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Water-tube boilers and auxiliary installations - Part 5: Workmanship and construction of 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 5: Workmanship and construction of pressure parts of the boiler

Chaudières à tubes d'eau et installations auxiliaires -
Partie 5: Fabrication et construction des parties sous
pression des chaudières

Wasserrohrkessel und Anlagenkomponenten - Teil 5:
Verarbeitung und Bauausführung für drucktragende
Kesselteile

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EN 12952-5:2021 (E)**European foreword**

This document (EN 12952-5:2021) 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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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 12952-5:2011.

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

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;*
- *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.

NOTE A “Boiler Helpdesk” has been established in CEN/TC 269 which can be contacted for any questions regarding the application of EN 12952 series and EN 12953 series, 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, Turkey and the United Kingdom.

EN 12952-5:2021 (E)**1 Scope**

This document specifies requirements for the workmanship and construction of water-tube boilers as defined in EN 12952-1:2015.

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 10025-2:2019, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10028-2:2017, *Flat products made of steels for pressure purposes - Part 2: Non-alloy and alloy steels with specified elevated temperature properties*

EN 10204:2004, *Metallic products - Types of inspection documents*

EN 10216-2:2013, *Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties*

EN 10253-2:2007, *Butt-welding pipe fittings - Part 2: Non alloy and ferritic alloy steels with specific inspection requirements*

EN 10253-4:2008,¹ *Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements*

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 12952-3:2011, *Water-tube boilers and auxiliary installations - Part 3: Design and calculation for 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 ISO 148-1:2016, *Metallic materials - Charpy pendulum impact test - Part 1: Test method (ISO 148-1:2016)*

¹ Document impacted by EN 10253-4:2008/AC:2009.

EN ISO 3452-1:2013, *Non-destructive testing - Penetrant testing - Part 1: General principles (ISO 3452-1:2013, Corrected version 2014-05-01)*

EN ISO 4759-1:2000, *Tolerances for fasteners - Part 1: Bolts, screws, studs and nuts - Product grades A, B and C (ISO 4759-1:2000)*

EN ISO 6507-1:2018, *Metallic materials - Vickers hardness test - Part 1: Test method (ISO 6507-1:2018)*

EN ISO 6892-1:2019, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1:2019)*

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 14555:2017, *Welding - Arc stud welding of metallic materials (ISO 14555:2017)*

EN ISO 15609 (all parts), *Specification and qualification of welding procedures for metallic materials — Welding procedure specification (ISO 15609, all parts)*

EN ISO 15613:2004, *Specification and qualification of welding procedures for metallic materials - Qualification based on pre-production welding test (ISO 15613:2004)*

EN ISO 15614-1:2017,² *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2017)*

EN ISO 15614-7:2019, *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 7: Overlay welding (ISO 15614-7:2016)*

EN ISO 14732:2013, *Welding personnel - Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials (ISO 14732:2013)*

EN ISO 17638:2016, *Non-destructive testing of welds - Magnetic particle testing (ISO 17638:2016)*

EN ISO 17639:2013, *Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds (ISO 17639:2003)*

EN ISO 17663:2009, *Welding - Quality requirements for heat treatment in connection with welding and allied processes (ISO 17663:2009)*

EN ISO 23277:2015, *Non-destructive testing of welds - Penetrant testing - Acceptance levels (ISO 23277:2015)*

EN ISO 23278:2015, *Non-destructive testing of welds - Magnetic particle testing - Acceptance levels (ISO 23278:2015)*

CEN ISO/TR 15608:2017, *Welding — Guidelines for a metallic material grouping system (ISO/TR 15608:2017)*

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