

# PFI Standards Program Updates

## PFI Conference - 2015

**Chris Wiberg**

Timber Products Inspection, Manager of Biomass Energy Services

July 2015, Williamsburg VA





## **Timber Products Inspection**

*Conyers, GA*

*ALSC Accredited Auditing Agency  
ALSC Accredited Testing Laboratory*

*ISO 17025 Accredited*



# Chris Wiberg - Background

- Timber Products Inspection – Manager of Biomass Energy SVCs
  - Biomass Lab Manager
  - Manager of Wood Pellet Inspection SVCs
  - QA/QC and Lab Setup SVCs
- Active participant in PFI since 2005
  - Standards Committee – Co-Chair
  - Board of Directors - 2012
- ISO TC 238 – Solid Biofuels
  - US TAG participant since 2007
  - Working groups 2, 4, 5, 6, 7





# PFI's Program Documents

<http://www.pelletheat.org/pfi-standards-program>

- PFI Standard Specifications for Residential/Commercial Densified Fuel
- PFI North American Grading System for Residential/Commercial Densified Fuel
- PFI Residential/Commercial Densified Fuel QA/QC Handbook
- ALSC Residential/Commercial Densified Fuel Enforcement Regulations



[www.pelletheat.org/pfi-standards-program](http://www.pelletheat.org/pfi-standards-program)

## PFI Standards Program

On November 8, 2011, the Pellet Fuels Institute announced the launch of the PFI Standards Program, a third-party accreditation program providing specifications for residential and commercial-grade fuel.

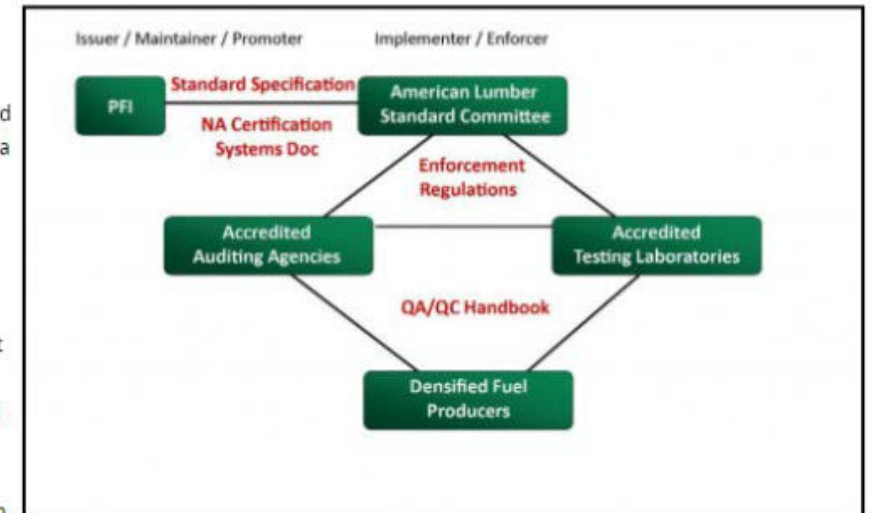
The American Lumber Standard Committee (ALSC) serves as the program's accreditation body, providing program implementation and enforcement, as well as facilitating program enrollment.

[Click here](#) for information on how to enroll in the program and for a list of participating mills.

## Program Documents

There are three main documents that serve as the basis of the program. These documents have been modified over the last year and contain a variety of new information.

Pellet Fuels Institute Standard Specification for Residential/Commercial Densified Fuel This document is the backbone of the program. It outlines the actual grade parameter test method requirements for densified fuels registered in the program.



# This is PFI Graded Fuel!!

## PFI's Quality Mark



### PFI Densified Fuel Grade: Premium Mill Registration #

#### Grade Requirements:

|                            |                           |
|----------------------------|---------------------------|
| Bulk Density:              | 40–46 lbs/ft <sup>3</sup> |
| Diameter:                  | .230–.285 in/5.84–7.25 mm |
| Durability:                | ≥96.5                     |
| Fines:                     | ≤0.50%                    |
| Ash Content (as received): | ≤1%                       |
| Length:                    | ≤1% >1.5 in.              |
| Moisture:                  | ≤8.0%                     |
| Chlorides:                 | ≤300 ppm                  |

#### Manufacturers Guaranteed Analysis:

Type of Material:

Additives:

Minimum Higher Heating Value (as received):

Other Manufacturers Guarantees:

Approved Auditing  
Agency Logo  
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For more information, please visit the PFI website at [www.pelletheat.org](http://www.pelletheat.org).



