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Water-tube boilers and auxiliary installations - Part 8: Requirements for firing systems for liquid and gaseous fuels for the boiler

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12952-8:2022 sisaldab Euroopa standardi EN 12952-8:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 12952-8:2022 consists of the English text of the European standard EN 12952-8:2022.
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 19.10.2022.	Date of Availability of the European standard is 19.10.2022.
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.

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English Version

Water-tube boilers and auxiliary installations - Part 8: Requirements for firing systems for liquid and gaseous fuels for the boiler

Chaudières à tubes d'eau et installations auxiliaires - Partie 8 : Exigences pour les équipements de chauffe pour combustibles gazeux et liquides de la chaudière

Wasserrohrkessel und Anlagenkomponenten - Teil 8: Anforderungen an Feuerungsanlagen für flüssige und gasförmige Brennstoffe für den Kessel

This European Standard was approved by CEN on 15 August 2022.

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

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European foreword

This document (EN 12952-8:2022) has been prepared by Technical Committee CEN/TC 269 “Shell and water-tube boilers”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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 12952-8:2002.

The technical modifications in comparison with the previous edition are listed in Annex D.

The EN 12952 series “Water-tube boilers and auxiliary installations” consists of the following Parts:

- *Part 1: General*;
- *Part 2: Materials for pressure parts of boilers and accessories*;
- *Part 3: Design and calculation for pressure parts*;
- *Part 4: In-service boiler life expectancy calculations*;
- *Part 5: Workmanship and construction of pressure parts of the boiler*;
- *Part 6: Inspection during construction, documentation and marking of pressure parts of the boiler*;
- *Part 7: Requirements for equipment for the boiler*;
- *Part 8: Requirements for firing systems for liquid and gaseous fuels for the boiler*;
- *Part 9: Requirements for firing systems for pulverized solid fuels for the boiler*;
- *Part 10: Requirements for safeguards against excessive pressure*;
- *Part 11: Requirements for limiting devices of the boiler and accessories*;
- *Part 12: Requirements for boiler feedwater and boiler water quality*;
- *Part 13: Requirements for flue gas cleaning systems*;
- *Part 14: Requirements for flue gas DENOX systems using liquefied pressurized ammonia and ammonia water solution*;
- *Part 15: Acceptance tests*;
- *Part 16: Requirements for grate and fluidized-bed firing systems for solid fuels for the boiler*;
- *CR 12952 Part 17: Guideline for the involvement of an inspection body independent of the manufacturer.*

- *Part 18: Operating instructions*

Although these parts can be obtained separately, it should be recognized that the parts are inter-dependent. As such, the design and manufacture of water-tube boilers requires the application of more than one part in order for the requirements of the document to be satisfactorily fulfilled.

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

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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

1.1 Firing systems

This document specifies requirements for liquid and gaseous fuel firing systems of steam boilers and hot water generators as defined in EN 12952-1:2015.

These requirements also apply to firing systems of chemical recovery boilers (black liquor boilers) with the additions and amendments specified in Annex A.

These requirements also apply to gas turbines in combination with fired/unfired heat recovery steam generators with the additions and amendments specified in Annex B.

NOTE 1 This document is not applicable to coil type boilers (flash boilers/small boilers) that use burners in accordance with EN 12953-7 for single burner installations.

NOTE 2 This document is not applicable to the storage of liquid fuels and to transfer stations of long-distance gas pipelines.

1.2 Fuels

This document specifies requirements which cover the use of liquid and gaseous fuels as defined in this document. Fuels deviating from standardized commercially available types can require additional or alternative safety measures. For black liquor these safety measures are given in Annex A.

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 161:2011+A3:2013, *Automatic shut-off valves for gas burners and gas appliances*

EN 751-3:1996,[1] *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water – Part 3: Unsintered PTFE tapes*

EN 12952-18:2012, *Water-tube boilers and auxiliary installations - Part 18: Operating instructions*

EN 12952-5:2021, *Water-tube boilers and auxiliary installations - Part 5: Workmanship and construction of pressure parts of the boiler*

EN 13480-2:2017, *Metallic industrial piping - Part 2: Materials*

EN 16678:2015, *Safety and control devices for gas burners and gas burning appliances - Automatic shut-off valves for operating pressure of above 500 kPa up to and including 6 300 kPa*

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

[1] As impacted by EN 751-3:1996/AC:1997.

EN ISO 23553-1:2022, *Safety and control devices for oil burners and oil-burning appliances - Particular requirements - Part 1: Automatic and semi-automatic valves (ISO 23553-1:2022)*

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

3 Terms and definitions

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

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

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

3.1
black liquor
spent liquor from the pulp cook

3.2
black liquor gun
device for the introduction of the black liquor as a spray of droplets into the furnace

Note 1 to entry: The black liquor gun is not a burner.

3.3
high volume low concentration odorous gas
mixtures of air and a low concentration of odorous gases collected from the pulp mill processes, where the concentration of the combustible odorous gas is always kept below the lower explosion limit

3.4
burner
device (including main or igniter burners) for the introduction of fuel and air into a combustion chamber of a steam generator at required velocities, turbulence and local fuel concentration to establish and maintain proper ignition and stable combustion of the fuel

Note 1 to entry: Burners are differentiated by their mode of operation.

3.4.1
chemical recovery boiler start-up burner
oil- or gasfired burner mainly intended for the initiation of the black liquor combustion process

Note 1 to entry: The chemical recovery boiler start-up burners are located in and integrated with a combustion air register, like the primary or the secondary air register of the furnace. Thus, they have no individual air supply and no individual combustion air control.

3.4.2
multi-fuel burner
burner in which more than one fuel is burned either simultaneously or alternately

3.4.3
pilot burner
burner which maintains a proper permanent ignition source for one or a group of other non-monitored burners