



# Copper-Nickel-Tin

# C725

Alloy C725 is a moderate strength, low conductivity alloy with excellent bare solderability and corrosion resistance. Applications include electronic parts, springs, connectors and wire wrap terminals.

## Mechanical Properties

 ROUND & SQUARE WIRE...as drawn			
Temper		Tensile Strength PSI	
Annealed		55-65,000	
1/4 Hard		65-80,000	
1/2 Hard		75-90,000	
3/4 Hard		80-95,000	
Hard		95-110,000	
Spring		110-125,000	
 ROLLED FLAT WIRE...wire other than square			
Temper	Tensile Strength PSI	Nominal Yield Strength PSI	Nominal Elongation %
Annealed	45-65,000	22,000	35
Quarter Hard	55-75,000	58,000	18
Half Hard	65-80,000	69,500	6
Hard	75-90,000	81,000	3
Extra Hard	80-95,000	86,000	2
Spring	85-100,000	90,000	1

Note: Flat wire sections having a 3:1 width to thickness ratio or less are by commercial convention processed to the same tensile strength values as round or square wire.

## Physical Properties

Physical Properties	English Units	Metric Units
Melting Point (Liquidus)	2065°F	1130°C
Melting Point (Solidus)	1940°F	1060°C
Density	.321 lbs/cu in	8.89 gm/cu cm
Thermal Conductivity (Annealed)	31 Btu ft/sq ft hr °F @ 68°F	.13 cal cm/sq cm sec °C @ 20°C
Coefficient of Thermal Expansion	.000092°F (68-572°F)	.000165°C (20-300°C)
Electrical Resistivity (Annealed)	94.3 ohm (cir mil/ft) @ 68°F	15.7 microhm-cm @ 20°C
Electrical Conductivity (Annealed)	11% IACS* @ 68°F	.064 megmho/cm @ 20°C
Modulus of Elasticity	20,000,000 psi	14,000 kg/sq mm

\*International Annealed Copper Standard

## Conversion Factors Metric Tensile Strengths

kg/mm<sup>2</sup> = KSI x .7031

Newtons/mm<sup>2</sup> = KSI x 6.895  
or  
MPa



## Chemical Composition

Nominal	
Copper	Remainder
Nickel	9.5%
Tin	2.3%
Composition Limits	
Cu+Specifics	Remainder.
Nickel	8.5 - 10.5%
Tin	1.8 - 2.8%
Iron	0.6% Max.
Zinc	0.5% Max.
Manganese	0.2% Max.
Lead	0.05% Max.

## Specifications

ASTM B122  
ASTM B206  
ASTM B250

## Mill Limits

Round	.0010 - .1285 inch .0254 - 3.264 mm
Square and Rectangular	.0100 - .0808 inch .2540 - 1.905 mm Corner Radius as Specified
Flat	Thickness: .0100 - .0500 inch .2540 - 1.270 mm Width: .0150 - .2500 inch .3810 - 6.350 mm Edge Condition as Specified
Shapes	Special Shapes and Sizes Produced to Order

The information provided on this page is for reference purposes only.  
Fisk Alloy Wire, Inc. • P.O. Box 26 • 10 Thomas Road • Hawthorne, NJ 07507 • U.S.A.  
Phone (973) 427-7550 • Fax (973) 427-4585 • E-mail: sales@fiskalloy.com