



SLOVENSKI STANDARD

SIST EN 14588:2010

01-december-2010

Nadomešča:

SIST-TS CEN/TS 14588:2004

Trdna biogoriva - Terminologija, definicije in opisi

Solid biofuels - Terminology, definitions and descriptions

Feste Biobrennstoffe - Terminologie, Definitionen und Beschreibungen

Biocomustibles solides - Terminologie, définitions et descriptions

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Ta slovenski standard je istoveten z: ~~SIST EN 14588:2010~~ EN 14588:2010

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ICS:

01.040.75	Naftna in sorodna tehnologija (Slovarji)	Petroleum and related technologies (Vocabularies)
75.160.10	Trda goriva	Solid fuels

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en,fr,de

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EUROPEAN STANDARD

EN 14588

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2010

ICS 01.040.75; 75.160.10

Supersedes CEN/TS 14588:2003

English Version

Solid biofuels - Terminology, definitions and descriptions

Biocomustibles solides - Terminologie, définitions et descriptions

Feste Biobrennstoffe - Terminologie, Definitionen und Beschreibungen

This European Standard was approved by CEN on 12 September 2010.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 14588:2010) 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of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.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 14588:2003.

Annex A and Annex B are informative.

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Introduction

This European Standard has been performed in accordance with ISO 10241 [1]. Beside international standards (see References) approved national standards and manuals [2], [3], [4], [5] provided the basis of this European Standard. Moreover, some terms important within specific nations were added to the international terminology during compilation of this document.

Waste is defined in Article 1(a) of Council Directive 75/442/EEC [6] and some of the given terms fall within this category. However, sources within the scope of this European Standard are excluded from the scope of Directive 2000/76/EC ("waste incineration directive") [7]. In this European Standard, instead of the legal definition *waste* the technical term *residue* is used for well-defined side-streams from agricultural, forestry and related industrial operations. The terms and definitions are harmonised as far as possible with the current language used in management as well as in regulatory activities.

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1 Scope

This European Standard defines terms concerned in all standardisation work within the scope of CEN/TC 335. According to CEN/TC 335 this European Standard is applicable to solid biofuels originating from the following sources:

- products from agriculture and forestry;
- vegetable waste from agriculture and forestry;
- vegetable waste from the food processing industry;
- wood waste, with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste from construction- and demolition waste;
- cork waste;
- fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and heat generated is recovered.

The embedding of the scope within the biomass/biofuel field is given in Figure 1.

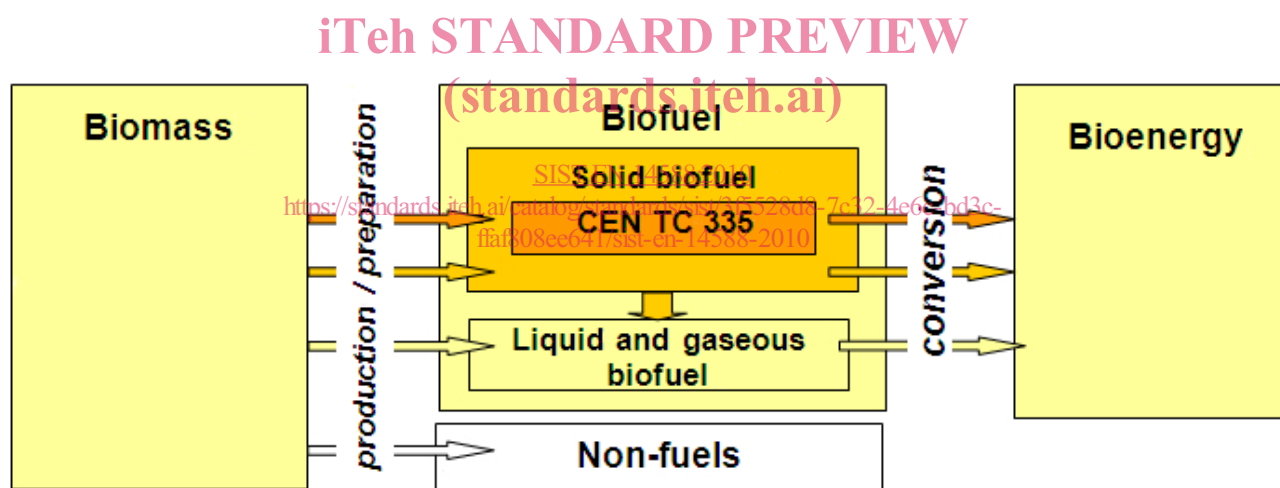


Figure 1 — CEN TC 335 within the biomass-biofuel-bioenergy field

NOTE 1 CEN/TC 335 considers that wood waste, including wood waste originating from construction and demolition waste are included in the scope of CEN/TC 335 and of the scope of the mandate M/298 "solid biofuels", unless they contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings [8].

NOTE 2 There are more terms included within this European Standard as covered by the mandate due to clarification and differentiation.

