



Best Practices in Wood Waste Recycling

Wood Waste Feedstock Specification for Medium Density Fiberboard

Material: Wood Waste

Issue: *Since wood waste processors are trying to displace traditional virgin wood fiber suppliers, satisfying the MDF manufacturer's specifications are critical to sustaining the captured market share. End-users of wood waste derived products have specific feedstock expectations including the: wood species, geometry, color, size distribution, allowable contaminant levels, and moisture content. MDF manufacturers closely monitor their wood fiber supplies since poor quality feedstock leads to costly down-time, excessive equipment maintenance or damage, and end product-quality problems with the panelboard. These types of problems jeopardize the long-term viability of the business relationship between the processor and manufacturer. Reduction of the product's price, rejection of the delivered products, or termination of the business relationship could result if the product quality problems persists.*

Best Practice: This Best Practice recommends that wood waste processors and end-users agree to specific product quality requirements in writing. Wood waste processors need to develop these agreements with each individual customer, since the particular details of feedstock specifications vary from one customer to another. The variations in feedstock specifications are determined by the customer's processing equipment and techniques. Wood waste feedstock requirements include:

Wood Species

Species specifications vary by mill and region. MDF mills might have a species preference for their feedstock. Some mills will set maximum allowable levels of certain species by weight, such as: Cottonwood at 10 percent, Oak at 5 percent, and cedar at 2 percent.

Size Distribution

Length: 3/4-inch maximum 1/4-Inch minimum	Fines: (<1/4-inch) maximum 5% (<1/8-inch) maximum 2%
Overs: (>3/4-inch) maximum 20% gross (>3-inch) maximum 5% (>6-inch) none	Width: <3/4-inch maximum 20% none over 1 1/4-inch
Dust: (<20 mesh) maximum 0.1%	Thickness: <1/2-inch) maximum 20% (<1/8-inch) maximum 2%

Acceptable Geometry

MDF mills accepts hogged, shredded, and chipped feedstocks.

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Maximum Allowable Contaminant Levels

Non-Wood Contaminants:

- No noticeably large pieces of non-wood contaminant allowed.
- Rubber and plastic materials: maximum allowed is .001% by weight.
- Rocks, Glass, Sand, Non-Ferrous: maximum allowed is .1% by weight.
- Ferrous Metal: maximum allowed is .1% by weight.
- Painted, Treated, Laminated Wood: none

Other Contaminants:

- Bark: maximum allowed is 1% by weight
- Wood with Binders (plywood, OSB) max. 10%; (particleboard, MDF): max 2%
- Char: maximum allowed is .001% by weight.
- Rot: maximum allowed is .1% by weight.
- Paper and Cardboard: maximum allowed is .1% by weight

Color Brightness

MDF mills prefer bright colored feedstock as opposed to aged.

Moisture

MDF mills accept feedstocks of somewhat varying moisture content in the range of 10 to 50 percent. However, consistent moisture level within each specific load of material for each supplier are desired.

Implementation: Wood waste processors should work with each manufacturer's fiber buyer to develop and adhere to written specifications for their unique production systems and product requirements. A quality control program should be in place to ensure product consistently complies with the paper manufacturer's specifications. The goal of the quality control program should be to detect and correct any problems before shipping the processed wood to the manufacturers. However, if problems are identified, they should be resolved properly, quickly, and objectively. Regardless of whether the supplier (wood waste processor) failed to meet the required specifications or the buyer (the panelboard manufacturer) changed the agreed upon specifications and expectations, both parties should work together to resolve the problem. Maintaining an open communication and diplomacy throughout the settlement process would foster a healthy business relationship and avoid future problems.

Benefits: Consistently providing high quality feedstock and adhering to the specifications improves the marketability of the material and potentially increases the price and use of it. Arbitrating problem loads promptly, adjusting specifications mutually, and continuously making equipment and process modifications are practices that could improve the use of the wood waste processor's material.

Application Site: Manufacturing Site and Processing Facility.

Contact: For more information about this Best Practice, contact CWC (206) 443-7746, e-mail info@cw.org.

References:

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3. "Investigation of Alternative Markets for Recycled Wood," prepared by International Resources Unlimited, Inc. for the Portland Metropolitan Service District; 1992.
4. Yeasting, John. Re-Sourcing Associates. Seattle, WA.

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