

Material Designation	
EN	CW509L
UNS*	no UNS standard

* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cu	61 %
Pb	0.2 %
Zn	balance

Typical Applications
<ul style="list-style-type: none"> • Locks and metal fittings • Keys • Architecture

Physical Properties*		
Electrical Conductivity	MS/m %IACS	15 26
Thermal Conductivity	W/(m·K)	117
Coefficient of Electrical Resistance**	10 ⁻³ /K	1.7
Coefficient of Thermal Expansion**	10 ⁻⁶ /K	20.3
Density	g/cm ³	8.41
Modulus of Elasticity	GPa	102
Specific Heat	J/(g·K)	0.375
Poisson's Ratio		0.34

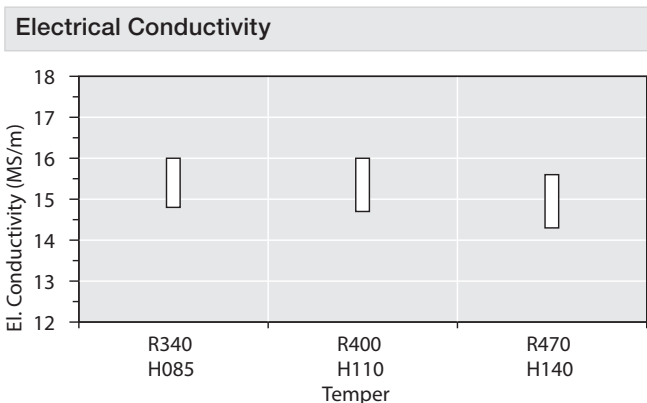
Fabrication Properties	
Capacity for Being Cold Worked	fair
Machinability	fair
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	good
Gas Shielded Arc Welding	fair
Laser Welding	less suitable

Corrosion Resistance
Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia (stress corrosion cracking) in the non-stress-relieved condition.

* Reference values at room temperature
 ** Between 0 and 300 °C

Mechanical Properties				
Temper		R340	R400	R470
Tensile Strength R _m	MPa	340–420	400–480	≥ 470
Yield Strength R _{p0.2}	MPa	≤ 240	≥ 200	≥ 390
Elongation A _{50mm}	%	≥ 33	≥ 15	≥ 6

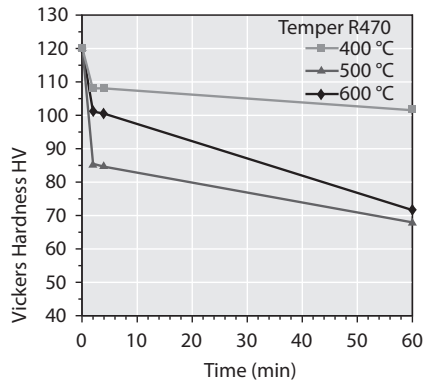
Temper		H085	H110	H140
Hardness HV		85–115	110–140	≥ 140



WIELAND-Z20

CuZn40

Resistance to Softening



Vickers hardness
after heat treatment
(typical values)

Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10^7 load cycles under symmetrical alternate load without breaking. It is dependent on the temper tested and is about $\frac{1}{3}$ of the tensile strength R_m .

Types and Formats Available

- Standard coils with outside diameters up to 1400 mm
- Contour-milled strip
- Sheet
- Strip and sheet with protective coating

Dimensions Available

- Strip thickness from 0.20 mm
- Strip width from 3 mm, however min. 10 x strip thickness