



MARMETAL

C46400 NAVAL BRASS

ASTM B171/ASME SB-171 ASTM B21

QQ-B-637 QQ-B-639

UNS No.	Copper & Silver	Tin	Lead	Iron	Zinc
C46400	59.0-62.0	0.50-1.0	0.20 max	0.10 max	remainder

C46400 Naval Brass is copper, alloyed with zinc and tin to provide improved strength, corrosion resistance and machinability. As the name implied, naval brass has extensive marine application and can be found where strength and corrosion resistance are valued. Typical industrial applications for C46400 brass include tubesheets, baffles valve stems, fasteners and mold plates. C46400 Naval Brass is also widely used for indoor and outdoor decorative applications including screens, elevators, signs, frames, and decorative fascia. Naval brass is considered a Lead Free product because the maximum lead content is 1/5th of 1%.

Fabrication Properties

Density @ 68° F	0.304 lb/in ³
Melting Range	1630-1650° F
Hot Formability	Excellent
Cold Formability	Fair
Machinability rating (C36000 = 100)	30
Brazing	Excellent
Soldering	Excellent
Gas-shielded arc welding	Fair
Oxy-acetylene welding	Good
Carbon-arc welding	Not recommended
Coated metal-arc welding	Not recommended
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, 0.5% Offset, min (MPa)	Elongation in 2", min, %
3 and under	50 (345)	20 (140)	35
over 3 to 5	50 (345)	18 (125)	35
Thickness Tolerances*			
	<=36 in.	>36 to 60 in.	>60 to 96 in in.
>.25 to .50	.025	.027	.029
>.50 to .75	.028	.030	.032
>.75 to 1.0	.033	.035	.037
>1.0 to 1.5	.038	.040	.042
>1.5 to 1.75	.043	.045	.047
>1.75 to 2.00	.050	.055	.062
>2.00 to 5.00	.058	.062	.065

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Thickness x Width (W) in.	Temper	Tensile, min ksi	Yield 0.5% min ksi	Elongation in 2", min, %
<=.1875, all W	Soft	52	20	30
>.1875 to <= .375x<=30 W	Soft	52	20	30
<=.375 x >30 W	Soft	50	20	35
>.375, all W	Soft	50	20	35
<=.1875, all W	Half Hard	60	35	20
>.1875 to <= .375x<=30 W	Half Hard	60	35	20
<=.375 x <=30 W	Half Hard	57	28	30
>.375, all w	Half Hard	54	25	30