

## Wieland-S37 Special brass

## Extruded/drawn products

**Wieland-S37** is a special brass with medium strength, high resistance to atmospheric corrosion as well as good sliding properties due to the alloying constituents manganese and aluminium. Wieland-S37 is used as standard bearing alloy for medium load applications in machine construction.

### Chemical composition\*

Cu	60%
Al	1%
Mn	1%
Zn	balance

### Material designation

EN	CuZn38Mn1Al CW716R
UNS	not standardized
DIN*	CuZn37Al1-2.0510
BS*	not standardized
NF*	not standardized

\* Reference values in % by weight

\* Former national standards

### Physical properties\*

Electrical conductivity	MS/m	7.8
	% IACS	13
Thermal conductivity	W/(m*K)	63
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	21.1
Density	g/cm <sup>3</sup>	8.24
Modulus of elasticity	GPa	93

\* Reference values at room temperature  
1 GPa = 1 kN/mm<sup>2</sup>  
1 MS/m = 1 m/Ω • mm<sup>2</sup>

### Fabrication properties

#### Forming

Machinability	40%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	poor
Capacity for being hot worked	good

#### Joining

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

### Corrosion resistance

Special brass generally exhibits excellent corrosion resistance due to alloying additions. Wieland-S37 is characterized by good resistance to organic substances and neutral or alkaline compounds.

\*Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.

### Surface treatment

Polishing	mechanical	good
	electrolytic	poor
Electroplating		fair

### Product standards

Rod	EN 12163
Tube	EN 12449

### Heat treatment

Melting range	860-910 °C
Hot working	600-700 °C
Soft annealing	500-650 °C, 1-3 h
Thermal stress-relieving	300-430 °C, 1-3 h

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

Reference values	from (soft/extruded)	to (hard)
R <sub>m</sub> [MPa]	520	590
R <sub>p0.2</sub> [MPa]	200	450
A <sub>5</sub> [%]	30	18
HB	120	170

## 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
S37	CuZn38Mn1Al	CW716R	10	207	1	15				
Round tubes			10	207	1	15				
Drawn sections							3.5	100		
Extruded sections								150		
Sectional tubes										
Round and polygonal rods									2	250
Round wires										
Polygonal wires										

All values in mm

\* Depending on the form, cross-sections in the lower size range are also available as wire.

**Wieland - S37**

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