



United States Wood Chip Fuel Quality Standard

ANSI/ASABE AD17225-4:2014 FEB2018 Solid Biofuels -- Fuel Specifications and Classes -- Part 4: Graded Wood Chips

SUMMARY DOCUMENT

A wood chip heating fuel technical quality standard is essential to improve the performance, efficiency, and reliability of wood chip heating systems and enhance the technical credibility and market confidence that will help expand the wood chip heating market.

A wood chip heating fuel technical quality standard was developed following the American National Standard Institute (ANSI) protocol. This standard is entitled: ANSI/ASABE AD17225-4:2014 FEB2018 Solid biofuels -- Fuel specifications and classes -- Part 4: Graded wood chips which can be obtained at www.asabe.org. This document is a companion to the technical standard and provides the key required parameters of the standard. More details are available at <https://www.woodchipstandard.org>.

Overview

The AD17225-4 standard classifies wood chips into three grade levels:

Grade A are wood chips with a lower ash content and, in some cases, lower moisture content:

- Grade A1 have lower ash content
- Grade A2 have comparatively higher ash content.

Grade B have higher ash content than Grade A and, in some cases, a comparatively higher moisture content.

Source of the wood: The standard allows any wood sourced from forestry activities (including urban wood), plantations, short-rotation or coppice wood, and residues from wood product manufacturing industries. Chemically-treated wood is excluded from this Standard.

Particle size, further defined by particle diameter and length, proportion of fines (undersized material), and oversized material (stringers etc.) (see **table 1** on next page).

Moisture content: classified based on the percentage of water content (relative to the wet weight). If greater than 50%, the grade is automatically Grade B.

- $M_{13} \leq 13\%$
- $M_{25} \leq 25\%$
- $M_{30} \leq 30\%$
- $M_{35} \leq 35\%$
- If $>35\%$:
 - Grade A1 and A2: $M_{50} \leq 50\%$
 - Grade B: $M_{35} + > 35\%$

Ash content: There are three ash content classes:

- **A1.0** is less than or equal to 1.0% ash content,
- **A1.5** is between 1.0% and 1.5% ash content
- **A3.0** is between 1.5% and 3.0% ash content

Elemental properties (Grade B only): N, S, Cl, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn: For Grade B chips, when ash content is greater than 1.5%, the elemental properties of the chips should be tested to demonstrate compliance with the Standard.



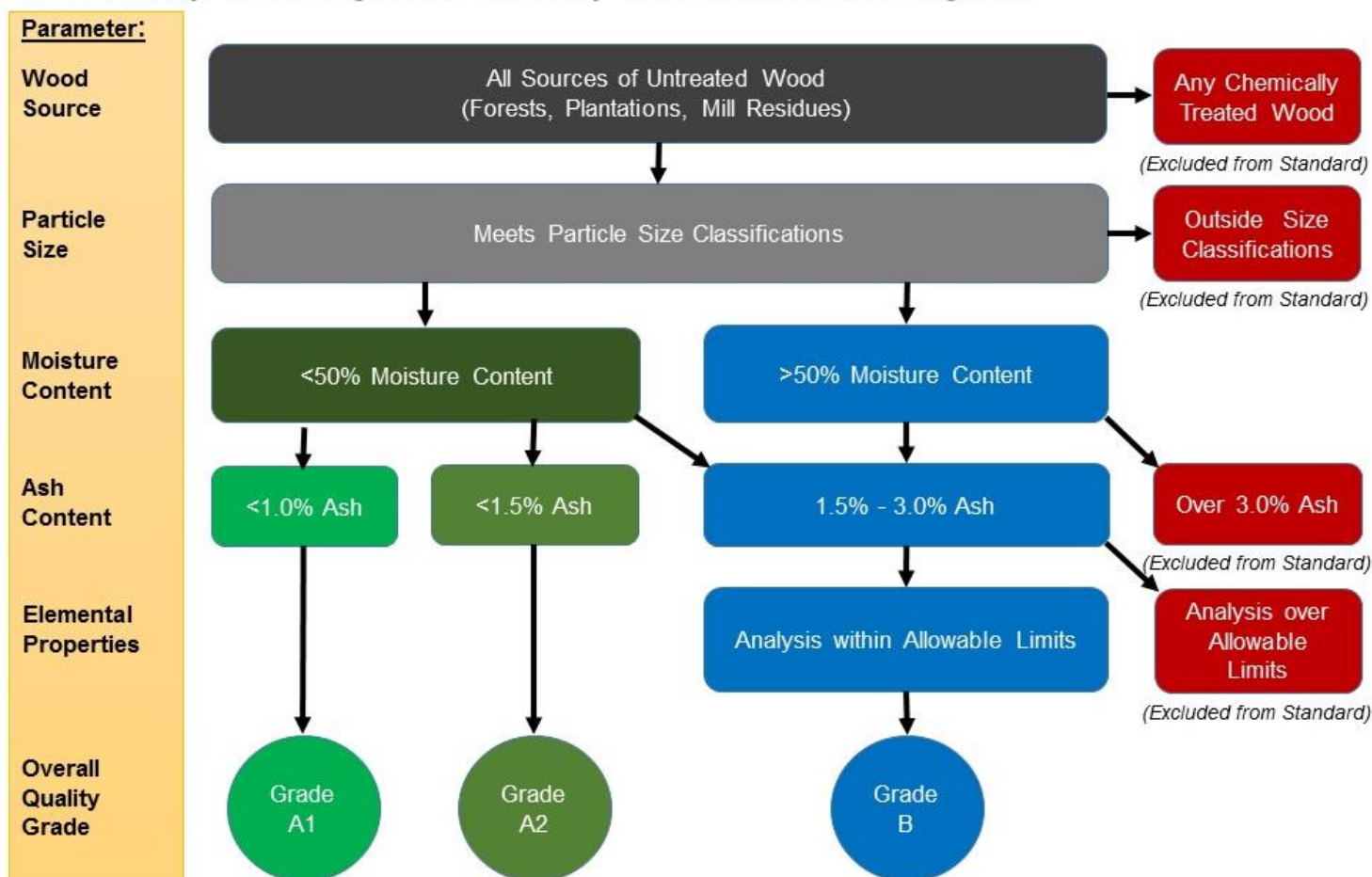
Table 1 - Particle Size Classes

Particle Size Class	Chip "Width" ¹ main fraction >1/8 in, (minimum 60% by weight),	Fines Fraction: ≤1/8 in (% by weight)	Chip Length (% by weight)	Maximum Chip Length in the Coarse Section (in)
P9.5S	P ≤ 3/8 inches	≤ 15 %	≤ 6 % greater than 3/4 inches	≤ 1-1/4 in
P16S	P ≤ 5/8 inches		≤ 6 % greater than 1-1/4 inches	≤ 1-3/4 in
P25S	P ≤ 1 inches			
P38S	P ≤ 1-1/2 inches	≤ 10 %	≤ 6 % greater than 1-3/4 inches	≤ 6.0 in
P50S	P ≤ 2 inches		≤ 10 % greater than 2-1/2 inches	≤ 8.0 in

Summary Flow Diagram

The following diagram summarizes the parameters that are evaluated in the Standard and how the overall wood chip grade is determined. Note that most all parameters have sub-classifications in addition to grade that should be reported under the Standard.

Woodchip Heating Fuel Quality Classification Diagram



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