

TAHKED BIOKÜTUSED. KÜTUSTE
SPETSIFIKATSIOONID JA KLASSID. OSA 4:
KLASSIFITSEERITUD HAKKPUIT

Solid biofuels - Fuel specifications and classes - Part 4:
Graded wood chips (ISO 17225-4:2021)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 17225-4:2021 sisaldab Euroopa standardi EN ISO 17225-4:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 17225-4:2021 consists of the English text of the European standard EN ISO 17225-4:2021.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.03.2021.	Date of Availability of the European standard is 10.03.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 27.190, 75.160.40

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

**Solid biofuels - Fuel specifications and classes - Part 4:
Graded wood chips (ISO 17225-4:2021)**

Biocombustibles solides - Classes et spécifications des
combustibles - Partie 4: Classes de plaquettes de bois
(ISO 17225-4:2021)

Biogene Festbrennstoffe - Brennstoffspezifikationen
und -klassen - Teil 4: Klassifizierung von
Holzhackschnitzel (ISO 17225-4:2021)

This European Standard was approved by CEN on 8 January 2021.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 17225-4:2021) 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 September 2021, and conflicting national standards shall be withdrawn at the latest by September 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 17225-4:2014.

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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 17225-4:2021 has been approved by CEN as EN ISO 17225-4:2021 without any modification.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	2
5 Specification of graded wood chips	3
Annex A (informative) General guidelines for bulk density of graded wood chips	7
Bibliography	8

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee TC238, *Solid biofuels*.

This second edition cancels and replaces the first edition (ISO 17225-4:2014), which has been technically revised. The main changes compared to the previous edition are as follows:

- particle size distribution classification updated;
- moisture and ash content classes updated;
- [Annex A](#) updated.

A list of all parts in the ISO 17225 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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 solid 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 [2].

This document supports the use of graded wood chips for small and medium residential, commercial and public building applications.

Depending on the type of energy conversion technology used (boilers, heaters, gasifiers, etc., the tolerances for a particular quality of wood chips will be different.

Scales of applications and their typical operation range:

- below 100 kW (Residential);
- from 75 to 500 kW (Small; e.g. residential, public and commercial buildings);
- from 500 kW to 1,5 MW (Medium; public and commercial buildings);
- 1,5 MW to 5 MW (Large; small industrial facilities and district heating);
- over 5 MW (Industrial; recommended to use 'ISO 17225-1 or ISO/DIS 17225-9¹⁾)

The scale used for grouping the applications utilizing wood chips is for illustration only and in practice, some overlaps between the applications and the scales are expected.

The residential, small and medium commercial and public building applications require high 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 document can be used in boilers tested according to EN 303-5[1].

NOTE 2 For individual contracts and industrial use, ISO 17225-1 or ISO/DIS 17225-9 can be used.

Although this document can be obtained separately, it requires 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 this document.

1) Under preparation. Stage at the time of publication: ISO/DIS 17225-9:2021.

Solid biofuels — Fuel specifications and classes —

Part 4: Graded wood chips

1 Scope

This document determines the fuel quality classes and specifications of graded wood chips. This document covers only wood chips produced from the following raw materials (see ISO 17225-1:2021, 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.

This document covers only wood chips, which are produced with sharp tools, and does not cover hog fuel, which is produced with blunt tools.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 14780, *Solid biofuels — Sample preparation*

ISO 16559, *Solid biofuels — Terminology, definitions and descriptions*

ISO 16948, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen*

ISO 16968, *Solid biofuels — Determination of minor elements*

ISO 16994, *Solid biofuels — Determination of total content of sulfur and chlorine*

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

ISO 17827-1, *Solid biofuels — Determination of particle size distribution for uncompressed fuels — Part 1: Oscillating screen method using sieves with apertures of 3,15 mm and above*

ISO 18122, *Solid biofuels — Determination of ash content*

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified method*

ISO 18135, *Solid Biofuels — Sampling*

ISO 21945, *Solid biofuels — Simplified sampling method for small scale applications*

3 Terms and definitions

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