# Rules of the Mark

- Provides a Registration Number
- Displayed on the front lower third of the bag
- Material type must be stated
- Additives may not exceed 2% by weight (type must be stated)
- Higher heating valued stated as-received and must reflect a minimum BTU guarantee
- Manufacturers may provide other guarantees as long as their claims are demonstrated through audit (e.g. Ash Content As-Rec: <0.50%)



**PFI GRADED FUEL**

**PFI Densified Fuel Grade: Premium**  
**Mill Registration #**  
**Grade Requirements:**

|                            |                           |
|----------------------------|---------------------------|
| Bulk Density:              | 40–46 lbs/ft <sup>3</sup> |
| Diameter:                  | .230–.285 in/5.84–7.25 mm |
| Durability:                | ≥96.5                     |
| Fines:                     | ≤0.50%                    |
| Ash Content (as received): | ≤1%                       |
| Length:                    | ≤1% >1.5 in.              |
| Moisture:                  | ≤8.0%                     |
| Chlorides:                 | ≤300 ppm                  |

**Manufacturers Guaranteed Analysis:**

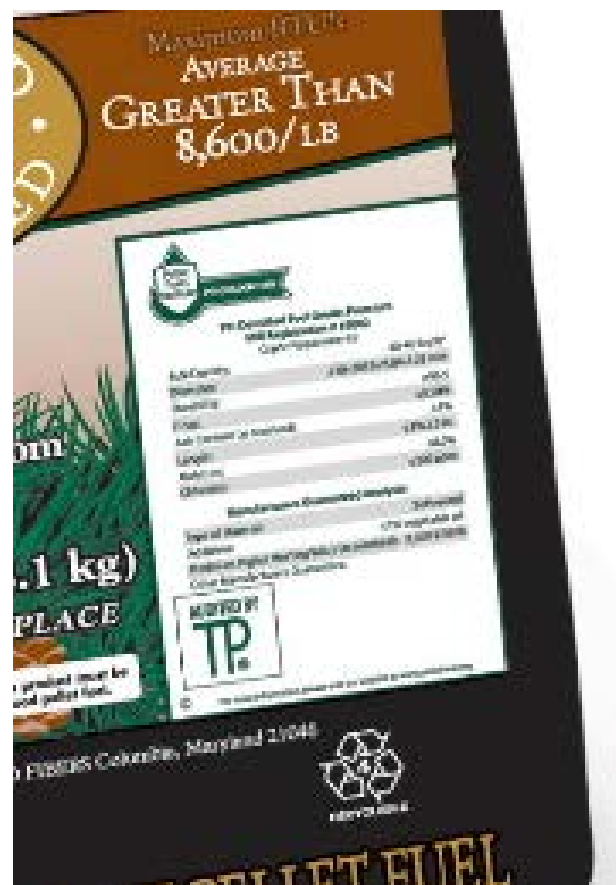
|   |
|---|
| Type of Material:                           |
| Additives:                                  |
| Minimum Higher Heating Value (as received): |
| Other Manufacturers Guarantees:             |

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# This is PFI Graded Fuel!!



