



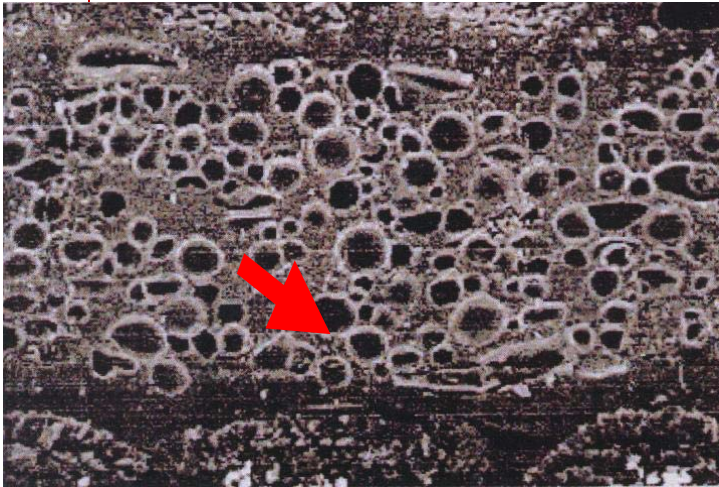
Metro Users Group

February, 2009

Presented by: E.G. Mills

Compressible Layer

Closed Cell



- ✓ Consists of synthetic elastomers and microcells
- ✓ These microcells contain trapped air
- ✓ The compressibility of the layer is determined by the air bubbles and the rubber compound of the compressible layer

Blanket Surface Compounds

The surface of an offset printing blanket is composed of a synthetic rubber compound. Rubber is used because it can be formulated to be compatible with various printing applications.

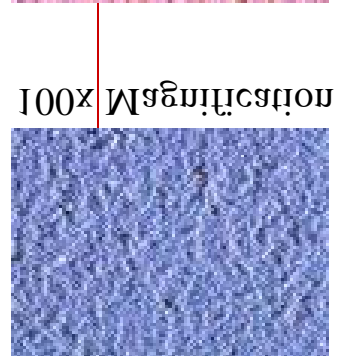
Blanket surface compounds can vary to provide:

- *Solvent resistance*
- *Durability*
- *Ink transfer ability*
- *Release characteristics*

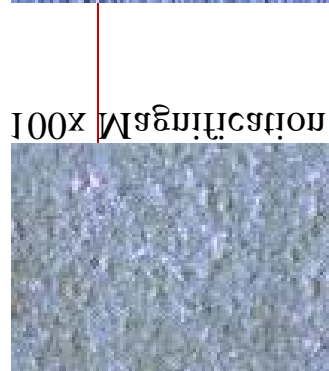
Blanket Surface Finishes



CAST: Process by which surface finish is formed by using a curing paper



GROUND/Bufed: Mechanical process of finishing the surface of the blanket



TEXTURIZED: Surface finish is formed by using a patented chemical process.

Blanket Users Guide

- Packing***
- Gauging***
- Installation***
- Washing procedure***

Importance of Gauge

All printing blankets are expected to have certain properties. Proper thickness will enhance the following properties:

- ✓ Print quality
- ✓ Run life
- ✓ Release
- ✓ Resistance to piling
- ✓ Resistance to smashes
- ✓ Reduced plate wear
- ✓ Web control
- ✓ Reduce web breaks
- ✓ Maintains good register

printed product.
negative effect on the finished
Improper backing can have a



Why is Blanket Height So Important

There are certain printing problems that can be caused or aggravated by improper packing:

- ✓ Weak print
- ✓ Pin holes
- ✓ Piling
- ✓ Linting
- ✓ Poor trap
- ✓ Emulsification
- ✓ Slurring
- ✓ Dot gain
- ✓ Register across the web
- ✓ Register-circumferential
- ✓ Plate wear
- ✓ Plate cracking
- ✓ Plate pulling
- ✓ Pressure wrinkles
- ✓ Release
- ✓ Web control
- ✓ Web breaks
- ✓ Poor dot reproduction





Calculating Proper Packing Height

Calculating Packing Height of Blanket	Imperial	Metric
Desired blanket height above bearer:	.004	0.10
Blanket cylinder undercut:	<u>.081</u>	<u>2.06</u>
Subtotal	.085	2.16

Note: Bearer pressures must be set with the blankets and plates packed to the desired heights so optimum print quality can be achieved.



Calculating Proper Packing Height

Calculating Packing Height of Blanket	Imperial	Metric
Desired blanket height above bearer:	.004+	0.10
Blanket cylinder undercut:	<u>.081</u>	<u>2.06</u>
Subtotal	.085	2.16
Blanket thickness (subtract):	<u>.077</u>	<u>1.96</u>
Subtotal	.008	0.20

Note: Bearer pressures must be set with the blankets and plates packed to the desired heights so optimum print quality can be achieved.



