

Water-tube boilers and auxiliary installations - Part 13: Requirements for flue gas cleaning systems

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12952-13:2003 sisaldab Euroopa standardi EN 12952-13:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.04.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12952-13:2003 consists of the English text of the European standard EN 12952-13:2003.</p> <p>This document is endorsed on 15.04.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This part of this European Standard applies to the design of equipment for boiler plants to reduce air pollutants in the flue gases</p>	<p>Scope: This part of this European Standard applies to the design of equipment for boiler plants to reduce air pollutants in the flue gases</p>
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ICS 27.040, 27.060.30

Võtmesõnad: boilers, heat exchangers, installations in need of monitoring, materials, mathematical calculations, plant, production, quality requirements, specification (approval), specifications, steam boilers, steam generation, steam generators, tanks, water-tube boilers

ICS 27.040; 27.060.30

English version

Water-tube boilers and auxiliary installations

Part 13: Requirements for flue gas cleaning systems

Chaudières à tubes d'eau et installations auxiliaires – Partie 13: Exigences pour les systèmes de traitement des fumées

Wasserrohrkessel und Anlagenkomponenten – Teil 13: Anforderungen an Rauchgasreinigungsanlagen

This European Standard was approved by CEN on 2002-12-27.

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 Management Centre or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This document (EN 12952-13:2003) 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 September 2003, and conflicting national standards shall be withdrawn at the latest by September 2003.

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).

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

The European Standard EN 12952 concerning 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 and safety circuits 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*
- *Part 15: Acceptance tests*
- *Part 16: Requirements for grate and fluidized bed firing systems for solid fuels for the boiler*

CR 12952-17, *Water boilers and auxiliary installations - Part 17: Guideline for the involvement of an inspection body independent of the manufacturer*

Although, these parts may be obtained separately, it should be recognised 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 European Standard to be satisfactorily fulfilled.

NOTE Parts 4 and 15 are not applicable during the design, construction and installation stages.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of this European Standard applies to the design of equipment for boiler plants to reduce air pollutants in the flue gases.

NOTE The effects of explosion are not considered in this part of this European Standard.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12952-8, *Water-tube boilers and auxiliary installations – Part 8: Requirements for firing systems for liquid and gaseous fuels for the boiler*

prEN 12952-14, *Water-tube boilers and auxiliary installations – Part 14: Requirements for flue gas DENOX-systems*

EN 13445 (all parts), *Unfired pressure vessels*.

prEN 50156-1:1997, *Electrical equipment for furnaces and ancillary equipment – Part 1: Requirements for application design and installation*.

3 Design, calculation, construction and manufacture

3.1 The plant components, vessels, absorbers, DENOX reactors, scrubbers, heat exchangers, pipework, ducts, expansion joints, shut-off devices, blanking disks and other related equipment shall be designed such that they will safely withstand the mechanical loadings from internal pressure, vacuum, if any, dead weight and additional forces e.g. expansion joint working spring rates, at the intended operating temperature and for the service lifetime. Pressures and loadings resulting from operating upset conditions and their consequences shall be considered separately. In such cases, the safety factor referred to the pertinent yield stress shall be at least 1,0.

Temperatures below dew point, if any, and the consequences arising therefrom shall be prevented by suitable measures or by proper selection of materials. Additional effects such as corrosion/erosion attack by other chemicals in the flue gas may be considered by wall thickness allowances, if required. The suitability of plant components containing water-polluting substances shall comply with European Standards (e.g. prEN 12285).

3.2 The design shall be based on the load assumptions of EN 13445 unless deviations from these assumptions occur locally.

For additional loadings not covered by the above mentioned standard the respective values shall be taken from the design data, in which case distinction has to be made between normal and abnormal operating load conditions.

3.3 Unfired pressure vessels included in the system shall be designed and manufactured in accordance with EN 13445.

3.4 The design shall assume that under any operating condition the flue gas pressure is not higher or lower than the value used in the design. Particular consideration of the damper positions and the heads of pumps and fans shall be taken into account.

3.5 The design of the components shall take into account the requirements for corrosion resistant materials, for items such as linings and coatings.

3.6 Structural components of the flue-gas cleaning plant shall meet the relevant European Standards (e.g. ENV 1993, ENV 1994). Fire-protection requirements shall be taken into account.