Edgebanding – Tips & Techniques

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Edgebanding Tips & Techniques

Edgebanders – WOW adjustments everywhere!
Edgebanding Tips & Techniques

We will be discussing:

• Machines
• Board
• Banding
• Adhesive
• Handling/Application
• Other
Edgebanding Machines – Types

- Laser Edgebanders
  - Zero edge, high speed, large production capabilities, cost, limited choices of banding, no wood strips/HPL

- Hot Air Edgebanders
  - Up and coming, zero edge, cost less than laser, no wood strips/HPL

- EVA/PUR Hot Melt Edgebanders
  - Highest market share, glue pot or cartridge, colored adhesives

- Contour/BAZ Edgebanders/Vector
  - BAZ larger pieces, integrated into CNC, automatic, cost
  - Manual contour dependent on operator
Edgebanding Machines - Laser

- Laser
  - Newer technology
  - Zero Edge
    - Highest quality edge
    - Higher heat resistance
    - Moisture resistance
  - High Production Capability
    - Speed up to 50m/min
  - Co-extruded polymer banding
  - High cost for entry into market
  - Cannot edgeband solid wood/HPL
- Has ability to use EVA
Edgebanding Machines – Hot Air

- Hot Air
  - Up and Coming
  - Zero edge
  - Higher heat resistance
    - Moisture resistance
  - Co-extruded polymer banding
  - Cannot edgeband wood/HPL
  - Servo controlled for easy adjustment
  - Speed
    - Around 20 m/min
- Has ability to use EVA
Edgebanding Machines - EVA

- EVA/PO/PUR Hot Melt
  - Most popular
  - Small, medium to large shops
  - Glue pot or cartridge
  - Servo controls for easy adjustment
  - Speed
    - 8-25 m/min
Edgebanding Machines - Contour

- CNC Controlled EB
- High production
- Large pieces
- Higher cost of entry
- Automatic

- Contour Edgebander
- Manual contour dependent on operator
- Low cost for entry
- Low temp adhesive
Machines – What is best for me?

- Type (Laser, Hot Air, Hot Melt)
  - Consider today and future applications
- Feed speed
  - Consider current and future production needs
- Edge capacity
  - Thin banding, HPL strips, solid wood strips, etc..
- Number of hours per day in use
- Features
  - Pre-mil, corner rounding, hogging, t/b trimming, sanding, grooving
Machines – What is best for me?

• Roller/slot nozzle
  – Reversible/PUR Adhesive

• Copy wheels
  – Roller versus shoes
  – Placement from edge of board
  – Hinge locations
  – Veneers, scratching
  – Pressure sections
    • Jump/spring pressure versus tangent pressure

• Controllers
  – Ability to adjust all stations from controller
  – Set up/servos
  – Ease of set-up, change over
Machines – What is best for me?

- PowerTouch from Homag Group
  - Consistency from saw to bander to CNC
  - Programmability, saving programs error messages, maintenance, servo adjustments.
  - Repeatability of settings and programs, continuity of machines in the shop with the same controller

- Tooling
  - We’ll be hosting a tooling forum later today – please ask questions!
  - Diamond tooling, 10X longer life versus carbide
Edgebanding Machines – Maintenance

- Keep pot clean
  - 2nd pot on hand
- Shut off when not in use
- Clean machine daily
- Preventive maintenance
  - Check heating elements
- Check Tooling
Board

- Particle Board
- MDF
- Plywood
- Honeycomb/Light Weight
- Other
Board – cont.

- Acclimate board to environment
  - Temperature of board is critical!
- Swelling of edges
- Density
  - Affects pull strength
- Cut quality/edge quality
  - Perpendicular edge / long boards
  - Dust free
- Band as quickly as possible after cutting
- Careful to not over sand wood strips
  - Maple
Banding

- PVC/PP/ABS
  - Ask manufacturer about clear tape
- HPL
  - Primed vs Not Primed
- Veneer
  - Fleece backed
- Wood Strips
- Handling
  - Storage
- Thickness/height
  - Sized properly
Banding – cont.

- Rigid versus Flexible
  - Straight versus contour

- Thin banding and manual contour banders
  - Low temperature hot melt for thin banding

- High gloss banding
  - Trending up
Adhesive

- EVA/Polyolefin
  - Heat resistance
  - Lowest cost
- PUR
  - Special equipment required
  - Clinical, high temperature applications
- Co-Extruded Polymer Functional Layer
  - Hot Air & Laser Edgebanders
- Pre-Applied
  - Mostly seen with veneers
Adhesive – cont.

- Filled vs Unfilled
  - Filled has functional additive
  - Dependent on board and application (gap filling)
  - Un-filled has longer hot tack window/thinner glue line

- Adhesion vs Cohesion

- Glue pot
  - Keep full or only add what is needed?

- Calibrate glue pot temperature
  - Verify it matches the controller setting

- Verify glue roller is perpendicular
  - 100% coverage on board
Handling

- Banding storage
  - Flat on shelf
  - Wood/Veneer in climate controlled room
  - Prime HPL strips

- Banding has more memory closer to center of roll
  - Straighten if needed

- Adhesive storage
  - Clean, dust free environment
Other

- Key operators
  - Have a “Champion” of the edgebander
  - Always run sample boards (beginning of every shift)
  - Clear banding test, pull test
- When working on new project or application
  - Call upon equipment and adhesive manufacturers
- Document failures
  - Note board material, adhesive batch, banding, climate, date
- Return conveyors
  - Easy payback
Other – cont.

- Factory environment
  - Hot/cold/humidity/dust
  - Fan near edgebander
- Use temperature strips/infrared guns
  - Verify heat tunnel temperature
- Preventive maintenance on machines
Think like an edgebander

- Failures
  - Why and how did it happen?
  - Hard to determine once it left the facility
  - What caused failure?
    - What does the glue line look like?
    - Where is the glue line? Board? Banding? Both?
Think like an edgebander – cont.

- You’re applying thin layer of adhesive in liquid state at high temp.
- Within seconds, you expect to adhere banding, cut, trim, scrape and shape.
- You’ll need to adjust speed and/or temp according to environment
- Adhesive, board, banding and machines don’t think, you’ll need to.
- Too fast or too high of temperature, adhesive won’t bond and may slip, boards
- Too slow or too low of temperature and adhesive will cure prior to pressure section
Think like an edgebander – cont.

- Board temperature is a major cause for failure!
- Edgebanding will change with the seasons
  - Spring/summer versus fall/winter
- Keep adhesive in clean, dust free environment. Saw dust becomes charred when in glue pots
- Keep banding flat and clean, dust on banding can cause bad bonding
Think like an edgebander – cont.

– Keep your bander clean and dust free. Clean nightly. This is a money maker, treat it so.

– If storing board material in a non-heated warehouse, bring into factory and let it acclimate to normal temperature in winter months – 72 hours.

– If board is coming from railcar directly to facility, make sure it has cooled from the manufacturer.

– Work down the machine, don’t make multiple changes at once.
Recap

- Many different types of edgebanders
  - Consider the future
- Work with vendors on selecting board, banding, adhesive
- Have a champion who’ll ownership of machine
  - Keep it clean
- Love your edgebander, it is a money maker!
Thank You!

Question and Answers