



**C 70600
71500**

WWW.NBMMETALS.COM

COPPER NICKEL "90/10" & "70/30"

LEADING MANUFACTURER & MASTER DISTRIBUTOR OF BRASS, BRONZE, & COPPER ALLOYS



Offered in solid bars, tubes, and plate.

C70600 & C71500, Copper nickel offers excellent corrosion resistance, especially in marine salt water environments. The main, wrought copper-nickel alloys chosen for sea water service contain 10 or 30 percent nickel. They also have important additions of iron and manganese which are necessary to maintain good corrosion resistance. Some common applications for copper nickel include: valves, pump components, fittings, flanges and various other marine hardware components.

Sizes Available From NBM

SOLID BAR 1/4" - 12" diameter
 PLATE up to 6" thick
 TUBE up to 10" diameter

Spec Equivalents

ASTM B-111, B-151, B-171, B-466
 MIL C15726F

Chemical Composition for C70600

	Cu ⁽¹⁾	Fe	Pb	Mn	Ni ⁽²⁾	Zn
min/max	Rem	1.0-1.8	.05	1.0	9.0-11.0	1.0
nominal	88.6	1.4	-	-	10.0	-

(1) Cu value includes Ag.
 (2) Ni value includes Co.
 Note: Cu + Sum of Named Elements, 99.5% min.

Chemical Composition for C71500

	Cu ⁽¹⁾	Fe	Pb	Mn	Ni ⁽²⁾	Zn
min/max	Rem	.40-1.0	.05	1.0	29.0-33.0	1.0
nominal	69.5	.50	-	-	30.0	-

(1) Cu value includes Ag.
 (2) Ni value includes Co.
 Note: Cu + Sum of Named Elements, 99.5% min.

Typical Uses for C70600

Automotive

Power Steering Tube, Brake Lines

Consumer

Screw Lamp Bases

Industrial

Condenser Plates, Condensers, Weld Torch Tips, Heat Exchanger Tubes, Valve Bodies, Evaporator Tubes, Pressure Vessels, Distiller Tubes, Pump Impellers for Oil Refining, Ferrules, Evaporators

Marine

Boat Hulls, Tube Sheet for Salt Water Service, Salt Water Pipe Fittings, Salt Water Piping Systems, Salt Water Piling Wrap, Hot Water Tanks, Salt Water Baffles, Propeller Sleeves, Ship Hulls, Water Hoses

Plumbing

Flanges

Typical Uses for C71500

Industrial

Pump Impellers, Heat Exchanger Tubes, Evaporator Tubes, Distiller Tubes, Condenser Plates, Refrigerators, Process Equipment, Condenser Components, Ferrules, Welding Backing Rings, Flexible Metal Hose, Weld Wire, Boiler Parts, Condensers, Propeller Sleeves, Heat Exchanger Components

Marine

Salt Water Flanges, Salt Water Piping, Valve Bodies, Sea Water Service, Fittings, Sea Water Condensers, Salt Water Pipe Fittings, Water Boxes - Salt Water Applications, Pump Bodies and Internal Parts-Sea Water



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Room Temp Tensile & Hardness Data for C70600 / C71500 Plate

ALLOY	TEMPER (PLATE)	SECTION SIZE (INCHES)	TENSILE (KSI) MIN	YIELD (KSI) MIN	ELONGATION IN HD MIN
C70600	M20 and 025	2 1/2" and Under	40	15	30%
		2 1/2" and Over	40	15	30%
C71500	M20 and 025	2 1/2" and Under	50	20	30%
		2 1/2" and Over	45	18	30%

Room Temp Tensile & Hardness Data C70600 / C71500 Tube & Pipe

ALLOY	TEMPER (Tube & Pipe)	TENSILE (KSI) MIN	YIELD (KSI) MIN	ROCKWELL HARDNESS (B)
C70600	O60 ANN.	38	13	45 Max
	H55 Light Drawn	45	35	45 - 70
	H80 Hard Drawn	50	40	63 Min.
C71500	O60 ANN.	52	18	51 Max
	H80 Hard Drawn	70	45	70 Min.

Physical Properties for C70600

Melting Point - Liquidus 2100 F
 Melting Point - Solidus 2010 F
 Density 0.323 lb/in³ at 68 F
 Specific Gravity 8.94
 Electrical Resistivity 115.0 ohms-cmil/ft @ 68 F
 Electrical Conductivity 9 %IACS @ 68 F
 Thermal Conductivity 26.0 Btu · ft/(hr · ft²·°F) at 68F
 Coefficient of Thermal Expansion 9.5 · 10⁻⁶ per °F (68-572 F)
 Specific Heat Capacity 0.09 Btu/lb/°F at 68 F
 Modulus of Elasticity in Tension 18000 ksi
 Modulus of Rigidity 6800 ksi
 Machinability Rating 20%

Physical Properties for C71500

Melting Point - Liquidus 2260 F
 Melting Point - Solidus 2140 F
 Density 0.323 lb/in³ at 68 F
 Specific Gravity 8.94
 Electrical Resistivity 225.0 ohms-cmil/ft @ 68 F
 Electrical Conductivity 4 %IACS @ 68 F
 Thermal Conductivity 17.0 Btu · ft/(hr · ft²·°F) at 68F
 Coefficient of Thermal Expansion 9.0 · 10⁻⁶ per °F (68-572 F)
 Specific Heat Capacity 0.09 Btu/lb/°F at 68 F
 Modulus of Elasticity in Tension 22000 ksi
 Modulus of Rigidity 8300 ksi
 Machinability Rating 20%



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