

# Ufyrede trykbeholdere – Del 11: Supplerende krav til trykbeholdere af titanium og titaniumlegeringer

Unfired pressure vessels – Part 11: Additional requirements for pressure vessels of titanium and titanium alloys

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## Unfired pressure vessels - Part 11: Additional requirements for pressure vessels of titanium and titanium alloys

Réipients sous pression non soumis à la flamme  
- Partie 11 : Exigences supplémentaires pour les  
réipients sous pression en titane et alliage de titane

Unbefeuerte Druckbehälter - Teil 11:  
Zusätzliche Anforderungen an Druckbehälter  
aus Titan und Titanlegierungen

This European Standard was approved by CEN on 14 July 2024.

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## Contents

Page

<b>European foreword</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>5</b>
<b>2 Normative references</b> .....	<b>5</b>
<b>3 Terms, definitions, symbols and units</b> .....	<b>5</b>
<b>4 General requirements</b> .....	<b>6</b>
<b>5 Materials</b> .....	<b>6</b>
5.1 General .....	6
5.2 Material specification .....	6
5.3 Material grouping system .....	6
5.4 Material documentation .....	6
5.5 Prevention of brittle fracture .....	6
<b>6 Design</b> .....	<b>7</b>
6.1 General .....	7
6.2 Corrosion, erosion and protection .....	7
6.3 Joint coefficient .....	7
6.4 Time-independent nominal design stress .....	7
6.5 Creep design .....	8
6.6 Shells under external pressure .....	8
6.7 Flanges .....	9
6.8 Fatigue design .....	9
<b>7 Manufacture</b> .....	<b>10</b>
7.1 General .....	10
7.2 Filler metals .....	10
7.3 Attachment of dissimilar metals .....	10
7.4 Backing strips, joggle joints and partial penetration welds .....	10
7.5 Qualification of welding procedure specifications (WPQR) .....	10
7.6 Qualification of welders and welding operators .....	10
7.7 Joint preparation .....	10
7.8 Execution of welded joints .....	11
7.9 Preheat .....	11
7.10 Permanent joints other than welding .....	11
7.11 Production test, reference criteria .....	11
7.12 Extent of testing .....	12
7.13 Performance of test and acceptance criteria .....	12
7.14 Forming procedures .....	12
7.14.1 Cold forming .....	12
7.14.2 Hot forming .....	12
7.15 Heat treatment after forming .....	13
7.15.1 General .....	13
7.15.2 Heat treatment of flat products after cold forming .....	13
7.15.3 Heat treatment of tubular products after cold forming .....	13
7.15.4 Heat treatment after hot forming .....	14
7.15.5 Annealing .....	14
7.16 Sampling of formed products .....	14
7.16.1 Cold formed products without heat treatment .....	14
7.16.2 Hot formed or cold formed products with heat treatment .....	14
7.17 Tests .....	15
7.17.1 Base material .....	15
7.17.2 Butt welds .....	15
7.18 Post weld heat treatment (PWHT) .....	15
7.19 Repairs .....	15
<b>8 Inspection and testing</b> .....	<b>16</b>

This is a preview of DS/EN 13445-11:2024. [Click here to purchase the full version from the ANSI store.](#)

8.1	General .....	16
8.2	Non-destructive testing of welded joints .....	16
	8.2.1 General.....	16
	8.2.2 Demonstration of satisfactory experience for testing group 3.....	16
8.3	Determination of extent of non-destructive testing .....	17
8.4	Selection of non destructive testing methods for internal imperfections.....	20
8.5	Selection of non destructive testing methods for surface imperfections.....	20
8.6	Assessment of defects.....	20
8.7	Standard hydrostatic test.....	20
<b>9</b>	<b>Finishing operations .....</b>	<b>20</b>
	<b>Annex A (normative) Grouping system for titanium and titanium alloys .....</b>	<b>21</b>
	<b>Annex B (informative) Designation of some titanium and titanium alloy materials .....</b>	<b>22</b>
	<b>Annex C (informative) Materials .....</b>	<b>24</b>
	<b>Annex D (informative) Physical properties of titanium and titanium alloys .....</b>	<b>26</b>
	<b>Annex E (informative) Creep data for unalloyed titanium .....</b>	<b>29</b>
	<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of Directive 2014/68/EU aimed to be covered.....</b>	<b>30</b>
	<b>Bibliography .....</b>	<b>32</b>

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## European foreword

This document ([EN 13445-11:2024](#)) 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 March 2025, and conflicting national standards shall be withdrawn at the latest by March 2025.

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 addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, 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.

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# Unfired pressure vessels –

## Part 11: Additional requirements for pressure vessels of titanium and titanium alloys

### 1 Scope

This document specifies requirements for unfired pressure vessels and their parts made of titanium and titanium alloys in addition to the general requirements for unfired pressure vessels under [EN 13445-1:2021](#) to [EN 13445-5:2021](#).

NOTE 1 Cast materials, HIP and additive manufacturing are not included in this version. Details regarding such materials will be subject to an amendment to or a revision of this European Standard.

NOTE 2 Materials in Groups 51.4 and 54 are not included in this version.

### 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 764-5:2014](#), *Pressure equipment - Part 5: Inspection documentation of metallic materials and compliance with the material specification*

[EN 10204:2004](#), *Metallic products - Types of inspection documents*

[EN 13445-1:2021](#), *Unfired pressure vessels - Part 1: General*

[EN 13445-2:2021+A1:2023](#), *Unfired pressure vessels - Part 2: Materials*

[EN 13445-3:2021](#), *Unfired pressure vessels - Part 3: Design*

[EN 13445-4:2021+A1:2023](#), *Unfired pressure vessels - Part 4: Fabrication*

[EN 13445-5:2021](#), *Unfired pressure vessels - Part 5: Inspection and testing*

[EN ISO 148-1:2016](#), *Metallic materials - Charpy pendulum impact test - Part 1: Test method (ISO 148-1:2016)*

[EN ISO 9606-5:2000](#), *Approval testing of welders - Fusion welding - Part 5: Titanium and titanium alloys, zirconium and zirconium alloys (ISO 9606-5:2000)*

[EN ISO 15614-5:2004](#), *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 5: Arc welding of titanium, zirconium and their alloys (ISO 15614-5:2004)*

[EN ISO 15614-8:2016](#), *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 8: Welding of tubes to tube-plate joints (ISO 15614-8:2016)*

[CEN ISO/TR 15608:2017](#), *Welding — Guidelines for a metallic materials grouping system (ISO/TR 15608:2017)*