



SLOVENSKI STANDARD

SIST EN 10213-1:1997

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Technical delivery conditions for steel castings for pressure purposes - Part 1: General

Technische Lieferbedingungen für Stahlguß für Druckbehälter - Teil 1: Allgemeines

Conditions techniques de livraison des pieces moulées en acier pour service sous pression - Partie 1: Généralités

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Ta slovenski standard je istoveten z: EN 10213-1:1995

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ICS:

77.140.10 Jekla za toplotno obdelavo Heat-treatable steels
77.140.30 Jekla za uporabo pod tlakom Steels for pressure purposes

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en

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EUROPEAN STANDARD

EN 10213-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1995

ICS 77.140.10

Descriptors: cast steels, structural steels, boilers, pressure equipment, delivery, generalities, designation, grades:quality, manufacturing, chemical composition, mechanical properties, tests, marking

English version

Technical delivery conditions for steel castings for pressure purposes - Part 1: General

Conditions techniques de livraison des pièces
moulées en acier pour service sous pression -
Partie 1: Généralités

Technische Lieferbedingungen für Stahlguß für
Druckbehälter - Teil 1: Allgemeines

This European Standard was approved by CEN on 1995-10-20. 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 Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
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Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by the Technical Committee ECISS/TC 31 "Steel castings" the secretariat of which is held by AFNOR.

This European Standard EN 10213 "Technical delivery conditions for steel castings for pressure purposes" consists of 4 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

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 June 1996, and conflicting national standards shall be withdrawn at the latest by June 1996.

According to the Internal Regulations of the CEN/CENELEC, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard applies to steel castings for pressure-containing parts. It includes materials which are used for the manufacture of components subject to pressure vessel construction codes.

This standard relates to castings manufactured from unalloyed and alloyed steel grades (characterised by their composition and mechanical properties).

Part 1 specifies general technical delivery conditions.

The standard comprises three other parts specifying requirements for :

- steel grades for use at room and elevated temperatures (see EN 10213-2) ;
- steel grades for use at low temperatures - (see EN 10213-3) ;
- austenitic and austenitic-ferritic steel grades - (see EN 10213-4).

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

In cases where castings are welded :

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

this European Standard does not apply.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 10002-1	Metallic materials - tensile testing - Part 1 : Method of test (at ambient temperature) <small>SIST EN 10213-1:1997</small>
EN 10002-5	Metallic materials - tensile testing - Part 5 : Method of test at elevated temperature <small>https://standards.iteh.ai/catalog/standards/sist/7074b664-a50c-4531-a5f3-5b3cc4ac7267/sist-en-10213-1-1997</small>
EN 10027-1	Designation systems for steels - Part 1 : Steel names, principal symbols
EN 10027-2	Designation systems for steels - Part 2 : Numerical system
EN 10045-1	Metallic materials - Charpy impact test - Part 1 : Test method

EN 10204	Metallic products - Types of inspection documents
EN 10213-2	Technical delivery conditions for steel castings for pressure purposes - Part 2 : Steel grades for use at room and elevated temperatures
EN 10213-3	Technical delivery conditions for steel castings for pressure purposes - Part 3 : Steel grades for use at low temperatures
EN 10213-4	Technical delivery conditions for steel castings for pressure purposes - Part 4 : Austenitic and austenitic-ferritic steel grades
prEN 288-12 ¹⁾	Specifications and approval of welding procedures for metallic materials - Part 12 : Welding procedure tests for arc welding of steel castings
prEN 1369 ¹⁾	Founding - Magnetic particle inspection
prEN 1370 ¹⁾	Founding - Surface roughness inspection by visual tactile comparators
prEN 1371-1 ¹⁾	Founding - Liquid penetrant inspection - Part 1 : Sand, gravity die and low pressure die castings
prEN 1559-1 ¹⁾	Founding - Technical conditions of delivery - Part 1 : General
prEN 1559-2 ¹⁾	Founding - Technical conditions of delivery - Part 2 : Additional requirements for steel castings
prEN 28062 ¹⁾	Castings - System of dimensional allowances
CR 10260	ECISS INFORMATION CIRCULAR Nr. 10 - Designation systems for steels - Additional symbols for steel names
ISO 4990	Steel castings - General technical delivery requirements

3 Designation

3.1 The cast steel grades are named in accordance with EN 10027-1 and CR 10260 :

- either by their minimum yield strength (tensile test) for unalloyed steels (preceded by letter P related to pressure uses) ;

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¹⁾ In preparation.

- or by their chemical composition for alloyed steels.

3.2 For a steel grade manufactured to different strength levels, according to the heat treatment, a suffix shall be added in accordance with CR 10260.

3.3 In every case the name will be preceded by the letter "G" to express that cast steel materials are concerned.

3.4 The cast steel grades are numbered in accordance with EN 10027-2.

The numbers can be used instead of the names.

4 General conditions for delivery

Unless otherwise specified in this European Standard castings supplied to this European Standard shall conform to the requirements of ISO 4990:1986 ²⁾.

5 Ordering

5.1 In addition to the information ordering given in ISO 4990:1986 ²⁾ the following shall be observed :

- the clauses marked (•) pertain to a mandatory agreement ;
- the clauses marked (••) pertain to alternative delivery conditions which may be agreed at the time of enquiry and order.

• **5.2** The following information shall be given by the purchaser to the founder :

- ruling thickness (see 7.2.1) ³⁾ ;
- conditions of inspection (see clause 8).

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6 Manufacturing

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6.1 Steel melting

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The steel shall be produced by an electric melting process or by any other process involving secondary refining.

The alternatives are left to the discretion of the founder.

²⁾ ISO 4990 will be replaced by EN 1559-2 at the time of publication.

³⁾ The purchaser will prescribe a ruling thickness in relation to the mechanical stresses.

6.2 Heat treatment

Unless otherwise agreed, the type of heat treatment shall comply with tables 2 of EN 10213-2, EN 10213-3 or EN 10213-4.

6.3 Welding

Unless otherwise agreed welding is permitted, provided that all welds shall conform to the same criteria for non-destructive testing as the relevant part of the casting. A welding procedure qualification is required (see prEN 288-12).

Conditions for preheat, interpass and postweld heat-treatment related to welding operations are given in annex A. These conditions are given only for information for grades included in EN 10213-2 and EN 10213-3.

However the heat treatment procedure established to qualify the weld procedure for the austenitic and austenitic-ferritic steels of EN 10213-4 is mandatory.

6.4 Further processing

Unless previously agreed the foundry shall not be held responsible for the consequences of any further processing, e. g. welding, heat treatment... undertaken by the purchaser after delivery of the castings by the foundry.

7 Requirements

7.1 Chemical composition

The chemical composition determined by a cast analysis shall comply with the values given in tables 1 of EN 10213-2, EN 10213-3 and EN 10213-4.

Permissible deviations on check analysis are indicated in annex B.

Elements unspecified in tables 1 of EN 10213-2, EN 10213-3 and EN 10213-4 shall not be intentionally added without agreement of the purchaser other than for the purpose of finishing the heat. If not otherwise agreed the maximum values in % (m/m) given in table 1 shall be applicable (for unspecified elements).

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