

**Solid biofuels - Fuel specifications and classes - Part 7:
Graded non-woody briquettes (ISO 17225-7:2014)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 17225-7:2014 sisaldab Euroopa standardi EN ISO 17225-7:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 17225-7:2014 consists of the English text of the European standard EN ISO 17225-7:2014.
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ICS 27.190; 75.160.10

English Version

**Solid biofuels - Fuel specifications and classes - Part 7: Graded
non-woody briquettes (ISO 17225-7:2014)**

Biocombustibles solides - Classes et spécifications des
combustibles - Partie 7: Classes de briquettes d'origine
agricole (ISO 17225-7:2014)

Feste Biobrennstoffe - Brennstoffspezifikationen und -
klassen - Teil 7: Einteilung von nicht-holzartigen Briketts
(ISO 17225-7:2014)

This European Standard was approved by CEN on 29 March 2014.

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Foreword

This document (EN ISO 17225-7:2014) 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of an identical text or by endorsement, at the latest by November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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Endorsement notice

The text of ISO 17225-7:2014 has been approved by CEN as EN ISO 17225-7:2014 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 will also facilitate authority permission procedures and reporting.

This part of ISO 17225 supports the use of graded non-woody pellets 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 does not usually have advanced controls and flue gas cleaning
- Appliances is not generally managed by professional heating engineers
- Appliances are often located in residential and populated districts

Non-woody briquettes have high ash, chlorine, nitrogen, sulfur and major element contents, so non-woody briquettes are recommended to be used in appliances, which are specially designed or adjusted for this kind of briquettes.

NOTE 1 Briquettes produced according to this part of ISO 17225 may be used in stoves, fireplaces, cookers, roomheaters and multifired sauna stoves, which are tested according to European standards EN 13229[1], EN 12815[2], EN 12809[3], EN 13240[4], EN 15250[5] and EN 15821[6], and boilers systems tested according to EN 303-5[7].

NOTE 2 When using non-woody materials for combustion special attention should be paid to the risk of corrosion in small and medium scale boilers and flue gas systems. Be aware that herbaceous or fruit biomass may influence the fuel ash composition differently depending on growth and soil conditions. The content of chlorine, phosphate and potassium in the material may form chlorides and phosphates and other chemical compounds resulting in high hydrochloric emissions and chemically active ash with low melting temperature causing corrosion.

NOTE 3 In general non-woody biomass materials have higher content of ash forming elements and produces ashes with lower melting temperature compared to most woody biomass. This may result in fouling, slagging and corrosion inside boilers. These problems are especially related to materials that contain high content of potassium (K) and silicate (Si) and low content of calcium (Ca).

NOTE 4 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 7: Graded non-woody briquettes

1 Scope

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

- 2 Herbaceous biomass

NOTE 1 *Herbaceous biomass* is from plants that have a non-woody stem and which die back at the end of the growing season. It includes grains or seeds crops from food production or processing industry and their by-products such as cereals.

- 3 Fruit biomass
- 4 Aquatic biomass
- 5 Biomass blends and mixtures

NOTE 2 Group 5 *Blends and mixtures* include blends and mixtures from the main origin-based solid biofuel groups woody, herbaceous biomass, fruit biomass and aquatic biomass.

Blends are intentionally mixed biofuels, whereas mixtures are unintentionally mixed biofuels. The origin of the blend and mixture is to be described using ISO 17225-1, Table 1.

If solid biofuel blend or mixture contains chemically treated material it shall be stated.

NOTE 3 Thermally treated biomass briquettes (e.g. torrefied briquettes) are not included in the scope of this part of ISO 17225. Torrefaction is a mild pre-treatment of biomass at a temperature between 200 – 300 °C.

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*¹⁾

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

ISO 16968, *Solid biofuels — Determination of minor elements*³⁾

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

1) To be published.

2) To be published.

3) To be published.

4) To be published.

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

ISO 18122, *Solid biofuels — Determination of ash content*⁵⁾

ISO 18134-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*⁶⁾

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture - Simplified method*⁷⁾

3 Terms and definitions

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

3.1
non-woody briquette
densified biofuel made with or without additives in form of cubiform, prismatic or cylindrical unit with diameter of more than 25 mm produced by compressing milled biomass

Note 1 to entry: The raw material for non-woody briquettes can be herbaceous, fruit or aquatic biomass or biomass blends and mixtures.

Note 2 to entry: Briquettes are usually manufactured in a piston press, with the total moisture content on wet basis usually being less than 15 % of the mass.

3.2
additive
material which has been intentionally introduced into the fuel feed stock to improve quality of fuel (e.g. combustion properties), to reduce emissions or to make production more efficient

Note 1 to entry: Trace amounts of e.g. grease or other lubricants that are introduced into the fuel processing stream as part of normal mill operations are not considered as additives.

3.3
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.

3.4
commercial application
facility that utilize 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.

5) To be published.

6) To be published.

7) To be published.