Calculating Proper Packing Height

Calculating Packing Height of Blanket	Imperial	Metric
Desired blanket height above bearer:	.004+	0.10
Blanket cylinder undercut:	<u>.081</u>	<u>2.06</u>
Subtotal	.085	2.16
Blanket thickness (subtract):	<u>.077</u>	<u>1.96</u>
Subtotal	.008	0.20
Add .001 to .002 for draw down:	.002	0.05
Packing Thickness Needed:	.010	0.25
Blanket Thickness:	.077	1.96
Calculated Total Packing Height:	.087	2.21

Note: Bearer pressures must be set with the blankets and plates packed to the desired heights so optimum print quality can be achieved.



Calculating Proper Packing Height

Calculating Packing Height of Blanket	Imperial	Metric
Desired blanket height above bearer:	.004+	0.10
Blanket cylinder undercut:	<u>.081</u>	<u>2.06</u>
Subtotal	.085	2.16
Blanket thickness (subtract):	<u>.077</u>	<u>1.96</u>
Subtotal	.008	0.20
Add .001 to .002 for draw down:	.002	0.05
Packing Thickness Needed:	.010	0.25
Blanket Thickness:	.077	1.96
Calculated Total Packing Height:	.087	2.21

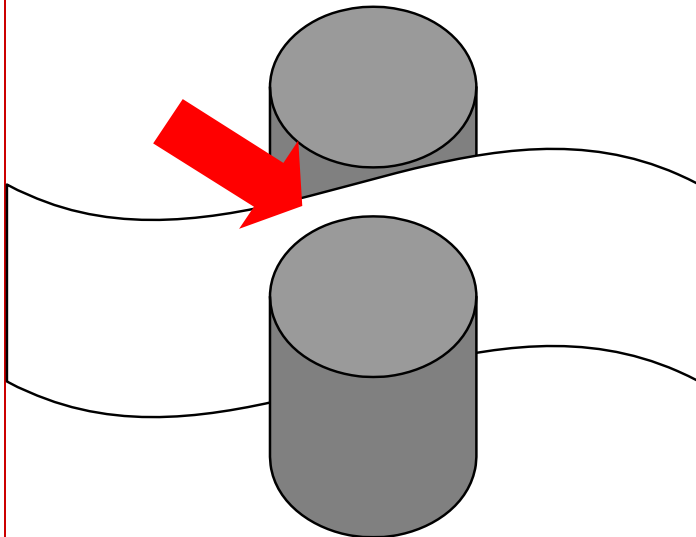
Plate: .001 above bearer
 Blanket: .004 above bearer
 Total .005 total plate-to-blanket squeeze

Note: Bearer pressures must be set with the blankets and plates packed to the desired heights so optimum print quality can be achieved.

Packing Related Problems

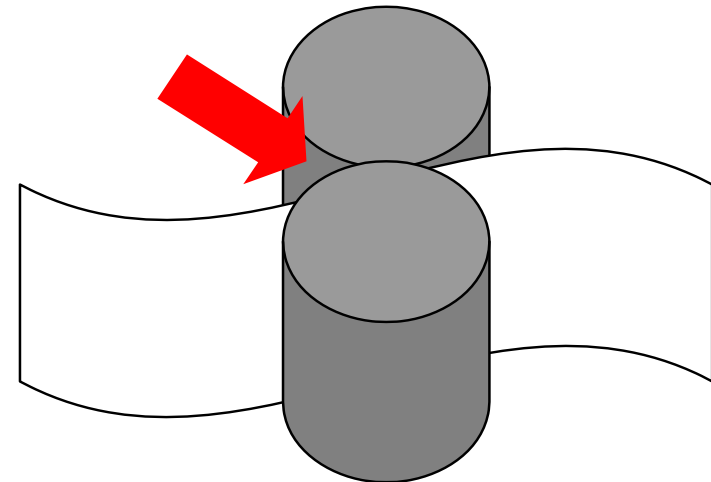
Too Little Squeeze:

- ✓ Light Solids
- ✓ Open Dots
- ✓ Paper Piling



Too Much Squeeze:

