



TYPICAL USES

Architecture	Ornamental Fixtures
Builders Hardware	Dead Bolt Locks, Cases for Dead Bolt Locks, Door Hardware for Prisons, Hardware
Building	Cooling Equipment, Heating Equipment
Consumer	Musical Instruments
Electrical	Electrical Equipment
Industrial	Valve Bodies for the Water Industry, Valves for Water Meters, Valves, Valve Seat, Low Pressure Fittings, Pump Fixtures
Marine	Marine Hardware, Boat Parts, Nuts for Transducers
Plumbing	Pipe Fittings, Fixtures

Bronze Family: Leaded Semi Red Brass
Solids: 1/2" to 13" OD
Tubes: 1" to 16" OD
Rectangles: Up to 20"
Standard Lengths: 144"

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C84400	ASTM B505	37			QQ-C-390B TYPE III QQ-B-1005, COMP. 11	123	MIL-B11553 COMP. 11	Valve Metal

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C84400	78.00- 82.00	2.30- 3.50	6.00- 8.00	7.00- 10.00	0.40	1.00*	0.25	1.5	0.08	0.005	N/A	0.005

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

*In determining copper minimum, copper may be calculated as copper plus nickel.

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C84400	90	0.314

MECHANICAL PROPERTIES

Tensile Strength, min		Yield Strength, at .5% extension under load min		Elongation in 2 in. or 50 mm min, %	Brinell Hardness, min	Remarks
ksi	MPa	ksi	MPa			
30	207	15	103	16	N/A	

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

ALLOY: C84400 CONTINUED

	US Customary	Metric
Melting Point - Liquidus	1840 F	1004 C
Melting Point - Solidus	1549 F	843 C
Density	0.314 lb/in ³ at 68 F	8.69 gm/cm ³ @ 20 C
Specific Gravity	8.690	8.69
Electrical Resistivity	63.30 ohms-cmil/ft @ 68 F	10.53 microhm-cm @ 20 C
Electrical Conductivity	16.40 %IACS @ 68 F	0.095 MegaSiemens/cm @ 20 C
Thermal Conductivity	41.80 Btu · ft/(hr · ft ² ·oF)at 68F	72.4 W/m · oK at 20 C
Coefficient of Thermal Expansion	10 ·10 ⁻⁶ per oF (68-572 F)	18.0 ·10 ⁻⁶ per oC (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/oF at 68 F	377.1 J/kg · oK at 293 K
Modulus of Elasticity in Tension	13000 ksi	89600 MPa
Magnetic Permeability	1	1.0

Physical Properties provided by CDA

FABRICATION PRACTICES

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Fair

Fabrication Properties provided by CDA

THERMAL PROPERTIES

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	500	260
Solution Minimum		
Solution Maximum		
Solution Time	0.0	
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		

Thermal Properties provided by CDA