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Carbon Steel Properties

Alloy	Similar Designation	Usual Condition	Castability	Machinability	Corrosion Resistance	Weldability	Hardenable	Density (g/cm3)	As-Cast				Comments
									Tensile Str (psi)	Yield Str (psi)	Elongation (%)	Hardness	
1010 (G10100)		As-Cast	4	3	5	3	yes	7.9	50,000	30,000	30	HRB 50	Electrical components. High impact, carburizing.
1020 (G10200)	ASTM A372 MIL S 22141	As-Cast of annealed	4	3	5	3	yes	7.9	60,000	45,000	20	HRB 10	Medium Strength
1040 (G10400)	ASTM A372 MIL S 22141	Annealed and/or Quenched and Tempered	3	3	5	3	yes	7.8					Medium Strength
1095 (G10950)		Annealed and/or Quenched and Tempered	3	3	5	3	yes	7.8					High strength
4130 (G41300)	AMS 5336 ASTM A732 MIL S 22141	Annealed and/or Quenched and Tempered	2	4	5	4	yes	7.8					Structural parts requiring welding. High fatigue resistance and strength.
4140 (G41400)	AMS 5338 ASTM A732	Annealed and/or Quenched and Tempered	2	2	5	3	yes	7.8					High hardenability, good fatigue resistance, abrasion, and impact resistance.
4340 (G43400)	AMS 5338 ASTM A733	Annealed and/or Quenched and Tempered	2	2	5	2	yes	7.8					Better hardenability than 4140.
6150 (G61500)	ASTM A732	Annealed and/or Quenched and Tempered	2	4	5	2	yes	7.8					High strength and hardness. Highly resistant to shock and adaptable for highly-stressed machinery parts which are heat treated after machining.
8620 (G86200)	ASTM A732 MIL S 22141	Annealed and/or Quenched and Tempered	2	3	5	3	yes	7.8					Carburizing alloy steel for stressed parts.
8640 (G86400)	ASTM A732 MIL S 22141	Annealed and/or Quenched and Tempered	3	3	5	3	yes	7.8					Often used for small machine parts and shafts.
52100 (G51986)	MIL S 22141	Annealed and/or Quenched and Tempered	3	3	5	3	yes	7.8					High hardness and abrasion resistance.

Key

- 1 = Excellent
- 2 = Very Good
- 3 = Good
- 4 = Fair
- 5 = Poor

Hardness Scale

- HRB = Rockwell Hardness, B Scale
- HRE = Rockwell Hardness, E Scale
- HRC = Rockwell Hardness, C Scale
- BHN = Brinell Hardness, B Scale
- No data = Metal not usually used in this condition