HOT MELT TECHNOLOGY

BREAKING THRU A PARADIGM

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UFD TECHNOLOGY
Utilizing Hot Melt Polymers

Versus more traditional methods

- Roll Coating
- Scatter Coating
- Needle punching
- Flame laminating
- Ultrasonic's

For Coating and Laminating
• No Harmful emissions
• Higher line speeds
• Tighter control over coat weights
• Vary coat weights on the fly
• Vary web widths on the fly
• Heat history
ROLL COATING

• Primary benefit is reduced adhesive usage (any where from 20 – 60% less)
• This is Quantifiable in the lab.
• Vary Adhesive patterns on the fly
• Vary coat weights on the fly
• Faster production speeds
• Vary web width on the fly
• Non-contact application does not compress or crush the substrate
• Faster production speeds
• Reduced energy costs
  (eliminates both the oven and the chill rolls)
• Much more accurate in cross web coat weights
• Vary adhesive patterns on the fly
• Vary coat weight on the fly
• Vary web width on the fly
• No static issues
• Wider variety of polymers and substrates can be used
• Minimal floor space
Why Hot Melt?

Thermo plastic polymers

• EVA’s
• APAO’s
• PSA’s
• PUR’s
• TPR’s
• PE’s
• PP’S
• PET’S
Hot Melt Additives

- Anti-Microbial
- Flame Retardants
- Anti-Oxidants
- UV Inhibitors
- Water Repellants
Making your product more Green

- Saturation produces Biodegradability
  - Oils
  - Resins
  - Waxes
- Virtually no VOC’s (No Solvent emissions)
- No waste water issues
- No airborne contaminants
- Products totally recyclable APAO’s (All Thermoplastics)
  - By comparison to Acrylics, Urethanes, and latexes
Hot Melt Coating Advantage

- Lighter coat weights
- Faster production speeds
- Immediate post processing
- Energy savings
- Alleviate EPA issues
- Carry the Green Label
Hot Melt Coatings

- Adjustable structural Integrity
- Water proofing
- Anti-Oxidants
- UV Inhibitors
Hot Melt Laminating

- Variable coat weights on the fly
- Faster production speeds – line speeds exceeding 2500FPM
- Intermittent patterning
- Vary web widths on the fly
- No burn thru of thin substrates
- Non contact-will not compress or crush the substrate
- Provide measured breathability used in filtration areas
- Less overall cost
- Immediate post processing
- Vast range of composite substrates
ADHESIVE LAYDOWN TYPES

All applicator types shown
Can come in various head widths
SYSTEM COMPONENTS
HOTMELT SYSTEM CONFIGURATION

THREE MAIN COMPONENTS

• ADHESIVE SUPPLY UNIT
• HEATED HOSES
• APPLICATION HEAD/S
UFD Head Design
UFD Nozzle Design
UFD System

Technical Advantages

Modular Assembly
Integrated Filter Technology
Variable Nozzle System
Fiberized Patterns

Random Fiber

Omega Patterns
UFD Head

Variable web width design

One half of 16’ UFD head
UFD Heads in Application
UFD Technology

INFINITE PATTERNS
- By adjusting air pressure
- By adjusting pump pressure
- By adjusting line speed
- By adjusting nozzle type

VARIABLE COAT WEIGHTS
- By adjusting air pressure
- By adjusting pump pressure
- By adjusting line speed
- By adjusting nozzle type

THE UFD™ ADVANTAGE

- Up to 40% adhesive savings
- Long life SS construction
- Less down time: quick change nozzles
- Less down time: thru on-the-fly adjustment
- Less down time: nozzles have built-in filters
- Tackle difficult projects thru precision control
STRAND COATING
Pressurized versus Metered

PRESSURIZED SYSTEM

METERED SYSTEM
Pressurized versus Metered

PRESSURIZED
PRESSURIZED ACCURACY CROSS WEB WITHIN 10%

METERED
MINIMAL PRESSURE HIGH ACCURACY CROSS WEB WITHIN 1%
Patterned Coating

- Horizontal stripes
- Vertical stripes
- Box patterns
- Edge coating
- Various widths
- Various lengths

Adhesive laydown technology allows for a wide variety of patterns.
Also

• Monitor and compensate for Variances in Line speed to maintain Constant coat weight

• Can start and stop Polymer laydown Within milli-seconds
PROOF OF PROCESS

LAB FACILITIES
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