Alloy: C64200

Bronze Family: Aluminum Bronze
Tempers: HR50 Drawn and Stress Relieved
Solid Rounds: 3/16" to 3" OD
Hex: 1/2" to 2" OD
Rectangles: Consult Mill
Standard Lengths: 144"

Typical Uses

Automotive : Valve Guides, Automobile Engines
Electrical: Pole Line Hardware
Fasteners: Nuts, Bolts
Industrial: Valve Bodies, Valve Stems, Gears, Cams, Valve Components
Marine: Hardware

Similar or Equivalent Specification

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C64200	ASTM B150		SAE J461 SAE J463	AMS 4634B	QQ-C-465			Aluminum Bronze

Chemical Composition

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Al%	Mn%	Si%	As%
C64200	Remainder	0.20	0.05	0.50	0.30	0.25	6.30-7.60	0.10	1.50- 2.20	0.15

Chemical Composition according to ASTM B150-08
Note: Single values represent maximums.

Machinability

Alloy	Machinability Rating	Density (lb/cu in.)
C64200	60	0.278

Mechanical Properties

Mechanical Properties according to ASTM B150-08

C64200
HR50 DRAWN AND STRESS RELIEVED TEMPER

Size range: 1/2” diameter and under

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**			
90	620	45	310	9	N/A	

Size range: 1/2” to 1” rod

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**			
85	585	45	310	12	80-100	

Size range: over 1” to 2” inclusive rod

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**			
80	550	42	290	12	80-100	

Size range: 1/2” diameter and under

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**			
75	575	35	240	15	70-95	

Dura-Bar® Metal Services

Alloy: C64200

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1840 F	1004 C
Melting Point - Solidus	1800 F	982 C
Density	0.278 lb/in3 at 68 F	7.7 gm/cm3 @ 20 C
Specific Gravity	7.690	7.69
Electrical Resistivity	113 ohms-cmil/ft @ 68 F	18.79 microhm-cm @ 20 C
Electrical Conductivity	8 %IACS @ 68 F	0.047 MegaSiemens/cm @ 20 C
Thermal Conductivity	26 Btu · ft/(hr · ft2·oF)at 68F	45.0 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
Modulas of Elasticity in Tension	16000 ksi	110000 MPa
Modulas of Rigidity	6000 ksi	41370 MPa

Physical Properties provided by CDA

Fabrication Properties

Joining Technique	Suitability
Soldering	Not Recommended
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shield Arc Welding	Fair
Coated Metal Arc Welding	Fair
Spot Weld	Fair
Seam Weld	Fair
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Forgeability Rating	80

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature		
Solution Minimum		
Solution Maximum		
Solution Time		
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum	1100	594
Annealing Maximum	1300	705
Annealing Time		
Hot Works Minimum	1300	705
Hot Works Maximum	1600	872

Thermal Properties provided by CDA

For more information contact Dura-Bar Metal Services
2195 W. Lake Shore Drive, Woodstock, IL | 770 Cedar Springs Road, Salisbury, NC | 90 Grumbacher Road, York, Pa | 2320 Pecan Court, Fort Worth, Tx
888-387-2227 | **dura-barms.com**