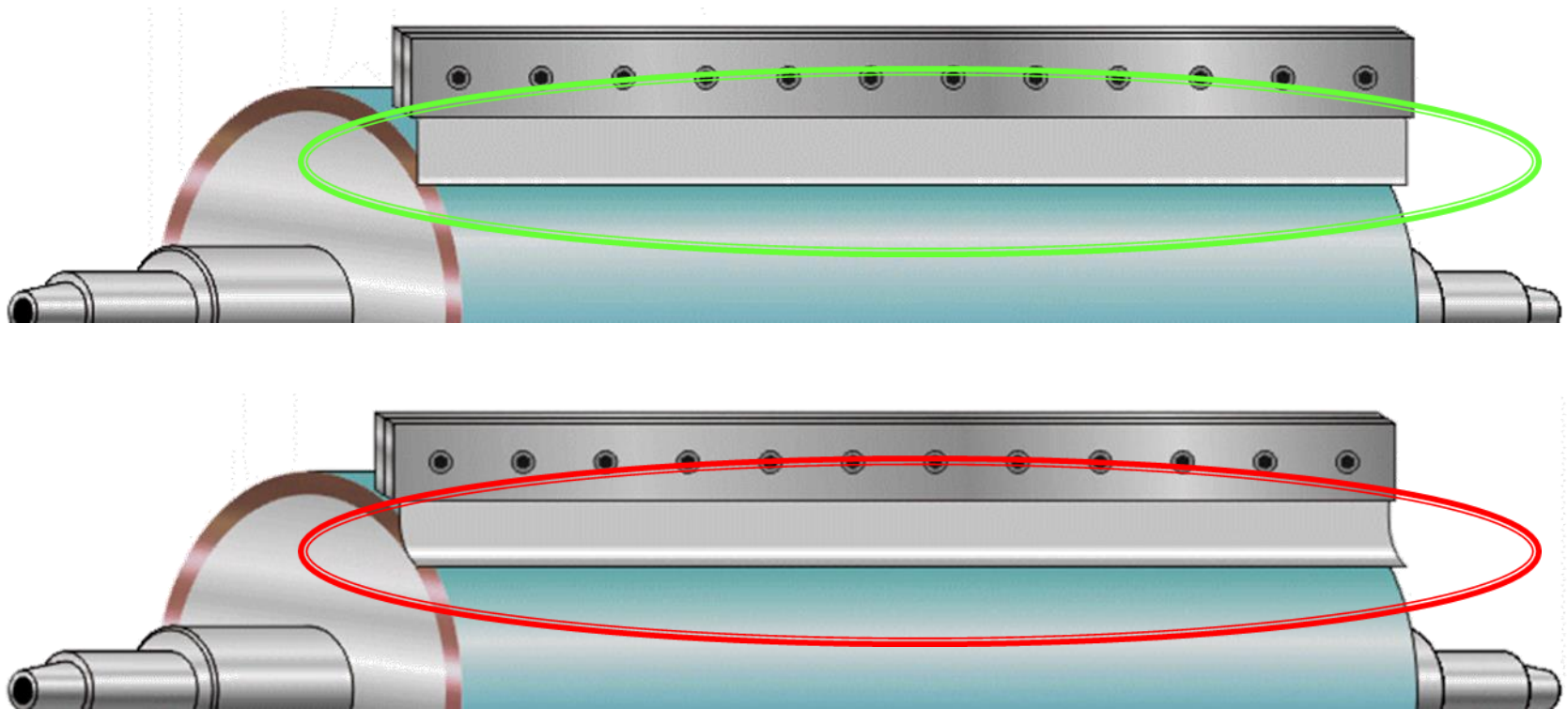
"Blade Snap" can occur, introducing large fragments into your ink system

