

Solid Biofuels

GRADED

WOOD PELLETS

introduces the different grades of wood pellets, their appropriate use and the important parameters that can affect the fuel characteristics.



Wood pellets are a highly consistent biomass fuel allowing for easy handling and storage, as well as efficient energy conversion..

As a globally traded commodity, wood pellets are used for space heating in residential appliances, boilers, district heating plants and for electricity generation in large coal-burning power plants.

Wood pellets are small densified cylindrical granules produced by compression of sawdust. As a result, wood pellets are a consistent fuel that can easily be transported and are suited for automated fuel handling systems.

Key Properties

The production of pellets starts with size reduction of the raw biomass source followed by drying. The material is then extruded under high pressure in pellet machines coming out as small cylinders typically with a 6 or 8 mm diameter, and a length of up to 40 mm. Small amounts of additives and binders can be blended with biomass material to improve the quality of wood pellets,

Origins and Sources

Wood pellets are mainly produced from the by-products of traditional forestry operations such as sawmills and finished wood products manufacturing. Harvest residues are also used as raw material though to a much lesser extent. The highest quality sources tend to come from milling and manufacturing residues with little or no bark or ash content

Diameter and Length (D and L)

production site. Two alternative diameters are produced: 6 mm and 8 mm (± 1 mm). The length of the individual wood pellets should be larger than 3.15 mm, and less than or equal to 40 mm ($3.15 < L \leq 40$ mm) with the maximum length not exceeding 45mm. The quantity of pellets longer than 40 mm can be up to 1% in weight.

The quantity of pellets shorter than 10 mm (weight %) is stated by the producer

Calorific value (Q) and Moisture Content (M)

measured by lab testing. All grades of wood pellets must have moisture content less than 10% and a high calorific value greater than or equal to 18.6 MJ/kg (or low heating value of greater than or equal to 16.5 MJ/kg).

Analysis	Unit	Result
Diameter	mm	6-8+/-1mm
Moisture Content	% of weight	5.0
Ash Content	% of weight	0.6
Durability	% of weight	95.5
Calorific Value	Kcal/kg	4678
Sulfur Content	% of weight	0.03
Bulk Density , DB	kg/m3	620

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