Rotary Screen
Functional Coating &
Lamination Technology

Alan Fenno
Market Development Manager - Coatings
Rubberlite, Inc.
AIMCAL, Orlando
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Outline

- Brief introduction to Rubberlite
- Which application method is ‘best’
- Unique features & benefits of rotary technology
- The role of chemistry
- What comes next
- Summary
Outline

- Brief introduction to Rubberlite
History

- Founded in 1986 (Huntington, WV)
- Secured distributorships from the leading manufacturers of cellular rubber/plastics and adhesives
- Positioned to supply products to the gasket & sponge rubber fabrication industry
- Incorporated rotary screen coating & finishing technology in 2012
- Current campus footprint over 300K ft², global customer base of 1,600 strong with broad range of applications including medical, footwear, industrial, automotive, aviation, flexographic printing and apparel
- Present day challenge (mine at least...): “What do you guys do”?!?
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- Which application method is ‘best’
Which application method is ‘best’?
Good question!
Specific attribute/specification influenced

- Commodity or specialty?
- Volume?
- Substrate characteristics (width, construction, fiber, etc.)?
- Coverage (blotch, design, pattern)?
- Add-on, thickness, wet, dry?
- Type of chemistry/adhesive (water-based, solvent, UV, etc.)?

and so on, and so on, and so on...
It depends...
Many different types with quite good results
Screen printing
Rotary screen printing
Rotary screen discontinuous printing
Rotary screen continuous coating
Rotary screen adhesive lamination
Question: What's the difference?

printing
/prin(t)ing/

4. a piece of fabric or clothing with a decorative colored pattern. "light summer prints"
   synonyms: printed cloth/fabric, patterned cloth
   "soft floral prints"
   - a printed pattern or design

coating
/ˈkōdiŋ/
noun
- a thin layer or covering of something. "a coating of paint"

1. provide with a layer or covering of something; apply a coat to.

Sometimes used interchangeably!
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Unique features & benefits of rotary technology

- Patterns & designs (in addition to full width continuous)
- Cost effective and efficient to change
- Multiple substrate types / thicknesses
- Tension free
- Precise add-on / penetration control
- FIFO material consumption (closed system)
- Consistent adhesive deposition
- Breathability + softness
Patterns & designs
Depth & texture
Finishes & effects
Cost effective and efficient to change

- Seamless *nickel cylinder*, made by an *electroforming or galvanic* process
Countless parameters

1. Mesh / Lineair inch
2. Thickness
3. Open area
4. Hole diameter
5. Theorical wet ink deposit
6. Maximum particle size
7. Resolution
Multiple substrate types / thickness

- Woven
- Knit
- Nonwoven
- Film
- Foil
- Paper
- From 0.001” to 1.5748”
- All tension free!
Precise add-on / penetration control
Material delivery (open system)
FIFO material consumption (closed system)
Consistent adhesive deposition

Screen (push)

Rotogravure (pull)
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The role of chemistry

- The “art” of formulation and manipulation
- Adaptation to achieve desired performance/specifications
- Impact of dispensing and delivery
- Equipment parameter influences
- **Cannot** be emphasized **enough**!
Paste vs. foam

- Paste
- Foam (stable)
- Foam (unstable)
Functional coatings

- Foam coatings
  for enhanced soft touch, conformance, & cushioning
- Durability coatings
  for extending end product life/use
- Waterproof/breathable coatings
  for comfort & MVT control
- Flame retardant/anti-microbial coatings
  for improving the safety & protection of the end-user
- Anti-slip coatings
  for providing tack & resisting migration
- Elastomeric coatings
  for improved compression & elasticity
- Raised print
  for increasing airflow, wicking comfort, and aesthetics
Functional coatings

- **Adhesive/lamination coatings**
  water based, breathability, flexible hand

- **Textured coatings**
  furniture upholstery, synthetic leather

- **Digital ink receptive coatings**
  replacement of costly/wasteful padding technique

- **Expanded (“puff” print) coatings**
  for added texture, embossed or embroidered effects

- **Phosphorescent coatings**
  glow-in-the-dark fashion, safety, novelty

- **Reflective coatings**
  polished glass beads enhancing fashion, safety, novelty

- **Pearlescent coatings**
  sparkle reflective qualities for signage, banners, fashion
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What comes next? (now!!)

- Nano coating
- Far-infrared (FIR) emitting bio-ceramic materials
- Digital coating
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 ✓ Wide variety of coating techniques
 ✓ Multiple parameters determine optimal method
 ✓ Rotary screen application technology extremely versatile
 ✓ Functional coatings are significant value add
 ✓ Adaptation for next state-of-the-art market trends