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Sistemi označevanja jekel - 1. del: Oznake jekel

Designation systems for steels - Part 1: Steel names

Bezeichnungssysteme für Stähle - Teil 1: Kurznamen

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Systèmes de désignation des aciers - Partie 1: Désignation symbolique

Ta slovenski standard je istoveten z: FprEN 10027-1

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Designation systems for steels - Part 1: Steel names

Systèmes de désignation des aciers - Partie 1: Désignation symbolique Bezeichnungssysteme für Stähle - Teil 1: Kurznamen

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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.

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

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European foreword

This document (FprEN 10027-1:2016) has been prepared by Technical Committee ECISS/TC 100 "Iron and steel - General issues", the secretariat of which is held by BSI.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 10027-1:2005.

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1 Scope

1.1 This European Standard specifies rules for designating steels by means of symbolic letters and numbers to express application and principal characteristics, e.g. mechanical, physical, chemical, so as to provide an abbreviated identification of steels.

NOTE In the English language the designations covered by this European Standard are known as "steel names"; in the French language as "designation symbolique"; in the German language as "Kurznamen".

1.2 This European Standard applies to steels specified in European Standards (EN), Technical Specifications (TS), Technical Reports (TR) and CEN member's national standards.

1.3 These rules may be applied to non-standardized steels.

1.4 A system of numerical designation of steels known as steel numbers is specified in EN 10027-2.

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 10020:2000, Definition and classification of grades of steel

EN 10027-2, Designation systems for steels - Part 2: Numerical system EN 10079:2007, Definition of steel products

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020:2000 and EN 10079:2007 apply.

4 **Principles**

4.1 A unique steel name

There shall be one unique steel name for each steel.

4.2 Formulation of steel names

Steel names allocated in accordance with this European Standard shall comprise principal symbols as specified in 7.1.

In order to avoid ambiguity, it may be necessary to supplement these principal symbols by additional symbols identifying additional characteristics of the steel or steel product, e.g. suitability for use at high or low temperatures, surface condition, treatment condition, de-oxidation. These additional symbols are given in 7.2.

Unless otherwise specified in this European Standard the symbols used in the steel name shall be written without spaces.

4.3 Allocation of steel names

4.3.1 For steels specified in European Standards (EN), Technical Specifications (TS) and Technical Reports (TR), steel names shall be allocated by the ECISS Technical Committee concerned.

4.3.2 For steels specified in CEN member's national standards and for other steels, steel names shall be allocated by or under the responsibility of the national standards body concerned.

So as to avoid a variety of steel names being assigned to essentially the same steel, the European Registration Office as provided for in EN 10027-2 shall, when a steel number is applied for, cooperate with the national standards body concerned to ensure uniform steel names.

4.4 Consultation

Where there are difficulties or disputes in establishing steel names ECISS/TC100 shall be consulted and shall advise accordingly.

5 Reference to product standards

The complete designation of a steel product where quoted in orders or similar contractual documents shall include, in addition to the steel name, an indication of the technical delivery requirement in which the steel is specified. For steels specified in standards this shall be the reference number of the relevant product standard.

Details of the structures of the steel name for the steel or steel product shall be provided in the relevant product or dimensional standard.

6 Classification of steel names

For the purposes of designation, steel names are classified into two main categories:

- Category 1: steels designated according to their application and mechanical or physical properties (see 7.3).
- Category 2: steels designated according to their chemical composition (see 7.4).

7 Structure of steel names

7.1 Principal symbols

Principal symbols for steels designated according to steel application and its mechanical and physical properties shall be assigned in accordance with 7.3.

Principal symbols for steels designated according to the chemical composition of the steel shall be assigned in accordance with 7.4.

Where a steel is specified in the form of a steel casting, its name as specified in Tables 1 to 15 shall be preceded by the letter G.

Where a steel is produced by powder metallurgy, its name as specified in Tables 14 and 15 shall be preceded by the letters PM.

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7.2 Additional symbols

Additional symbols may be added to the principal symbols and assigned in accordance with 7.3 and 7.4.

Additional symbols are divided into two groups, i.e. group 1 and group 2 (see 7.3 and 7.4). If the symbols for group 1 are inadequate to describe the steel fully, then additional symbols from group 2 may be added. Symbols of group 2 shall only be used in conjunction with and follow symbols of group 1.

