



Waters' New Bio Tech

Frequently Asked Questions About the Difference between Wood Chips and Wood Pellets

1. Is there any difference in moisture content?

Yes. Wood chips often run at 35% moisture or higher. Clean chips can be reduced to 15-20%, but they are more costly to produce. In contrast, pellets are in the 8-10% moisture range, which means better burn efficiency.

2. What about the energy chips or pellets produce? Is there any difference?

Any difference in the amount of energy comes from how dry the wood fuel source is. Pellets produce a greater energy value because they have a lower moisture content.

- A fuel chip with 45% moisture produces 4675 BTU's/lb and 10.87 MJ/KG
- A fuel chip that has been dried to 15% moisture produces 7225 BTU/lb and 16.81 MJ/KG
- Pellets average 8% moisture and produce 7820 BTU/lb and 18.19 MJ/KG

3. Is there any difference in density that affects transportation and/or shipping cost?

Absolutely. Chips run 10-16 lbs per cubic foot while pellets run 40 lbs per cubic foot. This means **chips are three times as expensive to transport** as pellets, making them cost prohibitive to use anywhere beyond immediate environs.

4. Do these different densities affect the size of storage facilities?

Yes. In addition to being three times as expensive to ship, chips require about three times as much storage space for an equal weight of pellets. Pellets can also be stored in standard silos. Chips cannot.

5. Is there any impact if the size and shape of the product are consistent?

Again yes. Chips are irregularly shaped and sized, which means repeatedly removing clogs, increased maintenance, and production shut downs of automated equipment. Pellets, however, can use smaller and simpler automated conveying systems due to their consistent shape and size.

6. How do chips and pellets compare in their emissions?

Simply put, chips have higher particulate emissions, while the higher burn efficiency of pellets produces a mere fraction of the emissions produced by raw wood.

7. Can chips or pellets be produced with woody bio-mass (wood scraps, limbs, branches, etc.)?

Chips can only be produced from de-barked logs and require more equipment to produce, whereas pellets can be made from the entire tree using a simpler process. No woody bio-mass is wasted when making pellets. This means that acquiring the supply to make pellets is less expensive than the supply to make chips.

8. Are there any other differences in environmental benefits between clean wood chips and wood pellets?

Yes. Making clean chips means that tree slash and tops are left behind. Re-forestation is slowed because the remnants block sunlight and oxygen. Because pelletizing uses the slash and tops, the forest bed is cleared for quicker and fuller re-growth.

In addition, urban wood waste cannot be used to produce wood chips, whereas many types of wood destined for the landfill can be diverted to make wood pellets. Reduced landfill benefits everyone.

Sources:

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