SLOVENSKI STANDARD
SIST EN 14961-2:2011

01-september-2011

Nadomešča:
SIST-TS CEN/TS 14961:2005

Trdna biogoriva - Specifikacije goriv in razredi - 2. del: Lesni peleti za neindustrijsko uporabo

Solid biofuels - Fuel specifications and classes - Part 2: Wood pellets for non-industrial use

Feste Biobrennstoffe - Brennstoffspezifikationen und -klassen - Teil 2: Holzpellets für nichtindustrielle Verwendung

Biocombustibles solides - Classes et spécifications des combustibles - Partie 2: Granulés de bois densifié à usage non industriel

Ta slovenski standard je istoveten z: **EN 14961-2:2011**

ICS:

75.160.10	Trda goriva	Solid fuels

SIST EN 14961-2:2011 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14961-2

June 2011

ICS 75.160.10

English Version

Solid biofuels - Fuel specifications and classes - Part 2: Wood pellets for non-industrial use

Biocombustibles solides - Classes et spécifications des combustibles - Partie 2: Granulés de bois densifié à usage non industriel

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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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Ref. No. EN 14961-2:2011: E

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Foreword

This document (EN 14961-2:2011) 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of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.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.

The European standard series EN 14961 *Solid biofuels — Fuel specifications and classes* are provided as general requirements and additional product standards. Additional product standards may extend this series over time.

EN 14961 consists of the following parts, under the title *Solid biofuels — Fuel specifications and classes*:

— *Part 1: General requirements*;

— *Part 2: Wood pellets for non-industrial use*;

— *Part 3: Wood briquettes for non-industrial use*;

— *Part 4: Wood chips for non-industrial use*;

— *Part 5: Firewood for non-industrial use*;

— *Part 6: Non woody pellets for non-industrial use (under development)*.

Although these product standards may be obtained separately, they require a general understanding of the standards based on and supporting EN 14961-1. It is recommended to obtain and use EN 14961-1 in conjunction with these standards.

NOTE In these product standards, non-industrial use - means fuel intended to be used in smaller appliances, such as in households and small commercial and public sector buildings.

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

This European Standard for "Fuel Specifications and Classes — Part 2: Wood pellets for non-industrial use" has been produced by CEN/TC 335 Solid Biofuels Working group "Fuel Specifications, Classes and Quality Assurance".

The objective of this European Standard is to provide unambiguous and clear classification principles for solid biofuels, to serve as a tool to enable efficient trading of biofuels and to enable good understanding between seller and buyer as well as a tool for communication with equipment manufacturers. It will also facilitate authority permission procedures and reporting.

This European Standard is made to support the use of wood pellets in a non-industrial situation and specifically for the domestic/householder markets and smaller commercial boiler situations, where sensitivity to the fuel quality can cause major issues. These consumers need special consideration for the following reasons:

- small-scale equipment does not usually have advanced controls and flue gas cleaning;
- it is not generally managed by professional heating engineers;
- they are often located in living and populated districts.

NOTE Pellets produced according to this European Standard can be used in pellet stoves, which are tested according to EN 14785, pellet burners tested according to EN 15270 and pellet boilers or integrated-pellet burner systems tested according to EN 303-5 ($\leq$ 500 kW_{th}).

1 Scope

This European standard determines the fuel quality classes and specifications of wood pellets for non-industrial use. This European standard covers only wood pellets produced from the following raw materials (see EN 14961-1:2010, Table 1):

- 1.1 Forest, plantation and other virgin wood;
- 1.2 By-products and residues from wood processing industry;
- 1.3 Used wood.

NOTE 1 For the avoidance of doubt, demolition wood is not included in the scope of this European Standard. Demolition wood is “used wood arising from demolition of buildings or civil engineering installations” (EN 14588:2010, 4.52).

NOTE 2 Torrefied pellets are not included in the scope of this European Standard. Torrefaction is a mild pre-treatment of biomass at a temperature between 200 °C to 300 °C.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. 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 14774-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*

EN 14774-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified procedure*

EN 14775, *Solid biofuels — Determination of ash content*

EN 14918, *Solid biofuels — Determination of calorific value*

EN 14961-1:2010, *Solid biofuels — Fuel specifications and classes — Part 1: General requirements*

EN 15103, *Solid biofuels — Determination of bulk density*

EN 15104, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen — Instrumental methods*

EN 15149-1, *Solid biofuels — Determination of particle size distribution — Part 1: Oscillating screen method using sieve apertures of 1 mm and above*

