



Construction & Demolition Wood-Derived Product Specifications

**Provided by
CMRA and NSWMA**

**(Construction Materials Recycling Association)
and
(National Solid Wastes Management Association)**

Introduction:

The Construction & Demolition Wood-Derived Product Specifications are intended to provide a guide of differing grades of C&D wood-derived (C&D wood) product. These specifications are needed to ensure the fuel is suitable to be burned in a particular combustion system in order to allow the combustion system to operate properly. These specifications provide categorization of C&D wood to encourage standardization and promote marketability. The specifications serve as a starting point in negotiations between purchasers and suppliers. C&D wood suppliers will need to work with purchasers to ensure that the C&D wood meets the purchaser's specific needs.

DISCLAIMER: The EPA issued the "Identification of Non-hazardous Secondary Materials that are Solid Waste" on March 21, 2011, per 40 CFR Part 241 (<http://edocket.access.gpo.gov/2011/pdf/2011-4492.pdf>) which must be addressed independently by purchasers and suppliers of C&D wood. Identification of a material as a fuel or waste by this rule only applies for units to be subject to the CISWI (Commercial, Industrial, Solid Waste Incinerator) rule. On May 16, 2011 EPA stayed implementation of the CISWI rule (<http://www.gpo.gov/fdsys/pkg/FR-2011-05-18/pdf/2011-12308.pdf>) which delays the requirement for suppliers and purchasers to make this identification.

Definition: *C&D wood-derived product* - a renewable, biomass product prepared from wood materials generated at construction and demolition sites that is processed to create a commodity that can be used as fuel for a boiler and/or other energy generation technology (e.g. gasification). This product can also include other biomass materials such as boxes, crates, pallets and other wood products from industrial and post-consumer sources.

Unwanted Materials

Certain substances should be discouraged from entering the C&D wood processing operation. Limiting these materials will improve the characteristics of the (e.g, fuel heat

content) of the final product. These include materials such as scrap metal, PVC piping, drywall and non-combustibles - such as rocks and aggregate – that can create operational problems with the C&D wood used as fuel. In addition, processors must take care to ensure that prohibited substances (such as lead-based painted wood or certain treated woods) and asbestos-containing materials are prevented from entering the fuel processing.

Fuel purchasers may have specific limits or prohibitions on particular substances and materials. C&D wood suppliers may be required through contractual obligations to further prevent and restrict these or other materials from entering the processing system. The limitation may be specified through standards or specifications from common standardization entities such as the American Standards and Testing Methods (ASTM). This document does not address such levels of specific requirements between individual purchaser - supplier agreements. CMRA and NSWMA encourage all C&D wood suppliers to strive to ensure the highest quality product for the C&D wood application. The C&D wood supplier must comply with all Federal, state and local regulations. This document does not address such regulations. Suppliers and/or purchasers may need to comply with additional state, federal, and facility testing procedures and protocols and sizing procedures.

Product Grade System:

Process material is categorized for grade and sizing. Grade defines the acceptable amount of undesirable materials. Sizing defines the range of acceptable particle nominal sizing from processing (i.e., grinding) of materials. All grade and sizing fractions are based on weight.

- Size A: 3 inches or less in any dimension.
- Size B: A minimum of 90% is 3 inches or less in any dimension. All material is 6 inches or less in any dimension. A minimum of 85% is greater than ¼ inch size in their smallest dimension.
- Size C: A minimum of 90% is between 3 inches and 6 inches in any dimension. All material is 10 inches or less in any dimension. A minimum of 85% is greater than ¼ inch in any dimension.
- Size D: A minimum of 90% are 6 inches or greater in any dimension. All material is 10 inches or less in any dimension. A minimum of 85% is greater than ¼ inch in any dimension.

NOTE: Certain markets may have limitations on the amount of “fines”, typically material less than ¼ inches or less.

Grade Number - The following materials are restricted within the following grades: lead-based painted wood, CCA- treated wood, plastic, plaster, and all non-combustibles such as rocks, concrete and aggregate.

Grade 1

1 percent or less

Grade 2

1 to 5 percent

Grade 3

5 percent or more

Notes for C&D wood – desirable properties for fuel

Boilers and other energy generation technologies have operational specifications for fuels (e.g., moisture content, ash, fuel particle size and fines). These operational specifications are needed to ensure the combustion system is well operated to ensure that the fuel is suitable to be used in the boiler.

In general, high quality fuels have lower moisture, lower ash content and high heating value. These qualities encourage efficient and complete combustion. As such, C&D wood suppliers should strive to limit the moisture exposure, such as rain water, of process materials, reduce noncombustible materials and maximize the carbon content of the C&D wood (e.g., increase organic content). The purchaser may request fuel to be processed to a less than nominal diameter (e.g., 3 inch or less) in order for the material to properly burn in a specific combustion system.

For more information contact:

William Turley
Executive Director, CMRA
P.O Box 122
Eola, IL 60519
turley@cdrecycling.org
630-585-7530

Chaz Miller
Director, State Programs, NSWMA
4300 Connecticut Ave, NW Ste 300
Washington, DC 20008
cmiller@nswma.org
202-364-3742