SLOVENSKI STANDARD
oSIST prEN 1559-2:2012

01-oktober-2012

Livarstvo - Tehnični dobavni pogoji - 2. del: Dodatne zahteve pri jeklenih ulitkih

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

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

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

Ta slovenski standard je istoveten z: prEN 1559-2

ICS:

77.140.80 Železni in jekleni ulitki Iron and steel castings

oSIST prEN 1559-2:2012 en,fr,de

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 1559-2

August 2012

ICS 77.140.80

Will supersede EN 1559-2:2000

English Version

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

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

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ECISS/TC 111.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. prEN 1559-2:2012: E

Contents

Page

Foreword

This document (prEN 1559-2:2012) has been prepared by Technical Committee ECISS/TC 111 “Steel castings and forgings”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1559-2:2000.

Annex B provides details of significant technical changes between this European Standard and the previous edition.

Within its programme of work, Technical Committee ECISS/TC 111 included the revision of EN 1559-2:2000:

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

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 alloy castings;*

— EN 1559-5, *Founding — Technical conditions of delivery — Part 5: Additional requirements for magnesium alloy castings;*

— EN 1559-6, *Founding — Technical conditions of delivery — Part 6: Additional requirements for zinc alloy castings.*

Introduction

In order to assist manufacturers and purchasers to prepare proper contractual arrangements and prevent misunderstanding, CEN/TC 190 approved the preparation of a series of standards covering technical delivery conditions. These have been prepared as separate parts.

This part of EN 1559 covers the additional technical delivery conditions for all the steel casting materials and has the same structure for clauses as EN 1559-1:2011.

This part of EN 1559 cannot be used alone for compiling a specification for ordering and supplying steel castings, but as a complement to EN 1559-1:2011.

This European Standard uses a system of identification with the following structure:

— clauses and subclauses preceded by ■ indicate no additional conditions to EN 1559-1:2011;

— 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 can be agreed at the time of enquiry and order (optional);

— subclauses without dot marking are mandatory.

Annex A gives a check list for quick information about different points that shall or may be agreed by the time of acceptance of the order. It relates to the applicable clauses or subclauses of EN 1559-1:2011 and prEN 1559-2:2012.

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 part of EN 1559 is also applicable to nickel and cobalt alloy castings.

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 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, *Non-destructive testing — 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 — Examination of surface condition*

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

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

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

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

EN 12681, *Founding — Radiographic examination*

EN 13018, *Non-destructive testing — Visual testing — General principles*

EN 14784-1, *Non-destructive testing — Industrial computed radiography with storage phosphor imaging plates — Part 1: Classification of systems*

EN 14784-2, *Non-destructive testing — Industrial computed radiography with storage phosphor imaging plates — Part 2: General principles for testing of metallic materials using X-rays and gamma rays*

EN ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1:Test method (ISO 148-1)*

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)*

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)*

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1)*

EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1)*

EN ISO 6892-2, *Metallic materials — Tensile testing — Part 2: Method of test at elevated temperature (ISO 6892-2)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1559-1, in the applicable material standard and the following 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 wall thickness

3.9 ■
inspection

3.10 ■
continuous inspection

3.11 ■
inspection representative

3.12 ■
test unit

3.13 ■
sample casting

3.14 ■
sample

Note 1 to entry: In steel foundry industry the term used for sample is "test block"

3.15 ■
test piece

3.16 ■
sequential testing

3.17 ■
acceptance criteria

3.18 ■
drawing

3.19 ■
finishing welding

3.20 ■
joint welding

3.21
excavation
cavity produced by the removal of cast material prior to subsequent welding

Note 1 to entry: It can be of minor or major nature according to its depth (over 40 % of the section thickness the excavations are major).

4 Information to be supplied by the purchaser

4.1 • Mandatory information

The relevant wall thickness shall be given in the order.

4.2 •• Optional information

In addition to EN 1559-1, for specific uses, some optional requirements may become mandatory according to the material standard(s).

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 and EN 10027-2.

NOTE Designations of steel casting materials are given in the applicable product standards.

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 usually 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 ■

In addition to EN 1559-1 major production welds may be reported by indicating their location and extent in the form of drawings, sketches or photographs.

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

6.2.2.6 ■

6.2.2.7 •• Criteria for excavation

Criteria other than those defined in 3.21 can be agreed.

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, etc. undertaken by the purchaser after delivery of the castings by the manufacturer.

7 Requirements

7.1 ■ General

7.2 Material

7.2.1 Chemical composition

In addition to EN 1559-1, Table 1 specifies permissible deviations above the maximum limits or below the minimum limits of the chemical requirements of the applicable product specification for the results of product analysis carried out on test blocks or on the product itself.

NOTE 1 Table 1 doesn't apply to heat analysis as specified in the product standards.

NOTE 2 For methods of determination of the chemical composition, see FprCEN/TR 10261.