

Aluminum	Tensile Strength (PSI)	Yield Strength (PSI)	% Elongation	Reference Specification
319	23-31,000	13-20,000	1.5	ASTM B108
355	35-50,000	28-39,000	1-3	
C355	35-50,000	28-39,000	1-3	ASTM B618 AMS-A-21180
356	32-40,000	22-30,000	3-7	ASTM B618 AMS 4217
A356	32-45,000	28-34,000	2-5	ASTM B618 ASTM B686 Mil-A-21180
A357	38-50,000	28-40,000	2-5	ASTM B018 AMS-A-21180
E357	35-48,000	30-40,000	2-5	AMS 4288
F357	38-50,000	28-40,000	2-5	AMS 4289
70/30 copper nickel	60,000	32,000	32	
90/10 copper nickel	45,000	25,000	25	
Silicon Brass (87300)	45,000	18,000	20	ASTM B584
Silicon Bronze (C87200)	45,000	18,000	20	QQ-C-390
Aluminum Bronze (C95200)	65,000	25,000	20	ASTM B148

Cobalt	Condition	Tensile Strength (PSI)	Yield Strength (PSI)	% Elongation	Hardness Rc	Reference Specification
Alloy 3 (stellite)	As Cast				48-53	
Alloy 6 (stellite)	As Cast				37-45	AMS 5387
Alloy 21 (stellite)	As Cast	95-130,000	65-95,000	8-20	24-32	AMS 5385
Alloy31 (stellite)	As Cast	105-130,000	75-90,000	6-10		AMS 5382
X-40	As Cast					
X-45	As Cast					
F-75	As Cast	95-110,000	70-80,000	8-15	25-34	

Nickel	Condition	Tensile Strength (PSI)	Yield Strength (PSI)	% Elongation	Hardness Range or Max	Reference Specification
Inconel 600	As Cast	65-75,000	35-40,000	10-20	80-90 Rb	AMS 5401
Inconel 625	Annealed	80-100,000	40-55,000	15-30	10-20 Rc	AMS 4501
Hastalloy C	As Cast	80-95,000	45-55,000	8-12	90-100 Rb	
	Annealed	75-95,000	45-55,000	8-12	90 Rb- 25 Rc	
Hastalloy X						AMS 5390
Invar	As Cast	50-60,000	25-30,000	30-40	50-60 Rb	
Monel E						

Stainless Steel	Condition	Tensile Strength (PSI)	Yield Strength (PSI)	% Elongation	Hardness Range or Max	Reference Specification
303 (CF-20)	Solution Anneal	65-75,000	30-35,000	35-60	90 Rb	ASTM A743
304L (CF-3)	Solution Anneal	70-85,000	40-50,000	35-50	90 Rb	ASTM A351 Mil-S-81591
304 (CF-8)	Solution Anneal	70-85,000	40-50,000	35-50	90 Rb	ASTM A269
316L (CF-3M)	Solution Anneal	70-85,000	40-50,000	35-50	90 Rb	ASTM A743
316 (CF-8M)	Solution Anneal	70-85,000	40-50,000	35-50	90 Rb	ASTM A743 ASTM A351 Mil-S-81591
347 (CF-8C)	Solution Anneal	70-85,000	32-36,000	30-40	90 Rb	ASTM A743 AMS 5362
410 (CA-15)	Hardened	95-200,000	75-160,000	5-12	94 Rb-45 Rc	ASTM A743
416 (IC 416)	Hardened	95-200,000	75-160,000	3-8	94 Rb-45 Rc	Mil-S-81591
13-8 PH	Hardened	130-180,000	100-150,000	5-15	26-40 Rc	AMS 5840
17-4 PH	Hardened	150-190,000	140-160,000	6-20	34-44 Rc	ASTM A747 AMS 5355 AMS 5643
15-5 PH	Hardened	135-170,000	110-145,000	5-15	26-38 Rc	AMS 5346 AMS 5347
HK	Solution Anneal	65-75,000	35-45,000	10-20	100 Rb	IDM-8365
CA-6NM		120,000	100,000	19	285 BHN Max	ASTM A487 MS-32014

