ELAMUTE TAHKEKÜTTESEADMED. OSA 1: ÜLDNÕUDED JA KATSEMEETODID

Residential solid fuel burning appliances - Part 1: General requirements and test methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16510-1:2023 sisaldab Euroopa standardi EN 16510-1:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 16510-1:2023 consists of the English text of the European standard EN 16510-1:2022.
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 21.12.2022.	Date of Availability of the European standard is 21.12.2022.
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 97.100.30

EUROPEAN STANDARD

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EN 16510-1

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Supersedes EN 12809:2001, EN 12815:2001, EN 13229:2001, EN 13240:2001, EN 16510-1:2018

English Version

Residential solid fuel burning appliances - Part 1: General requirements and test methods

Appareils de chauffage domestiques à combustible solide - Partie 1 : Exigences générales et méthodes d'essai

Häusliche Feuerstätten für feste Brennstoffe - Teil 1: Allgemeine Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 23 October 2022.

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

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European foreword

This document (EN 16510-1:2022) has been prepared by Technical Committee CEN/TC 295 “Residential solid fuel burning appliances”, the secretariat of which is held by BSI.

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 June 2023, and conflicting national standards shall be withdrawn at the latest by November 2025.

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 16510-1:2018, EN 12815:2001, EN 13240:2001, EN 13229:2001 and EN 12809:2001 as amended and corrected.

In relation to EN 16510-1:2018 the following changes have been made:

— modifications to align the document with the standardisation request M/577 and the parts 2 (to be harmonized);

— emission test procedures optimized;

— new test procedure for particulate matter (PM) measurement integrated;

— Clause 8 “Environmental sustainability” completely revised;

— Annex J “A-deviations” deleted.

The structure of EN 16510, *Residential solid fuel burning appliances*, is as follows:

— *Part 1: General requirements and test methods*;

— *Part 2-1: Roomheaters*;

— *Part 2-2: Inset appliances including open fires*;

— *Part 2-3: Cookers*;

— *Part 2-4: Independent boilers — Nominal heat output up to 50 kW*;

— *Part 2-5: Slow heat release appliances*;

— *Part 2-6: Mechanically by wood pellets fed roomheaters, inset appliances and cookers.*

Other sections of Part 2 will be added to cover residential solid fuel burning appliances not included in parts 2-1 to 2-6.

EN 16510-1 is used in conjunction with the appropriate Part 2. The Parts 2-1 to 2-6 contain clauses that supplement or modify the corresponding clauses in this Part 1. Part 1 together with the relevant Part 2 provides the requirements for each type of appliance.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Türkiye and the United Kingdom.

1 Scope

This document is applicable to residential solid fuel burning appliances of which the nominal space heat output is more than 6 % of the combined nominal space heat output and nominal water heat output (total heat output).

This document specifies requirements relating to the design, manufacture, construction, safety and performance (efficiency and emission) of appliances fired by solid fuel (hereafter referred to as "appliance(s)") and provides instructions for them. Furthermore, it also gives provisions for the evaluation of conformity, i.e. initial type testing (ITT) and factory production control (FPC) and marking of these appliances.

This document specifies CO, NO_x, OGC and particulate matter (PM) emission test methods.

This document is as well applicable to appliances intended to carry the load of a chimney.

Appliances receiving combustion air through ductwork from outside the external envelope, which is not air tight, are not considered roomsealed.

This document is not applicable to appliances with boiler parts in contact with fire or flue gases other than when the boiler parts are manufactured from steel or cast iron.

This document is not applicable to appliances with a boiler intended for water systems having:

— water temperatures above 110 °C and/or an operating pressure of more than 300 kPa (3 bar);

— direct contact with sanitary hot water.

This document is not applicable to appliances to be operated with ventilating systems which are intended to operate with pressure below -15 Pa in the room of installation of the appliance in relation to the outside atmosphere.

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.

EN 303-5:2021, *Heating boilers — Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW — Terminology, requirements, testing and marking*

EN 613:2000[1], *Independent gas-fired convection heaters*

EN 1561:2011, *Founding — Grey cast irons*

EN 1563:2018, *Founding — Spheroidal graphite cast irons*

EN 10029:2010, *Hot-rolled steel plates 3 mm thick or above — Tolerances on dimensions and shape*

EN 12828:2012+A1:2014, *Heating systems in buildings — Design for water-based heating systems*

EN 13384-2:2015+A1:2019, *Chimneys — Thermal and fluid dynamic calculation methods — Part 2: Chimneys serving more than one combustion appliance*

[1] As impacted by EN 613:2000/A1:2003.

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 14597:2012, *Temperature control devices and temperature limiters for heat generating systems*

EN 14792:2017, *Stationary source emissions — Determination of mass concentration of nitrogen oxides — Standard reference method: chemiluminescence*

EN 14793:2017, *Stationary source emissions — Demonstration of equivalence of an alternative method with a reference method*

EN 15456:2008, *Heating boilers — Electrical power consumption for heat generators — System boundaries — Measurements*

EN 15804:2012+A2:2019, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

EN 60335-2-102:2016, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections (IEC 60335-2-102:2004)*

EN 60730-1:2016[2], *Automatic electrical controls — Part 1: General requirements (IEC 60730-1:2013, modified)*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 228-2:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 2: Verification by means of limit gauges (ISO 228-2:1987)*

EN ISO 9606-1:2017, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1:2012 including Cor 1:2012 and Cor 2:2013)*

EN ISO 9606-2:2004, *Qualification test of welders — Fusion welding — Part 2: Aluminium and aluminium alloys (ISO 9606-2:2004)*

EN ISO 16948:2015, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen (ISO 16948:2015)*

EN ISO 16994:2016, *Solid biofuels — Determination of total content of sulfur and chlorine (ISO 16994:2016)*

EN ISO 18122:2015, *Solid biofuels — Determination of ash content (ISO 18122:2015)*

EN ISO 18123:2015, *Solid biofuels — Determination of the content of volatile matter (ISO 18123:2015)*

EN ISO 18125:2017, *Solid biofuels — Determination of calorific value (ISO 18125:2017)*

EN ISO 18134-1:2015, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method (ISO 18134-1:2015)*

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[2] As impacted by EN 60730-1:2016/A1:2019 and EN 60730-1:2016/A2:2022.

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 7-2:2000, *Pipe threads where pressure-tight joints are made on the threads — Part 2: Verification by means of limit gauges*

ISO 331:1983[3], *Coal — Determination of moisture in the analysis sample — Direct gravimetric method*

ISO 334:2020, *Coal and coke — Determination of total sulfur — Eschka method*

ISO 501:2012, *Hard coal — Determination of the crucible swelling number*

ISO 562:2010, *Hard coal and coke — Determination of volatile matter*

ISO 609:1996, *Solid mineral fuels — Determination of carbon and hydrogen — High temperature combustion method*

ISO 687:2010, *Solid mineral fuels — Coke — Determination of moisture in the general analysis test sample*

ISO 1171:2010, *Solid mineral fuels — Determination of ash*

ISO 1928:2020, *Coal and coke — Determination of gross calorific value*

ISO 10849:1996, *Stationary source emissions — Determination of the mass concentration of nitrogen oxides — Performance characteristics of automated measuring systems*

ISO 19579:2006, *Solid mineral fuels — Determination of sulfur by IR spectrometry*

IEC 62301:2011, *Household electrical appliances — Measurement of standby power*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at https://www.electropedia.org/

3.1
accumulator
part of the appliance designed for accumulation of the heat released by the Kachelofen/Putzofen heat generator and which releases this heat slowly

[3] ISO 331:1983 is withdrawn.