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Fuels For Schools & Communities

Recommended Wood Fuel Specifications, PA Fuels for Schools and Communities

http://www.pafuelsforschools.psu.edu/resources/fuelstandards.asp
Approved for release January 2015
Drafted by industry/equipment manufacturers
Vetted by boiler operators
### Wood Fuel Standard & Specification

**PA Fuels for Schools & Communities**

<table>
<thead>
<tr>
<th>CATEGORY A: Medium Clean Chip</th>
<th>Moisture Content (% by weight)</th>
<th>BTU/Energy Value as Received (per lb.)</th>
<th>Smallest Wood Particle Size</th>
<th>Largest Wood Particle Size</th>
<th>Contains Bark, Leaves, Twigs etc.</th>
<th>% Overs (oversized material)</th>
<th>Ash Content (% by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;90% hardwood, &quot;virgin wood&quot; only</td>
<td>no greater than 50% (wet basis)</td>
<td>greater than 5000 btu per lb (HHV) as received</td>
<td>0.25&quot; (max dimension), no sander dust or wood flour</td>
<td>not to exceed 3&quot; x 1/2&quot;</td>
<td>no</td>
<td>not to exceed 1% by weight</td>
<td>not to exceed 3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY B: SRWC Chip</th>
<th>Moisture Content (% by weight)</th>
<th>BTU/Energy Value as Received (per lb.)</th>
<th>Smallest Wood Particle Size</th>
<th>Largest Wood Particle Size</th>
<th>Contains Bark, Leaves, Twigs etc.</th>
<th>% Overs (oversized material)</th>
<th>Ash Content (% by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short rotation woody crop, &quot;virgin wood&quot; only</td>
<td>no greater than 50% (wet basis)</td>
<td>greater than 5000 btu per lb (HHV) as received</td>
<td>0.25&quot; (max dimension), no sander dust or wood flour</td>
<td>not to exceed 3&quot; x 1&quot;</td>
<td>yes</td>
<td>not to exceed 1% by weight</td>
<td>not to exceed 3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY C: Medium Variable Chip</th>
<th>Moisture Content (% by weight)</th>
<th>BTU/Energy Value as Received (per lb.)</th>
<th>Smallest Wood Particle Size</th>
<th>Largest Wood Particle Size</th>
<th>Contains Bark, Leaves, Twigs etc.</th>
<th>% Overs (oversized material)</th>
<th>Ash Content (% by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hardwood or softwood, &quot;virgin wood&quot; only</td>
<td>no greater than 50% (wet basis)</td>
<td>greater than 4500 btu per lb (HHV) as received</td>
<td>0.25&quot; (max dimension), no sander dust or wood flour</td>
<td>not to exceed 3&quot; x 1/2&quot;</td>
<td>yes</td>
<td>not to exceed 5% by weight</td>
<td>not to exceed 5%</td>
</tr>
</tbody>
</table>

**Note:** For the purpose of this spec, "hardwood" refers to higher density species of hardwoods such as oak and maple, rather than aspen, poplar, etc.

**Note:** Fuels must not contain any dirt, rocks, or debris.

**Note:** Fuels must not contain any paint, glue, chemical treatments, or other manufactured or hazardous materials (no C/D waste).

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**Map of PA by regions and counties.**

Each county name followed in parentheses by number of facilities that participated in the survey and number of known facilities in that county.
430 facilities identified to be surveyed
   - across 62 of the 67 counties in PA
312 businesses participated
Statewide participant rate = 73%
Total production reported = 185 million cubic feet
   - equivalent to 1.2 billion board feet of wood
253 facilities reporting
With a Growth Rate of 2.5% on 17 million forested acres, could have a Sustainable Annual Harvest = 12 million grn tons
As a Reference :
   * Early 1990’s = used 6 million grn tons
   * Early 2000’s = used 2 million grn tons (PSU)
   * 2014 TPO report = 185 mm cu ft / 33 cu ft per grn ton
      = 5.6 million grn tons
      (as reported by 253 mills)

2.0 million green tons (66.3. million cubic feet) of residues reported by 192 mills.
   - Bark, coarse and sawdust compose most of the residue volume -- at 41%, 32% and 23%
   - 39% of all residues made into mulch/soil additive -- 81% of that volume from bark
   - 16% of the reported residues used in the manufacture of fiber/composite products
   - 17% of the total residue used for animal bedding -- mostly shavings and sawdust
   - 8% of the total residue volume used for bio-energy pellets -- coarse, sawdust, and shavings
     - 160,000 grn tons