

**Solid biofuels - Fuel specifications and classes - Part 4:  
Graded wood chips (ISO 17225-4:2014)**

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN ISO 17225-4:2014 sisaldab Euroopa standardi EN ISO 17225-4:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 17225-4:2014 consists of the English text of the European standard EN ISO 17225-4:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 07.05.2014.	Date of Availability of the European standard is 07.05.2014.
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English Version

**Solid biofuels - Fuel specifications and classes - Part 4: Graded wood chips (ISO 17225-4:2014)**

Biocombustibles solides - Classes et spécifications des combustibles - Partie 4: Classes de plaquettes de bois (ISO 17225-4:2014)

Feste Biobrennstoffe - Brennstoffspezifikationen und -klassen - Teil 4: Einteilung von Holzhackschnitzeln (ISO 17225-4:2013)

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## Foreword

This document (EN ISO 17225-4:2014) has been prepared by Technical Committee ISO/TC 238 "Solid biofuels" in collaboration with 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of an identical text or by endorsement, at the latest by November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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This document supersedes EN 14961-4:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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### Endorsement notice

The text of ISO 17225-4:2014 has been approved by CEN as EN ISO 17225-4:2014 without any modification.

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## Introduction

The objective of the ISO 17225 series is to provide unambiguous and clear classification principles for solid biofuels; to serve as a tool to enable efficient trading of biofuels; to enable good understanding between seller and buyer as well as a tool for communication with equipment manufacturers. It also facilitates authority permission procedures and reporting.

This part of ISO 17225 supports the use of graded wood chips for residential, small commercial and public building applications.

The residential, small commercial and public building applications require higher quality fuel for the following reasons:

- Small-scale equipment usually does not have advanced controls and flue gas cleaning.
- Appliances are not generally managed by professional heating engineers.
- Appliances are often located in residential and populated districts.

NOTE 1 Wood chips produced according to this part of ISO 17225 may be used in boilers tested according to EN 303-5[1].

NOTE 2 For individual contracts, ISO 17225-1 can be used.

Although these product standards may be obtained separately, they require a general understanding of the standards based on and supporting ISO 17225-1. It is recommended to obtain and use ISO 17225-1 in conjunction with these standards.

# Solid biofuels — Fuel specifications and classes —

## Part 4: Graded wood chips

### 1 Scope

This part of ISO 17225 determines the fuel quality classes and specifications of graded wood chips. This part of ISO 17225 covers only wood chips produced from the following raw materials (see ISO 17225-1, Table 1):

- 1.1 Forest, plantation and other virgin wood
- 1.2 By-products and residues from wood processing industry
- 1.3.1 Chemically untreated used wood

### 2 Normative references

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

NOTE ISO standards describing methods for analysis of fuel properties listed in the Bibliography, will become normative references when they are published.

ISO 16559, *Solid biofuels — Terminology, definitions and descriptions*<sup>1)</sup>

ISO 16948, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen*<sup>2)</sup>

ISO 16968, *Solid biofuels — Determination of minor elements*<sup>3)</sup>

ISO 16994, *Solid biofuels — Determination of total content of sulfur and chlorine*<sup>4)</sup>

ISO 17225-1, *Solid biofuels — Fuel specifications and classes — Part 1: General requirements*

ISO 17828, *Solid biofuels — Determination of bulk density*<sup>5)</sup>

ISO 18122, *Solid biofuels — Determination of ash content*<sup>6)</sup>

ISO 18134-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*<sup>7)</sup>

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1) To be published.

2) To be published.

3) To be published.

4) To be published.

5) To be published.

6) To be published.

7) To be published.

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture - Simplified method*<sup>8)</sup>

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16559 and the following apply.

**3.1**  
**wood chips**  
chipped *woody biomass* in the form of pieces with a defined *particle size* produced by mechanical treatment with sharp tools such as knives

Note 1 to entry: Wood chips have a subrectangular shape with a typical length of 5 mm to 50 mm and a low thickness compared to other dimensions.

**3.2**  
**chemical treatment**  
any treatment with chemicals other than air, water or heat

EXAMPLE      Glue and paint.

Note 1 to entry: Examples of chemical treatment are listed in ISO 17225-1.

**3.3**  
**contamination**  
exposure to impurity such as poisonous or polluting substance to a fuel

**3.4**  
**commercial application**  
facility that utilises solid biofuel burning appliances or equipment that have similar fuel requirements as residential appliances

Note 1 to entry: Commercial applications should not be confused with industrial applications, which can utilize a much wider array of materials and have vastly different fuel requirements.

### 4 Symbols and abbreviated terms

The symbols and abbreviated terms used in this part of ISO 17225 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 on dry basis, $A_d$ [w-%]
BD	Designation for bulk density as received [kg/m <sup>3</sup> ]
P	Designation for particle size distribution
M	Designation for moisture content as received on wet basis, $M_{ar}$ [w-%]
Q	Designation for net calorific value as received, $q_{p,net,ar}$ [MJ/kg or kWh/kg or MWh/t] at constant pressure

NOTE 1    1 MJ/kg equals 1 GJ/t or 0,2778 kWh/kg (1 kWh/kg equals 1 MWh/t and 1 MWh/t is 3,6 MJ/kg).  
1 g/cm<sup>3</sup> equals 1 kg/dm<sup>3</sup>. 1 mg/kg equals 0,000 1 % or 1 ppm.

8) To be published.