

Wieland-Z10

CuZn37Pb0.5 | Machining brass

Material designation

| | |
|-----|-----------------------|
| EN | CuZn37Pb0.5 CW604N |
| UNS | C33500 |

Chemical composition*

| | |
|----|---------|
| Cu | 57.5 % |
| Pb | 0.3 % |
| Zn | balance |

*Reference values in % by weight

Physical properties*

| | | |
|--|---------------------|------|
| Electrical conductivity | MS/m | 14.7 |
| | %IACS | 25 |
| Thermal conductivity | W/(m·K) | 113 |
| Thermal expansion coefficient (0–300 °C) | 10 ⁻⁶ /K | 20.4 |
| Density | g/cm ³ | 8.44 |
| Modulus of elasticity | GPa | 110 |

*Reference values at room temperature

Corrosion resistance

Machining brass is generally quite resistant against organic substances as well as neutral or alkaline compounds. Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress. Dezincification in warm, acidic waters should also be taken into consideration.

Product standards

| | |
|------|----------|
| Tube | EN 12449 |
|------|----------|

Material properties and typical applications

Wieland-Z10 is a high-copper machining brass which has excellent cold working properties and can still be machined. It is ideal for producing components which are primarily coined, riveted, crimped or flanged and, to a small extent, machined.

Types of delivery

The BU Extruded Products supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming

| | |
|-----------------------------------|------|
| Machinability (CuZn39Pb3 = 100 %) | 60 % |
| Capacity for being cold worked | good |
| Capacity for being hot worked | good |

Surface treatment

| | |
|----------------|-----------|
| Polishing | |
| mechanical | excellent |
| electrolytic | fair |
| Electroplating | excellent |

Joining

| | |
|--------------------------------|-----------|
| Resistance welding (butt weld) | fair |
| Inert gas shielded arc welding | poor |
| Gas welding | poor |
| Hard soldering | fair |
| Soft soldering | excellent |

Heat treatment

| | |
|--------------------------|---------------------|
| Melting range | 885–910 °C |
| Hot working | 720–820 °C |
| Soft annealing | 450–650 °C 1–3 h |
| Thermal stress relieving | 200–300 °C 1–3 h |

Trademarks



Further information is provided in our brochure on Wiconnec.

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Mechanical properties according to EN

| Tubes | | | | | | | | | | acc. to EN 12449 | | |
|--------|----------------|----|---|---------------------------|------|--------------|----------|------|------|------------------|--|--|
| Temper | Wall thickness | | Tensile strength R_m | Yield strength $R_{p0.2}$ | | Elongation % | Hardness | | | | | |
| | mm | | MPa | MPa | | A100 | HV | | HB | | | |
| | from | to | min. | min. | max. | min. | min. | max. | min. | max. | | |
| M | - | 20 | as manufactured – without specified mechanical properties | | | | | | | | | |
| R300 | - | 20 | 300 | - | 220 | 45 | - | - | - | - | | |
| H060 | - | 20 | - | - | - | - | 60 | 90 | 55 | 85 | | |
| R370 | - | 10 | 370 | 200 | - | 25 | - | - | - | - | | |
| H085 | - | 10 | - | - | - | - | 85 | 120 | 80 | 115 | | |
| R440 | - | 5 | 440 | 340 | - | 10 | - | - | - | - | | |
| H115 | - | 5 | - | - | - | - | 115 | - | 110 | - | | |