

MECHANICAL REQUIREMENTS - I

ASTM A-193 ASME SA-193 Grade	Minimum Tempering Temperature deg. F (deg C)	Tensile Strength min. ksi (MPa)	Yield Strength min. ksi (MPa)	Elongation in 2" (50mm) Min. %	Reduction of Area Min. %	Hardness Maximum
B5	1100 (593)	100 (690)	80 (550)	16	50	-
B6	1100 (593)	110 (760)	85 (585)	15	50	-
B7 2-1/2" & under in diameter over 2-1/2" to 4" in diameter	1100 (593)	125 (860)	105 (725)	16	50	-
	1100 (593)	115 (790)	95 (655)	16	50	-
B7M 2-1/2" & under in diameter over 2-1/2" to 4" in diameter	1150 (620)	100 (690)	80 (550)	18	50	235 HB (99HRB) See note 1
	1150 (620)	100 (690)	80 (550)	18	50	235 HB (99HRB) See note 1
B16 2-1/2" & under in diameter over 2-1/2" to 4" in diameter	1200 (650)	125 (860)	105 (725)	18	50	-
	1200 (650)	110 (760)	95 (655)	17	45	-
	Heat Treatment					
B8 Class 1	Carbide Solution treated	75 (515)	30 (205)	30	50	223 HB (96HRB) See note 2
	Class 2	Carbide solution treated & strain hardened				
3/4" & under		125 (860)	100 (690)	12	35	321 HB (35HRC) See note 2
over 3/4" to 1" incl.		115 (790)	80 (550)	15	35	"
over 1" to 1-1/4" incl.		105 (725)	65 (450)	20	35	"
over 1-1/4" to 1-1/2" incl.		100 (690)	50 (345)	28	45	"
B8M Class 1	Caribe solution treated	75 (515)	30 (205)	30	50	223 HB (96HRB) See note 2
	Class 2	Carbide solution treated & strain hardened				
3/4" & under		110 (760)	95 (655)	15	45	321 HB (35HRC) See note 2
over 3/4" to 1" incl.		100 (690)	80 (550)	20	45	"
over 1" to 1-1/4" incl.		95 (655)	65 (450)	25	45	"
over 1-1/4" to 1-1/2" incl.		90 (620)	50 (345)	30	45	"

Note 1: In order to meet the tensile requirements, the hardness shall be no less than 201 HB or 94 HRB

Note 2: For 3/4" in diameter and under, maximum hardness of 241 HB or 100 HRB is permitted

See ASTM & ASME Books or Standards for allowing variations and for other mechanical and testing requirements.

Ph: 780-440-2737 • 1-800-661-6923

M & Z INDUSTRIAL SUPPLY LTD.