Carbon & Low Alloy Steel	Condition	Tensile Strength (PSI)	Yield Strength (PSI)	% Elongation	Hardness Range or Max	Reference Specification
IC-1010	Annealed	50-60,000	30-35,000	30-35	50-55 Rb	
IC-1020	Annealed	60-70,000	40-45,000	25-40	80 Rb	ASTM A732 ASTM A27
IC-1025	Annealed	63-73,000	42-47,000	25-35	80 Rb	ASTM A216
IC-1030	Annealed Hardened	65-75,000 85-150,000	45-50,000 60-150,000	20-30 0-15	20-50 Rc	ASTM A732 ASTM A27
IC-1035	Annealed Hardened	70-80,000 90-150,000	45-55,000 85-150,000	20-30 0-15	80 Rb 25-52 Rc	ASTM A148
IC-1045	Annealed Hardened	80-90,000 100-180,000	50-60,000 90-180,000	20-25 0-10	100 Rb 25-57 Rc	QQ-S-633
IC-1050	Annealed Hardened	90-110,000 125-180,000	50-65,000 100-180,000	20-25 0-10	100 Rb 30-60 Rc	ASTM A732
IC-1060	Annealed Hardened	100-120,000 120-200,000	55-70,000 100-180,000	12-20 0-5	25 Rc 30-60 Rc	
IC-4130	Annealed Hardened	70-90,000 130-170,000	50-70,000 100-130,000	15-25 5-20	100 Rb 23-49 Rc	ASTM A148 ASTM A732 Mil-S-22141B
IC-4140	Annealed Hardened	80-100,000 130-200,000	50-70,000 100-155,000	14-24 5-20	100 Rb 29-57 Rc	ASTM A148 ASTM A732 Mil-S-22141B
IC-4150	Annealed Hardened	- 140-200,000	- 120-180,000	- 5-10	100 Rb 25-58 Rc	
IC-4330	Annealed Hardened	- 130-190,000	- 100-175,000	- 5-20	20 Rc 25-48 Rc	ASTM A732 ASTM A487 Mil-A-11356
IC-4340	Annealed Hardened	80-100,000 130-200,000	60-80,000 120-180,000	17-24 5-20	20 Rc 20-55 Rc	ASTM A732 ASTM A148
IC-4620	Annealed Hardened	- 110-150,000	- 90-130,000	- 10-20	100 Rb 20-32 Rc	
IC-8620	Annealed Hardened	60-80,000 100-130,000	40-60,000 80-110,000	20-25 10-20	100 Rb 2-45 Rc	ASTM A148 ASTM A732 Mil-S-22141
IC-8630	Annealed Hardened	- 120-170,000	- 100-130,000	- 7-20	100 Rb 25-50 Rc	ASTM A732 Mil-S-22141
IC-8640	Annealed Hardened	- 130-200,000	- 100-180,000	- 5-20	20 Rc 30-60 Rc	ASTM A732
WCB	Normalized	70-95,000	36-42,000	22-30	78-93 Rb	ASTM A216
Armor Steel	Normalize Quench/Temp					Mil-A-11356

Gray Iron	Tensile Strength (PSI)			
ASTM A48- Class 30	30,000 min			
ASTM A48- Class 40	40,000 min			
ASTM A159 (G3000)	30,000 min			

Tool Steel	Annealed with Slow Cool Max.	Cycle Anneal Max.	Hardened	Reference Specification
A2	20 Rc	27 Rc	47-60	ASTM A597
D2	-	35 Rc	40-59	ASTM A597
S7	-	100 Rb	35-57	ASTM A597
H13	100 Rb	26 Rc	45-53	ASTM A597
H21		26 Rc	45-60	ASTM A597
M2	-	30 Rc	61-63	ASTM A597