

# C65100

Extruded/cast and drawn

Product description	Low-silicon bronze B
Tempers	H02 half hard, H04 hard, H06 extra hard
Solids	3/8" to 2" O.D.
Hex	3/8" to 2" O.D.
Standard lengths	144"

## Typical uses

### Electrical

Conduit, motor (rotor bars), pole line hardware

### Fasteners

Bolts, cable clamps, cap screws, fasteners, machine screws, nuts, rivets, screws, u bolts

### Industrial

Heat exchanger tube, hydraulic pressure lines, oil refinery plumbing tube, welding rod

### Marine

Hardware

## Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C65100	B98 B98M					

## Chemical composition

Cu (%) <sup>1</sup>	Pb (%)	Zn (%)	Fe (%)	Mn (%)	Si (%)
Remain	0.05	1.50	0.80	0.70	0.80-2.00

Chemical composition according to ASTM B98/B98M-13(2019)

<sup>1</sup>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 <sup>3</sup> at 68 ° F)
C65100	30	0.316

C65100 continued

## Mechanical properties

Mechanical properties according to ASTM B98/B98M-13(2019)

C65100

H02 half hard

Size range up to ½" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
55	380	20	140	11	60-85	

Size range over ½" to 2" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
55	380	20	140	12	60-85	

C65100

H04 hard

Size range up to ½" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
65	450	35	241	8	65-90	

Size range over ½" to 2" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
65	450	35	241	10	65-90	

## C65100 continued

### C65100 H06 extra hard

#### Size range up to ½" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
85	585	55	380	6	75-95	

#### Size range over ½" to 1" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
75	515	45	310	8	75-95	

#### Size range over 1" to 1½" rod inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	min to max HRB	
75	515	40	275	8	75-95	

## Physical properties

	US customary	Metric
Melting point – liquidus	1940 °F	1060 °C
Melting point – solidus	1890 °F	1032 °C
Density	0.316 lb/in <sup>3</sup> at 68 °F	8.75 gm/cm <sup>3</sup> at 20 °C
Specific gravity	8.75	8.75
Electrical conductivity	12% IACS at 68 °F	0.07 MegaSiemens/cm at 20 °C
Thermal conductivity	33 Btu/sq ft/ft hr/°F at 68 °F	57.1 W/m at 20 °C
Coefficient of thermal expansion 68-572	9.9 · 10 <sup>-6</sup> per °F (68-572 °F)	17.1 · 10 <sup>-6</sup> 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	17000 ksi	117212 MPa
Modulus of rigidity	6400 ksi	44127 MPa

Physical properties provided by CDA

## C65100 continued

### Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene welding	Good
Gas shielded arc welding	Excellent
Coated metal arc welding	Fair
Spot weld	Excellent
Seam weld	Good
Butt weld	Excellent
Capacity for being cold worked	Excellent
Capacity for being hot formed	Excellent
Machinability rating	30

*Fabrication properties provided by CDA*

### Thermal properties

Treatment	Minimum*	Maximum*
Annealing	900	1250
Hot treatment	1300	1300

*Thermal properties provided by CDA*

*\*Temperature is measured in Fahrenheit.*

### Common fabrication processes

Forming and bending, heading and upsetting, hot forging and pressing, roll threading and knurling, squeezing and swaging

*Common fabrication processes provided by CDA*