ROOSTEVABAD TERASED. OSA 2: ÜLDOTSTARBELISTE KORROSIOONIKINDLATEST TERASTEST VALMISTATUD LEHTEDE/PLAATIDE JA RIBADE TEHNILISED TARNETINGIMUSED

Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resistant steels for general purposes

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 10088-2:2024 sisaldab Euroopa standardi EN 10088-2:2024 ingliskeelset teksti.	This Estonian standard EVS-EN 10088-2:2024 consists of the English text of the European standard EN 10088-2:2024.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.09.2024.	Date of Availability of the European standard is 25.09.2024.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 77.140.20, 77.140.50

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10088-2

September 2024

ICS 77.140.20; 77.140.50

Supersedes EN 10088-2:2014

English Version

Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resistant steels for general purposes

Aciers inoxydables - Partie 2 : Conditions techniques de livraison des tôles et bandes en acier résistant à la corrosion pour usage général

Nichtrostende Stähle - Teil 2: Technische Lieferbedingungen für Blech und Band aus korrosionsbeständigen Stählen für allgemeine Verwendung

This European Standard was approved by CEN on 6 November 2023.

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-CENELEC 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-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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 10088-2:2024 E

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European foreword

This document (EN 10088-2:2024) has been prepared by Technical Committee CEN/TC 459 “ECISS - European Committee for Iron and Steel Standardization[1]”, 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 March 2025, and conflicting national standards shall be withdrawn at the latest by March 2025.

This document supersedes EN 10088-2:2014.

In comparison with the previous edition, the following technical modifications have been made:

a) addition of austenitic grades 1.4382, 1.4420, 1.4678, 1.4682, addition of austenitic-ferritic (duplex) grade 1.4637, addition of ferritic grade 1.4622, and addition of martensitic grade 1.4060;

b) chemical composition was changed for following grades: austenitic grades 1.4310, 1.4404, 1.4529, ferritic grades 1.4003, 1.4521, and martensitic grades 1.4028, 1.4116;

c) removal of austenitic grades 1.4319, 1.4537, and removal of austenitic-ferritic (duplex) grade 1.4655;

d) permissible product analysis tolerances have been adjusted;

e) austenitic grade 1.4529 cold and hot rolled strip products have been added;

f) austenitic-ferritic (duplex) grades:

   — 1.4162 cold and hot rolled strip max. product thicknesses, and mechanical property requirements at room and elevated temperatures have been changed;

   — 1.4362 hot rolled strip and plate, a mechanical property requirement has been changed;

   — 1.4501 cold and hot rolled strip products have been added;

   — 1.4662 cold and hot rolled strip max. product thicknesses have been changed;

g) ferritic grades 1.4509, 1.4513, 1.4520, 1.4526 hot rolled strip products have been added;

h) introduction of the possibility to use modelling for determination of the mechanical properties measured by tensile testing;

i) addition of austenitic grades 1.4307, 1.4404, 1.4420, 1.4678 to cold worked process route, and expansion of cold worked strength levels for austenitic grades 1.4401, 1.4571;

j) listing of types of process route has been revised;

k) Clause 8 “Marking” has been revised;

l) listing of grades in all tables has been revised;

m) new Annex A lists all grades that appear in this document by ascending steel number.

[1] Through its sub-committee SC 5 “Steels for heat treatment, alloy steels, free-cutting steels and stainless steels”, (secretariat: DIN).

EN 10088, under the general title *Stainless steels*, consists of the following parts:

— *Part 1: List of stainless steels* (including a table of European Standards, in which these stainless steels are further specified, see Annex C);

— *Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resistant steels for general purposes*;

— *Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resistant steels for general purposes*;

— *Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes*;

— *Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes*.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents applied to eight steel grades, given in Clause 8, Annex A and Annex B and which is claimed to be relevant for the following clause(s) of this document:

Clauses: Clause 8, Annex A and Annex B

CEN takes no position concerning the evidence, validity and scope of these patent rights. The holders of these patent rights have ensured CEN that they are willing to negotiate licenses, under reasonable and non-discriminatory terms and conditions, with applicants throughout the world. In this respect, the statements of the holders of these patent rights are registered with CEN. Information may be obtained from:

Grade 1.4637, 1.4662

Outokumpu Stainless AB

SE-77480 Avesta, Sweden

Grade 1.4420, 1.4622

Outokumpu Oyj

FI-00180, Helsinki, Salmisaarenranta 11, Finland

Grade 1.4062

Ugitech

F-73403 Ugine Cedex, France

Grade 1.4062

Industeel

F-71200 Creusot, 56 Rue Clemenceau, France

Grade 1.4646, 1.4611, 1.4613

Acciai Speciali Terni

I-05100 Terni, Italy

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. CEN shall not be held responsible for identifying any or all such patent rights.

1 Scope

This document specifies the technical delivery conditions for hot or cold rolled sheet/plate and strip of standard grades and special grades of corrosion resistant stainless steels for general purposes.

NOTE General purposes include the use of stainless steels in contact with foodstuffs.

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

This document does not apply to components manufactured by further processing of the product forms listed above with quality characteristics altered as a result of such further processing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 10021, *General technical delivery conditions for steel products*

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

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

EN 10079, *Definition of steel products*

EN 10088-1:2023, *Stainless steels — Part 1: List of stainless steels*

EN 10151, *Stainless steel strip for springs — Technical delivery conditions*

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, *Steel products — Inspection documents — List of information and description*

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

EN 10307, *Non-destructive testing — Ultrasonic testing of austenitic and austenitic-ferritic stainless steels flat products of thickness equal to or greater than 6 mm (reflection method)*

EN 10373, *Determination of the physical and mechanical properties of steels using models*

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

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

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 sulfuric acid (ISO 3651-2)*

EN ISO 4885, *Ferrous materials — Heat treatments — Vocabulary (ISO 4885)*

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

EN ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method (ISO 6507-1)*

EN ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test (ISO 6508-1)*

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 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition (ISO 14284)*

3 Terms and definitions

For the purposes of this document, the terms and definitions regarding types of heat treatment in EN ISO 4885 and regarding product forms in EN 10079 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
stainless steels
steels with at least 10,5 % of chromium and maximum 1,20 % of carbon

[SOURCE: EN 10020:2000, 3.2.2]

Note 1 to entry: Stainless steels are further subdivided in accordance with their main property into corrosion resistant steels, heat resistant steels and creep resistant steels.

3.2
corrosion resistant stainless steels
standard stainless steels (see 3.1) where its resistance to corrosion is of primary importance

3.3
general purposes
purposes other than the special purposes referred to in the Bibliography

3.4
standard grades
grades with a relatively good availability and a wider range of application

3.5
special grades
grades for special use and/or with limited availability

4 Designation and ordering

4.1 Designation of steel grades

The steel names and steel numbers (see Tables 1 to 4) were formed in accordance with EN 10027-1 and EN 10027-2 respectively.

A complete overview of all grades that are in this document is given in Annex A.