

Creep resisting steels, nickel and cobalt alloys

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 10302:2008 sisaldab Euroopa standardi EN 10302:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 26.05.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.03.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 10302:2008 consists of the English text of the European standard EN 10302:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 26.05.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 19.03.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

Creep resisting steels, nickel and cobalt alloys

Aciers et alliages à base de nickel et de cobalt résistant au fluage

Warmfeste Stähle, Nickel- und Cobaltlegierungen

This European Standard was approved by CEN on 10 February 2008.

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Classification and designation.....	5
4.1 Classification.....	5
4.2 Designation	5
5 Information to be supplied by the purchaser	6
5.1 Mandatory information •.....	6
5.2 Options ••.....	6
6 Manufacturing process	7
6.1 General ••.....	7
6.2 Delivery condition •.....	7
7 Requirements	7
7.1 Chemical composition	7
7.2 Mechanical properties.....	7
7.2.1 Mechanical properties at room temperature.....	7
7.2.2 Mechanical properties at elevated temperatures	7
7.3 Creep properties	7
7.4 Surface condition.....	7
7.5 Internal soundness.....	8
7.6 Dimensions and tolerances on dimensions •.....	8
7.7 Calculation of mass and tolerances on mass.....	8
8 Inspection and testing.....	8
8.1 General.....	8
8.2 Types and contents of inspection documents ••.....	8
8.3 Specific inspection and testing.....	9
8.3.1 Extent of testing.....	9
8.3.2 Selection and preparation of samples and test pieces.....	9
8.4 Test methods.....	9
8.5 Retests	10
9 Marking	10
Annex A (informative) Applicable dimensional standards.....	25
Annex B (informative) Technical information on creep resisting steels, nickel and cobalt alloys.....	26
Annex C (informative) Preliminary reference data for creep strength to 1 % plastic strain and creep rupture strength	29
Annex D (informative) Guideline values for the physical properties of creep resisting steels, nickel and cobalt alloys	42
Bibliography	46

Foreword

This document (EN 10302:2008) has been prepared by Technical Committee ECISS/TC 23 “Stainless steels”, the secretariat of which is held by DIN.

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 September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 10302:2002.

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 the United Kingdom.

NOTE The clauses marked with a point (●) contain information relating to agreements which are to be made at the time of ordering. The clauses marked with two points (●●) contain information relating to agreements which may be made at the time of ordering.

1 Scope

1.1 This European Standard covers the grades of wrought steels and alloys listed in Table 1 and Table 2, which are usually employed for components and equipment, for which the main requirement is their creep resistance under mechanical long-time stressing at temperatures above 500 °C.

NOTE Heat resisting grades given in EN 10095 [9] may also be used for similar applications if so agreed.

1.2 This European Standard specifies the technical delivery conditions for semi-finished products, for hot or cold rolled sheet/plate and strip, hot or cold formed (cold drawn) bars, rods, wire and sections.

1.3 The general technical delivery conditions specified in EN 10021 apply in addition to the specifications of this European Standard, unless otherwise specified in this European Standard.

1.4 This European Standard does not apply to components manufactured by further processing the product forms listed in 1.2 with quality characteristics altered as a result of such further processing.

1.5 This European Standard shall not be used for aerospace and pressure purposes.

1.6 For steels and alloys with similar chemical composition, but intended for different applications, see the Bibliography.

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 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 testing at elevated temperature*

EN 10020:2000, *Definition and classification of grades of steel*

EN 10021:2006, *General technical delivery conditions for steels products*

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

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

EN 10052:1993, *Vocabulary of heat treatment terms for ferrous products*

EN 10079:2007, *Definition of steel products*

EN 10163-2, *Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections - Part 2: Plate and wide flats*

EN 10168:2004, *Steel products – Inspection documents – List of information and description*

EN 10204, *Metallic products - Types of inspection documents*

EN 10221, *Surface quality classes for hot-rolled bars and rods - Technical delivery conditions*

prCEN/TR 10261, *Iron and steel - Review of available methods of chemical analysis*

EN ISO 377:1997, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997)*

EN ISO 14284:2002, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996)*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 10020:2000, EN 10021:2006, EN 10052:1993, EN 10079:2007, EN ISO 377:1997 and EN ISO 14284:2002 and the following apply.

3.1

creep resisting materials

steels, nickel- or cobalt-alloys with a minimum of 8 % chromium, which are characterised by good mechanical behaviour at temperatures above 500 °C under long-range service conditions; i.e. primarily by creep strength to 1 % plastic strain or creep rupture strength during long-time stressing

NOTE For supplementary information on creep resisting steels and alloys see Annex B.

4 Classification and designation

4.1 Classification

Materials covered in this European Standard are classified according to their structure into:

- martensitic steels;
- austenitic steels;
- nickel alloys; and
- cobalt alloys.

4.2 Designation

The names and numbers of the steels (see Table 1) were formed in accordance with EN 10027-1 and EN 10027-2 respectively.

NOTE Explanation on the designation of nickel and cobalt alloys (see Table 2).

- name: The preceding chemical symbols indicate the main alloy elements and the figure immediately following indicates the average content of these alloys which is subsequently followed by the symbol for the other important alloying elements added.
- material number: The structure is set out according to EN 10027-2 with the number 2 for the material group number. This material group comprises chemically resistant and high temperature or heat resistant nickel and cobalt alloys.