

ASTM Specification For Fasteners

ASTM A 193/A 193M ALLOY STEEL, CARBON STEEL & STAINLESS STEEL BOLTING FOR HIGH TEMPERATURE SERVICE

ASTM GRADE	C	Mn	Si	S	P	Cr	Ni	Mo	Other	Hardness	Tensile Psi(MPa)	Yield Psi(MPa)	Elongation in Area %	Redu
A193 B8-B8A AISI Type 304	0.08 Max	2.00 Max	1.00 Max	0.030 Max	0.045 Max	18.00 20.00	8.00 10.50	- -	- -	223HB	75000(515)	30000(205)	30	50
A193B8-B8MA AISI Type 316	0.08 Max	2.00 Max	1.00 Max	0.030 Max	0.045 Max	16.00 18.00	10.00 14.00	2.00 3.00	- -	223HB 223HB	75000(515)	30000(205)	30	50
A193B8T-B8TA AISI Type 321	0.08 Max	2.00 Max	1.00 Max	0.030 Max	0.045 Max	17.00 19.00	9.00 12.00	- -	Ti5xC 0.70Min	223HB	75000(515)	30000(205)	30	50
A193B8C-B8CA AISI Type 347	0.08 Max	2.00 Max	1.00 Max	0.030 Max	0.045 Max	17.00 19.00	9.00 13.00	- -	CbxPTA= 1.10c Min	192HB	75000(515)	30000(205)	30	50
A193B6-B6X AISI Type 410	0.15 Max	1.00 -	1.00 Max	0.03 Max	0.040 Max	11.50 13.50	- -	- -	- -	- -	110000(760)	85000(585)	15	50
A193B7-B7M Alloy Steel (Cr, Mo)	0.37 0.49	0.65 1.10	0.15 0.35	0.040 Max	0.035 Max	0.75 1.20	- -	0.15 0.25	- -	- -	125000(860)	105000(720)	16	50
A193B5 A.S.-5%Cr.AISI501	0.10 min	1.00 Max	1.00 Max	0.030 Max	0.040 Max	4.00 6.00	- -	0.40 -	- -	- -	100000(690)	80000(550)	16	50

ASTM A 194/ 194 M CARBON STEEL, ALLOY STEEL & STAINLESS STEEL NUTS, BOLTS FOR HIGH PRESSURE & HIGH TEMPERATURE SERVICE

ASTM GRADE	C	Mn	Si	S	P	Cr	Ni	Mo	Other	Hardness	Tensile Psi(MPa)	Yield Psi(MPa)	Elongation in Area %	Redu
A194/8A AISI Type 304	0.08 Max	2.00 Max	1.00 Max	0.03 Max	0.045 Max	18.00 20.00	8.00 10.50	- -	- -	- -	126-300 Grade 8 126-182 Grade 8 A	30000(205)	30	50
A 194 8M/MA AISI Type 316	0.08 Max	2.00 Max	1.00 Max	0.03 Max	0.045 Max	16.00 18.00	10.00 14.00	2.00 3.00	- -	- -	126-300 Grade 8m 126-192 Grade 8 MA	30000(205)	30	50
A194/8T/8TA AISI Type 321	0.08 19.00	2.00 12.00	1.00 -	0.03 0.78 Min	0.045 Max	17.00	9.00	- -	- -	Ti 5 x C	126-300 Grade 8T 126-192 Grade 8 TA	30000(205)	30	50
A194/ 8C/8CA AISI Type 347	0.08 Max	2.00 Max	1.00 Max	0.03 Max	0.045 Max	17.00 19.00	9.00 13.00	- -	- -	CbxTa= 1.10Cmin	126-300 Grade 8CA 126-192 Grade 8 CA	30000(205)	30	50
A194-6 AISI Type 410	0.15 Max	1.00 Max	1.00 Max	0.03 Max	0.040 Max	11.50 13.50	- -	- -	- -	1.10 Cmin	228 271HRC-20-28	80000(550)	16	50
A194 2 2HM & 2H Carbon Steel	0.4 min	1 Max	0.4 Max	1.050 Max	0.040 Max	- -	- -	- -	- -	- -	159-352GR.2 248-352GR.2H 159-237GR.2HM	30000(205)	30	50
A194-7/7M Alloy Steel	0.37 0.49	0.65 1.1	0.15 0.35	0.04 Max	0.4 Max	0.75 1.2	0.15 0.25	- -	- -	- -	248-352GR.7 159-237GR.7M 248-352 (HRC-24-38)	30000(205)	30	50
A194-30.10 A.S.-5%Cr.AISI501	0.10 Max	1.00 Max	1.00 Max	0.030 Max	0.040 Max	4.00 6.00	- -	0.40 -	- -	- -	100000(690)	80000(550)	16	50