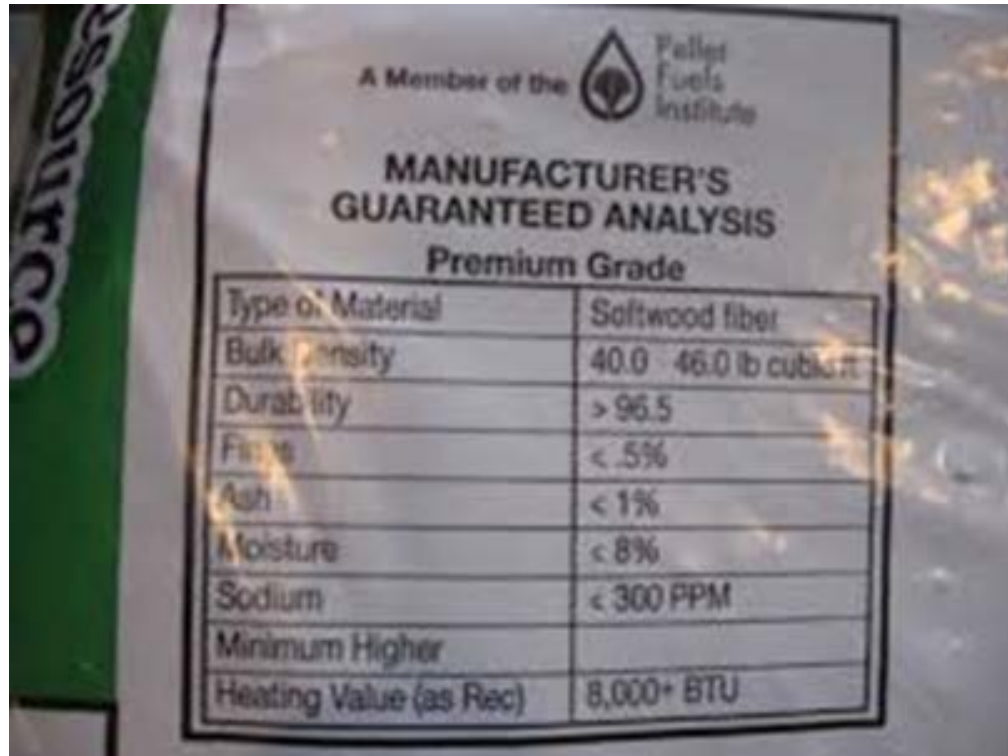


# This is PFI Graded Fuel!!





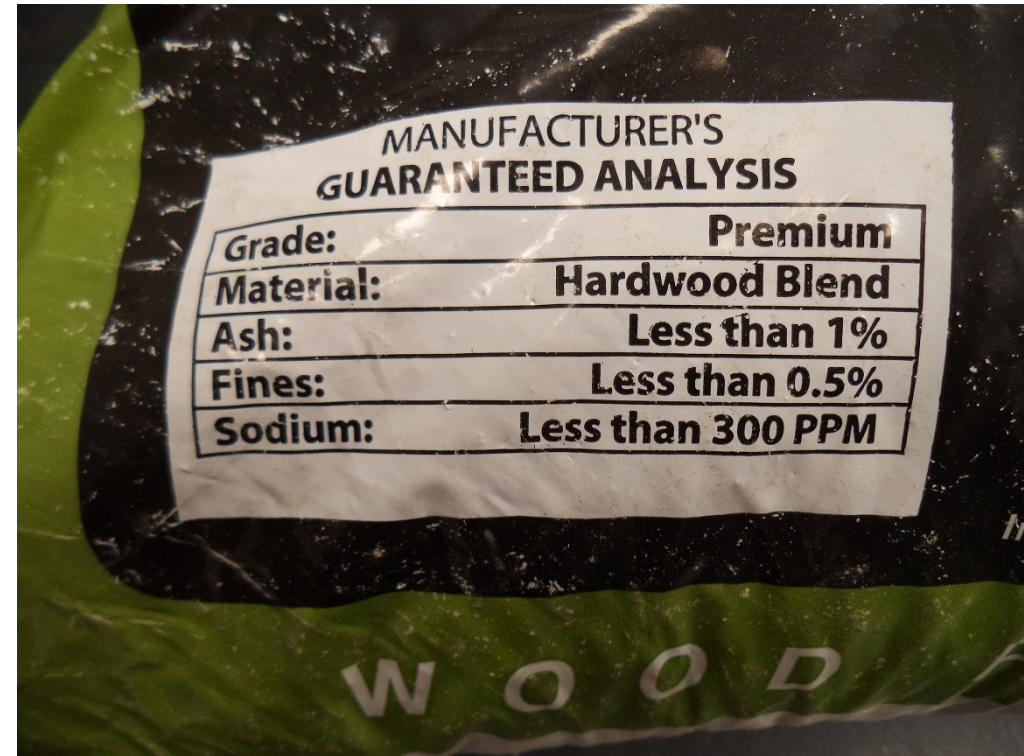
# This is NOT PFI Graded Fuel!!



A Member of the Pellet Fuels Institute

**MANUFACTURER'S GUARANTEED ANALYSIS**  
Premium Grade

|                                       |                         |
|---------------------------------------|-------------------------|
| Type of Material                      | Softwood fiber          |
| Bulk Density                          | 40.0 - 46.0 lb cubic ft |
| Durability                            | > 96.5                  |
| Fines                                 | < .5%                   |
| Ash                                   | < 1%                    |
| Moisture                              | < 8%                    |
| Sodium                                | < 300 PPM               |
| Minimum Higher Heating Value (as Rec) | 8,000+ BTU              |



**MANUFACTURER'S GUARANTEED ANALYSIS**

|           |                   |
|-----------|-------------------|
| Grade:    | Premium           |
| Material: | Hardwood Blend    |
| Ash:      | Less than 1%      |
| Fines:    | Less than 0.5%    |
| Sodium:   | Less than 300 PPM |

WOOD

Being a Member of PFI does NOT constitute  
being part of the PFI Standards Program



