

# CZ135

# MANGANESE BRONZE

## DESCRIPTION

CZ135 is a high tensile brass which is alloyed with aluminium, manganese and silicon etc. By alloying brass with strength-increasing elements, you get an alloy that is almost as hard as aluminium bronze, but considerably easier to process. The material also has good corrosion and wear resistance.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	57.00	60.00
Pb	-	0.80
Sn	-	0.30
Fe	-	0.50
Al	1.00	2.00
Mn	1.50	3.50
Ni	-	0.20
Si	0.30	1.30
Total Others (excl.Sn,Pb,Fe,Ni)	-	0.50
Zn	Remainder	

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## MECHANICAL PROPERTIES ACCORDING TO BS2874 CZ135 (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	40	550	270	12	-	-
	40	75	550	270	12	-	-
Hex (A/F)	3	40	550	270	12	-	-
	40	70	550	270	12	-	-
Square (A/F)	3	40	550	270	12	-	-
	40	60	550	270	12	-	-
Rectangle (Thickness)	3	40	550	270	12	-	-
	40	50	550	270	12	-	-

## PHYSICAL PROPERTIES

Melting Point	875-910 °C
Density	8.0 g/cm <sup>3</sup>
Electrical Conductivity	7-8 MS/m
Heat conductivity	60-70 W/(m*K)
Heat capacity	377 J/(kg*K)
Coefficient of thermal expansion	20 10 <sup>-6</sup> /K
Young's modulus	95 GPa

## FABRICATION PROPERTIES

Technique	Suitability
Cold formed	Poor
Hot worked	Good
Machinability Rating	30%
Resistance to corrosion	Excellent
Suitability for soldering	Excellent