

Alloy C19500, Strescon, is a high strength, high electrical conductivity copper alloy. Use in a range of applications and specifically electrical hardware this alloys offers a balanced combination of strength and conductivity. This alloy allows parts to be reduced in size without sacrificing performance in many cases. Designers requiring an alloy with improved resistance to stress relaxation should also consider C19025 or C18080 for enhanced performance.

Chemical Composition

Copper	96.0% Min
Iron	1.0-2.0%
Phosphorus	0.01-0.35%
Cobalt	0.30-1.3%
Tin	0.10-1.0%
Zinc	0.20% Max
Aluminum	0.02% Max
Lead	0.02% Max

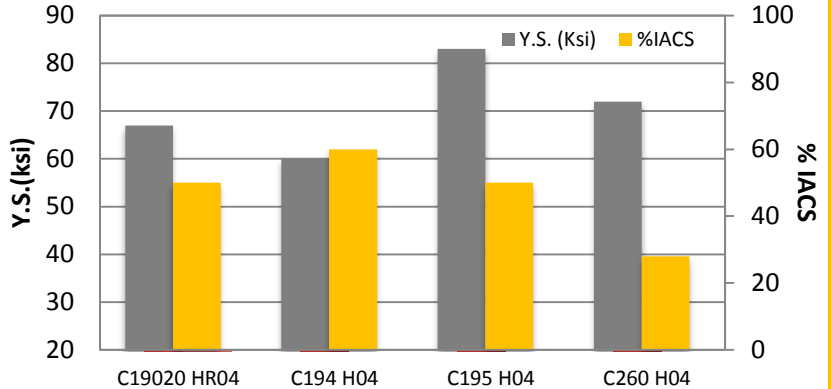


Figure 1: Comparison of Yield Strength and Electrical Conductivity performance of select highly electrical connector materials.

Physical Properties

	English Units	Metric Units
Density	0.322 lb/in ³ @ 68°F	8.92 g/cm ³
Thermal Conductivity	115 BTU-ft/ft ² -hr-°F	200 W/m ² °K
Electrical Resistivity	20.80 ohm circ mils/ft	3.94 microhm-cm
Electrical Conductivity (annealed)	50% IACS*	0.293 megamho/cm
Modulus of Elasticity	17,300,000 psi	121 kN/mm ²
Magnetic Permeability	1.1-1.15μ	1.1-1.15μ
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	9.6 PPM/°F	17.3 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength ²		% Elongation ²	Typical 90° Bend Formability GW/BW ³	
	ksi	N/mm ²	ksi	N/mm ²			
Annealed	50-60	345-415	28	195	26	-	-
1/4 Hard	60-72	415-495	57	395	14	0.3	0.3
1/2 Hard	68-78	470-540	71	490	6	0.8	0.8
3/4 Hard	75-85	515-585	77	530	3	1.0	1.3
Hard	82-90	565-620	83	570	2	1.5	1.8
Spring	88-97	605-670	88	605	2	2.5	2.5

¹ Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specification

² Nominal Values ³ DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.

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