

Pellet Fuel Standards

Essential for a fledgling industry

November 2006

Overview

- Why standards are required (in general)
- Where the pellet test fuel standard fits in the 4014 series of fuels for domestic
- What is the proposed pellet standard is
- How it compares with overseas standards
- The current status of the test standard
- Opportunity to create a pellet production standard
 - Pellets manufactured and the quality targets able to be achieved
 - Helps ensure that laboratory testing results will be achieved in the marketplace
 - Positive for the pellet industry as it ensures a consistently high quality product to the consumer
 - Helps reduce the chances of the fledgling industry being hurt by low quality, poor performing products
- The current status of the pellet production standard

Standards - what types are there and why are they needed?

1. Test fuel standards

- Allows repeatable laboratory testing of appliances for:
 - Emissions
 - Safety

2. Production fuel standards

- Protects consumer by guaranteeing a consistent high quality fuel supply
- Helps ensure actual appliance performance is similar to the laboratory testing

Wood Pellet Test Fuel Standard

- Part of the AS/NZS domestic solid fuel burning appliances - test fuel series (AS/NZS 4014)
 - 4014.1 Hardwood
 - 4014.2 Softwood
 - 4014.3 Lignite briquettes
 - 4014.4 Sub-bituminous coal
 - 4014.5 Semi-anthracite coal briquettes
 - **4014.6 Wood Pellets (draft)**

The draft wood pellet test fuel standard has been developed ...

- **Moisture** 4% to 8%
- **Bulk density** min 640 kg/m³
- **Ash** max 0.5% (oven dry basis)
- **Gross calorific value** 18 to 21 MJ/kg
- **Diameter** max 10mm
- **Length** max 38mm
- **Fines** max 1%

... and compares well with international standards

| Country | Standard | Class | Calorific Value (Gross) MJ/kg | Bulk Density kg/m ³ | Moisture (maximum) % | Ash (maximum) % |
|---------|---------------|---------|-------------------------------|--------------------------------|----------------------|-----------------|
| Europe | CEN/TS 14961 | | | | 10 | 0.7 |
| Austria | Ö-NORM M 7135 | HP1 | min 18 | | 10 | 0.50 |
| Germany | DIN 51731 | HP5 | 17.5 - 19.5 | | 12 | 1.5 |
| Germany | DINPlus | | 18 | | 10 | 0.5 |
| Sweden | SS 18 71 20 | Group 2 | min 16.9 | min 500 | 10 | 1.5 |
| | | Group 3 | min 15.1 | min 500 | 12 | 1.5 |
| | AS/NZS 4014.6 | | 18 - 21 | min 640 | 8 | 0.5 |

Status of draft wood pellet test fuel standard

- Due for final approval at the next meeting of the Solid Fuel Burning Appliances committee next week (28th – 30th November)

Pellet fuel production standard – a great opportunity

- Pellets are manufactured (unlike other most other domestic solid fuels)
- Manufacturing process allows pellet quality targets to be achieved
- Helps ensure that laboratory testing results will be achieved in the marketplace
- Positive for the pellet industry as it ensures a consistently high quality product to the consumer
- Helps reduce the chances of the fledgling industry being hurt by low quality, poor performing products

Pellet fuel production standard status

- Project to be submitted to Standards Committee

Conclusions

- Wood pellets are a high quality consistent fuel
- Pellet appliances combust wood pellets in an automated manner guaranteeing optimum combustion with low emissions
- Under simulated real life conditions pellet fires emit a fraction of the PM₁₀ emissions of low emission wood burners
- A deterioration in particulate emission performance over time is very unlikely
- Pellet fires emit low levels of NO₂ and PAH
- SERF will expand its existing commitment to providing a low cost, low emission renewable home heating option