Adequate Blade Pressure



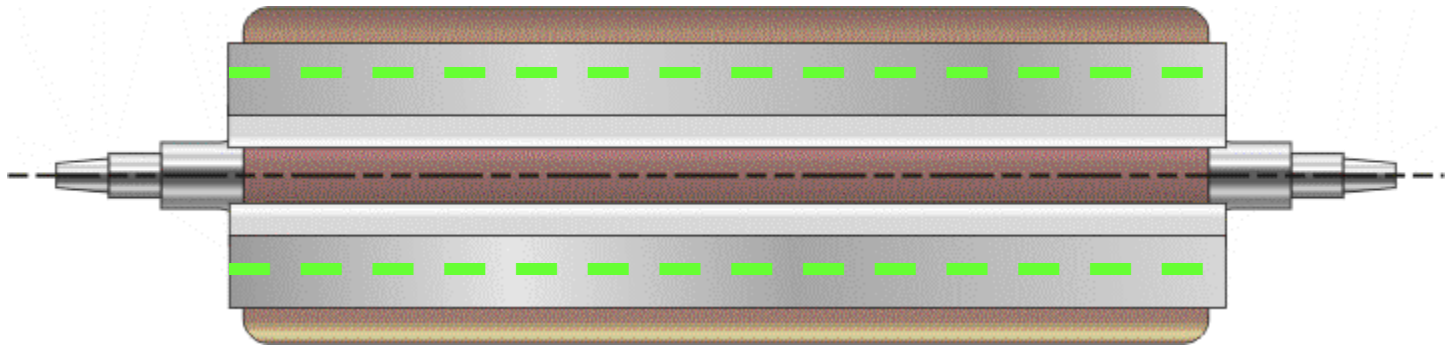
Doctor Blade "Shears" the anilox roll surface producing a very consistent film of ink.

Correct Pressure Shears Contamination

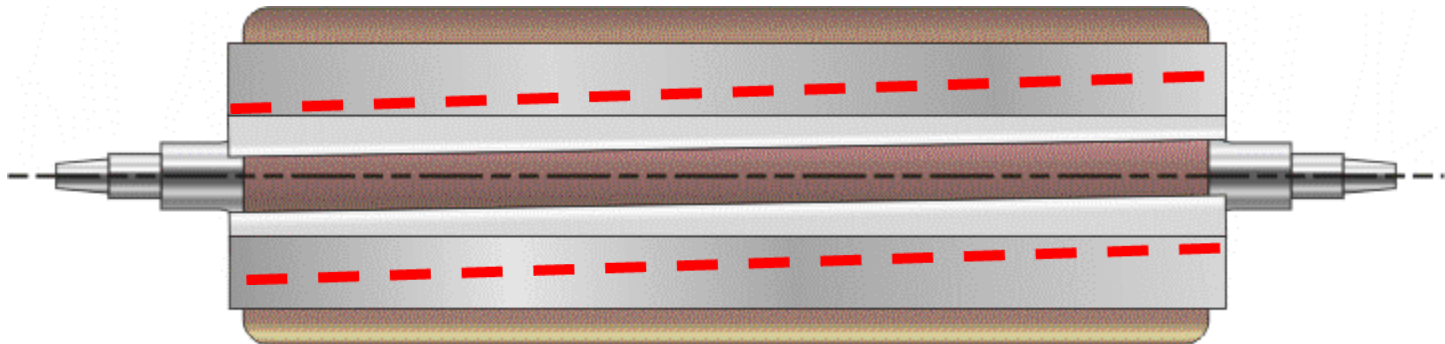


Excessive pressure traps foreign particles
Causing streaks and score lines!

