C519 Phosphor Bronze 6% Alloy Wire

Introduction

A phosphor bronze, alloy C519 has 6% nominal tin producing higher mechanical strengths with a slight decrease in electrical conductivity when compared to C510 phosphor bronze. Often functionally interchangeable with C510 which predominates in North America, alloy C519 is generally used in Europe.

To learn more please contact our sales department.

Fisk Alloy Wire Inc.
P.O. Box 26
10 Thomas Road N.
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Chemical Composition - Limits	Chemical Composition - Nominal
Cu rem (99.5 min incl named elements)	Cu 93.8
Sn 5.0-7.0	Sn 6.0
Pb 0.05 max	P 0.20
Zn 0.30 max	
Fe 0.10 max	
P 0.03-0.35	

Specifications	Fabrication Index	
ASTM B103	Soldering	5 - Excellent
EN 12166	Hot Worked	5 - Excellent
	Cold Worked	5 - Excellent
	Brazing	5 - Excellent
	Machinability	1 - Poor

Physical Properties

Annealing Range (Min)	700 °F
Annealing Range (Max)	1350 °F
Density	0.319 lb/in³
Electrical Resistivity (Annealed)	74.1 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	14% IACS @ 68 °F
Thermal Conductivity	38 Btu/ft²/ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	10 per °F (68-572 °F)
Modulus of Elasticity (Tension)	16 ksi
Modulus of Rigidity (Tension)	6 ksi
Melting Point (Solidus)	1,750 °F
Melting Point (Liquidus)	1,920 °F

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Round Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed	R370	54.0	68.0	.0010 - .1285 inch
1/4 Hard	R460	67.0	81.0	
1/2 Hard	R560	81.0	97.0	
3/4 Hard	R670	97.0	115	
Hard	R790	115	138	
Spring	R950	138		

Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed	R370	54.0	68.0	.0100 - .0808 inch
1/4 Hard	R460	67.0	81.0	
1/2 Hard	R560	81.0	97.0	
3/4 Hard	R670	97.0	115	
Hard	R790	115	138	
Spring	R950	138		

Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)

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Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Spring	H02	64.0	79.0	.0150 - .2500 inch
Spring	O60	48.0	63.0	
Spring	H04	80.0	96.0	Thickness: .0100 - .0500 inch Width:

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