

Material Designation	
EN	CuZn38Pb2
UNS*	C35000

\* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cu	60.5 %
Pb	1.8 %
Zn	balance

Typical Applications
• Precision mechanical components
• Watch and clock parts
• Milled parts

Physical Properties*		
Electrical Conductivity	MS/m %IACS	14 24
Thermal Conductivity	W/(m·K)	109
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	1.7
Coefficient of Thermal Expansion**	10 <sup>-6</sup> /K	20.4
Density	g/cm <sup>3</sup>	8.44
Modulus of Elasticity	GPa	102
Specific Heat	J/(g·K)	0.377
Poisson's Ratio		0.34

\* Reference values at room temperature

\*\* Between 0 and 300 °C

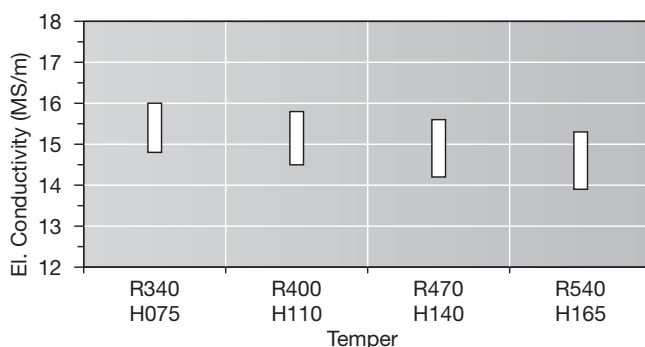
Fabrication Properties	
Capacity for Being Hot Worked	excellent
Machinability	excellent
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	fair
Gas Shielded Arc Welding	less suitable
Laser Welding	less suitable

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. It is, however, susceptible to dezincification due to the two-phase $\alpha/\beta$ -structure.

Mechanical Properties					
Temper		R340	R400	R470	R540
Tensile Strength $R_m$	MPa	340–420	400–480	470–550	≥ 540
Yield Strength $R_{p0.2}$	MPa	≤ 240	≥ 200	≥ 390	≥ 490
Elongation $A_{50mm}$	%	≥ 33	≥ 14	≥ 5	–

Temper		H075	H110	H140	H165
Hardness HV		75–110	110–140	140–170	≥ 165

**Electrical Conductivity**

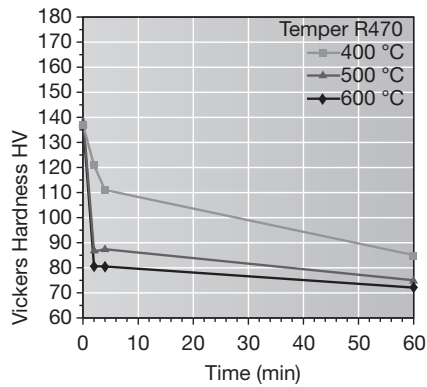


# Wieland-Z21

CuZn38Pb2

C35000

## 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