



SLOVENSKI STANDARD
SIST EN 13445-4:2021/A1:2023
01-junij-2023

Nekurjene tlačne posode - 4. del: Proizvodnja - Dopolnilo A1

Unfired pressure vessels - Part 4: Fabrication

Unbefeuerte Druckbehälter - Teil 4: Herstellung

Réipients sous pression non soumis à la flamme - Partie 4 : Fabrication

Ta slovenski standard je istoveten z: EN 13445-4:2021/A1:2023

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ICS:

23.020.32 Tlačne posode Pressure vessels

SIST EN 13445-4:2021/A1:2023 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13445-4:2021/A1

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English Version

Unfired pressure vessels - Part 4: Fabrication

Réceptacles sous pression non soumis à la flamme -
Partie 4 : Fabrication

Unbefeuerte Druckbehälter - Teil 4: Herstellung

This amendment A1 modifies the European Standard EN 13445-4:2021; it was approved by CEN on 3 March 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword		3
1	Modification to Clause 2, <i>Normative references</i>	4
2	Modification to 5.2.2, <i>Identification system</i>	5
3	Modifications to 7.1, <i>General</i>	5
4	Modifications to 8.3, <i>Welding procedure qualification record (WPQR)</i>	5
5	Modifications to 9.4.3, <i>Longitudinal weld tensile test</i>	6
6	Modification to Bibliography	6

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European foreword

This document (EN 13445-4:2021/A1:2023) has been prepared by Technical Committee CEN/TC 54 “Unfired pressure vessels”, the secretariat of which is held by BSI.

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 October 2023, and conflicting national standards shall be withdrawn at the latest by October 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 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 EN 13445-4:2021.

This document includes the text of the amendment itself. The amendment will be consolidated within EN 13445-4:2021 in accordance with the maintenance system of EN 13445 series approved by the CEN/BT Decision C172/2021.

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 13445-4:2021/A1:2023 (E)**1 Modification to Clause 2, Normative references**

Update the normative references as follows in this clause and in the whole document:

Delete “EN 10028-2:2009, Flat products made of steels for pressure purposes — Part 2: Non-alloy and alloy steels with specified elevated temperature properties”

Delete “EN 10028-3:2009, Flat products made of steels for pressure purposes — Part 3: Weldable fine grain steels, normalized”

Delete “EN 10028-4:2009, Flat products made of steels for pressure purposes — Part 4: Nickel alloy steels with specified low temperature properties”

Delete “EN 10216-1:2013, Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Non-alloy steel tubes with specified room temperature properties”

Delete “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”

Delete “EN 10216-3:2013, Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 3: Alloy fine grain steel tubes”

Delete “EN 10216-4:2013, Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 4: Non-alloy and alloy steel tubes with specified low temperature properties”

Delete “EN 10217-1:2002, EN 10217-1:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Non-alloy steel tubes with specified room temperature properties”

Delete “EN 10217-2:2002, EN 10217-2:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 2: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties”

Delete “EN 10217-3:2002, EN 10217-3:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 3: Alloy fine grain steel tubes”

Delete “EN 10217-4:2002, EN 10217-4:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 4: Electric welded non-alloy and alloy steel tubes with specified low temperature properties”

Delete “EN 10217-5:2002, EN 10217-5:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 5: Submerged arc welded non-alloy and alloy steel tubes with specified elevated temperature properties”

Delete “EN 10217-6:2002, EN 10217-6:2002/A1:2005, Welded steel tubes for pressure purposes — Technical delivery conditions — Part 6: Submerged arc welded non-alloy steel tubes with specified low temperature properties”

Delete “EN 10222-2:1999, Steel forgings for pressure purposes — Part 2: Ferritic and martensitic steels with specified elevated temperature properties”

Delete “EN 10222-3:1998, Steel forgings for pressure purposes — Part 3: Nickel steels with specified low temperature properties”

Delete “EN 10222-4:1998+A1:2002, Steel forgings for pressure purposes — Part 4: Weldable fine grain steels with high proof strength”

Replace “EN 14276-1:2006+A1:2011” by “EN 14276-1:2020”

Replace “EN ISO 3834-2:2005, Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements (ISO 3834-2:2005)” by “EN ISO 3834-2:2021, Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements (ISO 3834-2:2021)”

Replace “EN ISO 3834-3:2005, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements* (ISO 3834-3:2005)” by “EN ISO 3834-3:2021, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements* (ISO 3834-3:2021)”

Replace “EN ISO 5178:2011, *Destructive tests on welds in metallic materials — Longitudinal tensile test on weld metal in fusion welded joints* (ISO 5178:2001)” by “EN ISO 5178:2019, *Destructive tests on welds in metallic materials — Longitudinal tensile test on weld metal in fusion welded joints* (ISO 5178:2019)”

Replace “EN ISO 9016:2012, *Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination* (ISO 9016:2012)” by “EN ISO 9016:2022, *Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination* (ISO 9016:2022)”

Replace “EN ISO 15609-1:2004, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding* (ISO 15609-1:2004)” by “EN ISO 15609-1:2019, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding* (ISO 15609-1:2019)”

Replace “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)” by “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)”

Replace “EN ISO 17639:2013, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds* (ISO 17639:2003)” by “EN ISO 17639:2022, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds* (ISO 17639:2022)”

2 Modification to 5.2.2, *Identification system*

In Entry 5.2.2.2, replace item d) with the following one:

“d) the EN- or EN-ISO-designation or brand name of the welding consumables shall be recorded.”

3 Modifications to 7.1, *General*

Replace the sentence after the item list by the following:

“Other weld details may be used if they are described in EN 1708-1:2010 and EN 1708-3:2012 or if they are required due to design reasons. The selection of weld details shall be made in such a way that the testing required by the applicable testing group can be performed.”

Replace the first sentence in NOTE 2 with the following:

“Basic weld details are given in EN 1708-1:2010.”

4 Modifications to 8.3, *Welding procedure qualification record (WPQR)*

In List Entry a), replace “a longitudinal weld tensile test” with “one longitudinal weld tensile test” and replace the second sentence with the following one:

“Where the design temperature is higher than 300 °C then the test shall be done at a temperature higher than 300 °C, but below the temperature from which time-dependent values would apply.”

Under List Entry a), add the following new NOTE 1 (and renumber the following notes in this Subclause 8.3 accordingly):

“NOTE 1 For the all-weld tensile test it is intended that the test piece is taken from the area of lowest expected dilution from the base material.”