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Standards

Irish Standard
I.S. EN 14778:2011

Solid biofuels - Sampling

I.S. EN 14778:2011

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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English Version

Solid biofuels - Sampling

Biocombustibles - Echantillonnage

Feste Biobrennstoffe - Probenahme

This European Standard was approved by CEN on 5 May 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Contents	Page
Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Symbols and abbreviations	8
5 Principle.....	8
6 Establishing a sampling scheme (sampling plan)	9
6.1 Principle.....	9
6.2 Full sampling plan	9
6.3 Brief sampling plan.....	10
6.4 Division of lots	10
7 Visual inspection	11
8 Number of increments.....	11
8.1 General.....	11
8.2 Primary increment variance (V_i)	12
8.3 Preparation and testing variance (VPT)	12
8.4 Overall precision (P_L)	13
8.5 Calculation of number of increments per (sub)-lot.....	13
9 Calculation of the size of increment	14
10 Combined sample – Calculation of the volume of the combined sample	14
11 Sampling equipment	15
11.1 General.....	15
11.2 Equipment for manual sampling	15
11.3 Equipment for mechanical sampling	22
12 Sampling in practice.....	24
12.1 General.....	24
12.2 Methods for sampling stationary material	24
12.3 Methods for sampling moving material.....	27
12.4 Sampling of roundwood.....	28
13 Sample generation.....	30
13.1 Combined samples and laboratory samples	30
14 Performance characteristics	30
15 Handling and storage of samples	30
15.1 Packaging, storing and transport of samples	30
15.2 Identification / labelling.....	31
16 Sampling certificates.....	31
Annex A (informative) Model Sampling Plan and Sampling Certificate.....	32
Annex B (informative) Sampling from large stockpiles.....	35
B.1 Initial assessment of the stockpile	35
B.2 Taking samples	35
B.3 Marking, packaging and dispatch of samples	35

B.4	Certificate of sampling	35
	Annex C (informative) Bulk densities of biofuels	36
	Annex D (informative) Empirical values for P_L, V_I and V_{PT}	37
D.1	Introduction	37
D.2	Large shipment of wood pellets from different sources	37
	Annex E (informative) Guidelines for the number of increments to be taken	41
E.1	General	41
E.2	Estimation of the number of increments from empirical values	41
E.3	Examples for determining V_{PT}, V_I, N_{SL} and n_{min}	46
	Annex F (informative) Quality parameters for various solid biofuels in BioNorm projects and large shipments of wood pellets	50
F.1	General	50
F.2	Products investigated as part of the BioNorm projects	50
F.3	Summary of results from BioNorm projects	51
F.4	Large shipments	57
	Bibliography	63

Foreword

This document (EN 14778:2011) has been prepared by Technical Committee CEN/TC 335 "Solid biofuels", the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 14778-1:2005, CEN/TS 14778-2:2005 and CEN/TS 14779:2005.

This document differs from CEN/TS 14778-1:2005, CEN/TS 14778-2:2005 and CEN/TS 14779:2005 mainly as follows:

- a) CEN/TS 14778-1:2005, CEN/TS 14778-2:2005 and CEN/TS 14779:2005 are merged into one document and upgraded to EN 14778:2011;
- b) results of interlaboratory tests are supplemented as informative annexes;
- c) the whole document is restructured and editorially revised;
- d) decision schemes are updated;
- e) updated normative references are included.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Solid biofuels are a major source of renewable energy. European Standards are needed for production, trade and use of solid biofuels.

This European Standard can be used with regard to production, trading, controlling and analysis of solid biofuels in general. It is also useful for buyers of solid biofuels, regulators, controllers and laboratories.

This standard creates new working methods and practices for a broad fuel source, while for coal there are many years of experience for a single fuel source. This standard is based on the coal sampling methods, however due to the limited experience of biomass sampling, it is recognized that this standard will change in future versions when more experience is gained. What today is utilized as solid biofuels may change in the future.

1 Scope

This European Standard describes methods for preparing sampling plans and certificates and taking samples of solid biofuels, for example, from the place where the raw materials grow, from production plant, from deliveries e.g. lorry loads, or from stock. It includes both manual and mechanical methods, and is applicable to solid biofuels that are either:

- fine (particle size up to about 10 mm) and regularly-shaped particulate materials that can be sampled using a scoop or pipe, for example: sawdust, olive stones and wood pellets;
- coarse or irregularly-shaped particulate materials, particle sizes up to about 200 mm that can be sampled using a fork or shovel, for example: wood chips and nut shells, forest residue chips, and straw;
- baled materials for example: baled straw or grass;
- large pieces (particle sizes above 200 mm) which are either picked manually or automatically;
- vegetable waste, fibrous waste from virgin pulp production and from production of paper from pulp that has been dewatered;
- round wood.

It may be possible to use this standard on other solid biofuels. The methods described in this European Standard may be used, for example, when the samples are to be tested for moisture content, ash content, calorific value, bulk density, durability, particle size distribution, ash melting behaviour and chemical composition. The methods are not intended for obtaining the very large samples required for the testing of bridging properties.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14588:2010, *Solid biofuels — Terminology, definitions and descriptions*

EN 14780, *Solid biofuels — Sample preparation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14588:2010 and the following apply.

3.1

bias

systematic error that leads to the average value of a series of results being persistently higher or persistently lower than those that are obtained using a reference sampling method

3.2

combined sample

sample consisting of all the increments taken from a lot or sub-lot

NOTE The increments may be reduced by division before being added to the combined sample.

3.3

general analysis sample

sub-sample of a laboratory sample having a nominal top size of 1 mm or less and used for a number of chemical and physical analyses

3.4

increment

portion of fuel extracted in a single operation of the sampling device

3.5

laboratory sample

combined sample or a sub-sample of a combined sample for use in a laboratory

3.6

large stockpile

a stockpile with a capacity > 40 tonnes

3.7

lot

defined quantity of fuel for which the quality is to be determined

NOTE See also sub-lot.

3.8

mass-reduction

reduction of the mass of a sample or sub-sample

3.9

nominal top size

aperture size of the sieve used in the EN 15149 method for determining the particle size distribution of solid biofuels through which at least 95 % by mass of the material passes

3.10

overall precision

closeness of agreement between independent test results obtained under stipulated conditions; including sample preparation and sample analysis

NOTE A determination might be made with great precision and the standard deviation of a number of determinations on the same sub-lot might, therefore, be low; but such results are accurate only if they are free from bias.

3.11

particle size-reduction

reduction of the nominal top size of a sample or sub-sample

3.12

sample

quantity of material, representative of a larger quantity for which the quality is to be determined

3.13

small stockpile

stockpile with a capacity \leq 40 tonnes

3.14

sub-lot

part of a lot for which a test result is required

3.15

sub-sample

portion of a sample

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