



HPC-80EF® - Environmentally Friendly Copper Alloy

IWG High Performance Conductors, in response to global concerns, has taken a leadership role in developing high performance and environmentally friendly alloy systems. These alloys have been specifically designed to be free of heavy metal elements such as cadmium, mercury, and lead.

HPC-80EF® was designed for RoHS applications and offers comparable conductivity, tensile strength, flex life, and thermal stability to C162 Cadmium Copper. Utilizing the same solution strengthening as C162, HPC-80EF® was designed to be the RoHS compliant counterpart to C162 in a variety of industries such as commercial aerospace, geophysical exploration, and medical equipment applications.

MATERIAL PROPERTIES		
Composition	99% Cu; Balance Mg	
Density	0.323 lbs/in ³ @68F (8.941 gm/cm ³ @20C)	
Thermal Conductivity	191 BTU-ft/(h-ft ² -F) [(330 watt/meter-K)]	
PHYSICAL PROPERTIES		
	<i>Soft Temper</i>	<i>Hard Temper</i>
Elongation, min	8%	1%
Tensile, min	55,000 PSI (379 MPa)	100,000 PSI (690 MPa)
ELECTRICAL PROPERTIES		
	<i>Soft Temper</i>	<i>Hard Temper</i>
Resistivity, max	12.20 cmil-Ω/ft (2.03 mΩ-cm)	12.96 cmil-Ω/ft (2.15 μΩ-cm)
Conductivity	85 % IACS	80 % IACS
Temp. Coeff. of Resist.	0.00319 / °C	0.00319/ °C
AVAILABILITY		
Coatings ^{1,2}	Silver - ASTM B298, Nickel - ASTM B355, Tin - ASTM B33	
Constructions ^{3, 4, 5}	Solid: 24 - 52 AWG Stranded: 14 - 42 AWG (7 Wire, 19 Wire Unilay and Conc.) Flat: 30 - 38 (Equivalent round AWG size)	

1 – Strand sizes less than 44 AWG will not meet 40 micro-inches per ASTM B298

2 - Tin plating availability for hard temper only.

3 - Solid construction may not meet stated properties.

4 – Some sizes do not apply to nickel and tin plated HPC-80EF®

5 – Alternative constructions available for quote upon request

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