EN 15210-1, *Solid biofuels — Determination of mechanical durability of pellets and briquettes — Part 1: Pellets*

EN 15289, *Solid biofuels — Determination of total content of sulphur and chlorine*

EN 15297, *Solid biofuels — Determination of minor elements — As, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, V and Zn*

prEN 16127, *Solid biofuels — Determination of length and diameter for pellets and cylindrical briquettes*

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
wood pellet
densified biofuel made from pulverised woody biomass with or without additives usually with a cylindrical form, random length and typically 5 mm to 40 mm, with broken ends

NOTE The raw material for wood pellets is woody biomass in accordance with Table 1 of EN 14961-1:2010. Pellets are usually manufactured in a die, with total moisture content usually less than 10 % of their mass wet basis.

3.2
additive
material which improves the quality of the fuel (e.g. combustion properties), reduces emissions or makes production more efficient.

3.3
chemical treatment
any treatment with chemicals other than air, water or heat (e.g. glue and paint)

NOTE Examples of chemical treatment are listed in informative Annex C of EN 14961-1:2010.

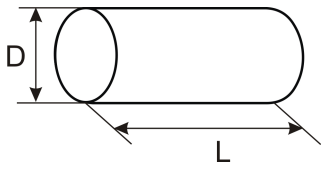
4 Symbols and abbreviations

The symbols and abbreviations used in this European Standard comply with the SI system of units as far as possible.

d	dry (dry basis)
ar	as received
w-%	weight-percentage
A	designation for ash content A_d [w-%, dry basis] [1)]
BD	designation for bulk density as received [kg/m^3] [1)]
D	designation for diameter as received, D [mm] [1)]
DU	designation for mechanical durability as received [w-%] [1)]
F	designation for amount of fines as received [w-%, particles less than 3,15 mm] [1)]
L	designation for length as received, L [mm] [1)]
M	designation for moisture content as received on wet basis, M_{ar} [w-%][1)]
Q	designation for net calorific value as received, $q_{p,net,ar}$ [MJ/kg or kWh/kg or MWh/t] at constant pressure [1)]

1) Designation symbols are used in combination with a number to specify property levels in Table 1. For designation of chemical properties chemical symbols like S (sulphur), Cl (chlorine), N (nitrogen) are used and the value is added at the end of the symbol.

NOTE 1 MJ/kg equals 0,2778 kWh/kg (1 kWh/kg equals 1 MWh/t and 1 MWh/t is 3,6 MJ/kg). 1 g/cm^3 equals 1 kg/dm^3.



Key

D Diameter

L Length

Figure 1 — Dimension of pellets

5 Specification of wood pellets for non-industrial use

The specification of the wood pellets is stated in accordance with Table 1. The sampling and analysis of the properties shall be carried out in accordance with the methods mentioned in the normative references.

Property class A1 and A2 represents virgin woods and chemically untreated wood residues. A1 represents fuels which are low in ash and nitrogen content, while class A2 has slightly higher ash, nitrogen and chlorine content. Property class B allows chemically treated industrial wood by-products and residues and used wood.

Chemically treated wood residues from wood processing and used wood are included in class B as long as they do not contain heavy metals or halogenated organic compounds as a result of treatment with wood preservatives or coating. In case of raw materials belonging to 1.2.2 and 1.3.2 (chemically treated wood) the actual origin of the raw material shall be closer described, e.g. 1.2.2, Residues from laminated wood production.

If the properties being specified are sufficiently known through information about the origin and handling (or preparation method combined with experience) then physical/chemical analysis may not be needed.

To ensure resources are used appropriately and the declaration is accurate, use the most appropriate measure below:

a) Using typical values, e.g. laid down in Annex B of EN 14961-1:2010, or obtained by experience;

b) Calculation of properties, e.g. by using typical values and considering documented specific values;

c) Carrying out of analysis:

   1) With simplified methods if available,

   2) With reference methods.

The responsibility of the producer or supplier to provide correct and accurate information is exactly the same whether laboratory analysis is performed or not. Typical values do not release the producer or supplier from providing accurate and reliable information.

To ensure the end-user receives pellets with a low level of fines, the amount of fines shall be ≤ 1% leaving the final point of loading for delivery to the end-user. i.e leaving the final storage point or the factory if delivering directly to the end-user. The amount of fines leaving the factory gate shall also be ≤ 1% (unless there is a different agreement between the producer and their customer), even when not going directly to the end-user.