

BS EN 10088-3 : 1995

Stainless Steels

Part 3. Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes

Table 1. Typical mechanical properties at room temperature for ferritic steels in the annealed* condition

Steel designation		Thickness max. mm	Hardness ⁽¹⁾⁽²⁾ HB, Max.	0.2% proof strength ⁽³⁾ Rp 0.2, min. N/mm ²	Tensile strength ⁽²⁾⁽³⁾ Rm N/mm ²	Elongation after fracture ⁽²⁾⁽³⁾ A, min. (long) %
Name	Number					
X6Cr13	1.4000	25	200	230	400 to 630	20
X6Cr17	1.4016	100	200	240	400 to 630	20

(1) Only for guidance
 (2) The maximum HB-values may be raised by 60 units or the maximum tensile strength value may be raised by 150 /mm² and the minimum elongation value be lowered to 10% for sections and bars < 35 mm thickness having a final cold deformation.
 (3) For rods, only the tensile strength values apply.
 * The annealing treatment may be omitted, if the conditions for hot working and subsequent cooling are such that the requirements for the mechanical properties of the product and the resistance to intergranular corrosion as defined in EU 114 are obtained.

Table 2. Typical mechanical properties at room temperature for martensitic steels in the heat treated condition

Steel designation		Thickness max. mm	Heat-treatment condition	Hardness ⁽¹⁾⁽²⁾ HB, Max.	0.2% proof strength ⁽³⁾ Rp 0.2, min. N/mm ²	Tensile strength ⁽²⁾⁽³⁾ Rm N/mm ²	Elongation after fracture ⁽²⁾⁽³⁾ A, min. long %
Name	Number						
X12Cr13	1.4006		A	220 ⁽⁴⁾	—	max. 730 ⁽⁴⁾	
		≤ 160	QT650	—	450	650 to 850	15
X12CrS13	1.4005		A	220 ⁽⁴⁾	—	max. 730 ⁽⁴⁾	
		≤ 160	QT650	—	450	650 to 850	12
X20Cr13	1.4021		A	230 ⁽⁴⁾	—	max. 760 ⁽⁴⁾	
		≤ 160	QT700	—	500	700 to 850	13
			QT800	—	600	800 to 950	12

(1) A=annealed; QT - quenched and tempered
 (2) Only for guidance
 (3) For rods, only the tensile strength values apply.
 (4) HB max values may be raised by 60 units or Rm, max values may be raised by 150N/mm² for sections and bars of ≤35 mm thickness having a final cold deformation.



Table 3. Typical mechanical properties at room temperature for austenitic steels in the solution-annealed condition

Steel designation		Thickness max. mm	Hardness ⁽¹⁾⁽²⁾ HB, Max.	Proof strength min.		Tensile strength ⁽²⁾⁽³⁾ min. N/mm ²	Elongation after fracture ⁽²⁾⁽³⁾	
Name	Number			0.2% Rp0.2 ⁽³⁾ N/mm ²	1% Rp1.0 ⁽³⁾ N/mm ²		Rm long %	A, min. tr. %
X2CrNi19-11	1.4306	d<160	215	180	215	460 to 680	45	—
		160<d<250					—	35
X5CrNi18-10	1.4301	d<160	215	190	225	500 to 700	45	—
		160<d<250					—	35
X8CrNiS18-9	1.4305	d<160	230	190	225	500 to 750	35	—
X6CrNiTi18-10	1.4541	d<160	215	190	225	500 to 700	40	—
		160<d<250					—	30
X2CrNiMo17-12-2	1.4404	d<160	215	200	235	500 to 700	40	—
		160<d<250					—	30
X5CrNiMo17-12-2	1.4401	d<160	215	200	235	500 to 700	40	—
		160<d<250					—	30
X6CrNiMoTi17-12-2	1.4571	d<160	215	200	235	500 to 700	40	—
		160<d<250					—	30
X6CrNiNb18-10	1.4550	d<160	230	205	240	510 to 740	40	—
		160<d<250					—	30

(1) Only for guidance

(2) The maximum HB-values may be raised by 100 HB or the tensile strength value may be raised by 200 N/mms and the minimum elongation value lowered to 20% for sections and bars of < 35 mm thickness having a final cold deformation.

(3) For rods, only the tensile strength values apply.