

# C48500

# NAVAL BRASS

## DESCRIPTION

Alloy 485 naval brass. Mostly used for machine hardware, screw machine products and valve stems, 485 naval brass is great for hot forging and pressing and machining. With high ductility, naval brass has excellent electrical and thermal conductivity. 485 naval brass has good creep resistance and high impact strength.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	59.00	62.00
Pb	1.30	2.20
Sn	0.50	1.00
Fe	-	0.10
Total Others	-	0.40
Zn	Remainder	

## MECHANICAL PROPERTIES (AS PER TEMPER HO2)

Range (Inch)	From	To	UTS Min (ksi)	PS Min (ksi)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)	0.059	0.500	60.00	27.00	12.00	-	-
	0.500	1.000	60.00	27.00	12.00	65.00	85.00
	1.000	2.000	58.00	26.00	20.00	60.00	85.00
	2.000	2.953	54.00	25.00	20.00	60.00	85.00
Hex (A/F)	0.118	0.500	60.00	27.00	12.00	-	-
	0.500	1.000	60.00	27.00	12.00	65.00	85.00
	1.000	2.000	58.00	26.00	20.00	60.00	85.00
Square (A/F)	2.000	2.756	54.00	25.00	20.00	60.00	85.00
	0.118	0.500	60.00	27.00	12.00	-	-
	0.500	1.000	60.00	27.00	12.00	65.00	85.00
	1.000	2.000	58.00	26.00	20.00	60.00	85.00
Rectangle (Thickness)	2.000	2.362	54.00	25.00	20.00	60.00	85.00
	0.118	0.500	60.00	27.00	12.00	-	-
	0.500	1.000	60.00	27.00	12.00	65.00	85.00
	1.000	1.968	58.00	26.00	20.00	60.00	85.00

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## MECHANICAL PROPERTIES (AS PER TEMPER HO2)

Range (Inch)	From	To	UTS Min (MPa)	PS Min (MPa)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)	1.5	12.00	415.00	185.00	12.00	-	-
	12.00	25.00	415.00	185.00	12.00	65.00	85.00
	25.00	50.00	400.00	180.00	20.00	60.00	85.00
	50.00	75.00	370.00	170.00	20.00	60.00	85.00
Hex (A/F)	3.00	12.00	415.00	185.00	12.00	-	-
	12.00	25.00	415.00	185.00	12.00	65.00	85.00
	25.00	50.00	400.00	180.00	20.00	60.00	85.00
	50.00	70.00	370.00	170.00	20.00	60.00	85.00
Square (A/F)	3.00	12.00	415.00	185.00	12.00	-	-
	12.00	25.00	415.00	185.00	12.00	65.00	85.00
	25.00	50.00	400.00	180.00	20.00	60.00	85.00
	50.00	70.00	370.00	170.00	20.00	60.00	85.00
Rectangle (Thickness)	3.00	12.00	415.00	185.00	12.00	-	-
	12.00	25.00	415.00	185.00	12.00	65.00	85.00
	25.00	50.00	400.00	180.00	20.00	60.00	85.00

## PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1650
Melting Point - Solidus°F	1630
Densitylb/cu in. at 68°F	0.305
Specific Gravity	8.44
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	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Spot Weld	Not Recommended
Seam Weld	Not Recommended
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Good
Forgeability Rating	90
Machinability Rating	70



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## COMMON FABRICATION PROCESSES TYPICAL USES

- › Hot forging and Pressing
- › Machining
- › Fasteners
- › Industrial
- › Marine