

# C23000

Extruded

<b>Product Description:</b>	Red Brass 85%
<b>Temper:</b>	H01 Quarter Hard, H02 Half Hard, H04 Hard
<b>Solids:</b>	3/8" to 2 1/2" O.D.
<b>Hex:</b>	3/8" to 2" O.D.
<b>Rectangles:</b>	Consult Mill
<b>Standard Lengths:</b>	144"

## Typical Uses

<b>Architecture</b>	etching parts, trim, weather strip
<b>Builders Hardware</b>	kick plates
<b>Consumer</b>	badges, coinage, compacts, costume jewelry, dials, fire extinguisher cases, lipstick containers, medallions, nameplates, plaques, rouge boxes, tokens, zippers
<b>Electrical</b>	conduit, rotor bars (AC motors), screw shells, sockets
<b>Fasteners</b>	eyelets, fasteners
<b>Industrial</b>	condensor tubes, fire extinguishers, flexible metal hose, heat exchanger shells, heat exchangers, pickling crates, pump cylinder liners, radiator cores, tags, tubing for heat exchangers, tubing for instrumentation
<b>Other</b>	fire hose couplings
<b>Plumbing</b>	fittings, j-bends, pipe, pipe nipples, pipe service lines, pump lines, service lines, traps

## Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C23000	B927 B927M					

## Chemical Composition

Cu%	Pb%	Zn%	Fe%
84.00- 86.00	0.05	Rem.	0.05

Chemical Composition according to ASTM B927/B927M-17

Note: Cu + Sum of Named Elements 99.8% min. Single values represent maximums.



## Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in <sup>3</sup> at 68 ° F)
C23000	30	0.316

## Mechanical Properties

Mechanical Properties according to ASTM B927/B927M-17

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H01 Quarter Hard

## SIZE RANGE: UNDER ½" DIAMETER ROD

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
44	305	20	140	15		

## SIZE RANGE: ½" DIAMETER ROD TO 1" INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
42	290	17	115	17		

## SIZE RANGE: OVER 1" DIAMETER ROD

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
40	275	15	103	19		

C23000  
H02 Half Hard

**SIZE RANGE: UNDER ½" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
50	345	30	205	7	70	

**SIZE RANGE: ½" DIAMETER ROD TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
45	310	27	185	10	70	

**SIZE RANGE: OVER 1" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
40	275	25	170	12	70	

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H04 Hard

**SIZE RANGE: UNDER ½" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
63	435	40	275	5	82	

**SIZE RANGE: ½" DIAMETER ROD TO 1" INCLUSIVE**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
60	415	37	255	7	82	

**SIZE RANGE: OVER 1" TO 2" DIAMETER ROD**

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, 4x Diameter or 4x Thickness, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
58	400	35	240	9	82	

## Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1830 °F	999 °C
Melting Point – Solidus	1770 °F	966 °C
Density	0.313 lb/in <sup>3</sup> at 68 °F	8.67 gm/cm <sup>3</sup> at 20 °C
Specific Gravity	8.67	8.67
Electrical Conductivity	32% IACS at 68 °F	0.186 MegaSiemens/cm at 20 °C
Thermal Conductivity	81 Btu/sq ft/ft hr/ °F at 68 °F	140.3 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	10.6 · 10 <sup>-6</sup> per °F (68-572 °F)	18.4 · 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	16000 ksi	110317 MPa
Modulus of Rigidity	6000 ksi	41369 MPa

Physical Properties provided by CDA

## Fabrication Properties

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Not Recommended
Spot Weld	Fair
Seam Weld	Not Recommended
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Good
Machinability Rating	30

Fabrication Properties provided by CDA

## Thermal Properties

Treatment	Minimum*	Maximum*
Annealing	800	1350
Hot Treatment	1450	1650

Thermal Properties provided by CDA

\*Temperature is measured in Fahrenheit.