

## C86200 Manganese Bronze

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- **Bronze C86200:** Manganese Bronze
- **Solids:** 1/2" to 9" OD
- **Tubes:** 1 1/8 " to 9" OD
- **Rectangles:** Up to 15"
- **Standard Lengths:** 144"

### SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	Federal	Ingot#	Military	Other Desc
C86200	ASTM B505		SAE 430 A		QQ-C-390B TYPE III	423	MIL-C-22229 COMP 9	HIGH STRENGTH YELLOW BRASS
					QQ-B-726 CLASS B			

### CHEMICAL COMPOSITION (ACCORDING TO ASTM B505-08)

Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
60.00-66.00	0.20	0.20	22.00-28.00	2.00-4.00	1.00A	N/A	N/A	N/A	3.00-4.90	2.50-5.00	N/A

Note: Single values represent maximums.

- A In determining copper minimum, copper may be calculated as copper plus nickel.

### MECHANICAL PROPERTIES (ACCORDING TO ASTM B505-08)

Tensile Strength (min)		Yield Strength (at .5% extention under load min)		Elongation (in 2in. or 50mm min, %)	Brinell Hardness (min)	Remarks
Ksi	MPa	Ksi	MPa			
90	621	45	310	18	N/A	

### MACHINABILITY

Alloy	Rating	Density
C86200	30	0.288

### PHYSICAL PROPERTIES (PROVIDED BY CDA)

	US Customary	Metric
<b>Melting Point - Liquidus</b>	1725 F	941 C
<b>Melting Point - Solidus</b>	1650 F	899 C
<b>Density</b>	0.288 lb/in <sup>3</sup> at 68 F	7.97 gm/cm <sup>3</sup> @ 20 C
<b>Specific Gravity</b>	7.970	7.97
<b>Electrical Resistivity</b>	136.70 ohms-cmil/ft @ 68 F	22.73 microhm-cm @ 20 C
<b>Electrical Conductivity</b>	8 %IACS @ 68 F	0.044 MegaSiemens/cm @ 20 C
<b>Thermal Conductivity</b>	20.50 Btu · ft/(hr · ft <sup>2</sup> · °F) at 68F	35.5 W/m · °K at 20 C
<b>Coefficient of Thermal Expansion</b>	120 · 10 <sup>-6</sup> per oF (68-392 F)	21.6 · 10 <sup>-6</sup> per °C (20-200 C)
<b>Specific Heat Capacity</b>	0.090 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
<b>Modulus of Elasticity in Tension</b>	15000 ksi	103400 MPa
<b>Magnetic Permeability*</b>	1.240	1.24
• * Field Strength 16 kA/m		

### FABRICATION PROPERTIES (PROVIDED BY CDA)

Joining Technique	Suitability
<b>Soldering</b>	<i>Poor</i>
<b>Brazing</b>	<i>Poor</i>
<b>Oxyacetylene Welding</b>	<i>Good</i>
<b>Gas Shielded Arc Welding</b>	<i>Fair</i>
<b>Coated Metal Arc Welding</b>	<i>Good</i>

### THERMAL PROPERTIES (PROVIDED BY CDA)

Treatment	Temp./Time - US	Temp./Time - SI
<b>Stress Temperature</b>	500	260
<b>Solution Minimum</b>		
<b>Solution Maximum</b>		
<b>Solution Time</b>	0.0	
<b>Solution Medium</b>	None	
<b>Precipitation Value</b>		
<b>Precipitation Time</b>		
<b>Precipitation Medium</b>	None	
<b>Annealing Minimum</b>		
<b>Annealing Maximum</b>		
<b>Annealing Time</b>		

Treatment	Temp./Time - US	Temp./Time - SI
Hot Works Minimum		
Hot Works Maximum		

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**ADDEESS:**

Conex Bronze Fittings

**CONTACTS:**

PHONE : 91-22-43449300/27

FAX : 91 22 22834046

EMAIL : [sales@conexbronze.com](mailto:sales@conexbronze.com)

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**KEYWORDS:**

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