

SILICON BRASS AND BRONZE C87500

CDA NUMBER	C87500	
Common Name	13B Silicon Brass	
COMPOSITION PERCENT	Min	Max
Copper (Cu)	79	
Tin (Sn)		
Lead (Pb)		0.5
Zinc (Zn)	12	16
Iron (Fe)		
Antimony (SB)		
Nickel (Ni)		
Sulphur (S)		
Phosphorous (P)		
Aluminum (Al)		0.5
Manganese (Mn)		
Silicon (Si)	3	5
Other (Total)		
Cu + Sum of Named Elements, 99.5% min.		
NEAREST APPLICABLE CASTING STANDARDS		
ASTM (B Series)	B584	
SAE (J Series)	J462	
Federal (QQ-C- Series)	390	
Military (Mil-C- Series)		
TYPICAL PROPERTIES	Typ	Min
Tensile Strength (ksi)	67.8	60
Yield Strength (.5% extension under load) (ksi)	30	24
Elongation (2 inch gauge length) (%)	17	16
Reduction of Area (%)	20	
Proportional Limit (ksi)		
Modulus of Elasticity (ksi)	15400	
Hardness (Brinell) (HB @ 500kg)	115	
Machinability (% of free cutting brass)	50	
Fatigue Strength (10 ⁸ cycles) (ksi)	22	
Impact Strength (Charpy) (ft-lb)	32	
Impact Strength (Izod) (ft-lb)		
Shear Strength (ksi)		
Compressive Strength (0.001 in. set/in.) (ksi)	26.5	
Compressive Strength (0.010 in. set/in.) (ksi)	43	
Compressive Strength (0.100 in. set/in.) (ksi)	75	
Creep Strength (0.00001% per hour) (ksi)	28 @ 350F	
Melting Range (Liquidus-Solidus)(F)	1510-1683	
Coefficient of Thermal Expansion (per F @ 68-400F)	0.0000109	
Thermal Conductivity (Btu/sq.ft/ft.hr/F @ 68F)	16	
Specific Heat (Btu/lb/F @ 68F)	0.09	
Electrical Conductivity (% IACS @ 68F)	6.7	
Density (lb/cu.in. @ 68F)	0.299	
Pouring Temperature (Light Castings) (F)	1900-2000	
Pouring Temperature (Heavy Castings) (F)	1800-1900	
Patternmakers Shrinkage (in/ft)	15/64	
Drossing	Low	
Gassing	Medium	
Fluidity	High	
Corrosion Resistance: Excellent, especially to atmospheric corrosion.		
Applications: Bearings, bells, impellers, marine fittings, pump parts, statuary, valve stems, rocker arms, small boat propellers. These are the most popular alloys for artwork because of their high fluidity.		

Always use the design principles outlined on page two of this information sheet or at our website.

Consult your foundry early in the design process.

We routinely pour and inventory this alloy.



St. Paul
Brass and Aluminum
Foundry

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