

LEEKTORUKATLAD. OSA 5: KONTROLL KATLA
SURVEDETAILIDE VALMISTAMISE,
DOKUMENTEERIMISE JA MÄRGISTAMISE AJAL

Shell boilers - Part 5: Inspection during construction,
documentation and marking of pressure parts of the
boiler

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12953-5:2020 sisaldab Euroopa standardi EN 12953-5:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 12953-5:2020 consists of the English text of the European standard EN 12953-5:2020.
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EUROPEAN STANDARD

EN 12953-5

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English Version

Shell boilers - Part 5: Inspection during construction, documentation and marking of pressure parts of the boiler

Chaudières à tubes de fumée - Partie 5 : Contrôles en
cours de construction, documentation et marquage des
parties sous pression de la chaudière

Großwasserraumkessel - Teil 5: Prüfung während der
Herstellung, Dokumentation und Kennzeichnung für
drucktragende Kesselteile

This European Standard was approved by CEN on 6 January 2020.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 12953-5:2020) 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of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

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 12953-5:2002.

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 informative Annex B lists the significant technical changes between this document and the previous edition.

EN 12953, *Shell boilers*, 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: Workmanship and construction of pressure parts of the boiler;*
- *Part 5: Inspection during construction, documentation and marking of pressure parts of the boiler;*
- *Part 6: Requirements for equipment for the boiler;*
- *Part 7: Requirements for firing systems for liquid and gaseous fuels for the boilers;*
- *Part 8: Requirements for safeguards against excessive pressure;*
- *Part 9: Requirements for limiting devices of the boiler and accessories;*
- *Part 10: Requirements for feedwater and boiler water quality;*
- *Part 11: Acceptance tests;*
- *Part 12: Requirements for grate firing systems for solid fuels for the boiler;*
- *Part 13: Operating instructions;*
- *Part 14: Guideline for involvement of an inspection body independent of the manufacturer [CR 12953-14].*

Although these parts can be obtained separately, the parts are interdependent. As such, the design and manufacture of shell boilers requires the application of more than one part in order for the requirements of the standard 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 the European Standards series EN 12952 and EN 12953, see the following website: <http://www.boiler-helpdesk.din.de>.

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.

1 Scope

This document specifies requirements for the inspection during and after construction, documentation and marking of shell boilers as defined in EN 12953-1:2012.

NOTE For other components, such as water tube walls, reference will be made to the EN 12952 series [1].

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 764-1:2015+A1:2016, *Pressure equipment - Part 1: Vocabulary*

EN 764-2:2012, *Pressure equipment - Part 2: Quantities, symbols and units*

EN 12953-1:2012, *Shell boilers - Part 1: General*

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

EN 12953-4:2018, *Shell boilers - Part 4: Workmanship and construction of pressure parts of the boiler*

EN 13018:2016, *Non-destructive testing - Visual testing - General principles*

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 4136:2012, *Destructive tests on welds in metallic materials - Transverse tensile test (ISO 4136:2012)*

EN ISO 5173:2010, *Destructive tests on welds in metallic materials - Bend tests (ISO 5173:2009)*

EN ISO 5178:2019, *Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints (ISO 5178:2019)*

EN ISO 5817:2014, *Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections (ISO 5817:2014)*

EN ISO 6520-1:2007, *Welding and allied processes - Classification of geometric imperfections in metallic materials - Part 1: Fusion welding (ISO 6520-1:2007)*

EN ISO 9016:2012, *Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination (ISO 9016:2012)*

EN ISO 9712:2012, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2012)*

EN ISO 11666:2018, *Non-destructive testing of welds - Ultrasonic testing - Acceptance levels (ISO 11666:2018)*

EN ISO 15614-1:2017, *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, Corrected version 2017-10-01)*

EN ISO 17636-1:2013, *Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film (ISO 17636-1:2013)*

EN ISO 17636-2:2013, *Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors (ISO 17636-2:2013)*

EN ISO 17637:2016, *Non-destructive testing of welds - Visual testing of fusion-welded joints (ISO 17637:2016)*

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 17640:2018, *Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (ISO 17640:2018)*

EN ISO 23279:2017, *Non-destructive testing of welds - Ultrasonic testing - Characterization of discontinuities in welds (ISO 23279:2017)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12953-1:2012, EN 764-1:2015+A1:2016, EN 764-2:2012 and the following apply.

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

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

3.1

seam

generic term for welded joints, welded seams or welds

3.2

non-destructive testing (NDT)

non-destructive examination (NDE)

conventional and new techniques of radiographic, ultrasonic, magnetic particle examination, visual testing and/or penetrant testing

3.3

pressure part

pressure bearing part

component directly subjected to pressure (e.g. shell) or needed to withstand the pressure (e.g. reinforcement ring of the branch or the furnace)

4 Symbols

For the purposes of this document, the symbols given in EN 12953-1:2012, Table 1 shall apply.