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Water-tube boilers and auxiliary installations - Part 3: Design and calculation for pressure parts of the boiler

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Water-tube boilers and auxiliary installations - Part 3: Design and calculation for pressure parts of the boiler

Chaudière à tubes d'eau et installations auxiliaires -
Partie 3 : Conception et calcul des parties sous pression
de la chaudière

Wasserrohrkessel und Anlagenkomponenten - Teil 3:
Konstruktion und Berechnung für drucktragende
Kesselteile

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EN 12952-3:2022 (E)**European foreword**

This document (EN 12952-3:2022) 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of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.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 12952-3:2011.

Annex F provides details of significant technical changes between this document and the previous edition.

The EN 12952 series, 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 of the boiler*
- *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 safety devices 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 liquified 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 this document to be satisfactorily fulfilled.

NOTE A “Boiler Helpdesk” has been established in CEN/TC 269 which may be contacted for any questions regarding the application of European Standards series EN 12952 and EN 12953, see the following website: <http://www.boiler-helpdesk.din.de>.

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.

EN 12952-3:2022 (E)**1 Scope**

This document specifies the requirements for the design and calculation of water-tube boilers as defined in EN 12952-1.

The purpose of this document is to ensure that the hazards associated with water-tube boilers are reduced to a minimum by the proper application of the design according to this part of EN 12952.

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 1092-1:2018, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: Steel flanges*

EN 1759-1:2004, *Flanges and their joint - Circular flanges for pipes, valves, fittings and accessories, Class designated - Part 1: Steel flanges, NPS 1/2 to 24*

EN 10028-1:2017, *Flat products made of steels for pressure purposes - Part 1: General requirements*

EN 10164:2018, *Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions*

EN 10253-2:2021, *Butt-welding pipe fittings — Part 2: Non alloy and ferritic alloy steels with specific inspection requirements*

EN 10266:2003, *Steel tubes, fittings and structural hollow sections - Symbols and definitions of terms for use in product standards*

EN 12952-1:2015, *Water-tube boilers and auxiliary installations - Part 1: General*

EN 12952-2:2021, *Water-tube boilers and auxiliary installations - Part 2: Materials for pressure parts of boilers and accessories*

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

EN 12952-6:2021, *Water-tube boilers and auxiliary installations - Part 6: Inspection during construction, documentation and marking of pressure parts of the boiler*

EN 12952-7:2012, *Water-tube boilers and auxiliary installations - Part 7: Requirements for equipment for the boiler*

EN 12952-12:2003, *Water-tube boilers and auxiliary installations - Part 12: Requirements for boiler feedwater and boiler water quality*

EN 12953-3:2016, *Shell boilers - Part 3: Design and calculation for pressure parts*

EN 13445-3:2021, *Unfired pressure vessels — Part 3: Design*

EN 13480-3:2017,¹ *Metallic industrial piping — Part 3: Design and calculation*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

¹ As impacted by EN 13480-3:2017/A1:2021, EN 13480-3:2017/A2:2020, EN 13480-3:2017/A3:2020 and EN 13480-3:2017/A4:2021.