

C46750

NAVAL BRASS

DESCRIPTION

Naval Brass C46750 is a copper-zinc-tin alloy designed for excellent corrosion resistance in marine environments, with good strength, hardness, and wear resistance. It is widely used in shipbuilding, marine hardware, and industrial applications requiring durability against seawater.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	59.20	62.50
Sn	1.00	1.80
Pb	0.00	0.15
Zn	Remainder	
Fe	0.00	0.10
Ni	0.00	0.50
Sb	0.05	0.15
P	0.05	0.15

MECHANICAL PROPERTIES ACCORDING TO ASTM B21 C46750 (AS PER TEMPER H50)

Range (Inch)		From	To	UTS Min (Ksi)	PS Min (Ksi)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)		0.300	0.500	48.00	20.00	5.00	-	-
		0.500	1.000	48.00	20.00	10.00	-	-
		1.000	2.000	48.00	20.00	15.00	-	-
Hex (A/F)		0.300	0.500	48.00	20.00	5.00	-	-
		0.500	1.000	48.00	20.00	10.00	-	-
		1.000	2.000	48.00	20.00	15.00	-	-
Square (A/F)		0.300	0.500	48.00	20.00	5.00	-	-
		0.500	1.000	48.00	20.00	10.00	-	-
		1.000	2.000	48.00	20.00	15.00	-	-
Rectangle	Thickness	0.300	0.500	48.00	20.00	5.00	-	-
	Width	0.500	1.000					
	Thickness	0.500	1.000	48.00	20.00	10.00	-	-
	Width	1.000	2.000					
	Thickness	1.000	2.000	48.00	20.00	15.00	-	-
	Width	2.000	3.000					

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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	140	5.00	-	-
		13.00	25.00	315	140	10.00	-	-
		25.00	50.00	315	140	15.00	-	-
Hex (A/F)		8.00	12.00	315	140	5.00	-	-
		13.00	25.00	315	140	10.00	-	-
		25.00	50.00	315	140	15.00	-	-
Square (A/F)		8.00	12.00	315	140	5.00	-	-
		13.00	25.00	315	140	10.00	-	-
		25.00	50.00	315	140	15.00	-	-
Rectangle	Thickness	8.00	12.00	315	140	5.00	-	-
	Width	12.00	25.00					
	Thickness	13.00	25.00	315	140	10.00	-	-
	Width	25.00	50.00					
	Thickness	25.00	50.00	315	140	15.00	-	-
	Width	50.00	75.00					

PHYSICAL PROPERTIES

Melting Range	1546–1632 °F
Density	0.31 lb/cu in (8.48 g/cm ³)
Electrical Conductivity	~22% IACS
Thermal Conductivity	59.6 Btu/sq. ft/ft hr/°F
Coefficient of Thermal Expansion	10 × 10 ⁻⁶ per °F (68–212°F)

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