- ✓ Excessive Dot Gain
- ✓ Registration Problems
- ✓ Shortened blanket life

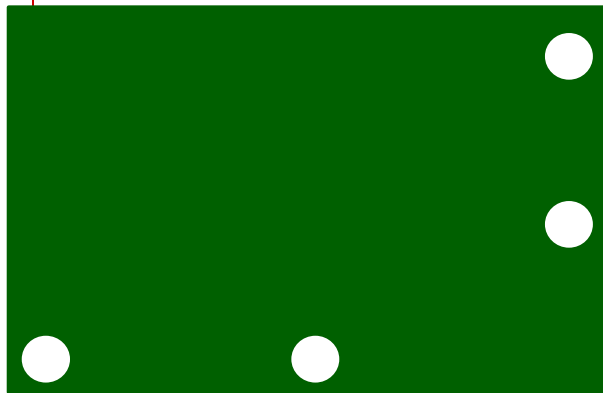


Thickness Measurement

The thickness of a blanket can be measured either on or off press.

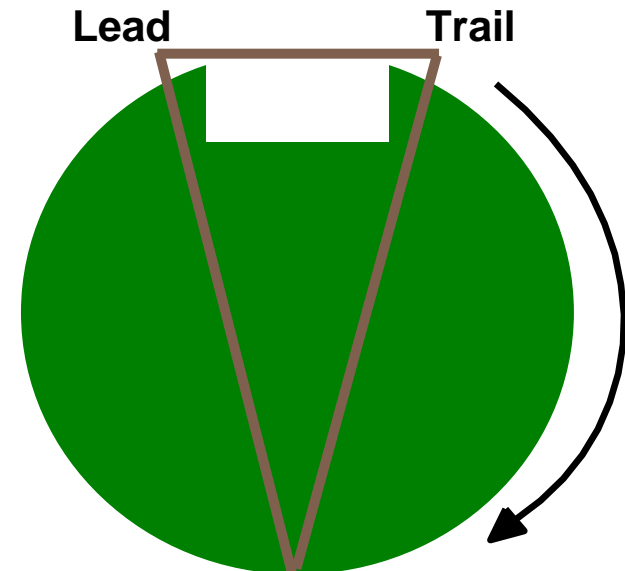
Off Press:

Using Cady Micrometer, measure at four points as determined by the ISO Standard.



On Press:

Using Cobra Mike, measure at three points on the cylinder.





Blanket Torquing

Benefits:

- ✓ Print Quality
- ✓ Consistency
- ✓ Longer Blanket Life
- ✓ Process Control
- ✓ Allows better printing to the gap

*for proper specifications:
contact the press manufacturer or blanket vendor.
Torque specifications vary from press to press -*



Signs of Loose Blanket

- ✓ **Slur on trail end**
- ✓ **Slapping or noisy gap**
- ✓ **Registration problems**
- ✓ **Web control or release problems**
- ✓ **Plate wear**

Selecting Blanket Washes

Wash Selection Variables:

- ✓ Safety
- ✓ Flammability
- ✓ Regulatory issues
- ✓ Cleaning power
 - ✓ Strong washes clean well but can cause blanket swelling and remove plasticizers
 - ✓ Milder washes take more time and effort to properly clean but don't damage blanket surface
- ✓ Drying speed
- ✓ Select solvents specifically designed for washing blanket surface

Print Quality

- ***Print Contrast***
- ***Solid Ink Density***
- ***Dot Gain***
- ***Dot Structure***
- ***Ink Piling***
- ***Registration***

Quality Issues

- *Blanket problems*
- *Troubleshooting*



Common Blanket Problems

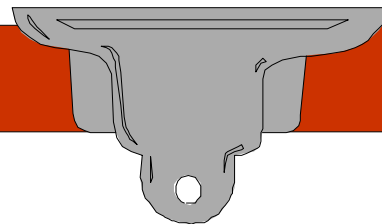
- ✓ **Incorrectly installed**
 - ✓ Overpacked or Underpacked
- ✓ **Overtightened**
 - ✓ Hand Tightened vs. Proper Torquing Procedures
- ✓ **Poor Blanket Maintenance**
- ✓ **Wrong Application**
- ✓ **Poor Release**

Common Quality Problems

Feed Problems

- Sheet Release/Wrap
- Registration Problems
- Ink Piling
- Excessive Dot Gain
- Poor Density Control

CONTROL 
QUALITY





Basic Troubleshooting Steps

If you are experiencing print quality problems, first check the following variables:

- ✓ Plate-Image-Packing
- ✓ Blanket Tensioning
- ✓ Blanket and/or Packing Thickness
- ✓ Bearer Pressure and Conditions
- ✓ Iron to Iron Settings
- ✓ Dampening Settings
- ✓ Form Roller Settings
- ✓ Roller Hardness
- ✓ pH/Conductivity

Areas of Change in the Process

As the printing industry continues to change, we must be aware of those improvements and how they impact the current processes.

