



SLOVENSKI STANDARD
SIST EN 1559-2:2000
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Objavljeno v: **SIST EN 1559-2:2000**

Founding - Technical conditions of delivery - Part 2: Additional requirements for steel castings

Gießereiwesen - Technische Lieferbedingungen - Teil 2: Zusätzliche Anforderungen an Stahlgußstücke

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Fonderie - Conditions techniques de fourniture - Partie 2: Spécifications complémentaires pour les pièces moulées en acier

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EUROPEAN STANDARD

EN 1559-2

NORME EUROPÉENNE

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English version

Founding – Technical conditions of delivery – Part 2: Additional requirements for steel castings

Fonderie – Conditions techniques de fourniture – Partie 2:
Spécifications complémentaires pour les pièces moulées
en acier

Gießereiwesen – Technische Lieferbedingungen –
Teil 2: Zusätzliche Anforderungen an
Stahlgußstücke

This European Standard was approved by CEN on 3 January 2000.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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 August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

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

This European Standard is one of a series of European Standards for technical delivery conditions for castings. The other standards in this series are:

- EN 1559-1, *Founding - Technical conditions of delivery - Part 1: General.*
- EN 1559-3, *Founding - Technical conditions of delivery - Part 3: Additional requirements for iron castings.*
- EN 1559-4, *Founding - Technical conditions of delivery - Part 4: Additional requirements for aluminium castings.*
- EN 1559-5, *Founding - Technical conditions of delivery - Part 5: Additional requirements for magnesium castings.*
- EN 1559-6, *Founding - Technical conditions of delivery - Part 6: Additional requirements for zinc castings.*

Introduction

This European Standard retains the same structure for clauses as EN 1559-1, Founding - Technical conditions of delivery - Part 1: General.

This European Standard cannot be used alone for compiling a specification for ordering and supplying steel castings, but as a complement to EN 1559-1.

The structure of this standard is as follows:

- clauses and subclauses preceded by ■ indicate no additional conditions to EN 1559-1;
- clauses and subclauses marked with a single dot • indicate that conditions shall be agreed at the time of enquiry and order;
- subclauses and paragraphs marked with two dots •• indicate that conditions may be agreed at the time of enquiry and order (optional);
- subclauses without dot marking are mandatory.

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1 Scope

This part of EN 1559 specifies the additional technical delivery conditions for steel castings unless other conditions have been agreed at the time of enquiry and order.

This standard is also applicable to nickel and cobalt alloy castings.

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 444, *Non-destructive testing - General principles for the radiographic examination of metallic materials by X and gamma-rays.*

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

EN 473, *Qualification and certification of NDT personnel - General principles.*

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

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

EN 1369, *Founding - Magnetic particle inspection.*

EN 1370, *Founding - Surface roughness inspection by visualtactile comparators.*

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

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

EN 1559-1:1997, *Founding - Technical conditions of delivery - Part 1: General.*

EN 10002-1, *Metallic materials - Tensile testing - Part 1: Method of test (at ambient temperature).*

EN 10002-5, *Metallic materials - Tensile testing - Part 5: Method of test at elevated temperature.*

EN 10003-1, *Metallic materials - Brinell hardness test - Part 1: Test method.*

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 12454, *Founding - Visual examination of surface discontinuities - Steel sand castings.*

prEN 12680-1:1996, *Founding - Ultrasonic inspection - Part 1: Steel castings.*

prEN 12681:1996, *Founding - Radiographic inspection.*

EN ISO 3651-1, *Determination of resistance to intergranular corrosion of stainless steels - Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in nitric acid medium by measurement of loss in mass (Huey test) (ISO 3651-1:1998).*

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

prEN ISO 9934-1:2000, *Non-destructive testing - Magnetic particle testing - Part 1: General principles* (ISO/FDIS 9934-1:2000).

CR 10260, *Designation systems for steels - Additional symbols*.

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

■3.1
purchaser

■3.2
manufacturer

■3.3
casting

■3.4
as-cast casting

■3.5
as-delivered casting

■3.6
initial sample

■3.7
preliminary sample

■3.8
relevant (ruling) wall thickness

NOTE The definition given in EN 1559-1:1997 applies to steel castings.

■3.9
inspection

■3.10
continuous inspection

■3.11
inspection representative

■3.12
test unit

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■3.13
sample casting

■3.14
sample

3.14.1
test block
term used for sample in steel foundry industry

■3.15
test piece

■3.16
sequential testing

3.17
excavation
cavity produced by the removal of cast material prior to subsequent welding

NOTE It can be of minor or major nature according to its depth (over 40 % of the section thickness means the excavations are major).

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4 Information to be supplied by the purchaser

[See also check list in annex A].

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4.1 • Mandatory information

In addition to EN 1559-1:

The relevant (ruling) wall thickness shall be agreed.

4.2 •• Optional information

In addition to EN 1559-1:

For specific uses some optional requirements can become mandatory according to product standard.

4.3 ■ Drawings, patterns and tools

4.4 ■ Information on the mass

4.5 ■ Preliminary sample

4.6 ■ Initial sample

5 Designations

Cast steels shall be designated in accordance with EN 10027-1, EN 10027-2 and CR 10260.

6 Manufacture

6.1 Manufacturing process

6.1.1 Melting

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

6.1.2 •• Heat treatment

6.1.2.1 The type of heat treatment is normally defined by the product standard. If this information is not available, the heat treatment type can be agreed between the purchaser and the manufacturer.

6.1.2.2 If required the purchaser shall be informed of the heat treatment conditions.

6.2 Welding operations

6.2.1 ■ General

6.2.2 ■ Production welding

6.2.2.1 ■

6.2.2.2 ■

6.2.2.3 ■

6.2.2.4 ■

6.2.2.5 ■

6.2.2.6 •• Mapping

Major production welds may be reported by indicating their zone and extent in the form of drawings or photographs.

6.2.2.7 •• Criteria for excavation

Criteria other than those defined in 3.17 can be agreed.

6.2.2.8 •• Documents

If agreed between the manufacturer and the purchaser, the documents related to the production welding shall be supplied to the purchaser.

6.3 Further processing

Unless previously agreed the manufacturer 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 manufacturer.

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7 Requirements

7.1 ■ General

7.2 Material

7.2.1 Chemical composition

In addition to EN 1559-1:

Permissible deviations between the specified cast analysis and the check analysis on test blocks are given in Table 1.

NOTE For method of chemical analysis, see CR 10261.

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