Check Used Blades

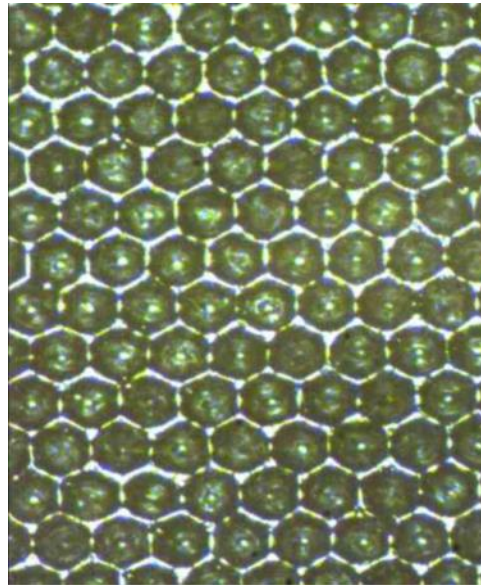
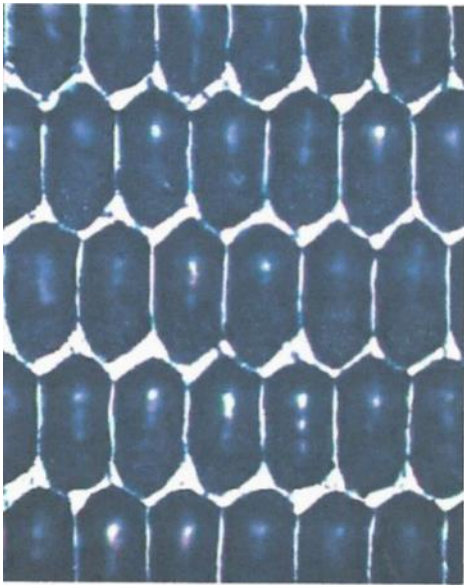


Even Wear



Uneven Wear

Machine Polishing Results



Post Engraving Polishing

CellBase™ Certification

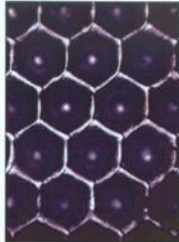
Date: 12/29/2010



General Information

Customer Name:
 PGG Work Order #: 21982
 Customer P.O #: R & D PROJECT
 Roll ID #: BPK-TEST
 Depth: 34.10

Actual Magnified Cell Image

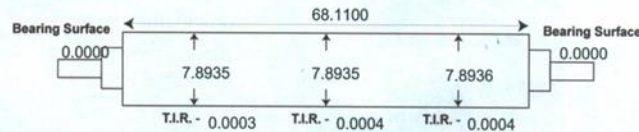


Engraving Details

Target Volume (BCM): 6.0000
 Actual Volume (BCM): 6.85
 Screen Angle (Degrees): 60
 Screen Count (LPI): 260
 Dead Band Width: SPECIAL
 Laser Type: THERMAFLO
 Recorded By: NMB

Readings and images provided by the Pamarco CellBase™ System, for more information contact your Pamarco Representative

Roll Dimensions



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CellBase™ Certification

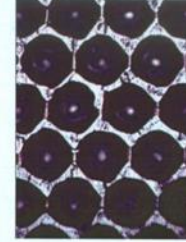
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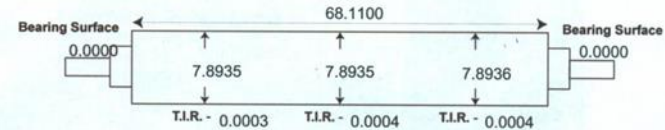


Engraving Details

Target Volume (BCM): 6.0000
 Actual Volume (BCM): 6.13
 Screen Angle (Degrees): 60
 Screen Count (LPI): 260
 Dead Band Width: SPECIAL
 Laser Type: THERMAFLO
 Recorded By: NMB

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Roll Dimensions



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Anilox Roll Audits

- Performed Annually
- An Audit Is An Impression, Or Mold, Of Each Anilox That Is Evaluated With Our Inspection Microscopes
- We Capture The Current Anilox Volume, Wear, And Cleanliness

Instructions

How to Take Anilox Roll Impression Using the Micro-Fax Dispenser Box



Step #1: Orient the box to the **suggested corner** and hold it as shown in Figure #1-A or Figure #1-B, as you prefer.

Step #2:

- Position the box over the Micro-Fax strip using the **wide-angle corner** of the box as shown in Figure #2.
- Apply reasonable pressure on the strip, and
- Draw **three parallel lines** horizontally or vertically whichever is easier.



NOTE:

The **objective** is to create wide lines at least 1 mm in width. Thin lines cause problems and may produce false readings. The lines should be distinctly separate from each other, as shown in Figure #3.



