Critical Parameters for Good Hotmelt Adhesion

Generally speaking, good adhesion occurs when **temperature**, **time**, **pressure**, **the amount of glue**, **and application speed** are working in harmony. If either one of these parameters is compromised, bonding issues may occur. The following recommendations are important steps to ensure proper edgebanding adhesion to the board:

Technical Data Sheet and Safety Data Sheet

Each hotmelt comes with a Technical Data Sheet outlining temperature, opening time, application speed and other information. Please follow the recommended setting parameters.

The Safety Data Sheet provides important information about the safe handling of the product. Please follow the recommendation in the Safety Data Sheet.

You can download the data sheets for each product at ramsindustries.com

Temperature

Please follow the temperature range on the Technical Data Sheet for the hotmelt you are using. Avoid operating temperatures in excess of the top end of the recommended temperature range. Higher temperature is not a cure for insufficient adhesion!

The wrong temperature is often responsible for poor adhesion. Temperature probes in the glue pot may malfunction and deliver the incorrect temperature to the edgebander. We advise to use a digital thermometer and check the actual temperature of the hotmelt on the glue application roller and in the glue pot. Temperature should be measured in the center of the glue pot and glue application roller. Adjust the temperature accordingly, if there is a discrepancy between temperature setting on the edgebander and actual temperature reading.

Manual addition of hotmelt is often responsible for temperature fluctuation (as much as 40ºC/104ºF) resulting in poor adhesion. It is advisable to refill glue pots during breaks or start of the shift allowing the glue to get up to the required temperature. The glue pot should never run low before refilling as the hotmelt will burn (oxidation) causing poor adhesion.

It is advisable to store board and Edgebanding at room temperature for at least 24 hours before processing.

Pressure

The amount of pressure is adjustable on most machines and can be set to the ideal level. As the board passes through the pressure roller station, the Edgebanding is evenly bonded to the board. Pressure rollers must be kept clean at all times. Please remove any glue residue from the pressure rollers resulting in uneven pressure.

Amount of Glue

Uniformity and thickness of glue spread are very important. The glue spread should be thick enough to cover 90% of the board. 10% of open spots are acceptable. Please adjust the amount of glue when excessive hotmelt squeeze out occurs or the glue spread does not over the board appropriately. More glue is not the cure for insufficient adhesion!

Most glue application rollers wear out over time. Change the glue application rollers when the grooved pattern is too light avoiding insufficient glue amounts.

Hotmelt which is heated and cooled too many times will produce a weaker bond. We recommend flushing out older adhesive and replace it with fresh hotmelt. We also advise to reduce the heat of the glue pot whenever the edgebander is not being used for longer periods. Reducing the glue pot temperature during idle times will reduce burning/browning of the glue (oxidation).

Glue Pot Maintenance

We recommend to cover the glue pot at all times to minimize oxidation (browning/charring) of the hotmelt resulting in poor adhesion.

We also recommend to clean the glue pot regularly (once a month). Hotmelts tends to carbonize on the bottom and sides of the glue pot negatively affecting heat transfer to the glue. Sandblasting is the best way to clean a very dirty glue pot.

Glue pot and glue spreaders containing EVA hotmelt can be cleaned with solvent (e.g. Toluene from Home Hardware, RONA, Canadian Tire).

Application Speed

Each hotmelt formulation is designed for a specific feed speed that the board runs through the edgebanding process. It is important that the edgebander can deliver the required feed speed that is outlined in the Technical Data Sheet. Processing edgebanding at a lower or higher than prescribed speed will decrease the adhesion quality/

✅ Edgebanding Adhesion Checklist

📄 Documentation

- Review **Technical Data Sheet** for temperature, open time, speed, and settings.
- Review **Safety Data Sheet** for handling guidelines.
- Download both documents from **ramsindustries.com**.

🌡️ Temperature

- Operate within the temperature range on the TDS.
- Avoid exceeding the upper temperature limit.
- Use a **digital thermometer** to verify glue roller & pot temperatures.
- Measure temperature at the **center** of the glue pot and roller.
- Refill glue pot during breaks or before shifts—**never when low**.
- Store boards and edgebanding at **room temperature for 24 hours** prior.
- Make sure that there is no cool draft since it can affect the glue temperature.

📏 Pressure

- Adjust pressure rollers to optimal level. Set the pressure rollers to accommodate the thickness of the edgebanding
- Clean rollers regularly—**remove glue residue**.

🧴 Amount of Glue

- Ensure glue spread covers **at least 90%** of the board.
- Adjust for excessive squeeze-out or low coverage.
- Replace worn glue rollers showing weak groove patterns.
- Flush old glue; use **fresh hotmelt**.
- Reduce glue pot heat during idle times to prevent oxidation.
- Make sure the board touches the glue roller.
- Is the shoe guide (skid plate) properly adjusted (distance between the shoe and the board should be 0.1mm

🧽 Glue Pot Maintenance

- Keep glue pot **covered** to avoid oxidation.
- **Clean monthly**—preferably via **sandblasting**.
- Use solvent (e.g., **Toluene**) for EVA hotmelt cleaning. The glue pot must be cold.

🚀 Application Speed

- Match feed speed to Technical Data Sheet specs.
- Avoid running too fast or too slow—impacts adhesion.

Edgebanding

- Ensure the Edgebanding is clean and dust-free
- Check for primer on the back – Matte/Chaulk = primer is present, shiny = insufficient primer
- Inspect the Edgebanding for warping or curling

🔧 Hotmelt Troubleshooting Table

Symptom	Possible Causes	Corrections / Remedies
Poor adhesion	Incorrect temperature setting	Verify with digital thermometer and adjust to TDS range
	Old or oxidized hotmelt	Flush and replace with fresh glue
	Insufficient glue coverage	Adjust glue amount to cover at least 90% of surface
Adhesive on board and Edgebanding	Application temperature to high	Decrease application temperature (where applicable)
	Press time too short	Decrease machine speed
	Temperature resistance of hotmelt too low	Change to hotmelt with higher softening point
Adhesive remains on substrate, pattern from the application roller is embossed on hotmelt	Application temperature is too low	Increase to specified hotmelt temperature per TDS
	Insufficient pressure	Increase pressure and check for contact of pressure rollers
	Machine speed is too slow	Increase machine speed per TDS
	Open time of hotmelt may be too short	Increase application temperature or increase machine speed
Excessive glue squeeze-out	Too much glue applied	Reduce glue spread to avoid waste and mess
	Excessive pressure	Lower pressure settings
Gaps or lifting at edges	Primer missing or uneven on edgebanding	Check underside for matte finish; replace if needed
	Low room temperature of board or edgebanding	Store materials at room temperature for 24 hours before use

Symptom	Possible Causes	Corrections/Remedies
Burnt or brown glue appearance	Overheating / oxidation in glue pot	Reduce idle temperature, clean glue pot, keep covered
	Reusing glue too many times	Avoid repeated reheating cycles; use fresh glue regularly
Uneven glue line or poor bond line	Worn glue roller	Replace roller if grooves are worn or uneven
	Dirty or damaged pressure rollers	Clean rollers and ensure proper alignment
Stringy or thick glue consistency	Glue temperature too low	Increase temperature to recommended level
	Contaminated hotmelt	Clean glue pot and use fresh adhesive
Adhesive remains on Edgebanding	Poor wetting (spread of adhesive) of board surface due to insufficient heat or pressure	Increase pressure, temperature, and/or speed
Very apparent glue line on one side of the board	Board edge was not cut straight, glue roller not perpendicular to edgebanding	Check setup for squareness

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