C62400

Extruded and drawn	
Product description	Aluminum bronze 11%
Tempers	HR50 drawn and stress relieved
Solids	1/2" to 3" O.D.*
Standard lengths	144" *Consult mill for other sizes

Typical uses

Fasteners

Nuts

Industrial

Bushings, cams, drift pins, gears, hydraulic bushings, support bushings, tie rods, valve balls, wear plates, welding wire

Similiar or equivalent specification						
CDA	ASTM	SAE	AMS	Federal	Military	Other
C62400	B150 B150M	J461 J463				

Chemical composition					
Cu (%)[1]	Sn (%)	Fe (%)	Al (%)	Mn (%)	Si (%)
Remain	0.20	2.00-4.50	10.00-11.50	0.30	0.25

Chemical composition according to ASTM B150/B150M-19

[1]Cu value includes Ag.
Note: Cu + sum of named elements, 99.5% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C62400	50	0.269

Mechanical properties

Mechanical properties according to ASTM B150/B150M-19
C62400
HR50 drawn and stress relieved temper

Size range ½" and under rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or specimen thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
95	655	45	310	10		

Size range over ½" to 1" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or specimen thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
95	655	45	310	12		

Size range over 1" to 2" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or specimen thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
90	620	43	295	12		

Size range over 2" to 3" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or specimen thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
90	620	40	275	12		

Physical properties

	US customary	Metric
Melting point – liquidus	1900 °F	1038 °C
Melting point – solidus	1880 °F	1027 °C
Density	0.269 lb/in³ at 68 °F	7.45 gm/cm³ at 20 °C
Specific gravity	7.45	7.45
Electrical conductivity	12% IACS at 68 °F	0.07 MegaSiemens/cm at 20 °C
Thermal conductivity	34 Btu/sq ft/ft hr/ °F at 68 °F	59 W/m at 20 °C
Coefficient of thermal expansion 68-572	$9 \cdot 10^{-6}$ per °F (68-572 °F)	$15.6 \cdot 10^{-6}$ per °C (20-300 °C)
Specific heat capacity	0.09 Btu/lb/ °F at 68 °F	377.1 J/kg at 20 °C
Modulas of elasticity in tension	17000 ksi	117212 MPa
Modulas of rigidity	6400 ksi	44127 MPa

Physical properties provided by CDA

Fabrication properties

Technique	Suitability
Soldering	Not recommended
Brazing	Fair
Oxyacetylene welding	Not recommended
Gas shielded arc welding	Good
Coated metal arc welding	Good
Spot weld	Good
Seam weld	Good
Butt weld	Good
Capacity for being cold worked	Poor
Capacity for being hot formed	Excellent
Forgeability rating	80
Machinability rating	50

Fabrication properties provided by CDA

Thermal properties

Treatment	Minimum*	Maximum*
Annealing	1100	1200
Hot treatment	1400	1625

Thermal properties provided by CDA

**Temperature is measured in Fahrenheit.*

Common fabrication processes

Hot bending, hot forging

Common fabrication processes provided by CDA