C194 Copper-Iron Alloy Wire

Introduction

Alloy C194 is a first generation high performance alloy used worldwide. C194 combines good electrical conductivity with high tensile strength, good solderability and plateability. Applications include connectors, semiconductor pins and leadframes, sockets and mass terminations.

To learn more please contact our sales department.

Fisk Alloy Wire Inc.
P.O. Box 26
10 Thomas Road N.
Hawthorne, NJ 07506 U.S.A.

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Chemical Composition - Limits	Chemical Composition - Nominal
Cu 97.0 min	Cu 97.4
Fe 2.1-2.6	Fe 2.40
P 0.015-0.15	Zn 0.13
Pb 0.03 max	P 0.04
Zn 0.05-0.20	

Specifications	Fabrication Index	
ASTM B465	Soldering	5 - Excellent
	Hot Worked	5 - Excellent
	Cold Worked	5 - Excellent
	Brazing	5 - Excellent
	Machinability	1 - Poor

Physical Properties

Annealing Range (Min)	700 °F
Annealing Range (Max)	1200 °F
Density	0.322 lb/in³
Electrical Resistivity (Annealed)	16 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	65% IACS @ 68 °F
Thermal Conductivity	150 Btu/ft²/ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	9.8 per °F (68-572 °F)
Modulus of Elasticity (Tension)	17 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		40.0	58.0	.0010 - .1285 inch
1/4 Hard	H01	50.0	65.0	
1/2 Hard	H02	60.0	75.0	
Hard	H04	70.0	85.0	
Extra Hard	H06	80.0	95.0	
Spring	H08	90.0		

Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed		40.0	58.0	.0100 - .0808 inch
1/4 Hard	H01	50.0	65.0	
1/2 Hard	H02	60.0	75.0	
Hard	H04	70.0	85.0	
Extra Hard	H06	80.0	95.0	

Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Spring	H08	70.0	76.0	Thickness: .0100 - .0500 inch Width: .0150 - .2500 inch
Annealed		40.0	63.0	
1/2 Hard	H02	53.0	63.0	
Hard	H04	60.0	70.0	

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Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Extra Hard	H06	67.0	73.0	
Spring	H08	70.0	76.0	
Extra Spring	H10	73.0	80.0	

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