

Material Designation	
EN	CuZn40
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"> <li>• Locks and metal fittings</li> <li>• Keys</li> <li>• Architecture</li> </ul>

Physical Properties*		
Electrical Conductivity	MS/m %IACS	15 26
Thermal Conductivity	W/(m·K)	117
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	1.7
Coefficient of Thermal Expansion**	10 <sup>-6</sup> /K	20.3
Density	g/cm <sup>3</sup>	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

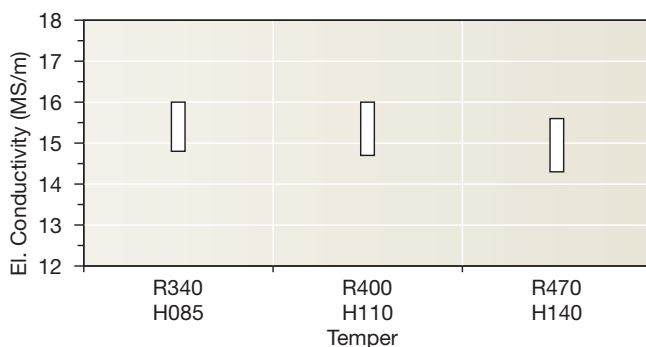
Corrosion Resistance
Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia (stress corrosion cracking) in the non-stress-relieved condition.

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

Mechanical Properties				
Temper		R340	R400	R470
Tensile Strength R <sub>m</sub>	MPa	340–420	400–480	≥ 470
Yield Strength R <sub>p0.2</sub>	MPa	≤ 240	≥ 200	≥ 390
Elongation A <sub>50mm</sub>	%	≥ 33	≥ 15	≥ 6

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

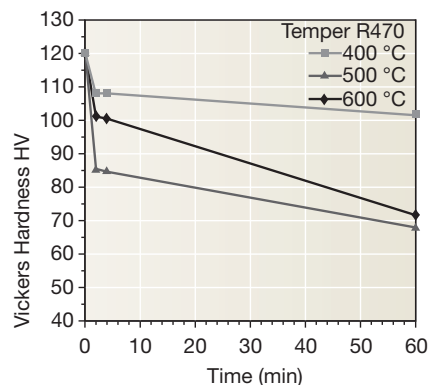
**Electrical Conductivity**



# 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