



**BSI Standards Publication**

## **Unfired pressure vessels**

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

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## National foreword

This British Standard is the UK implementation of EN 13445-11:2024.

The UK participation in its preparation was entrusted to Technical Committee PVE/1, Pressure Vessels.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2024.

**Amendments/corrigenda issued since publication**

Date	Text affected
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## EUROPÄISCHE NORM

September 2024

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English Version

## 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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This European Standard 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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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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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of an identical text or by endorsement, at the latest by March 2025, and conflicting national standards shall be withdrawn at the latest by March 2025.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.

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## 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)*