

# C46500

# NAVAL BRASS

## DESCRIPTION

C46500 is a brass with high ductility, high electrical and thermal conductivity, high impact strength, good creep resistance, ease of welding, and low volatility under high vacuum.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	59.00	62.00
Pb	-	0.20
Sn	0.50	1.00
Fe	-	0.10
As	0.02	0.10
Total Others	-	-
Zn	Remainder	

## MECHANICAL PROPERTIES (AS PER TEMPER 1/4HARD)

Range (Inch)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)	1.5	12.5	415.00	185.00	22.00	-	-
	12.5	25.00	415.00	185.00	25.00	-	-
	25.00	50.00	400.00	180.00	25.00	-	-
	50.00	75.00	270.00	170.00	25.00	-	-
Hex (A/F)	3.00	12.5	415.00	185.00	22.00	-	-
	12.5	25.00	415.00	185.00	25.00	-	-
	25.00	50.00	400.00	180.00	25.00	-	-
	50.00	70.00	270.00	170.00	25.00	-	-
Square (A/F)	3.00	12.5	415.00	185.00	22.00	-	-
	12.5	25.00	415.00	185.00	25.00	-	-
	25.00	50.00	400.00	180.00	25.00	-	-
	50.00	60.00	270.00	170.00	25.00	-	-
Rectangle (Thickness)	3.00	12.5	415.00	185.00	22.00	-	-
	12.5	25.00	415.00	185.00	25.00	-	-
	25.00	50.00	400.00	180.00	25.00	-	-

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## PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1650
Melting Point - Solidus°F	1630
Densitylb/cu in. at 68°F	0.304
Specific Gravity	8.41
Electrical Conductivity% IACS at 68°F	26
Thermal ConductivityBtu/ sq ft/ ft hr/ °F at 68°F	67
Coefficient of Thermal Expansion 68-57210 <sup>-6</sup> per °F (68 – 572°F)	11.8
Specific Heat CapacityBtu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tensionksi	15000
Modulus of Rigidityksi	5600

## FABRICATION PROPERTIES

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Good
Capacity for Being Cold Worked	Fair
Capacity for Being Hot Formed	Excellent
Forgeability Rating	90
Machinability Rating	30

## TYPICAL USES

- Architecture
- Fasteners
- Industrial
- Marine
- Plumbing