

Wieland-S28

CuZn28Sn1As
Special brass

Extruded and drawn products



| Material designation | |
|----------------------|-----------------------|
| EN | CuZn28Sn1As CW706R |
| UNS | C44300 |

| Chemical composition* | |
|-----------------------|---------|
| Cu | 71 % |
| Sn | 1 % |
| As | 0.03 % |
| Zn | balance |

* Reference values in % by weight

| Physical properties* | | |
|--|-------------------|------------|
| Electrical conductivity | MS/m %IACS | 14.1 24 |
| Thermal conductivity | W/(m·K) | 109 |
| Thermal expansion coefficient (0–300 °C) | $10^{-6}/K$ | 19.5 |
| Density | g/cm ³ | 8.56 |
| Modulus of elasticity | GPa | 110 |

* Reference values at room temperature

Corrosion resistance

Special brass generally has excellent corrosion resistance due to alloying additions. Wieland-S28 exhibits good resistance to river or domestic water which is not too heavily polluted. In addition, it is resistant to seawater and not susceptible to dezincification.

| Product standards | |
|-------------------|----------|
| Tube | EN 12451 |

Material properties and typical applications

Wieland-S28 is a special brass with excellent corrosion resistance through the addition of tin and arsenic. The material is primarily used for condenser tubes and finned tubes for river and domestic water applications. In the oil producing industry, Wieland-S28 is used because of its good mechanical strength and resistance.

Types of delivery

The Extruded and Drawn Products Division 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 | | Surface treatment | |
|-----------------------------------|------|--------------------------|---------------------|
| Machinability (CuZn39Pb3 = 100 %) | 30 % | Polishing | |
| Capacity for being cold worked | good | mechanical | excellent |
| Capacity for being hot worked | fair | electrolytic | poor |
| | | Electroplating | excellent |
| Joining | | Heat treatment | |
| Resistance welding (butt weld) | good | Melting range | 890–945 °C |
| Inert gas shielded arc welding | fair | Hot working | 750–850 °C |
| Gas welding | fair | Soft annealing | 450–600 °C 1–3 h |
| Hard soldering | fair | Thermal stress relieving | 200–300 °C 1–3 h |
| Soft soldering | good | | |

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Mechanical properties according to EN

| Tubes | | | | | | acc. to EN 12451 | |
|--------|------------------|----------------|-----------------------|-----------|----------|------------------|--|
| Temper | Tensile strength | Yield strength | Elongation at rupture | Expansion | Hardness | | |
| | Rm | Rp0,2 | A | | HV | | |
| | MPa min. | MPa min. | % min. | % min. | min. | max. | |
| R320 | 320 | 100 | 55 | 30 | – | – | |
| H060 | – | – | – | 30 | 60 | 90 | |
| R360 | 360 | 140 | 45 | 30 | – | – | |
| H080 | – | – | – | 30 | 80 | 110 | |