TECHNICAL SERVICE REPORT



CUSTOMER : Sample CITY, STATE: Atlanta, GA		LAB REF # AC-RWA-4305	Additional comments The roll looks clean, but showing light wear with some channeling which normally contributes to slight increase in cell volume. Recommended action: Continue use. The effective cell volume (present volume) is 92% of the original.
BACKGROUND INFORMATION: Date: 4/21/04 Sales Rep: John Doe Roll Serial No: 5238 Date Installed: 12/2/993 Orig'l Cell Volume: 7.5 BCM		Roll Supplier: Pamarco Press: Web Unit: 1st Station Metering: Enclosed, SS Machine No: 4305	
PARCO-FAX ROLL ANALYSIS (at the time of audit):		Customers course of action	
Cell Volume (BCM) Average Cell Volume Cell Depth (µm): Cell Opening (µm): Cell Wall Thickness (µm):	DR Side Center OP Side 6.91 6.91 20 64 7	Depth/Opening Ratio: Wall/Opening Ratio: Screen/Angle: 250 L/in	92% 7% 60 Deg Laser
CONCLUSION <p style="text-align: center;">Effective Cell Volume = 92%</p> <p style="text-align: center;"><small>* Loss in cell volume is the result of wear, dirty cells, or both.</small></p> <p style="text-align: center;"><small>** Effective Cell Volume = Present Cell Volume / Original Cell Volume x 100</small></p>			
OBSERVATIONS: <input type="checkbox"/> Light Plugging <input checked="" type="checkbox"/> Light Wear <input type="checkbox"/> Cells are in good condition <input type="checkbox"/> Broken cell walls <input type="checkbox"/> Moderate Plugging <input type="checkbox"/> Moderate Wear <input type="checkbox"/> Wide cell walls <input type="checkbox"/> Poor cell geometry <input type="checkbox"/> Heavy Plugging <input type="checkbox"/> Heavy Wear <input checked="" type="checkbox"/> Channeling between cells <input type="checkbox"/> Low Volume			
RECOMMENDED ACTIONS: <input checked="" type="checkbox"/> Continue Use <input type="checkbox"/> Re-engage <input type="checkbox"/> May need to re-engage soon <input type="checkbox"/> Clean and continue use <input type="checkbox"/> Monitor print quality <input type="checkbox"/> Clean and monitor print quality			
Recommendation made by Kelly Walker <i>[Signature]</i> Date 4/27/2004		Approved By Elias Haddadin <i>[Signature]</i> Date 4/27/2004	

