CMRA
Construction Materials Recycling Association
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How C&D Wood Fuel Is Created

Construction and demolition (C&D) wood or biomass is one of the materials generated during building construction and demolition activities. EPA's most recent estimate of building-related C&D generation is 178 million tons in 2008. The wood portion of that material is at least 45 million tons. Use of this biomass product as a fuel is an excellent example of sustainable materials management.

Clean construction and demolition biomass is defined as a "traditional fuel" by EPA in the Non-Hazardous Secondary Materials Rule. The production of this renewable fuel takes several processing steps from generation to end use.

Demolition Site: First, the wood is tested for lead-based paint at the demolition site. If lead-based paint is detected on the wood or other parts of the building, the paint is managed as required by government regulations. Processing then begins when the wood is separated into painted and unpainted wood either at the demolition site or it may be sent to a processing facility for sorting and classification.

Construction Site: Construction sites do not generate painted wood. Wood may be separated into a separate bin or commingled with the other materials generated at the site and sent to a processing facility for sorting. Often wood generation "spikes" during the construction process. For example, wood waste generation spikes during the framing process on housing. Additional emphasis on wood processing occurs during these spikes.

C&D Recycling Facility: After initial processing at a construction or demolition site, any comingled material is sorted into the various constituents, such as wood, metals, and concrete for further processing or ultimate discard. This ensures the removal of as much deleterious material as possible. Both mechanical and human sorting methods are used. C&D recycling facilities are heavily regulated, in most cases by state departments of environmental protection under regulations adopted within the state administrative code. Facilities are permitted by the states and sites are regularly inspected by enforcement personnel to gauge compliance.

At the processing facility, incoming material is inspected on the tipping floor for unacceptable wood. Inspection can be visual using trained inspectors or mechanical using testing analyzers. Although most contaminants are removed at the point of generation, this provides additional scrutiny before the material enters the facility's sorting and sizing process. For C&D wood fuel, unacceptable wood includes CCA-

treated wood and most painted wood. Any remaining non-combustibles such as metals and aggregate materials are also considered to be unacceptable and removed.

After separation, the wood is ground to a size specified by the customer. This processing can produce a large grind, such as an 8-inch minus product that will again be ground at the biomass boiler, or a smaller size such as 2-inch minus ready to be fed into the boiler.

The next step is to test for contaminants. Testing occurs at the recycling facility or at the biomass facility, often both. Several types of tests can be performed on the finished C&D biomass. Testing requirements and parameters are established through facility permit documents and are monitored by environmental enforcement agencies.

Biomass Facility: The wood is again inspected visually and may be tested. The wood is then used in the boiler for power generation. Afterward the ash is disposed in a landfill.

Combustion of C&D wood as a fuel is highly regulated at the state level. The product must be capable of being safely burned in the boiler and must not cause emissions that would lead to an air permit violation. C&D wood fuel customers take their permit requirements seriously and will not tolerate shipments that endanger their permits. As a result, most biomass facilities will inspect a C&D recycling facility before purchasing fuel from it. Unannounced inspections of the C&D processing facility by biomass plant personnel are common. Boiler operators also place restrictions on the size of the fuel, as well as limits on deleterious materials such as plastics, inorganics, and metals. Boiler operators are purchasing a fuel that will work efficiently and cost-effectively in their facility. They will not risk their boiler's performance or their air permit requirements with a subpar fuel.

For more information, contact:
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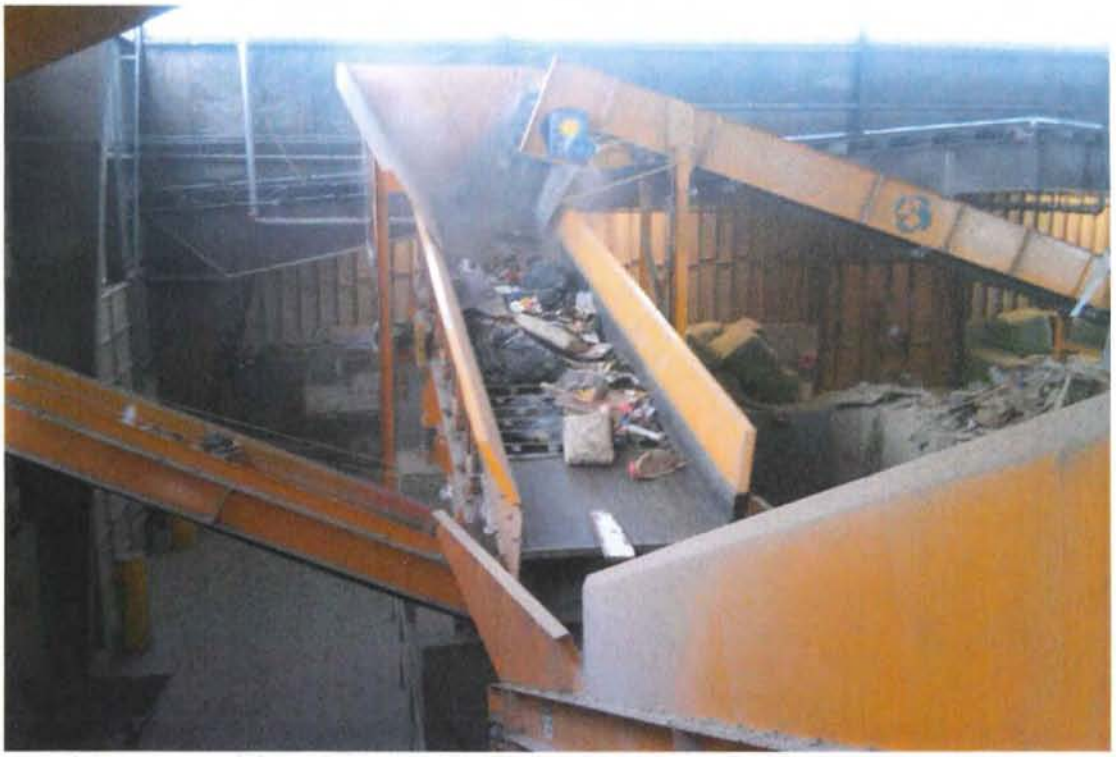
Demolition Site

Tipping Floor



Initial Screening (above) Manual Sort and Inspection (below)

Final Grind