

Silicon Bronze 655 Fact Sheet

Do you need custom fasteners created with Silicon Bronze 655? Since our inception, Elgin Fastener Group has met every challenge of providing Quality, Timely, Cost-effective solutions for specialty fastener applications. Every product is built to your specifications, using your prints if necessary.

Below are the technical specifications of the Silicon Bronze 655 Bar Stock we have available to meet your needs.

Herculoy[®], High-Silicon Bronze A, UNS C65500, H06 (50%) Temper rod

Subcategory: Bronze; Copper Alloy; Metal; Nonferrous Metal **Key Words:** HCDA 655, CS101, ISO CuSi3Mn1, CEN CS101, copper-silicon, silicon bronze

Component	Wt. %
Cu	97
Fe	Max 0.8
Mn	Max 1.5
Ni	Max 0.6
Pb	Max 0.5
Si	2.8 - 3.8
Zn	Max 1.5

Material Notes: Good to excellent corrosion resistance. Excellent hot and cold workability. Fabricated by blanking, drawing, forming and bending, heading and upsetting, hot forging and pressing, roll threading and knurling, shearing, squeezing, and swaging. **Applications:** hydraulic pressure lines, anchor screws, bolts, cable clamps, cap screws, machine screws, marine hardware, nuts, pole-line hardware, rivets, U-bolts, electrical conduits, heat exchanger tubing, welding rod, propeller shafts.

Test specimen: wire - 2mm diameter.

Physical Properties	Metric	English	Comments
Density	8.53 g/cc	0.308 lb/in ³	at 20°C (68°F)
Mechanical Properties			

Hardness, Rockwell B	95	95	
Tensile Strength, Ultimate	745 MPa	108000 psi	
Tensile Strength, Yield	415 MPa	60200 psi	0.5% extension under load
Elongation at Break	13 %	13 %	In 50 mm
Modulus of Elasticity	105 GPa	15200 ksi	
Poisson€™s Ratio	0.346	0.346	
Machinability	30 %	30 %	UNS C36000 (free-cutting brass) = 100%
Shear Modulus	39 GPa	5660 ksi	
Shear Strength	425 MPa	61600 psi	
Electrical Properties			
Electrical Resistivity	2.46e-005 ohm-cm	2.46e-005 ohm-cm	at 20°C (68°F)
Thermal Properties			
CTE, linear 250°C	18 μm/m-°C	10 μin/in-°F	from 20-300°C (68-570°F)
Heat Capacity	0.38 J/g-°C	0.0908 BTU/lb-°F	
Thermal Conductivity	36 W/m-K	250 BTU-in/hr-ft²-°F	
Melting Point	970 - 1025 °C	1780 - 1880 °F	
Solidus	970 °C	1780 °F	
Liquidus	1025 °C	1880 °F	
Processing Properties			
Annealing Temperature	475 - 700 °C	887 - 1290 °F	
Hot-Working Temperature	700 - 875 °C	1290 - 1610 °F	
Recrystallization Temperature	4.44 °C	40 °F	C37700 (forging brass) = 100%

References are available for this material.