

Surveotstarbeline terasvalu

Steel castings for pressure purposes

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 10213:2007 sisaldab Euroopa standardi EN 10213:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 10213:2007 consists of the English text of the European standard EN 10213:2007.</p> <p>This document is endorsed on 18.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>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.</p>	<p>Scope:</p> <p>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.</p>
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Võtmesõnad:

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 30 September 2007.

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

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 10213:2007) has been prepared by Technical Committee ECISS/TC 31 "Steel castings", 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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

This document supersedes EN 10213-1:1995, EN 10213-2:1995, EN 10213-3:1995 and EN 10213-4:1995.

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.

EN 10213, *Technical delivery conditions for steel castings for pressure purposes* is 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 consists 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard retains the same format for clauses as EN 1559-2:2000. This European Standard needs to be used in conjunction with EN 1559-2:2000. Where no text is given under a clause heading, the corresponding clause of EN 1559-2:2000 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 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 287-1:2004, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 444:1994, *Non-destructive testing — General principles for radiographic examination of metallic materials by X- and gamma-rays*

EN 462-1:1994, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) — Determination of image quality value*

EN 571-1:1997, *Non destructive testing — Penetrant testing — Part 1: General principles*

EN 583-1:1998, *Non-destructive testing — Ultrasonic examination — Part 1: General principles*

EN 1369:1996, *Founding — Magnetic particle inspection*

EN 1371-1:1997, *Founding — Liquid penetrant inspection — Part 1: Sand, gravity die and low pressure die castings*

EN 1371-2:1998, *Founding — Liquid penetrant inspection — Part 2: Investment castings*

EN 1559-2:2000, *Founding — Technical conditions of delivery — Part 2: Additional requirements for steel castings*

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

EN 10027-2:1992, *Designation system for steels — Part 2: Numerical system*

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

EN 12454:1998, *Founding — Visual examination of surface discontinuities — Steel sand castings*

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

EN ISO 11970:2007, *Specification and approval of welding procedures for production welding of steel castings (ISO 11970:2001)*

■ 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 1559-2:2000:

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.

In cases of grades with different mechanical properties relating to heat treatment conditions, the purchaser shall specify the heat treatment symbol. For example: GX8CrNi12 + QT1 or GP280GH + N.