

DESCRIPTION

Manganese is possibly the most flexible element that can be added to copper alloys. Small additions of manganese are used to deoxidize the alloy and enhance its mechanical strength and castability. Manganese provides a favourable combination and balance of properties like ductility, formability, strain hardening, and strength level parameters.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	57.00	59.00
Pb	1.00	2.00
Al	-	0.20
Fe	-	0.30
Mn	0.50	1.50
Ni	-	0.60
Si	-	0.10
Sn	-	0.30
Total others	-	0.30
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO EN12164 CW720R (AS PER TEMPER R440)

Range (mm)	From	To	UTS Min (N/mm ²)	PS Min (N/mm ²)	Elo Min (%)	Hardness Min(HB)	Hardness Max
Round (Dia)	6	50	440	250	18	120	-
Hex (a/F)	5	40	440	250	18	120	-
Square (A/F)	5	40	440	250	18	120	-
Rectangle (Thickness)	6	50	440	250	18	120	-



CW720R

MANGANESE BRONZE

PHYSICAL PROPERTIES	Metric	Metric
Density	8.40 g/cc	0.303 lb/in ³
CTE, linear	26.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	14.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$
Specific Heat Capacity	0.380 J/g $\cdot^{\circ}\text{C}$	0.0908 BTU/lb $\cdot^{\circ}\text{F}$
Thermal Conductivity	113 W/m-K	784 BTU-in/hr-ft ² $\cdot^{\circ}\text{F}$
Thermal Conductivity	880-900 $^{\circ}\text{C}$	1620 – 1650 $^{\circ}\text{F}$
Thermal Conductivity	880 $^{\circ}\text{C}$	1620 $^{\circ}\text{F}$
Thermal Conductivity	900 $^{\circ}\text{C}$	1650 $^{\circ}\text{F}$

FABRICATION PROPERTIES	
Machinability (CuZn39Pb3 = 100 %)	80%
Capacity for being cold worked	Poor
Capacity for being hot worked	excellent

TYPICAL USES

- > Valves