NOTE 3 Changes of ownership of the fibrous vegetable waste between paper and pulp company and the operator of the co-incineration plant in which the waste is used does not affect the inclusion of the waste in the scope of mandate M/298.

Other standards with a different scope than this European Standard can have different definitions than this standard.

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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.

Not applicable.

3 Principle

Solid biofuels are produced from different sources, which are defined within the scope of CEN TC 335 “Solid biofuels”. Terms and definitions are categorised in a logical structure based on the fact that solid biofuels are produced from different sources and that the purpose of solid biofuels is the conversion into bioenergy:

- the sources of solid biofuels cover the initial location of the input material (biomass) in the economic and environmental cycles (like forest wood, energy forest trees, logging residues, landscape management residues, etc.);
- the description of the solid biofuels itself as well as their handling, which covers the source and origin of the biofuel given in the same structure as the biomass sources (e.g. wood fuels, forest fuels), the different forms of biofuels produced within the preparation process (i.e. chipped biofuels, bundled biofuels), the most relevant biofuel properties (e.g. total moisture, total ash), and terms of sampling and testing as well as classification and specification;
- bioenergy as the result of biofuel conversion.

Appropriate terms for sampling and testing (as well as classification and specification of properties) have to be defined and described together with the category *source/origin, forms and properties of solid biofuels*. The structure of this European Standard (Table 1) is based on the classification system of solid biofuels given in [9], in which the classification of solid biofuels is specified more detailed.

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Table 1 — Structure of the terms [9]

Sources of biofuels	Woody biomass
	Herbaceous biomass
	Fruit biomass
	Biomass blends and mixtures
Solid biofuels	Source/origin
	Traded forms
	Sampling and testing
	Properties
	Classification and specification
Bioenergy	

4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE Many terms defined within this document are also used in the standardisation work of CEN/TC 343, especially in prEN 15357, *Solid recovered fuels — Terminology, definitions and descriptions*. Therefore, an informative list of terms defined by prEN 15357 is given in Annex B.

4.1

additive

material which improves quality of fuel (e.g. combustion properties), reduces emissions or make production more efficient

4.2**agricultural residues**

biomass residues originating from production, harvesting, and processing in farm areas

NOTE See also *crop production residues*.

4.3**agrofuels**

biofuels obtained as a product of *energy crops* and/or *agricultural residues*

NOTE Adapted from FAO unified bioenergy terminology (UBET) [10].

4.4**air dried basis**

condition in which the solid biofuel is in equilibrium with the atmospheric humidity

[Adapted from ISO 1213-2:1992]

4.5**animal husbandry residues**

agricultural residues originating from livestock keeping

NOTE 1 It includes among others solid excreta of animals.

NOTE 2 Animal husbandry residues are not included in the scope of CEN/TC 335. The term is included for information only.

4.6**as analysed
determined basis**

condition in which the moisture content of the solid biofuel is the content at the moment of analysis/determination

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[Adapted from ISO 1213-2:1992]

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4.7**as received basis****as received****as delivered**

calculation basis for material at delivery

4.8**ash**

solid mineral residue obtained from a complete *fuel* combustion

[Adapted from ISO 1213-2:1992]

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

4.9**ash deformation temperature****DT**

temperature at which the first signs of rounding of the edges of the test pieces occurs due to melting

4.10**ash flow temperature****FT**

temperature at which the *ash* is spread out over the supporting tile in a layer, the height of which is one-third of the height of the test piece at the *ash hemisphere temperature*

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4.11

ash fusibility**ash melting behaviour**

characteristic physical state of the *ash* obtained by heating under specific conditions

NOTE 1 Ash fusibility is determined under either oxidizing or reducing conditions.

NOTE 2 See also *ash deformation temperature*, *ash flow temperature*, *ash hemisphere temperature*, and *ash sphere temperature*.

4.12

ash hemisphere temperature**HT**

temperature at which the test piece forms approximately a hemisphere, i.e. when the height becomes equal to half the base diameter

4.13

ash sphere temperature**ST**

temperature at which shrinking of the test piece occurs

NOTE This temperature is defined as when the area of the piece falls below 95 % of the original test piece area at 550°.

4.14

baled biofuel**bale**

solid biofuel which has been compressed and bound to keep its shape and *density*

EXAMPLES Straw bales, bales of energy grass, bales of treetops and branches.

4.15

bark

organic cellular tissue which is formed by taller plants (trees, bushes) on the outside of the growth zone (cambium) as a shell for the wooden body

4.16

basis/bases

convention on measuring quantity

4.17

basic density

ratio of the mass on *dry basis* and the *solid volume* on *green basis*

4.18

bioenergy

energy from *biomass*

4.19

biofuel

fuel produced directly or indirectly from *biomass*

4.20

biofuel blend

biofuel resulting from intentionally mixing of different *biofuels*

EXAMPLES Straw or *energy grass* with wood, dried *biosludge* with *bark*.

