

Table 16 — Chemical composition: alloy direct hardening steels

Steel	C	Si	Mn	P	S	Cr	Mo	Ni
	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)
530M40	0.36 to 0.44	0.10 to 0.40	0.60 to 0.90	0.035 max.	0.040 max.	0.90 to 1.20	—	—
605M36	0.32 to 0.40	0.10 to 0.40	1.30 to 1.70	0.035 max.	0.040 max.	—	0.22 to 0.32	—
606M36	0.32 to 0.40	0.10 to 0.40	1.30 to 1.70	0.035 max.	0.15 to 0.25	—	0.22 to 0.32	—
708M40	0.36 to 0.44	0.10 to 0.40	0.70 to 1.00	0.035 max.	0.040 max.	0.90 to 1.20	0.15 to 0.25	—
709M40	0.36 to 0.44	0.10 to 0.40	0.70 to 1.00	0.035 max.	0.040 max.	0.90 to 1.20	0.25 to 0.35	—
722M24	0.20 to 0.28	0.10 to 0.40	0.45 to 0.70	0.035 max.	0.040 max.	3.00 to 3.50	0.45 to 0.65	—
817M40	0.36 to 0.44	0.10 to 0.40	0.45 to 0.70	0.035 max.	0.040 max.	1.00 to 1.40	0.20 to 0.35	1.30 to 1.70
826M31	0.27 to 0.35	0.10 to 0.40	0.45 to 0.70	0.035 max.	0.040 max.	0.50 to 0.80	0.45 to 0.65	2.30 to 2.80
826M40	0.36 to 0.44	0.10 to 0.40	0.45 to 0.70	0.035 max.	0.040 max.	0.50 to 0.80	0.45 to 0.65	2.30 to 2.80
945M38	0.34 to 0.42	0.10 to 0.40	1.20 to 1.60	0.035 max.	0.040 max.	0.40 to 0.60	0.15 to 0.25	0.60 to 0.90

NOTE See also 3.3 c), 3.3 i) and options A.2 and A.5.

Table 17 — Chemical composition: ferritic and martensitic stainless and heat resisting steels

Steel	Chemical composition (maximum unless range stated)							
	C	Si	Mn	P	S	Cr	Mo	Se
	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)	%(m/m)
<i>Ferritic steels</i>								
403S17	0.08	1.0	1.0	0.040	0.030	12.0 to 14.0	—	0.50
430S17	0.08	1.0	1.0	0.040	0.030	16.0 to 18.0	—	0.50
<i>Martensitic steels</i>								
410S21	0.09 to 0.15	1.0	1.0	0.040	0.030	11.5 to 13.5	—	1.00
416S21	0.09 to 0.15	1.0	1.5	0.060	0.15 to 0.35	11.5 to 13.5	0.60	1.00
416S29	0.14 to 0.20	1.0	1.5	0.060	0.15 to 0.35	11.5 to 13.5	0.60	1.00
416S37	0.20 to 0.28	1.0	1.5	0.060	0.15 to 0.35	12.0 to 14.0	0.60	1.00
416S41	0.09 to 0.15	1.0	1.5	0.060	0.060	11.5 to 13.5	0.60	1.00
420S29	0.14 to 0.20	1.0	1.0	0.040	0.030	11.5 to 13.5	—	1.00
420S37	0.20 to 0.28	1.0	1.0	0.040	0.030	12.0 to 14.0	—	1.00
431S29	0.12 to 0.20	1.0	1.0	0.040	0.030	15.0 to 18.0	—	2.0 to 3.0

Table 21 — Mechanical properties for alloy steels (18)

Steel	Condition (2)	Size (1) (diameter across flats, or thickness) mm	R <sub>m</sub> N/mm <sup>2</sup>	R <sub>e</sub> min. N/mm <sup>2</sup>	A min. on 5.65 S <sub>0</sub> %	Impact <sup>a</sup>		R <sub>p0.2</sub> (3) min. N/mm <sup>2</sup>	HB (13)
						Izod min. J	KCV min. J		
722M24	Hardened and tempered + turned or ground	T > 150 ≤ 250	850 to 1 000	650	13	40	35	635	248 to 302
		T ≥ 6 ≤ 150	850 to 1 000	680	13	54	50	665	248 to 302
		U ≥ 6 ≤ 150	925 to 1 075	755	12	47	42	740	269 to 331
	Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	T ≥ 6 ≤ 150	850 to 1 000	700	9	54	—	680	248 to 302
		U ≥ 6 ≤ 150	925 to 1 075	770	9	47	—	755	269 to 331
817M40	Turned, ground or cold drawn and finally softened	T > 150 ≤ 250	850 to 1 000	650	13	40	35	635	248 to 302
		T > 63 ≤ 150	850 to 1 000	680	13	54	50	665	248 to 302
		U > 29 ≤ 100	925 to 1 075	755	12	47	42	740	269 to 331
	Hardened and tempered + turned or ground	V > 13 ≤ 63	1 000 to 1 150	850	12	47	42	835	293 to 352
		W ≥ 6 ≤ 29	1 075 to 1 225	940	11	40	35	925	311 to 375
		X ≥ 6 ≤ 29	1 150 to 1 300	1 020	10	34	28	1 005	341 to 401
	Hardened and tempered + cold drawn or hardened and tempered + cold drawn + ground	Z ≥ 6 ≤ 29	1 550 min.	1 235	5	10	9	1 125	444 min.
		T > 63 ≤ 150	850 to 1 000	700	9	54	—	680	248 to 302
		U > 29 ≤ 100	925 to 1 075	770	9	47	—	755	269 to 331
	Turned, ground or cold drawn and finally softened	V > 13 ≤ 63	1 000 to 1 150	865	9	47	—	850	293 to 352
		W ≥ 6 ≤ 29	1 075 to 1 225	955	8	40	—	940	311 to 375
		X ≥ 6 ≤ 29	1 150 to 1 300	1 035	7	34	—	1 020	341 to 401
	Turned, ground or cold drawn and finally softened	Z ≥ 6 ≤ 29	1 550 min.	1 250	3	11	—	1 235	444 min.

<sup>a</sup> See also option A.3.