

Metal Properties Chart

GRADE	FINISH	STRENGTH & HARDNESS	FORMABILITY	TYPICAL MIN. INSIDE BEND RADIUS	CORROSION RESISTANCE	COST
Hot Dipped G60 Galvanized Steel (CS-B)	0.6 oz./sq. ft. zinc coating. Unique zinc spangling.	Zinc coating soft. Base metal similar to cold rolled.	Good	1/2t (t=thickness)	Good	Low
Hot Dipped G90 Galvanized Steel (CS-B)	0.9 oz./sq. ft. zinc coating. Unique zinc spangling.	Zinc coating soft. Base metal similar to cold rolled.	Good	1/2t	Good. Thicker coating than G60 = better resistance.	Low
A40 Galvannealed Steel (CS-B)	0.4 oz./sq. ft. zinc coating. Creates a uniform, matte finish. Usually painted.	Surface slightly harder than galvanized steel. Base similar to/slightly softer than galvanized.	Slightly better than galvanized due to annealing	1/2t	Good	More than galvanized due to extra processing
A60 Galvannealed Steel (CS-B)	0.6 oz./sq. ft. zinc coating. Creates a uniform, matte finish. Usually painted.	Surface slightly harder than galvanized steel. Base similar to/slightly softer than galvanized.	Slightly better than galvanized due to annealing process.	1/2t	Thicker coating than A40 = better resistance.	More than galvanized due to extra processing
Aluminum (5052-H32)	Can be anodized, painted, powder coated, etc.	Soft. Not as strong as steel	Good	1t	Moderate	Low to Moderate

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GRADE	FINISH	STRENGTH & HARDNESS	FORMABILITY	TYPICAL MIN. INSIDE BEND RADIUS	CORROSION RESISTANCE	COST
304 Stainless Steel (annealed)	Variety of brushed and polished mirror finishes	Excellent	Limited due to work hardening	1/2t	Excellent, but pitting corrosion possible in warm chloride areas	Moderately high
316 Stainless Steel (annealed)	Variety of brushed and polished mirror finishes	Excellent	Limited due to work hardening	1/2t	Same as 304 stainless, but safer against pitting, especially in warm chloride areas.	Moderately high
430 Stainless Steel	Variety of brushed and polished mirror finishes	Can't be hardened by heat treatment	Low work hardening rate enables easy forming, but low ductility makes rigorous operations difficult	1/2t	Excellent; not as good as 304 or 316, a bit lower in 430F variety	Moderately high, but less than 304 & 316
UR52N Stainless Steel ("Super Duplex")	Variety of brushed and polished mirror finishes	High. Can't be hardened by heat treatment	Somewhat challenging. Low ductility. Avoid sharp bends. Springback is high.	2t	Better than all other stainless. Resistant to hot chlorides and sulfides.	Moderately high, but less than stainless grades with high nickel

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Cold Rolled Carbon Commercial Steel Type B (CS-B) (similar to C1010)	Not the most attractive. Can be blackened, oxidized, or painted. Process does create better finish than hot rolled steel.	Typically HRB<70. Good, but can't be increased by heat treatment.	Good	1/2t	Low	Low
C260 ¼ hard brass ("cartridge brass 70/30")	Fixed finishes (clear-coat raw or antique it), or "live" finishes (change over time by forcing patina effect)	Equivalent to stainless steel in resilience & form, but not as strong structurally. Lower than carbon steel.	Good	1/2t	Excellent	Very high (2x-3x cost of stainless)
C220 ¼ hard bronze ("commercial bronze 90/10")	Fixed finishes (clear-coat raw or antique) or "live" finishes (Change over time by forcing patina effect)	Equivalent to stainless steel in resilience & form, but not as strong structurally. Higher than copper.	Good	1/2t	Excellent	Very high (2x-3x cost of stainless)
UNS C11000 copper (annealed) (electrolytic tough pitch, or ETP)	Fixed (clear-coat raw or antique it), or "live" finishes (change over time by initiating patina chemically)	Equivalent to stainless steel in resilience & form, but not as strong structurally (available in various tempers)	Great ductility means easy roll forming	0t (At annealed temper. Higher tempers require larger radii.)	Excellent	Very high (2x-3x cost of stainless)