There are two major areas of change:

- ✓ Mechanical
- ✓ Supplies



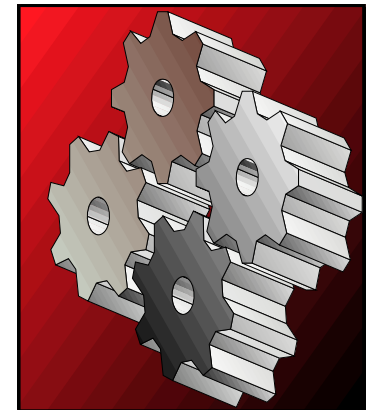
Mechanical Changes

Plates

- ✓ Environmental Chemistry Changes
- ✓ Computer to Plate
- ✓ Computer to Press

Dampening Systems

- ✓ Design Improvements
- ✓ Better Control
- ✓ Flexibility



Changes in Supplies

Blankets

- ✓ Compatibility with Environmental Chemistry/Solvent Changes
- ✓ New Technology/Design Features
- ✓ Development of Blanket for Gapless Presses

Fountain Solutions

- ✓ Environmental Chemistry Changes
- ✓ Designed for Higher Speeds
- ✓ Wider Window for Ink/Water Balance
- ✓ Systems for Control/Consistency

Ink

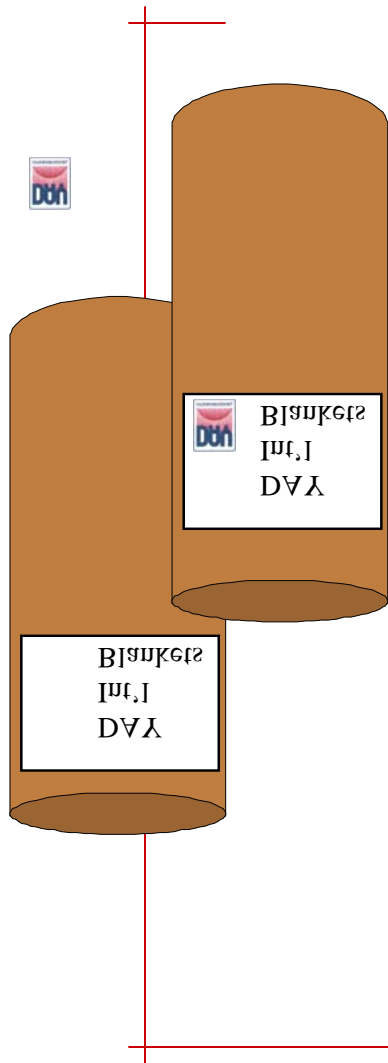
- ✓ Environmental Chemistry/Solvent Systems
- ✓ Wider Window for Ink/Water Balance
- ✓ Consistency





Care and Maintenance

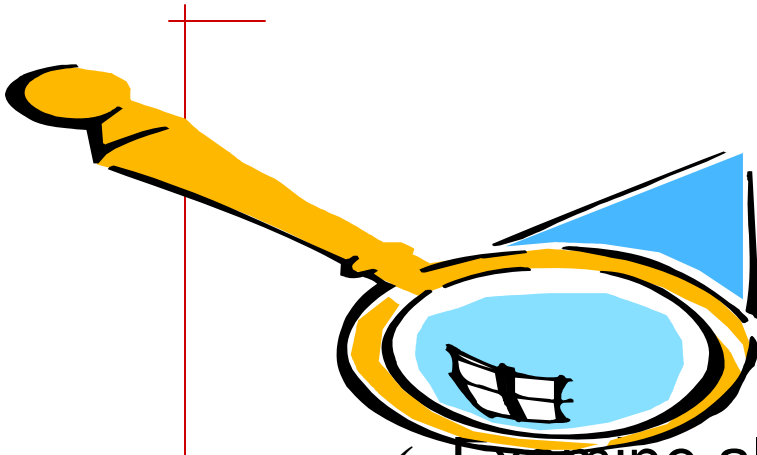
Storage



- ✓ Store blanket material:
 - ✓ In original containers
 - ✓ Standing upright until ready for use
 - ✓ If stored flat - lay surface to surface
 - ✓ Cool dry areas

- ✓ Do not expose blankets to sunlight or fluorescent lighting for long periods of time
 - ✓ Oxidation and/or discoloration can take place

Incoming Inspection



- ✓ Examine all blankets for damage in shipping
- ✓ Verify blanket received matches order
 - ✓ Gauge
 - ✓ Size
 - ✓ Style
- ✓ End treatments (bars, punches, etc.)



Thank You!