

C95200

Continuous Cast

Product Description:	Aluminum Bronze
Solids:	½" to 9" O.D.
Tubes:	1⅝" to 9" O.D.
Rectangles:	Up to 15"
Standard Lengths:	144"
Shape/Form:	semi-finished, mill stock or near-net shapes, anode, bar stock, billet/bloom, squares, hex, plate, profile or structural shape, flats/rectangular bar

Typical Uses

Electrical	electrical hardware
Fasteners	nuts
Industrial	acid-resistant pumps, bearing liners, bearings, bushings, gears, high-strength clamps, hot mill guides, hydrant parts, large gear parts, mild alkali applications, pickling equipment, pickling tanks, plungers, pump parts, pump rods, thrust pads, valve bodies, valve seats, valves, wear plates, welding jaws, worm wheels, worms
Marine	covers for marine hardware, marine engines, marine hardware, propellers
Ordnance	gun mountings, gun slides

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C95200	B505 B505M	68A J461 J462		QQ-C-390, G6 QQ-B-671, Class 1	MIL-B-16033, Class 1	Aluminum Bronze 9A

Chemical Composition

Cu%	Fe%	Al%
86.00	2.50-	8.50-
min	4.00	9.50

Chemical Composition according to ASTM B505/B505M-18

Note: Cu + Sum of Named Elements, 99.0% min. Unless otherwise noted, single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in ³ at 68 °F)
C95200	20	0.276

Mechanical Properties

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness (3000 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
68	469	26	179	20	125	

Mechanical Properties according to ASTM B505/B505M-18

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1913 °F	1045 °C
Melting Point – Solidus	1907 °F	1042 °C
Density	0.276 lb/in ³ at 68 °F	7.64 gm/cm ³ at 20 °C
Specific Gravity	7.64	7.64
Electrical Conductivity	11% IACS at 68 °F	0.064 MegaSiemens/cm at 20 °C
Thermal Conductivity	29.1 Btu/sq ft/ft hr/°F at 68 °F	50.4 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	9 · 10 ⁻⁶ per °F (68-572 °F)	15.5 · 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
Modulus of Elasticity in Tension	15000 ksi	103400 MPa
Magnetic Permeability*	1.1	1.1
Poisson's Ratio	0.31	0.31

Physical Properties provided by CDA

*Field strength 16000 A/m (200 Oersteds)

Fabrication Properties

Technique	Suitability
Soldering	Good
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Excellent
Coated Metal Arc Welding	Good
Machinability Rating	20

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Value*	Time**
Stress Relief	600	
Solution Treatment		0

Thermal Properties provided by CDA

*Temperature is measured in Fahrenheit. **For Stress Relief, Solution Treatment and Annealing - Time is measured in hours/inch of thickness. For Precipitation Heat Treatment - Time is measured in hours.