



MARMETAL

C70600 / C70620 90-10 COPPER-NICKEL

ASTM B171/ASME SB-171 ASTM B111/ASME SB-111

MIL-C15726F MIL-T-16420K MIL-T-15005

UNS No.	Copper & Silver	Nickel + Cobalt	Manganese	Lead	Iron	Zinc	Other Elem.
C70600	remainder	9.0-11.0	1.0 max	0.05 ^a max	1.0-1.8	1.0 ^a	
C70620	86.2 min	9.0-11.0	1.0 max	0.02	1.0-1.8	0.50	0.05 C .02 S/P

^aFor subsequent welding application max levels are: Zinc 0.50, Lead 0.02, Phosphorus 0.02, Sulfur 0.02, Carbon 0.05

Fabrication Properties

C70600 Copper Nickel, also known as 90/10 copper nickel, is an alloy composed of 90% copper and 10% nickel. Renowned for its excellent corrosion resistance, especially in marine environments, it is commonly used in shipbuilding, offshore platforms, and heat exchangers. Its durability and strength make it ideal for plumbing, valve components, and various industrial applications where resistance to seawater is essential.

Density @ 68° F	0.323 lb/in ³
Melting Range	2010-2095° F
Hot Formability	Good
Cold Formability	Excellent
Machinability rating (C36000 = 100)	20
Brazing	Good
Soldering	Excellent
Gas-shielded arc welding	Excellent
Oxy-acetylene welding	Not recommended
Carbon-arc welding	Not recommended
Coated metal-arc welding	Good
Resistant welding: spot and seam	Good
Resistance welding: butt	Good

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Properties for M20 & O25 tempers

Thickness, in.	Tensile, min ksi (MPa)	Yield, 0.2% Offset, min (MPa)	Elongation in 2", min, %
2.5 and under	40 (275)	15 (105)	30
over 2.5 to 5	40 (275)	15 (105)	30
Thickness Tolerances*			
	<=36 in.	>36 to 60 in.	>60 to 96 in in.
>.25 to .50	.031	.033	.036
>.50 to .75	.035	.037	.040
>.75 to 1.0	.041	.043	.046
>1.0 to 1.5	.047	.050	.052
>1.5 to 1.75	.053	.056	.058
>1.75 to 2.00	.062	.068	.077
>2.00 to 5.00	.072	.077	.081

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Thickness x Width (W) in.	Temper	Tensile, min ksi	Yield 0.5% min ksi	Elongation in 2", min, %
<=3/16, all W	O60	38	15	25
>3/16, all W	M20 Soft	38	15	30
<=3/16 x <=24W	H01	55	30	10
<=3/16 x >24 W	H01	47	25	10
<=1/2 x >24 W	M20 Hard	47	25	15
>1/2 to 3, all W	M20 Hard	40	17	20
>3 to 5, all W	M20 Hard	38	15	20
All OD Sizes	O60	38	15	30
<=3/8 OD	H04	60	38	10
>3/8 to 1 OD	H04	50	30	15
>1 to 30D	H04	40	15	30



*Thickness tolerances for MIL-C-15726F are based on lot weight.
Consult FED-STD-146 3a(7) for min/max weight

