

## Wieland-M37/M38

### Brass (lead-free)

### Extruded/drawn products

Wieland-M37/M38, with its lower copper content, is a one-phase alloy still having excellent cold working properties. It is, therefore, highly suitable for stamping, riveting, crimping and flanging.

M38 balances the benefits of low material costs and good cold working properties. It is, therefore, the material most frequently used for cold working.

#### Chemical composition\*

Cu	63%
Zn	balance

\* Reference values in % by weight

#### Material designation

EN	CuZn37, CW508L
UNS	C27200
DIN*	CuZn37, 2.0321
BS*	CZ108
NF*	CuZn36

\* Former national standards

#### Physical properties\*

Electrical conductivity	MS/m	15.5
	% IACS	26
Thermal conductivity	W/(m*K)	121
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	20.2
Density	g/cm <sup>3</sup>	8.44
Modulus of elasticity	GPa	110

\* 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	30%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	excellent
Capacity for being hot worked	good

##### Joining

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

#### Corrosion resistance\*

Brass with medium copper content is generally quite resistant to organic substances and neutral or alkaline compounds. It is virtually unsusceptible to stress corrosion cracking.

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

#### Surface treatment

Polishing	mechanical	excellent
	electrolytic	fair
Electroplating		excellent

#### Heat treatment

Melting range	900-920 °C
Hot working	750-850 °C
Soft annealing	450-650 °C, 1-3 h
Thermal stress-relieving	200-300 °C, 1-3 h

#### Product standards

Rod	EN 12163
Wire	EN 12166
Section	EN 12167
Tube	EN 12449

#### 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]	345	680
R <sub>p0.2</sub> [MPa]	120	590
A <sub>5</sub> [%]	60	10
HB	70	180

## 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
M37/M38	CuZn37	CW508L	6	130	0.15	15				
Round tubes										
Drawn sections							2.5	100		
Extruded sections								130		
Sectional tubes								120		
Round and polygonal rods									2	100
Round wires									0.3	
Polygonal wires									2	

All values in mm

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

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