31600 LEADED BRONZE

DESCRIPTION

Nickel Bearing C31600 is composed of approximately 89% copper, 8% zinc, and 2% lead, but also contains 1% nickel. This alloy combines the natural corrosion resistance and machinability of C31400 with a higher tensile and yield strength resulting from the controlled addition of nickel. The relatively low zinc content provides excellent corrosion resistance in potable water along with a pleasing golden colour It also possesses a particular resistance to stress corrosion cracking. It is an alloy suitable for outdoor use where higher strength is required.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	87.50	90.50
Pb	1.30	2.50
Fe	-	0.10
Ni	0.70	1.20
P	0.04	0.10
Total Others	-	0.40
Zn	Remainder	

MECHANICAL PROPERTIES (AS PER TEMPER Ho2)

Range (Inch)		From	To	UTS Min (ksi)	PS Min (ksi)	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)		0.059	0.500	50	30	7	-	-
		0.500	1.000	45	27	10	-	-
		1.000	2.953	40	25	"2	-	-
Hex (A/F)		0.118	0.5.00	50	30	7	-	-
		0.500	1.000	45	27	10	-	-
		1.000	2.756	40	25	12	-	-
Square (A/F)		0.118	2.362	40	25	12	-	-
Rectangle	Thickness	0.118	1.000	40	25	12	-	-
	Width	0.118	2.000				-	-
	Thickness	1.000	1.968	40	25	12	-	-
	Width	2.000	2.756				-	-

RAJHANS METALS PRIVATE LIMITED
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Range (mm)		From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)		1.5	12	345	205	7	-	-
		12	25	310	185	10	-	-
		25	75	275	170	12	-	-
Hex (A/F)		3	12	345	205	7	-	-
		12	25	310	185	10	-	-
		25	70	275	170	12	-	-
Square (A/F)		3	12	275	170	12	-	-
		50	60	275	170	12	-	-
Rectangle	Thickness	3	25	275	170	12	-	-
	Width	4	50				-	-
	Thickness	25	50	275	170	12	-	-
	Width	50	70				-	-

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1900
Melting Point - Solidus°F	1850
Density lb/cu in. at 68°F	0.32
Specific Gravity	8.86
Electrical Conductivity*. IACS at 68°F	32
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	81
Coefficient of Thermal Expansion 68-57210-6 per °F (68 - 572°F)	10.2
Specific Heat Capacity Btu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tension ksi	17000

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	Good
Capacity for Being Hot Formed	Poor
Machinability Rating	80

TYPICAL USES

- Builders Hardware
- Electrical
- Fasteners
- Industrial

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