

SYSTEMS OF DESIGNATION OF STEEL GRADES

Referring Norms

UNI EN 10027	Systems of Designation of steel grades Part 1: Alphanumeric Designation, main symbols
UNI EN 10027	Systems of Designation of steel grades Part 2: Numeric Designation

Examples of designation

Alphanumeric Numeric

S185	1.0035
S235JR	1.0037
E295	1.0045
C35E	1.1181
25CrMo4	1.7218
X5CrNi18-10	1.4301

UNI EN 10027 - part 1: Numeric Designation

Classification of alphanumeric designations in two groups:

Group 1: designation according to use And to mechanical or physical characteristics	Group 2: designation according to chemical composition
First Symbol: a letter B Steels for concrete D Steels for flat products suitable for cold forming E Steels for mechanical constructions G Steels for casting H High resistance steels HS Rapid steels L Steels for piping tubes M Magnetic steels P Steels for pressure boilers R Steels for rail tracks S Steels for structural uses T Steels for black plate, tin plate and chromium plated plate Y Steels for pre-compressed reinforced concrete	First Symbol: a letter C Non alloyed carbon steels X Alloyed steels (also stainless steels)
	Primo simbolo: a figure 1 Non alloyed steels (Mn<1%) 2 Non alloyed steels (Mn>1%) Alloyed steels except HS with a tenor of each alloying element <5% 3 Alloyed steels except HS with a tenor of at least an alloying element >5% 4 HS steels (rapid steels)

Main symbol: S for steels for structural uses (E for mechanical construction steels) followed by the *unit of minimum yield point* in N/mm² for the smallest range of thicknesses (≤ 16 mm), followed by other additional symbols.

Construction steels group	Mechanical Characteristics	Resilience (J)			Physical Characteristics		
		Unit of minimum yield load R_e in N/mm^2	Min 27 J	Min 40 J	Temp °C	Group 1	Group 2
S			JR	KR	20	M thermo mechanical rolling	C Special cold forming
			J0	K0	0		
			J2	K2	-20	N normalization rolling	D galvanization
			J3	K3	-30		
			J4	K4	-40	G1 sparkling G2 calmed G3 optional state of supply	E enamelling H hollow profile L low temperature M thermo mechanical rolling
S	355		J2			G3	H

UNI EN 10027 - part 2: Numeric Designation

Simplified Designation by which to every designation is given a number made of 5 digits, inspired directly to German DIN Norms.

X. XX XX (XX)
 X the first figure is a 1 when the material is steel
 XX the two figures that follow indicate a designation of the steel group
 XX order number for the steel type
 (XX) future extension