

Mechanical Properties

(AS SET BY THE SPECIFICATION)

TABLE 3 **MECHANICAL PROPERTIES OF WROUGHT STAINLESS STEEL***

(All properties minimum specified, usually flat products)

Common name	UNS number	Condition	0.2% Proof strength MPa	Tensile strength MPa	Elongation %		Brinell hardness (HB)			
			min	min	≤ 1.2 mm min	> 1.2 mm min	max	max	max	
201	S20100	Annealed	310	655	40	40	217	100	240	A240
202	S20200	Annealed	260	620	40	40	241	-	-	A240
301	S30100	Annealed	205	515	40	40	217	95	210	A240
301	S30100	1/4 hard	515	860	25	25	-	-	-	A666
301	S30100	1/2 hard	760	1035	15	18	-	-	-	A666
301	S30100	3/4 hard	930	1205	10	12	-	-	-	A666
301	S30100	Full hard	965	1275	8	9	-	-	-	A666
302	S30200	Annealed	205	515	40	40	201	92	210	A240
302HQ	S30430	Annealed	-	605 max	-	-	-	-	-	A493
303	S30300	Annealed	240	585	50	50	-	-	-	A582
304	S30400	Annealed	205	515	40	40	201	92	210	A240
304L	S30403	Annealed	170	485	40	40	201	92	210	A240
305	S30500	Annealed	-	585 max	-	-	-	-	-	A493
+	S30815	Annealed	310	600	40	40	217	95	-	A240
309S	S30908	Annealed	205	515	40	40	217	95	225	A240
310S	S31008	Annealed	205	515	40	40	217	95	225	A240
316	S31600	Annealed	205	515	40	40	217	95	225	A240
316L	S31603	Annealed	170	485	40	40	217	95	225	A240
316Ti	S31635	Annealed	205	515	40	40	217	95	225	A240
317	S31700	Annealed	205	515	35	35	217	95	-	A240
317L	S31703	Annealed	205	515	40	40	217	95	-	A240
321	S32100	Annealed	205	515	40	40	217	95	210	A240
347	S34700	Annealed	205	515	40	40	201	92	-	A240
904L	N08904	Annealed	215	490	35	35	-	90	-	B625/A240
409	S40900	Annealed	205	380	20	22	179	88	-	A240
430	S43000	Annealed	205	450	20	22	183	88	210	A240
444	S44400	Annealed	275	415	20	20	217	96	200	A240
446	S44600	Annealed	280	480	20	-	-	-	-	A580
1.4003 +	S41003	Annealed	280	460	18	18	220	-	-	-
Duplex	S31803	Annealed	450	620	25	25	293	[31]	-	A240
+	S32101	Annealed	450	650	30	-	290	-	-	A240
+	S32304	Annealed	400	600	25	25	290	[32]	-	A240
Super Duplex	S32750	Annealed	550	795	15	15	310	[32]	-	A240
Super Duplex	S32760	Annealed	550	750	25	25	270	[28]	-	A240
+	S32550	Annealed	550	760	15	15	302	[32]	-	A240
410	S41000	Annealed	205	450	20	22	217	96	210	A240
416	S41600	Annealed	276	517	30	30	-	-	-	A582
420	S42000	Cold finished	-	520	-	42	255	-	-	A276
431	S43100	Cold finished	-	965 max	-	-	285	-	-	A580
440A	S44002	Cold finished	-	-	-	-	285	-	-	A580
440C	S44004	Cold finished	-	-	-	-	285	-	-	A580
17-4PH	S17400	H1025	1000	1070	12	12	401	[42]	-	A564

*Consult the relevant product standard for definitive values.

+ Proprietary alloy names also apply.

Physical Properties

TABLE 4 **TYPICAL PHYSICAL PROPERTIES - ANNEALED CONDITION**

Common name	UNS number	Euronorm grade number	Density kg/m ³	Mean coefficient of thermal expansion (b)			Thermal conductivity at 100°C W/m.k	Specific heat 0-20°C j/kg.k	Electric resistivity at 20°C nΩm	
				Elastic modulus at 20°C GPa (a)	20-100°C μm/m/°C	20-300°C μm/m/°C				20-500°C μm/m/°C
FERRITIC										
409	S40900	1.4512	7700	220	10.5	11.5	12.0	25	460	600
1.4003	S41003	1.4003	7700	220	10.4	11.2	11.9	25	430	600
430	S43000	1.4016	7700	220	10.0	10.5	11.0	25	460	600
444	S44400	1.4521	7700	220	10.4	11.2	11.9	23	430	800
446	S44600	1.4749	7700	220	9.8	10.5	11.2	17	500	700
AUSTENITIC										
201	S20100	1.4372	7800	200	16.6	18.0	19.6	15	500	700
202	S20200	1.4373	7800	200	16.6	18.4	19.2	15	500	700
301	S30100	1.4310	7900	200	16.0	17.0	18.0	15	500	730
302	S30200	1.4319	7900	200	17.2	17.8	18.4	15	500	720
303	S30300	1.4305	7900	200	16.0	17.0	18.0	15	500	730
304	S30400	1.4301	7900	200	16.0	17.0	18.0	15	500	730
304L	S30403	1.4307	7900	200	16.0	17.0	18.0	15	500	730
302HQ	S30430	1.4567	7900	200	16.7	17.7	18.4	15	500	730
305	S30500	1.4303	7900	200	16.0	17.0	18.0	15	500	780
+	S30815	1.4835	7800	200	16.5	17.5	18.2	15	500	850
309	S30900	1.4833	7900	200	16.0	16.8	17.8	15	500	780
310S	S31008	1.4845	7900	200	15.0	16.2	17.2	15	500	850
316	S31600	1.4401	8000	200	16.0	17.0	18.0	15	500	750
316L	S31603	1.4404	8000	200	16.0	17.0	18.0	15	500	750
317L	S31703	1.4438	8000	200	16.0	17.0	18.0	15	500	750
321	S32100	1.4541	7900	200	16.0	17.0	18.0	15	500	730
347	S34700	1.4550	7900	200	16.0	17.0	18.0	15	500	730
+	N08904	1.4539	8000	195	15.8	16.5	17.3	12	450	1000
DUPLEX										
+	S31803	1.4462	7800	200	13.0	14.0	-	15	500	800
+	S32304	1.4362	7800	200	13.0	14.0	-	15	500	800
+	S32550	1.4507	7800	200	13.0	14.0	-	15	500	800
+	S32750	1.4410	7800	200	13.0	14.0	-	15	500	800
+	S32760	1.4501	7800	200	13.0	14.0	-	15	500	800
MARTENSITIC										
410	S41000	1.4006	7700	215	10.5	11.5	-	30	460	600
416	S41600	1.4005	7700	215	10.5	11.5	-	30	460	600
420	S42000	1.4021	7700	215	10.5	11.5	-	30	460	600
431	S43100	1.4507	7700	215	10.0	10.5	-	25	460	700
440C	S44004	1.4125	7700	215	10.4	11.2	-	15	430	800
PRECIPITATION HARDENING										
630	S17400	1.4542	7800	200	10.9	11.1	-	16	500	710
631	S17700	1.4568	7800	200	13.0	14.0	-	16	500	800

NOTES:

(a) 1 GPa = 1000 MPa

(b) μm/m/°C = x10⁻⁶/°C

+ Proprietary alloy names apply to these grades.

These properties are approximate and intended only for guidance.