Pellet  
Fuels  
Institute



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Fuels  
Institute

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TIMBER  
PRODUCTS  
INSPECTION



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Fuels  
Institute  
MEMBER<sup>TM</sup>

# Production Facility Requirements

- Develop a written in-house QA/QC program based on:
  - PFI QA/QC Handbook
  - PFI Standard Specification
- Select an auditing agency and lab
- Demonstrate compliance with certification system components
- Conduct QA/QC testing as necessary to verify continued compliance with grade criteria



Management of Raw  
Materials & Finished  
Product Quality

Process Management



On-Site QA/QC  
Testing





# Third Party Oversight

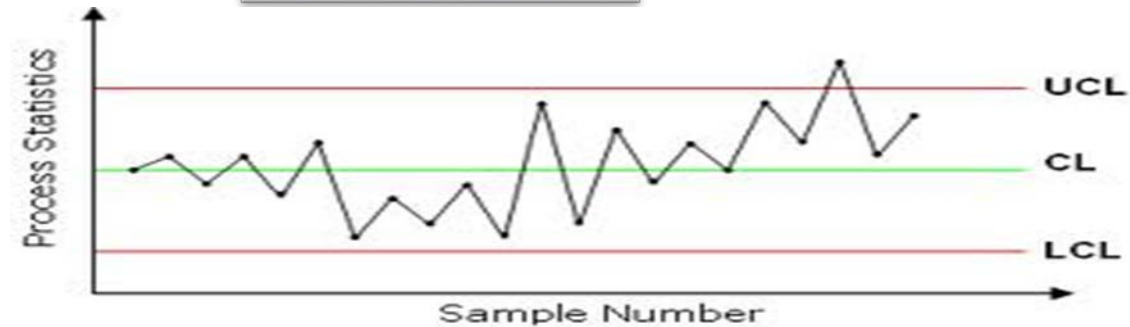
- Initial qualification based on compliance with all program documents
- Monthly audits to verify continued compliance
- Regular testing to verify grade criteria is achieved
- Enforcement action for non-conformance
- ALSC Oversight



Monthly Audits



Routine Testing of Audit Samples



Data Management

# Examples of How the Program Has Worked

- Identification of inappropriate materials at the site
- Observations of boiler fuel co-mingling with feedstock material
- Failed test parameters: Chlorine, Ash, Bulk Density, Durability, Length
- Identification of improper test methods used at the site
- Improper calibration
- Observations of water damaged product due to improper storage
- Process Cleanliness





# PFI Standards Program – 2015 Changes

Substantial Program Revisions have been approved – July 2015

- Edits that provide more concise and clearer wording and address typographical errors
- Edits that reflect the choice of ALSC as the accreditation body
- Formatting Changes





# PFI Standards Program – 2015 Changes

## Issues Related to Weights and Measures: (40lb Bags)

- PFI Standard Specifications Section 1.3 – The PFI Standards Program does not enforce weights and measures.
- Bag weights will still be monitored and producers will be informed when bag weights are below the specified weight.

## Grade Criteria Modifications – Bulk Density and Diameter:

- The acceptable range for bulk density has been modified to 40 – 48 lbs per cubic foot for all grades
- PFI Standard Specifications – Table 1 – Note 6 will allow for an expanded range for diameter per EPA review.

# PFI Standards Program – 2015 Changes

## Opportunities for Reduced Sampling Frequencies:

- QA/QC Handbook Sections 6.10 & 6.11
- Sampling frequency reduced based on demonstrated and continued compliance
- 1 sample per 5,000 tons of product produced after 3 successful monthly audits demonstrate compliance (minimum of 1 sample per audit)
- Sampling frequency reverts to 1 sample per 1,000 tons if compliance is not maintained.
- Having an on-site lab is required (Bulk Density, Durability, Length, Diameter, Fines & Moisture)
- On-site lab must also demonstrate compliance with grade criteria
- On-site lab must be verified against an accredited lab to verify comparability of test results

# PFI Standards Program – 2015 Changes

## Conformance Criteria Changed from 95% to 90%:

- QA/QC Handbook Section 6.12
- Allows for issues in 1 out of 10 samples instead of 1 out of 20 samples
- Still applied in the same fashion as it relates to the 10%/2% rule

## PFI's document - Rules of the Mark – has been added:

- PFI QA/QC Handbook – Annex A.1
- Outlines Quality Mark size and bag placement
- Outlines registration number assignments





 **AMERICAN WOOD FIBERS**



Thank You!!

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Especially to our Qualified Producers!!



*A Rentech Company*

