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Stainless steel steam boilers

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English Version

Stainless steel steam boilers

Chaudières à vapeur en acier inoxydable

Edelstahl-Dampfkessel

This European Standard was approved by CEN on 13 December 2020.

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European foreword

This document (EN 14222:2021) has been prepared by Technical Committee CEN/TC 102 “Sterilizers and associated equipment for processing of medical devices”, 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of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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 14222:2003.

This document has been prepared under mandates (M/071 and M/023) 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 Annexes ZA and ZB, which are an integral part of this document.

Further to the updating both technically and editorially, the following changes compared to the previous edition have been made:

- in the title “shell” has been changed to “steam” to read: “stainless steel steam boilers”;
- Scope has been refined by replacing “allowable pressure (PS) of 6 bar” by “allowable pressure (PS) of not greater than 6 bar”;
- Introduction added;
- Normative references and Bibliography have been updated;
- alignment of terminology throughout the document;
- definition of “limiter” has been aligned with EN 12953-9 and new definition of “steam boiler” was introduced;
- requirements on materials have been aligned with new edition of EN 13445-2;
- general requirements for equipment (see 9.1) have been revised, e.g. requirements on materials in contact with steam added;
- requirements on limiting devices and safety circuits (see 9.4) have been fundamentally revised;
- requirements on steam boiler heat supply revised by adding cross-references to requirements of EN 285:2015, or EN 13060:2014+A1:2018 (see 9.5);
- the option of the use of an safety temperature limiter instead of a water level limiter has been addressed (see 9.6.3);
- requirements on steam pressure indication have been revised by adding reference to small steam sterilizers (see 9.7.1);

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- requirements on limiter regarding low water protection (see 9.12.1) have been fundamentally revised;
- inclusion of informative Annex B on Guidance on the intended relationship between this European Standard and the General Safety and Performance Requirements of Regulation (EU) 2017/745 on medical devices aimed to be covered;
- update of Annex ZA on the Relationship between this European Standard and the essential requirements of Directive 2014/68/EU on Pressure Equipment aimed to be covered [OJEC L 189];
- inclusion of Annex ZB on the Relationship between this European Standard and the essential requirements of Directive 93/42/EEC on medical devices aimed to be covered [OJEC L 169].

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.

Introduction

EN 14222 is referred to normatively in EN 285:2015 'Sterilization – Steam sterilizers – Large sterilizers' and can be applied to EN 13060:2014+A1:2018 'Small steam sterilizers', two standards developed by CEN/TC 102 'Sterilizers and associated equipment for processing of medical devices'.

During the systematic review of EN 14222:2003 in 2014, CEN/TC 102 identified and expressed that the standard needed revising to bring it to the state of the art, and hence to enhance the requirements contained in EN 285:2015 and EN 13060:2014+A1:2018.

This document refers to EN 12953, *Shell boilers* and EN 13445, *Unfired pressure vessels*.

EN 14222:2021 (E)**1 Scope**

This document specifies requirements for electrically heated steam boilers manufactured from stainless steel specifically dedicated for generating steam for sterilizers and disinfectors.

This document covers only steam boilers that are heated by immersion heaters and which have a maximum allowable pressure (PS) of not greater than 6 bar, a maximum volume (V) of 1 000 litres and a product of PS · V not greater than 3 000 bar · l.

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 285:2015¹⁾, *Sterilisation — Steam sterilizers — Large sterilizers*

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

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

EN 12953-5:2020, *Shell boilers — Part 5: Inspection during construction, documentation and marking of pressure parts of the boiler*

EN 12953-6:2011, *Shell boilers — Part 6: Requirements for equipment for the boiler*

EN 12953-8:2001, *Shell boilers — Part 8: Requirements for safeguards against excessive pressure*

EN 12953-9:2007, *Shell boilers — Part 9: Requirements for limiting devices of the boiler and accessories*

EN 13060:2014+A1:2018, *Small steam sterilizers*

EN 13445-2:2014²⁾, *Unfired pressure vessels — Part 2: Materials*

EN 13445-3:2014²⁾, *Unfired pressure vessels — Part 3: Design*

EN 13445-4:2014²⁾, *Unfired pressure vessels — Part 4: Fabrication*

EN 13445-5:2014²⁾, *Unfired pressure vessels — Part 5: Inspection and testing*

EN 14597:2012, *Temperature control devices and temperature limiters for heat generating systems*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016, modified)*

EN 61010-1:2010³⁾, *Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements (IEC 61010-1:2010)*

1) This document is being amended by EN 285:2015/FprA1:2020.

2) Including all amendments.

3) This document is impacted by amendment EN 61010-1:2010/A1:2019 and corrigendum EN 61010-1:2010/A1:2019/AC:2019-04.