

# Cz115

# MANGANESE BRONZE

## DESCRIPTION

CZ115 is a duplex high tensile brass with a restricted aluminium content to facilitate soldering and brazing. Sometimes referred to as a manganese bronze, CZ115 has additions of iron, tin and manganese that benefit the physical and mechanical attributes of the alloy.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	56.50	58.50
Pb	0.50	1.50
Sn	0.20	0.80
Fe	0.30	1.00
Al	-	0.10
Mn	0.50	2.00
Total Others	-	0.50
Zn	Remainder	

## MECHANICAL PROPERTIES Cz115 (AS PER TEMPER M)

Range (mm)	From	To	UTS Min (N/mm <sup>2</sup> )	PS Min (N/mm <sup>2</sup> )	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)	1.5	18	460	250	12	-	-
	18	75	440	210	15	-	-
Hex (A/F)	3	18	460	250	12	-	-
	18	70	440	210	15	-	-
Square (A/F)	3	18	460	250	12	-	-
	18	60	440	210	15	-	-
Rectangle (Thickness)	6	18	460	250	12	-	-
	18	50	440	210	15	-	-

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## PHYSICAL PROPERTIES

Melting Point	940°C
Density	8.42 g/cm <sup>3</sup>
Specific Heat	380 J/Kg°K
Thermal conductivity (RT)	88 W/m°K
Thermal expansion coefficient (20-200°C)	20 x 10 <sup>-6</sup>
Electrical conductivity	18% IACS
Electrical Resistivity	0.082 ohm mm <sup>2</sup> /m

## FABRICATION PROPERTIES

Capacity for being Cold formed	Poor
Capacity for being Hot worked	Good
Machinability Ration	30%
Resistance to Corrosion	Excellent
Suitability for soldering	Excellent

## TYPICAL USES

- › Gas valves and fittings
- › Fasteners
- › Pump trim
- › Gears
- › Locks
- › Heavy-duty electrical connectors
- › Transmission components
- › Marine hardware