

## DESCRIPTION

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	75.00	77.00
Pb	-	0.10
Fe	-	0.30
Sn	-	0.30
Ni	-	0.20
Mn	-	0.05
Al	-	0.05
P	0.02	0.10
Si	-	3.50
Total Others	-	0.15
Zn	Remainder	

## MECHANICAL PROPERTIES (AS PER TEMPER R500)

Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min	Hardness Max
Round (Dia)	35	75	500	450	15	-	-
Hex (A/F)	35	70	500	450	15	-	-
Square (A/F)	35	60	500	450	15	-	-
Rectangle (Thickness)	35	50	500	450	15	-	-

## 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 68-5721 fr6 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	30

## TYPICAL USES

- > INDUSTRIAL
- > Valve Items