

Stainless Steels —

Part 1: List of stainless steels

The European Standard EN 10088-1:1995 has the status of a British Standard

ICS 77.140.20

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The preparation of this British Standard was entrusted to Technical Committee ISE/31, Wrought steels, upon which the following bodies were represented:

- British Chain Manufacturers' Association
- British Engineers Cutting Tools Association
- British Forging Industry Association
- British Industrial Fasteners Federation
- British Iron and Steel Producers' Association
- British Stainless Steel Association
- Department of Trade and Industry (National Physical Laboratory)
- Lloyd's Register of Shipping
- Ministry of Defence
- National Association of Steel Stockholders
- Road Vehicle Spring Society
- Society of Motor Manufacturers and Traders Limited
- Spring Research and Manufacturers' Association

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National foreword

This Part of BS EN 10088 has been prepared by Technical Committee ISE/31 and is the English language version of EN 10088-1 *Stainless steels — Part 1: List of stainless steels* published by the European Committee for Standardization (CEN). Together with BS EN 10088-2 and BS EN 10088-3, this Part of BS EN 10088 partially supersedes BS 970-1:1991, which has been amended.

This Part of BS EN 10088 should be used in preference to BS 970-1 whenever applicable.

Work is continuing in Europe to prepare standards covering boron steels and surface quality.

Cross-reference

Publication referred to	Corresponding British Standard
EN 10079:1992	BS EN 10079:1993 <i>Definition of steel products</i>

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Stainless steels, austenitic steels, ferritic steels, martensitic steels, lists, designation, chemical composition, grades, quality, rolled products, physical properties, data

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

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European Committee for Standardization
Comité Européen de Normalisation
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Foreword

This European Standard has been prepared by SC 1, Stainless steels, of Technical Committee ECISS/TC 23, Steels for treatment, alloy steels and free-cutting steels — Qualities, of which the secretariat 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 October 1995, and conflicting national standards shall be withdrawn at the latest by October 1995.

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

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1 Scope

This European Standard lists:

- the chemical composition of stainless steels (see Table 1 to Table 4);
- reference data on some physical properties (see Table A.1 to Table A.4).

NOTE A CEN report covering information on the forms of wrought products in which the grades are standardized and the application of the grades is identified is in course of preparation.

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 10079, *Definition of steel products*.

3 Definitions

3.1

stainless steels

for the purposes of this standard, steels with at least 10,5 % Cr and max. 1,2 % C are considered as stainless steels if their resistance to corrosion is of primary importance

NOTE It is intended to include into this standard at a later stage creep resisting and heat resisting steel grades.

3.2

product forms

for the form of products the definitions in EN 10079 apply

4 Chemical composition

The chemical composition is given

- in Table 1, for ferritic steels;
- in Table 2, for martensitic and precipitation-hardening steels;
- in Table 3, for austenitic steels;
- in Table 4, for austenitic-ferritic steels.

They apply for all product forms including ingots and semi-finished material.

Table 1 — Chemical composition (cast analysis)^a of ferritic stainless steels

Steel designation		% by mass											
Name	Number	C max.	Si max.	Mn max.	P max.	S	N max.	Cr	Mo	Nb	Ni	Ti	Others
X2CrNi12	1.4003	0,030	1,00	1,50	0,040	≤ 0,015	0,030	10,50 to 12,50			0,30 to 1,00		
X2CrTi12	1.4512	0,030	1,00	1,00	0,040	≤ 0,015		10,50 to 12,50				6 × (C + N) to 0,65	
X6CrNiTi12	1.4516	0,08	0,70	1,50	0,040	≤ 0,015		10,50 to 12,50			0,50 to 1,50	0,05 to 0,35	
X6Cr13	1.4000	0,08	1,00	1,00	0,040	≤ 0,015 ^b		12,00 to 14,00					
X6CrAl13	1.4002	0,08	1,00	1,00	0,040	≤ 0,015 ^b		12,00 to 14,00					Al: 0,10 to 0,30
X2CrTi17	1.4520	0,025	0,50	0,50	0,040	≤ 0,015	0,015	16,00 to 18,00				0,30 to 0,60	
X6Cr17	1.4016	0,08	1,00	1,00	0,040	≤ 0,015 ^b		16,00 to 18,00					
X3CrTi17	1.4510	0,05	1,00	1,00	0,040	≤ 0,015 ^b		16,00 to 18,00				4 × (C + N) + 0,15 to 0,80 ^c	
X3CrNb17	1.4511	0,05	1,00	1,00	0,040	≤ 0,015		16,00 to 18,00		12 × C to 1,00			
X6CrMo17-1	1.4113	0,08	1,00	1,00	0,040	≤ 0,015 ^b		16,00 to 18,00	0,90 to 1,40				
X6CrMoS17	1.4105	0,08	1,50	1,50	0,040	0,15 to 0,35		16,00 to 18,00	0,20 to 0,60				
X2CrMoTi17-1	1.4513	0,025	1,00	1,00	0,040	≤ 0,015	0,015	16,00 to 18,00	1,00 to 1,50			0,30 to 0,60	
X2CrMoTi18-2	1.4521	0,025	1,00	1,00	0,040	≤ 0,015	0,030	17,00 to 20,00	1,80 to 2,50			4 × (C + N) + 0,15 to 0,80 ^c	
X2CrMoTiS18-2 ^d	1.4523 ^d	0,030	1,00	0,50	0,040	0,15 to 0,35		17,50 to 19,00	2,00 to 2,50			0,30 to 0,80	(C + N) ≤ 0,040