

HEAT-TREATED ALLOY STUDS & THREADED RODS



CONTINUOUS THREAD STUDS



FERRITIC STEELS ASTM A 193 GRADE.
B5-B6-B7-B7M-B16.
ASTM A 320 GRADE.
L7-L7M

AUSTENITIC STEELS

ASTM A193 GRADE.
B8C-B8M-B8T.
ASTM A320 GRADE.
B8-B8M-B8C, B8T-B8F

ASTM Designation	Grade	Service Temperature Range	Strength and Ductility				Alloy Type	AISI	Suitable Nuts (ASTM/Grade)
			Tensile Min. PSI	Yield	Reduction of Area R/A	Elongation EL			
ASTM A-193	B7	High Temp. from 0-480 °C	125000	100000	50	16	Cr-Mo	(4140)	A194 Gr. 2H
ASTM A-193	B16	High Temp. 0-550 °C	125000	105000	50	18	Cr-Mo-V	(4140M)	A194 Gr. 4
ASTM A-193	B7M	High Temp. 0-450 °C	100000	80000	50	18	Cr-Mo	(4140)	A194 Gr. 2HM
ASTM A-320	L7	Low Temp. -100 °C	125000	105000	50	16	Cr-Mo	(4140)	A194 Gr. 4 or A194 Gr. 7
ASTM A-193	B5	Up to 815 °C	100000	80000	50	16	5% Cr	(501)	A194 Gr. 3
ASTM A-193	B6	Up to 450 °C	110000	85000	50	16	13%Cr	(410)	A194 Gr. 6
ASTM A-193	B8	Low Temp. -200 C - 650 °C	75000	30000	50	30	18%Cr - 8% Ni	(304)	A194B8
ASTM A-193	B8M	Low Temp. -200 C - 750 °C	75000	30000	50	30	16%Cr - 10% Ni	(316)	A194 B8M
ASTM A-320	B8	Low Temp. -200 C - 650 °C	75000	30000	50	30	18% Cr - 8% Ni	(304)	A194 B8
ASTM A-320	B8M	Low Temp. -200 C - 750 °C	75000	30000	50	30	16% Cr - 10% Ni	(316)	A194 B8M
ASTM A-320	B8T	Low Temp. -200 C - 650 °C	75000	30000	50	30	17% Cr - 9% Ni	(321)	A194 B8T
ASTM A-320	B8C	Low Temp. -200 C - 650 °C	75000	30000	50	30	17% Cr - 9% Ni	(347)	A194 B8C
ASTM A-193	B8 Class 2	Low Temp. -200 C - 650 °C	125000	100000	35	12	18% Cr - 8% Ni	(304)	A194 B8
ASTM A-453	660	High Temp. to 750 °C	130000	85000	18	15	High Iron Superalloy Precipitation Hardening STST	660 (A286)	A453 660
ASTM A-564 (cond. 900)	630	Med. Temp. up to 316 °C	190000	170000	40	10		630 (17-4)	A564 630
ASTM A-564 (cond. 1100)			140000	115000	45	14			
ASTM B-408	800 - 800H	High Temp. 540 C - 815 °C	80000	35000		25	Incoloy		ASTM B408
ASTM B-164	405	High Temp. to 815 °C	85000	50000		15	Monel	Temperature Conversions	
ASTM B-164	K500	High Temp. 650 C - 423 °C	100000	70000		35	Monel	°C	°F
		Low Temp. 650 C - 253 °C						-423	-729
		High Temp. Range from 815 C - 1090 °C	100000	80000		30	Nickel	-200	-328
		High Temp. to 850 °C	170000	115000		30	Superalloy (Inconel)	-100	-148
600, 625, 718, x750							Nickel	316	601
B,C, X							Superalloy (Hastalloy)	450	842
								480	896
								540	1004
								550	1022
								650	1202
								750	1382
								815	1499
								850	1562