C69300

SILICON BRASS

DESCRIPTION

C69300 the silicon red brass is specified for underground service lines since it offers great corrosion resistance to all types of potable waters and has moderate strength and good retention of spring properties. Silicon brasses are part of the subgroup of high strength brasses. Silicon Brass contain less than 20% zinc and less than 6% silicon. The silicon brasses are solid solution strengthened. Silicon brasses are typically chosen because of their high strength and moderately high corrosion resistance.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	73.00	77.00
Pb	-	0.10
Fe	-	0.10
Mn	-	0.10
Si	2.7	3.4
Sn	-	0.20
Ni	-	0.10
P	0.04	0.15
Total Others	-	0.50
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO ASTM B371 (AS PER TEMPER Ho2)

Range (Inch)	From	To	UTS Min (ksi)	PS Min (Ksi)	Elongation Min (%)	Hardness Min	Hardness Max
Round (Dia)	0.059	0.500	8o	45	5	-	-
	0.500	1.000	75	35	10	-	-
	1.000	2.000	70	30	10	-	-
Hex (A/F)	0.118	0.500	85	45	5	-	-
	0.500	1.000	75	35	10	-	-
	1.000	2.000	70	30	10	-	-
Square (A/F)	0.118	0.500	85	45	5	-	-
	0.500	1.000	75	35	10	-	-
	1.000	2.000	70	30	10	-	-

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C69430

SILICON BRASS

Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min	Hardness Max
Round (Dia)	1.5	12	585	310	5	-	-
	12	25	515	240	10	-	-
	25	50	480	205	10	-	-
Hex (A/F)	3	12	585	310	5	-	-
	12	25	515	240	10	-	-
	25	50	480	205	10	-	-
Square (A/F)	3	12	585	310	5	-	-
	12	25	515	240	10	-	-
	25	50	480	205	10	-	-

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1685
Melting Point - Solidus°F	1510
Density lb/cu in. at 68°F	0.26
Specific Gravity	8.19
Electrical Conductivity % IACS at 68°F	6.2
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	15
Coefficient of Thermal Expansion 68-57210-6 per °F (68 - 572°F)	11.2
Specific Heat Capacity Btu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tension ksi	16000

FABRICATION PROPERTIES

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Spot Weld	Good
Seam Weld	Good
Butt Weld	Good
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Excellent
Forgeability Rating	80
Machinability Rating	50

TYPICAL USES

INDUSTRIAL: Valves Stems

- Valves Stems

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