4.21**biofuel briquette**

densified biofuel made with or without *additives* in the form of cubiform, polyedric or cylindrical units, produced by compressing pulverised biomass

NOTE 1 The raw material for briquettes can be *woody biomass*, *herbaceous biomass*, *fruit biomass* and *biomass blends*, and *biomass mixtures*.

NOTE 2 Biofuel briquettes are usually manufactured in a piston press. The *total moisture* of the biofuel briquette is usually less than 15 % of mass as received.

NOTE 3 Biofuel briquettes for non industrial use are specified in prEN 14961-3.

4.22**biofuel mixture**

biofuel resulting from natural or unintentional mixing of different *biofuels* and/or different types of *biomass*

4.23**biofuel pellet**

densified biofuel made from *pulverised biomass* with or without *additives* usually with a cylindrical form, random length typically 3,15 mm to 40 mm, and broken ends

NOTE The raw material for biofuel pellets can be *woody biomass*, *herbaceous biomass*, *fruit biomass*, or *biomass blends* and *mixtures*. They are usually manufactured in a die. The *total moisture* of biofuel pellets is usually less than 10 % of mass as received.

[Adapted from prEN 14961-2:2010]

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4.24**biomass**

from a scientific and technical point of view, material of biological origin excluding material embedded in geological formations and/or transformed to fossil.

NOTE 1 Biomass is defined in legal documents in many different ways according to the scope and goal of the respective documents (e.g. Directive 2001/77/EC of the European Parliament and the Council; Commission Decision (2007/589/EC) of 18 July 2007). This definition does not contradict legal definitions.

NOTE 2 See also *herbaceous biomass*, *fruit biomass*, and *woody biomass*.

4.25**biomass residues**

biomass originating from well defined side-streams from agricultural, forestry and related industrial operations

NOTE Adapted from the proposal within the Draft CEN Report Solid Recovered Fuels [11].

4.26**biomass resource owner**

body or enterprise with the right to exploit the *biomass* resources for energy purposes

NOTE The biomass resource owner can be a land or forest owner, a company, etc.

4.27**biosludge**

sludge formed in the aeration basin during biological waste water treatment or biological treatment process and separated by sedimentation or flotation

NOTE Biosludges are not included in the scope of CEN/TC 335. The term is included for information only.

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4.28

black liquor

liquor obtained from wood during the process of pulp production, in which the energy content is mainly originating from the content of lignin removed from the wood in the pulping process

NOTE Black liquor is not included in the scope of CEN/TC 335. The term is included for information only.

4.29

bridging arching

tendency of particles to form a stable arch across an opening and hindering flow

NOTE Adapted to Woodcock and Mason. Bulk Solids Handling [12].

4.30

bulk density

mass of a portion of a solid *fuel* divided by the *volume* of the container which is filled by that portion under specific conditions

[Adapted from ISO 1213-2:1992]

4.31

bulk volume, loose volume

volume of a material including space between the particles

4.32

bundled biofuel, bundle

solid biofuels which has been bound together and where there is a lengthwise orientation of the material

EXAMPLES Bundles of *energy forest trees* and *logging residues*, small trees, or branches and tops.

4.33

calorific value heating value

q

energy amount per unit mass or volume released on complete combustion

NOTE See also *gross calorific value*, *energy density*, *net calorific value*, and *net calorific value as received*.

4.34

cereal crops

annual crops grown with the main purpose to use the seed for food production

NOTE Some cereal crops can be used as a *solid biofuel*.

EXAMPLES Barley, wheat, rye, oat.

4.35

char

solid partially or non-agglomerated carbonaceous material produced by pyrolysis of *solid fuels*

[Adapted from ISO 1213-2:1992]

4.36

chemical treatment

treatment with chemicals other than air, water or heat (e.g. glue and paint)

4.37

chopped straw

straw which has been cut into small pieces

4.38**chunkwood**

wood cut or broken with sharp cutting devices in which most of the material has a typical particle length, substantially longer and more coarse than *wood chips*

NOTE Chunkwood has a typical length of 50 mm to 150 mm.

4.39**combined sample**

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

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

4.40**common sample**

sample collected for more than one intended use

[Adapted from ISO 13909:2001]

4.41**complete tree**

harvested tree, including limbs and root system

NOTE See also *whole tree*.

4.42**contamination**

make impure by exposure to or addition of a poisonous or polluting substance to a fuel

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4.43**cork residues**

biomass residues from cork production

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4.44**critical control point**

point within or between processes at which relevant properties can be most readily assessed

NOTE Critical control points also offer the greatest potential for quality improvement.

4.45**crop production residues**

agricultural residues originating from crop production, harvesting, and processing in farm areas

NOTE It includes among others wood, straw, stalks, and husks.

4.46**cross-cut ends**

short pieces of *woody biomass* which occur when the ends of logs or sawn timber are cross cut off, with or without *bark*

4.47**customer****client**

organization or person that receives a product

[Adapted from EN ISO 9000:2005]

4.48**cut biofuel**

solid biofuel cut into pieces

NOTE See also *chunkwood*, *firewood*, *chopped straw*, and *smallwood*.