

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

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14961-2:2011 sisaldab Euroopa standardi EN 14961-2:2011 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 29.07.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.06.2011.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 14961-2:2011 consists of the English text of the European standard EN 14961-2:2011.

This standard is ratified with the order of Estonian Centre for Standardisation dated 29.07.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 15.06.2011.

The standard is available from Estonian standardisation organisation.

ICS 75.160.10

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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

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

This European Standard was approved by CEN on 18 January 2011.

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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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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of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.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 ($\leq 500 \text{ kW}_{\text{th}}$).

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.

<i>d</i>	dry (dry basis)
<i>ar</i>	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.