Reverse angle & Enclosed Chamber Metering systems

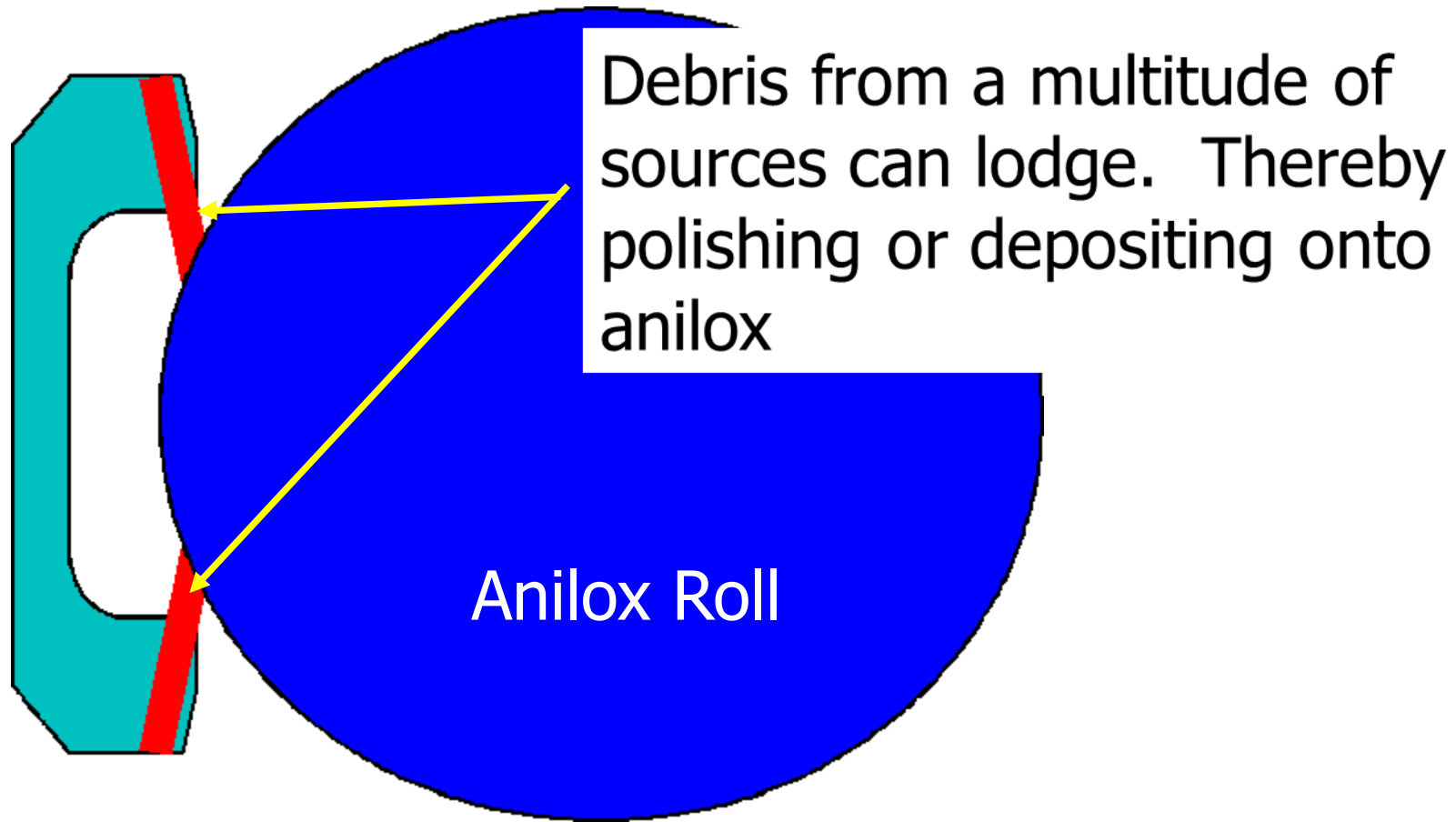
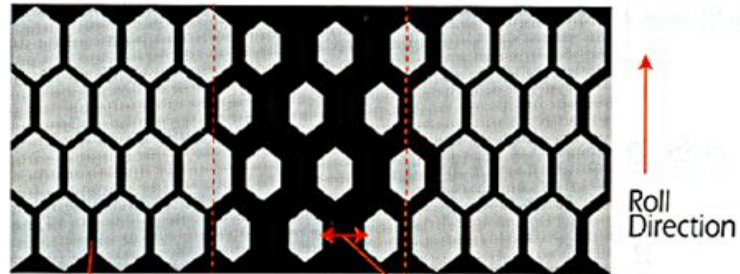


Illustration 1
ANILOX VOLUME INCREASE
 60° Engraving Pattern



The resulting increased liquid carrying capacity of the damaged area produces dark streaks on the printed substrate.

