

Material Designation	
UNS	C15500
EN*	no EN standard

\*European Standard

Chemical Composition (Reference)	
Cu	min. 99.75 %
Mg	0.11 %
Ag	0.064 %
P	0.06 %

Physical Properties*		
Electrical Conductivity	%IACS	90.0
Thermal Conductivity	Btu/(ft·h·°F)	200
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /°F	1.9
Coefficient of Thermal Expansion**	µin/(in·°F)	9.8
Density	lb/in <sup>3</sup>	0.322
Modulus of Elasticity	10 <sup>6</sup> psi	17.0
Specific Heat	Btu/(lb·°F)	0.092

\* Reference values at room temperature  
 \*\* Between 30 and 600°F

Fabrication Properties	
Capacity for Being Cold Worked	excellent
Machinability	less suitable
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	good
Gas Shielded Arc Welding	less suitable
Laser Welding	less suitable

Mechanical Properties							
Temper		O61	H02	H04	H06	H08	H10
		annealed	½ hard	hard	extra hard	spring	ex spring
Tensile strength	ksi	34 - 43	45 - 55	56 - 64	63 - 72	65 - 73	68 - 75
Yield strength	ksi	> 15	> 38	> 50	> 56	> 60	> 63
Elongation (A2")	%	> 30	> 13	> 6	> 5	> 4	> 3

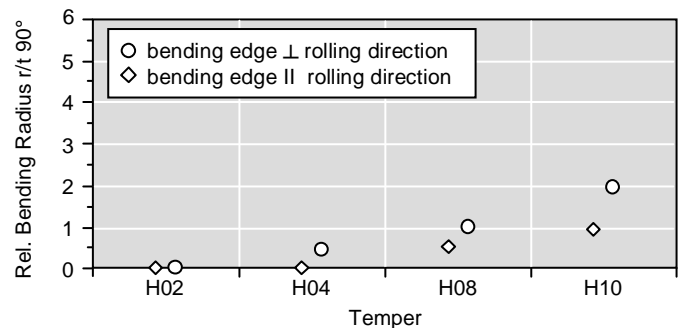
### Corrosion Resistance

C15500 has good corrosion resistance in natural atmosphere (also sea air) and industrial atmosphere.

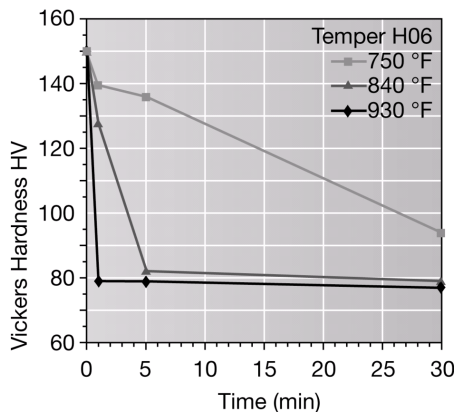
### Typical Applications

- Electrical contacts
- Electronic components
- Resistance welding electrodes

### Bendability (Strip Thickness t max 0.02 inch)

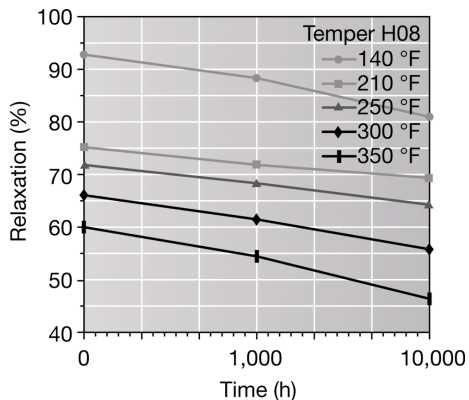


**Resistance to Softening**



Vickers hardness after heat treatment (typical values)

**Relaxation at Stress Level 0.5 x Yield Strength**



Stress remaining as a function of service temperature and time. Measured on stress relief annealed specimens parallel to rolling direction. Values extrapolated according to F.R. Larson, J. Miller, Trans ASME74 (1952) 765 – 775. Due to plastic deformation different relaxation values are to be expected.

**Fatigue Strength**

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10<sup>7</sup> load cycles under symmetrical alternate load without breaking. It is dependent on the temper tested and is about 1/3 of the tensile strength.

**Types and Formats Available**

- Standard coils with outside diameters up to 58 inches
- Traverse-wound coils with drum weights up to 4,000 lbs
- Multicoil up to 10,000 lbs
- Hot-dip tinned and electroplated strip
- Contour-milled strip

**Dimensions Available**

- Strip thickness from 0.004 inch, thinner gauges on request
- Strip width from 0.1 inch



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