Further additional symbols for steel products may follow the additional symbols of group 1 and group 2 and shall be selected in accordance with 7.3 and 7.4 from Tables 16, 17 and 18. These symbols shall be separated from preceding symbols by the plus sign (+).

Additional symbols selected from Tables 16, 17 and 18 may be added to steel numbers allocated in accordance with EN 10027–2 and, when used, separated from the steel number by the plus sign (+).

7.3 Steels designated according to their application and mechanical or physical properties

The designation of steel according to their application and mechanical or physical properties shall be made in accordance with Table 1 to Table 11.

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		1			2	3		
	GS	n n	<u>n</u>	é	an	+an +ana		
•	V	J					•	
Principal				A	Additional symbols			
Lattar	Mechanical		For steel					
Letter	property	Group 1 b)	Group 2 c d	product	
G = steel casting (where necessary)	nnn = specif ied minimum	Impac Energ	t prop y Joul	oerty es (J)	Test tempe- rature	C = Special cold forming D = Hot dip coating E = Enamelling	Tables 16, 17 and 18	
steel	yield strength e	27J	40J	60 J	°C	F = Forgings H = Hollow section		
	in MPa ^f for	JR	KR	LR	20	L = Low temperature		
	the smallest	JO	K0	LO	0	M = Thermomechanically roll	ed	
	thickness	J2	K2	L2	-20	N = Normalized or normalized	ed	
	lien	J3	K3	L3	-30	rolled		
		J4	K4	L4	-40	P = Sheet piling		
		J5 S	K5	L5	-50	Q = Quenched and tempered		
		J6	K6	L6	-60	S = Ship building		
		A = P	recipi	tation		$_{2}T = Tubes$		
	https://standar	ds.itelh M = T	arden hermo	ing omech	andards/si anically10	w = Weather resistant an = Chemical symbol	of	
		N = N	ormal	lized	or	elements, e.g. Cu, togeth	er,	
		n	ormal	ized ro	olled	where necessary, with	a	
		Q = Q te	uench emper	ied ed	and	$10 \times \text{the average (round)}$	ed	
		G = O fo n d	ther ollowe ecessa igits	chara d, ary by	cteristics where 1 or 2	range of the content of the element	at	

Key

1 = Principal symbols

2 = Additional symbols for steel

3 = Additional symbols for steel products

^a *n* = numerical characters, a = alpha characters, an = alphanumeric characters.

^b Symbols A, M, N and Q in Group 1 apply to fine grain steels.

^C Symbols of Group 2, other than chemical symbols, may be suffixed by one or two digits in order to distinguish between qualities in accordance with the relevant product standard.

^d If two of the symbols of this Group are needed the chemical symbol shall be the last one.

^e The term "yield strength" refers to upper or lower yield strength (R_{eH}) or (R_{eL}) or proof strength (R_p), or proof strength total extension (R_t) depending on the requirement specified in the relevant product standard.

 $f 1 MPa = 1 N/mm^2$.

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Examples of ste	eel names for structural steels
Standard	Steel name according to EN 10027–1
	S235JR
	S355JR
EN 1002E 2	S355J0
EN 10025-2	S355J2
	S355K2
	S450J0
EN 1002E 2	S355N
EN 10025-5	S355NL
EN 1002E 4	S355M
EN 10025-4	S355ML
	S235J0W
	S235J2W
	S355J0WP
EN 10025-5	S355J2WP
	S355J0W
TANDA	S355J2W D D V D V V
	S355K2W
standar	S460Q
EN 10025-6	S460QL
ALAT TAL	S460QL1
EN 10149-2	S355MC
EN 10149-3	S355NC
EN 10210-1	S355J2H
EN 10248-1	S355GP
FN 10346	S350GD
LIN 10340	S350GD+Z

Table 1 (continued)



Table 2 — Steels for pressure purposes

e 1 MPa = 1 N/mm².

	· · ·						
Example	Examples of steel names						
Standard	Steel name according to EN 10027–1						
EN 10028-2	P265GH						
EN 10028-3	P355NH						
EN 10020 F	P355M						
EN 10028-5	P355ML1						
	P355Q						
EN 10028-6	Р355QН						
	P355QL1						
EN 10120	P265NB						
EN 10207	P265S						
EN 10212	GP240GR						
e EN 10213	GP240GH	Ð					

Table 2 (continued)

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