

Pellet Quality & Standards 16 Months On

Presented By
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Consulting With A Purpose

Overview

- CWAP / Gideon Richards
- Pellets put in context
- Fuel Quality & Quality Assurance
- Standards – Update

Context

Pellets put in context



- Biomass Task Force / Gov't Response - Pages 44 & 45 (Paras 8.16 – 8.19)
- Environmental and Regulatory Impact Assessments Required of Standards

The Government agrees that the European Standards for solid biofuels and solid recovered fuels should form the basis of a UK standard.

Pellets put in context

Guidance on Directive 2000/76/EC on the incineration of waste
Part 2

August 2004



- Waste Incineration Directive
Wood waste (Article 2(2)(a)(iv)) (last years presentation)
Plants Excluded by Article 2(2) of the WID - Pages 22
- EA have concerns over using appropriate fuels in appropriate appliances

Pellets put in context




- Consultation Response By 11th July 2006
- Para 2.4.3.2 Specifically picks up on Domestic Wood Heating as a source of Particulate Emissions
- Smoke Control Areas - PM₁₀ & PM_{2.5} Emissions to be tightened
- Clean Air Act has been seen by government as being particularly successful – 8mths increase in mortality
- Defra's understanding of Wood fuels as smoke producing when burned.

Quality & Quality Assurance

Quality

- What makes a quality pellet?
- What is a poor quality fuel?
- What is the impact of poor quality fuel?
- *The Ultimate Aim* - Customer Satisfaction

Components of Quality Pellets

- Remain as a pellet - mechanical durability
- Moisture Content Low – typically 8-10%
- Produce Low Ash – typically 1% to 3%
- Have no hidden nasties - mercury, lead, arsenic, chromium, nickel, etc.
- Clearly Understood & Specified Parameters – typical values, analyses or 

Quality?



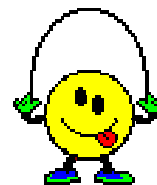
As A Customer I Am Buying This!

Quality?

Wood-pellets For the Domestic and Smaller Boilers / Coal Boilers	
Origin	Chemically untreated wood, wood excluding bark.
Moisture-content	M10 (not more than 10 per cent)
Mechanical durability	DU97.5 (at least 97.5 per cent of pellets must survive the test)
Amount of fines	F1 or F2 (not more than 1 or 2 per cent – two grades here).
Dimensions	D06 (diameter (D) 6 +/- 0.5 mm, length not more than 5 x D) or D08 (diameter (D) 8 +/- 0.5 mm, length not more than 4 x D)
Ash-content	A0.7 (not more than 0.7 per cent)
Sulphur content	S0.05 (not more than 0.05 per cent).
Additives	<2 per cent by weight. Only products from the primarily agricultural and forest biomass that are not chemically modified are approved to be added as pressing aids. Type and amount of additive has to be stated.
Energy-density	E4.7 (at least 4.7 kWh/kg or 16.9 MJ/kg)

Quality Pellets - Benefits

Customers



Impact of Poor Quality Fuel

Customer



Quality?

Not This!



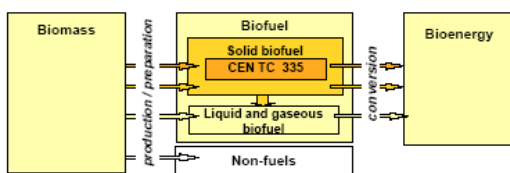
Fuel Quality Assurance

- Establish QA Procedures and Processes (DD CEN/TS15234:2006 and Technical Guide to Support)
- Write down or flowchart requirements
- Agree Fuel Quality
- Agree what's being delivered / received
- Agree How It's Being Delivered & To Where
- Monitor and review periodically



Standards

TC335 Scope of Standard



CEN TC335 Solid Biofuels - What They Are:

- A way of supporting efficient trading between buyers and sellers
- To provide an unambiguous and clear classification and specification system
- A tool for communicating with equipment manufacturers
- To facilitate Authority Permission Procedures and Reporting

Wood Pellet Fuel Production – Quality & Standards

CEN TC335 Solid Biofuels – How They Work

- It's a declaration of what is to be / has been supplied
- It gives traceability from raw material to the end-user
- It ensures those using the standards are specifying and classifying the pellets in the same way
- It gives confidence to customers that they know what they are getting and its origin and source

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Wood Pellet Fuel Production – Quality & Standards

DD CEN/TS14588:2004

Terminology, Definitions & Descriptions (Example)

4.4

ash

residue obtained by combustion of a fuel

NOTE 1 See also total ash and ash fusibility.

NOTE 2 Depending on the combustion efficiency the ash may contain combustibles.

NOTE 3 Adapted from ISO 1213-2:1992

4.5

ash deformation temperature, DT

temperature at which first signs of rounding due to melting, of the tip or edges of the test piece occur

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DD CEN/TS14961:2005 Specification & Classes

	FUEL QUALITY DECLARATION FOR WOOD PELLETS BASED ON CEN/TS 14961
Producer information	Producer: Europellet Ltd Size of package: 20 kg
Origin	Wood without bark (1.2.1.1)
Traded form	Wood pellet
Normative	Dimensions: Diameter 8 mm, length ≤ 40 mm (D08) Moisture content ≤ 10% (M10) Ash ≤ 0,7 w-% (A0,7) Mechanical durability: 97,5 % (DU97.5) Fines: ≤2 w-% (F2) Additives: 1 w-% starch used
Informative	Energy density: 100 kWh/package (4,7 kWh/kg) (E4.7(KWh/kg)) Store pellets in dry place and handle with care to avoid crushing of pellets

- UK BSI Mirror Committee Health Warning!
- Specifications for Normative & Informative Information
 - Methodologies for the Determination of Mechanical, Physical and Chemical Properties – reference to other standards
- Tables identify properties to be specified

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DD CEN/TS15234:2006 Fuel Quality Assurance

6 Step Process For Establishing FQA



Flowcharts & Diagrams work well!!

Figure A1—Methodology for quality assurance

The KEY will be to keep it straight forward and appropriate for the business

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CEN TC335 Solid Biofuels – The Details

DD CEN/TS Documents List

- Full list attached to presentation.
- Purchased through BSI at <http://www.bsonline.bsi-global.com/server/index.jsp> search on number of document and select appropriate one.
- Requesting Forestry Commission under the Biomass Energy Centre have copies that can be read only.
- Looking for other outlets to make access easier.

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Wood Pellet Fuel Production – Quality & Standards

Summary

- EU & UK Biomass Focus
- Buy-in from government dept's that pellets are good and healthy
- Quality of pellets is KEY
- Understanding the quality offered is very important
- Quality Assurance builds confidence in the market and regulators
- EU Standards are here to stay! Start using them, now!!

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Thank You!

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