

C48640

NAVAL BRASS

DESCRIPTION

C48640 naval brass is a copper-zinc-tin alloy known for its excellent corrosion resistance in marine environments, good strength, and machinability. It is widely used in shipbuilding, marine hardware, and industrial applications requiring durability against seawater.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	59.00	62.00
Sn	0.50	2.00
Pb	1.00	3.00
Zn	Remainder	
Fe	0.00	0.40
Ni	0.00	0.30
P	0.05	0.25

MECHANICAL PROPERTIES ACCORDING TO ASTM B21 C48640 (AS PER TEMPER HO2)

Range (Inch)		From	To	UTS Min (Ksi)	PS Min (Ksi)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round(Dia)		0.300	0.500	45.7	18	5	-	-
		0.500	1.000	45.7	18	10	-	-
		1.000	2.000	45.7	18	15	-	-
Hex(A/F)		0.300	0.500	45.7	18	5	-	-
		0.500	1.000	45.7	18	10	-	-
		1.000	2.000	45.7	18	15	-	-
Square(A/F)		0.300	0.500	45.7	18	5	-	-
		0.500	1.000	45.7	18	10	-	-
		1.000	2.000	45.7	18	15	-	-
Rectangle	Thickness	0.300	0.500	45.7	18	5	-	-
	Width	0.500	1.000					
	Thickness	0.500	1.000	45.7	18	10	-	-
	Width	1.000	2.000					
	Thickness	1.000	2.000	45.7	18	15	-	-
	Width	2.000	3.000					

C48640

NAVAL BRASS

Range (mm)		From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round(Dia)		8.00	12.00	315	124	5.00	-	-
		12.00	25.00	315	124	10.00	-	-
		25.00	50.00	315	124	15.00	-	-
Hex(A/F)		8.00	12.00	315	124	5.00	-	-
		12.00	25.00	315	124	10.00	-	-
		25.00	50.00	315	124	15.00	-	-
Square(A/F)		8.00	12.00	315	124	5.00	-	-
		12.00	25.00	315	124	10.00	-	-
		25.00	50.00	315	124	15.00	-	-
Rectangle	Thickness	8.00	12.00	315	124	5.00	-	-
	Width	12.00	25.00					
	Thickness	12.00	25.00	315	124	10.00	-	-
	Width	25.00	50.00					
	Thickness	25.00	50.00	315	124	15.00	-	-
	Width	50.00	75.00					

PHYSICAL PROPERTIES

Melting Range	1591–1639 °F (866–893 °C)
Density	0.303 lb/cu in (8.4 g/cm ³)
Electrical Conductivity	~22.4% IACS
Thermal Conductivity	59.3 Btu/sq. ft/ft hr/°F
Coefficient of Thermal Expansion	11.9 × 10 ⁻⁶ per °F (68–572 °F)
Modulus of Elasticity	16,000 ksi
Modulus of Rigidity	6,000 ksi

FABRICATION PROPERTIES

Hot Working: -	Excellent
Cold Working	Moderate
Machinability	Good
Soldering and brazing	Good
Welding	fair

TYPICAL USES

Propeller shafts and pump shafts
Bushings and bearings
Valves, fasteners, and fittings
Marine hardware
Architectural fittings & Heavy-duty hardware