

Olin Brass Alloy C4252 is a dispersion and solid strengthened alloy developed for use in the electronic and automotive connector market. It was developed to provide a cost-effective solution to the increasing price pressures placed upon connector manufactures using traditional phosphor bronze alloys. Its unique combination of properties provides higher current carrying capacity than Alloy C510 at the same strength.

Chemical Composition

Copper¹	88.0-91.0%
Tin	1.5-3.0%
Iron	0.05-0.20%
Nickel	0.05-0.20%
Phosphorous	0.01-0.20%
Zinc	Remainder
Lead	0.05% Max

1. Cu plus Named Elements = 99.7% min

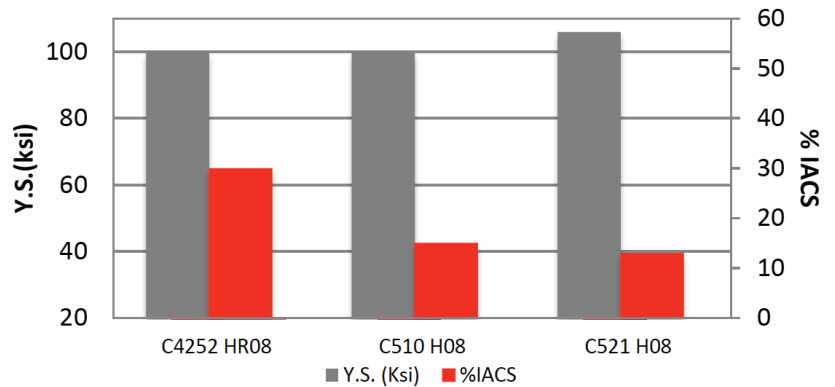


Figure 1: Comparison of Yield Strength and Electrical Conductivity performance of select spring connector materials.

Physical Properties

	English Units	Metric Units
Density	0.318 lb/in ³ @ 68°F	8.80 g/cm ³
Thermal Conductivity	70 BTU-ft/ft ² -hr-°F	120 W/m ² K
Electrical Resistivity	34.57 ohm circ mils/ft	5.75 microhm-cm
Electrical Conductivity (annealed)	30% IACS*	0.170 megamho/cm
Modulus of Elasticity	16,000,000 psi	110 kN/mm ²
Thermal Capacity(Specific Heat)	0.090 Btu/lb/F° @ 68°F	0.090 cal/gm/C° @ 20°C
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	10.2 PPM/°F	18.4 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength ²		% Elongation ²	Typical 90° Bend Formability GW/BW ^{3,4}	
	ksi	N/mm ²	ksi	N/mm ²			
1/2 Hard	58-73	400-505	60	415	20	-	-
3/4 Hard	68-79	470-545	71	490	15	-	-
Hard	76-91	525-625	81	560	10	-	0.5
Extra Hard	88-103	605-710	92	635	6	0.5	1.8
Spring Hard	95-110	655-760	100	690	4	1.0	3.0
Extra Spring	100-114	690-785	103	710	3		

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

² Nominal Values ³ DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.012" (0.3mm) thick, 11/16 (17.5mm) wide.

⁴ Relief annealed product recommended for maximum formability