

LEEKKUUMUTUSETA SURVEANUMAD. NÕUDED KUNI
15% KATKEVENIVUSEGA MALMIST SURVEANUMATE JA
SURVEDETAILIDE KAVANDAMISELE JA
VALMISTAMISELE

Unfired pressure vessels - Requirements for the design
and fabrication of pressure vessels and pressure parts
constructed from cast iron with an elongation after
fracture equal or less than 15 %

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15776:2011+A1:2015 sisaldab Euroopa standardi EN 15776:2011+A1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 15776:2011+A1:2015 consists of the English text of the European standard EN 15776:2011+A1:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.10.2015.	Date of Availability of the European standard is 21.10.2015.
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ICS 23.020.30

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English Version

Unfired pressure vessels - Requirements for the design and
fabrication of pressure vessels and pressure parts constructed
from cast iron with an elongation after fracture equal or less than
15 %

Réipients sous pression non soumis à la flamme -
Exigences supplémentaires pour la conception et la
fabrication des réipients sous pression et des parties sous
pression moulés en fonte à allongement, après rupture,
inférieur ou égal à 15 %

Unbefeuerte Druckbehälter - Anforderungen an die
Konstruktion und Herstellung von Druckbehältern und
Druckbehälterteilen aus Gusseisen mit einer Bruchdehnung
von 15 % oder weniger

This European Standard was approved by CEN on 1 January 2011 and includes Amendment 1 approved by CEN on 24 August 2015.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 15776:2011+A1:2015) 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 April 2016, and conflicting national standards shall be withdrawn at the latest by April 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15776:2011.

This document includes Amendment 1 approved by CEN on 2015-08-24.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

■^{A1} This standard is a stand-alone document and may be used for pressure equipment with certain restrictions and limitations.

NOTE For the design and fabrication of cast iron pressure equipment standards with higher elongations and ductility, see EN 13445-6:2014. ■^{A1}

Attention is drawn to the references to ■^{A1} EN 13445-6:2014 ■^{A1} for design and fabrication according to specific grades of material standards ■^{A1} EN 1563:2011 ■^{A1} and ■^{A1} EN 13835:2012 ■^{A1} which are found in some clauses of this standard, EN 15776. Requirements for the design, material, manufacturing and testing of pressure vessels and pressure vessel parts made from ferritic or austenitic spheroidal graphite cast iron grades with an elongation after fracture higher than 15 % are given in ■^{A1} EN 13445-6:2014 ■^{A1}.

Cast iron with elongation after fracture equal or less than 15 % may only be used for pressure equipment when operational and technical advantages are dictating its use instead of the cast iron grades given in ■^{A1} EN 13445-6:2014 ■^{A1} with elongation after fracture higher than 15 %.

1 Scope

This European Standard specifies requirements for the design, material, manufacturing and testing of pressure vessels and pressure vessel parts made from materials for which details are specified from the following material standards for specific grades which meet the criterion of an elongation after fracture less than or equal to 15 %:

- **EN 1561:2011**, *Founding — Grey cast irons*;
- **EN 1563:2011**, *Founding — Spheroidal graphite cast irons*;
- **EN 13835:2012**, *Founding — Austenitic cast irons*.

The allowed content of the vessel or pressure part is a fluid of group 2 only, according to the Directive 97/23/EC.

2 Normative references

The following referenced documents are indispensable for the application 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 1370:2011, *Founding — Examination of surface condition*

EN 1371-1:2011, *Founding — Liquid penetrant testing — Part 1: Sand, gravity die and low pressure die castings*

EN 1559-1:2011, *Founding — Technical conditions of delivery — Part 1: General*

EN 1559-3:2011, *Founding — Technical conditions of delivery — Part 3: Additional requirements for iron castings*

EN 1561:2011, *Founding — Grey cast irons*

EN 1563:2011, *Founding — Spheroidal graphite cast irons*

EN 12680-3:2011, *Founding — Ultrasonic testing — Part 3: Spheroidal graphite cast iron castings*

EN 13445-3:2014, *Unfired pressure vessels — Part 3: Design*

EN 13445-5:2014, *Unfired pressure vessels — Part 5: Inspection and testing*

EN 13445-6:2014, *Unfired pressure vessels — Part 6: Requirements for the design and fabrication of pressure vessels and pressure parts constructed from spheroidal graphite cast iron*

EN 13835:2012, *Founding — Austenitic cast irons*

EN ISO 8062-3:2007, *Geometrical Product Specifications (GPS) — Dimensional and geometrical tolerances for moulded parts — Part 3: General dimensional and geometrical tolerances and machining allowances for castings (ISO 8062-3:2007)*