



## BLUE FLAME™ BIOMASS ENERGY SYSTEMS

Moisture Content:	8% to 50% Moisture Content
Particle Size:	4" or smaller (long thin pieces are acceptable)
Fines:	Less than 10% sander dust and/or wood flour mixture
Mineral Content:	Less than 10% (some exceptions apply);
Fuel Calorific Value:	Minimum 4,500 Btu/Lb of biomass fuel;

Any carbon based biomass fuels can be combusted. However, biomass comes in various forms and therefore performance of the biomass system is affected by the choice of biomass fuel.

The following biomass fuel characteristics determine equipment selection, and performance.

Species: Clean wood species does not vary the biomass fuel value of fuel material significantly.

Moisture Content: Moisture greatly varies the fuel value of the material. All biomass combustion systems can be adjusted up to the ultimate capacity of the systems, depending on the fuel moisture.

Mineral Content: Minerals are any inert, non organic material in the fuel. Adding minerals to any given biomass fuel will reduce its fuel value. The mineral fusion temperature is also important to system performance. Blue Flame Stoker design assures relatively cool combustion chamber and enables usage of many "marginal" materials with high minerals, or low ash fusion temperatures.

Contaminants: Contaminants have a variety of consequences to the equipment and performance depending on the mix. Many chemicals cause accelerated degradation in refractory, grate corrosion issues, or air quality issues. Contaminated fuels need to be evaluated on a case by case basis.

Blue Flame Stoker has successfully tested and/or used the following biomass fuel materials:

- Wood Pellets;
- Oat Hulls Pellets;
- Whole tree chips (screened) with moisture content under 50% (wet Basis);
- Green hardwood or softwood mill residue;
- (Mill chips) dry hardwood or softwood chips, (Planer shavings, etc.);
- Corn cobs and corn stover;
- Flax Straw and Flax Shive;
- Crushed clean pallets (with removed metal components);
- Cleaned and sorted construction and demolition waste grinded down to 4" minus (with removed metal components);
- Chicken or Turkey litter mixed with wood chips or wood shavings.