

| 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 ⁻³ /K | 1.7 |
| Coefficient of Thermal Expansion** | 10 ⁻⁶ /K | 20.4 |
| Density | g/cm ³ | 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

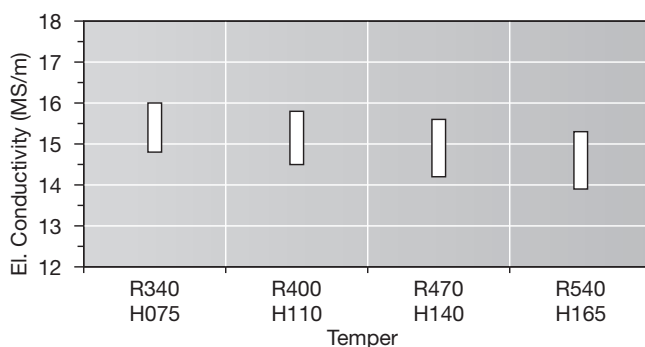
| Fabrication Properties | |
|-----------------------------------|---------------|
| Capacity for Being Hot Worked | excellent |
| Machinability | excellent |
| Capacity for Being Electroplated | excellent |
| Capacity for Being Hot-Dip Tinned | excellent |
| Soft Soldering | excellent |
| Resistance 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 α/β -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

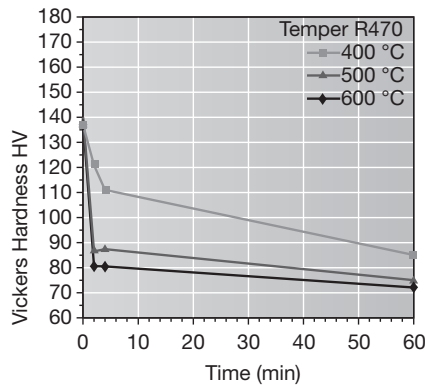


Wieland-Z21

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

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Rolled Products Division

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