

Wieland-S28 Special brass

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.

Extruded/drawn products

Chemical composition*

Cu	71%
Sn	1.2%
As	0.03%
Zn	balance

* Reference values in % by weight

Material designation

EN	CuZn28Sn1As
	CW706R
UNS	C44300
DIN*	CuZn28Sn1-2.0470
BS*	not standardized
NF*	not standardized

* Former national standards

Physical properties*

Electrical conductivity	MS/m	14.1
	% IACS	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

1 GPa = 1 kN/mm²

1 MS/m = 1 m/Ω • mm²

Fabrication properties

Forming

Machinability	30%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	good
Capacity for being hot worked	fair

Joining

Resistance welding	good
Inert gas shielded arc welding	fair
Hard soldering	fair
Soft soldering	good

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.

Surface treatment

Polishing	mechanical	excellent
	electrolytic	poor
Electroplating		excellent

Product standards

Tubes	EN 12451
	EN 12152

Heat treatment

Melting range	890-945 °C
Hot working	750-850 °C
Soft annealing	450-600 °C, 1-3 h
Thermal stress-relieving	200-300 °C, 1-3 h

Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (extruded/soft)	to (hard)
R _m [MPa]	340	630
R _{p0.2} [MPa]	110	580
A ₅ [%]	60	10
HB	70	140

Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from	to	from	to
S28	CuZn28Sn1As	CW706R	6	130	0.25	10				
Round tubes			6	130	0.25	10				
Drawn sections										
Extruded sections										
Sectional tubes								90		
Round and polygonal rods									2	125
Round wires										
Polygonal wires										

All values in mm

Wieland - S28

Wieland

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