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SIST EN 14961-3:2011

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14961-3

June 2011

ICS 75.160.10

English Version

Solid biofuels - Fuel specifications and classes - Part 3: Wood briquettes for non-industrial use

Biocombustibles solides - Classes et spécifications des
combustibles - Partie 3: Briquettes de bois à usage non
industriel

Feste Biobrennstoffe - Brennstoffspezifikationen und -
klassen - Teil 3: Holzbriketts für nichtindustrielle
Verwendung

This European Standard was approved by CEN on 18 January 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.

CEN members are the national standards bodies of 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 United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14961-3:2011) 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of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.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 general 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).*

NOTE In these product standards, non-industrial use means use in smaller scale 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.

EN 14961-3:2011 (E)**Introduction**

This European Standard for "Fuel Specifications and Classes — Part 3: Wood briquettes 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 briquettes in 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 Wood briquettes produced according to this European Standard can be used in stoves, fireplaces, cookers, roomheaters and multifired sauna stoves, which are tested according to EN 13229, EN 12815, EN 12809, EN 13240, EN 15250 and EN 15821, and boilers systems tested according to EN 303-5 ($\leq 500 \text{ kW}_{th}$).

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1 Scope

This European standard determines the fuel quality classes and specifications of wood briquettes for non-industrial use. This European standard covers only wood briquettes 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 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).

2 Normative references

The following referenced documents are indispensable for the application of this 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 15104, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen — Instrumental methods*

prEN 15150, *Solid biofuels — Determination of particle density*

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*

EN 14961-3:2011 (E)**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 briquette**

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

NOTE 1 The raw material for wood briquettes is woody biomass in accordance with Table 1 of EN 14961-1:2010.

NOTE 2 Biofuel briquettes are usually manufactured in a piston press, with the total moisture content usually being less than 15 % of the mass on 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 treatments are listed in informative Annex C of EN 14961-1:2010.

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4 Symbols and abbreviations

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

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d dry (dry basis)

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ar as received

w-% weight-percentage

A designation for ash content A_d [w-%, dry basis] ¹⁾

D designation for diameter as received, D [mm] ¹⁾

DE designation for particle density as received [g/cm³] ¹⁾

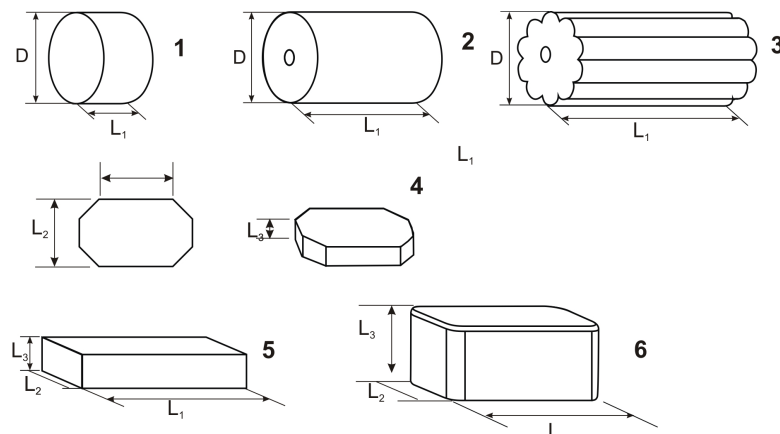
L designation for length as received, L [mm] ¹⁾

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⁾

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/cm³ equals 1 kg/dm³.

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.

**Key***D* Diameter*L* Length**Figure 1 — Examples of briquettes with different shapes****5 Specification of wood briquettes for non-industrial use**

The specification of the wood briquettes 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 and nitrogen 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 in EN 14961-1:2010, Table 1) 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.

The quality shall be given either in the product declaration (prEN 15234-3) or by a corresponding label on the package.