

Specifications
ASTM A668 Table 3 Tensile Requirements

Class	Size, in. (mm)		Tensile Strength, min.		Yield Point, Yield Strength 0.2% Offset, min.		Elongation	Reduction	Brinnell
	Over	Not Over	psi	MPa	psi	MPa	in 2 in. or 50mm, min, %	of Area, min, %	Hardness
Carbon Steel									
A (AH) (Untreated)	--	20 (500)	47 000	325	--	--	--	--	183 max
B (BH) (Annealed, or normalized or normalized and tempered)	--	20 (508)	60000	415	30000	205	24	36	120-174
C (CH) (Annealed, or normalized, or normalized & tempered)	--	12 (203)	66000	455	33000	230	23	36	137-183
	12 (305)	20 (508)	66000	455	33000	230	22	34	137-183
D (DH) (Normalized, annealed, or normalized & tempered)	--	8 (203)	75000	515	37500	260	24	40	149-207
	8 (203)	12 (305)	75000	515	37500	260	22	35	149-207
	12 (305)	20 (508)	75000	515	37500	260	20	32	149-207
	20 (508)		75000	515	37500	260	19	30	149-207
E (EH) (Normalized & tempered or double-normalized & tempered)	--	8 (203)	85000	585	44000	305	25	40	174-217
	8 (203)	12 (305)	83000	570	43000	295	23	37	174-217
	12 (305)	20 (508)	83000	570	43000	295	22	35	174-217
F (FH) (Quenched & tempered or normalized, quenched & tempered)	--	4 (102)	90000	620	55000	380	20	39	187-235
	4 (102)	7 (178)	85000	585	50000	345	20	39	174-217
	7 (178)	10 (254)	85000	585	50000	345	19	37	174-217
	10 (254)	20 (508)	82000	565	48000	330	19	36	174-217
Alloy Steel									
G (GH) (Annealed, or normalized, or normalized & tempered)	--	12 (305)	80000	550	50000	345	24	40	163-207
	12 (305)	20 (508)	80000	550	50000	345	22	38	163-207
H (HH) (Normalized & tempered)	--	7 (178)	90000	620	60000	415	22	44	187-235
	7 (178)	10 (254)	90000	620	58000	400	21	42	187-235
J (JH) (Normalized & tempered, or normalized, quenched & tempered)	--	7 (178)	95000	655	70000	485	20	50	197-255
	7 (178)	10 (254)	90000	620	65000	450	20	50	187-235
K (KH) (Normalized, quenched & tempered)	--	7 (178)	105000	725	80000	550	20	50	212-269
	7 (178)	10 (254)	100000	690	75000	515	19	50	207-269
L (LH) (Normalized, quenched & tempered)	--	4 (102)	125000	860	105000	725	16	50	255-321
	4 (102)	7 (178)	115000	795	95000	655	16	45	235-302
	7 (178)	10 (254)	110000	760	85000	585	16	45	223-293
M (MH) (Normalized, quenched & tempered)	--	4 (102)	145000	1000	120000	825	15	45	293-352
	4 (102)	7 (178)	140000	965	115000	790	14	40	285-341
	7 (178)	10 (254)	135000	930	110000	758	13	40	269-331
N (NH) (Normalized, quenched & tempered)	--	4 (102)	170000	1175	140000	965	13	40	331-401
	4 (102)	7 (178)	165000	1140	135000	930	12	35	331-401
	7 (178)	10 (254)	160000	1105	130000	905	11	35	321-388