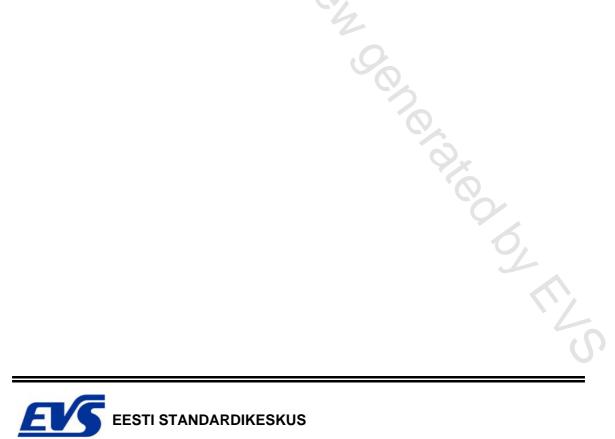
# Stainless steels - Part 1: List of stainless steels

Stainless steels - Part 1: List of stainless steels



#### EESTI STANDARDI EESSÕNA

#### NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 10088-	This Estonian standard EVS-EN 10088-
1:2005 sisaldab Euroopa standardi EN	1:2005 consists of the English text of the
10088-1:2005 ingliskeelset teksti.	European standard EN 10088-1:2005.
Käesolev dokument on jõustatud	This document is endorsed on 15.07.2005
15.07.2005 ja selle kohta on avaldatud	with the notification being published in the
teade Eesti standardiorganisatsiooni	official publication of the Estonian national
ametlikus väljaandes.	standardisation organisation.
Standard on kättesaadav Eesti	The standard is available from Estonian
standardiorganisatsioonist.	standardisation organisation.

Käsitlusala:	Scope:
This European Standard lists the chemical	This European Standard lists the chemical
composition of stainless steels, which are	composition of stainless steels, which are
subdivided in accordance with their main	subdivided in accordance with their main
properties into corrosion resistingsteels,	properties into corrosion resistingsteels,
heat resisting steels and creep resisting	heat resisting steels and creep resisting
steels and spectified in the European	steels and spectified in the European
Standard hiven in Table 1.	Standard hiven in Table 1.

**ICS** 77.140.20

Võtmesõnad: corrosion-resistant s, dictionaries, grades, grades (quality), ladle analysis, lists, martensitic steels, materials, physical properties, quality, rolling equipment, rustless, stainless steels, steel grades, steels, surveys, tables (data) 212

Hinnagrupp R

# **EUROPEAN STANDARD** NORME EUROPÉENNE **EUROPÄISCHE NORM**

# EN 10088-1

June 2005

ICS 77.140.20

Supersedes EN 10088-1:1995

English version

### Stainless steels - Part 1: List of stainless steels

Aciers inoxydables - Partie 1: Liste des aciers inoxydables

Nichtrostende Stähle - Teil 1: Verzeichnis der nichtrostenden Stähle

This European Standard was approved by CEN on 14 April 2005.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom. L.C.L.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

Foreword		3
1 Scope	<i>p</i>	4
2 Normative refe	rences	4
3 Terms and defi	initions	5
4 Chemical comp	position	5
· · · ·	Guidance data on some physical properties	
Annex B (informative)	Classification of stainless steel grades	26
Annex C (informative)	Empirical formulae for steel grade classification by microstructure	30
Annex D (informative)	Matrix to show which steels are included in which standards	31
10269 and EN 1	Chemical composition of nickel and cobalt alloys listed in EN 10095, EN 10302	35
Bibliography	Q	37
	Provide and and a second and a	Ĩ

## Foreword

This European Standard (EN 10088-1:2005) has been prepared by Technical Committee ECISS/TC 23 "Steels for heat treatment, alloy steels and free-cutting steels - Qualities and dimensions", 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 December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

This document supersedes EN 10088-1:1995.

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 D),
- Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes,
- Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright
  products of corrosion resisting steels for general purposes.

The European Organisation for Standardisation (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents applied to five steels grades

CEN takes no position concerning the evidence, validity and scope of these patent rights.

The holder of these patent rights has assured CEN that they are willing to negotiate licences, 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:

nero;

Grades 1.4362, 1.4410 and 1.4477

Sandvik AB SE-811 81 SANDVIKEN Sweden

Grades 1.4652, 1.4854

Outokumpu Stainless AB SE-77480 AVESTA Sweden

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

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

#### 1 Scope

This European Standard lists the chemical composition of stainless steels, which are subdivided in accordance with their main properties into corrosion resisting steels, heat resisting steels and creep resisting steels and specified in the European Standards given in Table 1.

Table 1 — Overview of material standa	rds for stainless steels
---------------------------------------	--------------------------

Stainless steels				
Corrosion resisting steels	Heat resisting steels	Creep resisting steels		
EN 10028-7		EN 10028-7		
EN 10088-2				
EN 10088-3				
	EN 10095			
EN 10151				
EN 10216-5		EN 10216-5		
EN 10217-7				
EN 10222-5	<b>D</b>	EN 10222-5		
EN 10250-4				
EN 10263-5				
EN 10264-4	EN 10264-4			
EN 10269	0.	EN 10269		
EN 10270-3				
EN 10272	2			
EN 10296-2				
EN 10297-2				
		EN 10302		
EN 10312				

Reference data on some physical properties are given in Tables A.1 to A.8.

- NOTE 1 A matrix that shows which steels are included in which standard is given in Annex D.
- NOTE 2 Valve steels are specified in EN 10090.
- NOTE 3 Steel castings are specified in various European Standards (see Bibliography).
- Tool steels are specified in EN ISO 4957. NOTE 4
- NOTE 5 Welding consumables are specified in various European Standards (see Bibliography).

#### Normative references 2

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. 2

EN 10079:1992, Definition of steel products

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