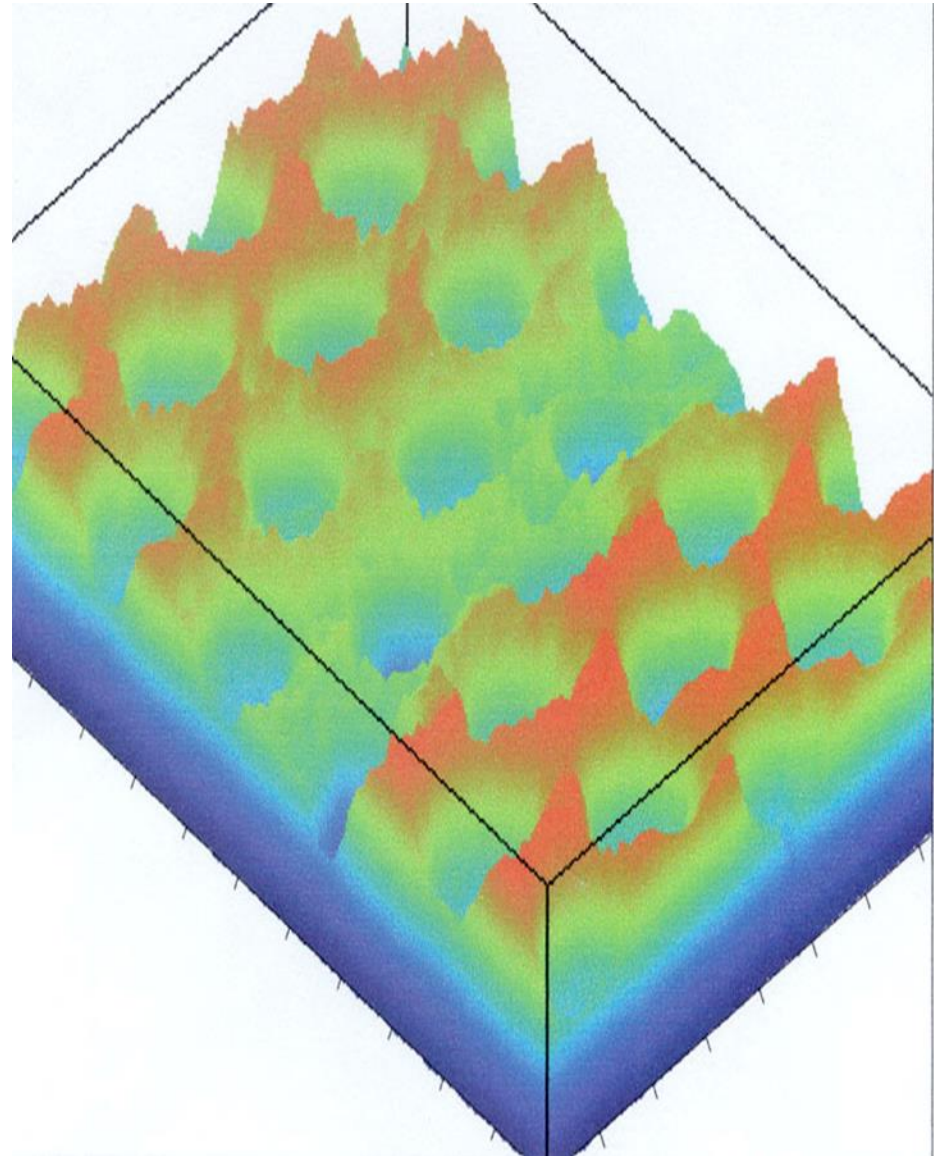
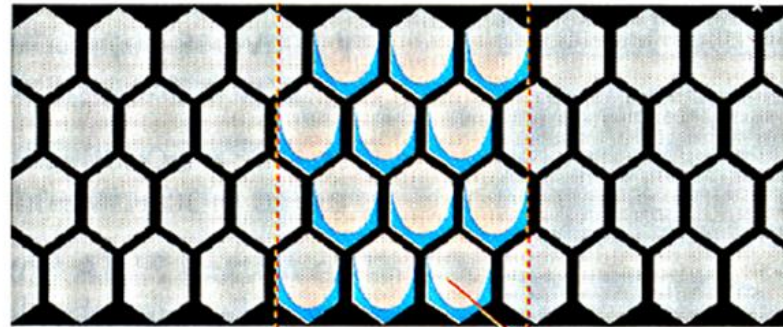


Illustration 3

ANILOX VOLUME REDUCTION

60° Engraving Pattern



Roll
Direction



Damaged
surface area
on anilox roll



Blade fragments trapped between the doctor blade and anilox roll embed themselves in the engraved cells. The resulting reduced liquid carrying capacity of the damaged area produces light streaks on the printed substrate.



cross section

