

SURVEOTSTARBELINE TERASVALU

Steel castings for pressure purposes

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 10213:2007+A1:2016 sisaldab Euroopa standardi EN 10213:2007+A1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 10213:2007+A1:2016 consists of the English text of the European standard EN 10213:2007+A1:2016.
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English Version

Steel castings for pressure purposes

Pièces moulées en acier pour service sous pression

Stahlguss für Druckbehälter

This European Standard was approved by CEN on 11 March 2016.

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

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European foreword

This document (EN 10213:2007+A1:2016) has been prepared by Technical Committee ECISS/TC 111 “Steel castings and forgings”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

This document includes Corrigendum 1 issued by CEN on 30 September 2007 and Amendment 1 approved by CEN on 11 March 2016.

This document supersedes A1 EN 10213:2007 A1.

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

The modifications of the related CEN Corrigendum have been implemented at the appropriate places in the text and are indicated by the tags AC AC.

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.

A1 EN 10213:2007 A1, *Technical delivery conditions for steel castings for pressure purposes*, A1 was A1 a revision of the European Standard, EN 10213:1995, in four parts:







- *Part 1: General*
- *Part 2: Steel grades for use at room temperature and elevated temperatures*
- *Part 3: Steel grades for use at low temperatures*
- *Part 4: Austenitic and austenitic-ferritic steel grades*

The revision A1 consisted A1 of:

- merging of the four previous parts and new arrangement of steel grades in tables;
- GP240GR has been deleted;
- GX10NiCrSiNb32-20 has been added.

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

This European Standard retains the same format for clauses as  EN 1559-2:2014 . This European Standard needs to be used in conjunction with  EN 1559-2:2014 . Where no text is given under a clause heading, the corresponding clause of  EN 1559-2:2014  applies.

The structure of this European Standard is as follows:

- clauses and subclauses preceded by ■ indicates no additional conditions to EN 1559-2;
- subclauses and paragraphs marked with a single dot ● indicate that the conditions shall be agreed at the time of enquiry and order;
- subclauses marked with two dots ●● indicate that conditions may be agreed at the time of enquiry and order (optional);
- subclauses without dot marking are mandatory.

1 Scope

This European Standard applies to steel castings for pressure containing parts. It includes materials which are used for the manufacture of components, for pressure equipment.

This European Standard relates to castings characterised by their chemical composition (see Table 2) and mechanical properties (see Tables 3 to 6).

In cases where castings are joined by welding by the founder, this European Standard applies.

In cases where castings are welded:

- to wrought products (plates, tubes, forgings), or
- by non founders,

this European Standard does not apply.

NOTE For this harmonised supporting standard for materials, presumption of conformity to the Essential Requirements of the Directive is limited to technical data of the material in the standard and does not presume adequacy of the material to specific equipment. Consequently the technical data stated in the material standard should be assessed against the design requirements of the specific equipment to verify that the Essential Requirements of the Pressure Equipment Directive (PED) are satisfied.

2 Normative references

Ⓐ The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Ⓐ

Ⓐ EN 287-1:2011 Ⓐ, *Qualification test of welders — Fusion welding — Part 1: Steels*

Ⓐ (deleted text) Ⓐ

Ⓐ EN 1369:2012, *Founding — Magnetic particle testing* Ⓐ

Ⓐ 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 1371-2:2015, *Founding — Liquid penetrant testing — Part 2: Investment castings* Ⓐ

Ⓐ EN 1559-2:2014 Ⓐ, *Founding — Technical conditions of delivery — Part 2: Additional requirements for steel castings*

EN 10027-1:2005, Ⓐ *Designation systems for steels — Part 1: Steel names* Ⓐ

Ⓐ EN 10027-2:2015, *Designation systems for steels — Part 2: Numerical system* Ⓐ

EN 10204:2004, *Metallic products — Types of inspection documents*

Ⓐ (deleted text) Ⓐ

EN 12680-1:2003, *Founding — Ultrasonic examination — Part 1: Steel castings for general purposes*

EN 12680-2:2003, *Founding — Ultrasonic examination — Part 2: Steel castings for highly stressed components*

EN 12681:2003, *Founding — Radiographic examination*

EN ISO 3452-1:2013, *Non-destructive testing — Penetrant testing — Part 1: General principles (ISO 3452-1:2013, Corrected version 2014-05-01)*

EN ISO 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels — Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid (ISO 3651-2:1998)*

EN ISO 5579:2013, *Non-destructive testing — Radiographic testing of metallic materials using film and X- or gamma rays — Basic rules (ISO 5579:2013)*

EN ISO 9934-1:2001, *Non-destructive testing — Magnetic particle testing — Part 1: General principles (ISO 9934-1:2001)*

EN ISO 11970, *Specification and qualification of welding procedures for production welding of steel castings (ISO 11970)*

EN ISO 16810:2014, *Non-destructive testing — Ultrasonic testing — General principles (ISO 16810:2012)*

EN ISO 19232-1:2013, *Non-destructive testing — Image quality of radiographs — Part 1: Determination of the image quality value using wire-type image quality indicators (ISO 19232-1:2013)*

■ 3 Terms and definitions

4 Information to be supplied by the purchaser

● 4.1 Mandatory information

The relevant (ruling) wall thickness shall be agreed.

In cases of grades with different mechanical properties relating to heat treatment conditions, the purchaser shall specify the heat treatment symbol (see Clause 5).

■ 4.2 Optional information

5 Designation

In addition to EN 1559-2:2014:

Cast steels shall be designated in accordance with EN 10027-1 and EN 10027-2:

- either by their minimum yield strength (tensile test) for non alloy steels (preceded by letter P related to pressure uses);
- or by their chemical composition for alloy steels.