

## Wieland-Z10

### Machining brass

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.

### Extruded/drawn products

Chemical composition*		Material designation	
Cu	63.0%	EN	CuZn37Pb0.5
Pb	0.3%		CW604N
Zn	balance	UNS	C33500
		DIN*	CuZn37Pb0.5 2.0332
		BS*	not standardized
		NF*	not standardized

\* Reference values in % by weight

\* Former national standards

Physical properties*			Fabrication properties			Corrosion resistance	
Electrical conductivity	MS/m	14.7	<b>Forming</b>			Machining brass is generally quite resistant against organic substances as well as neutral or alkaline compounds.  *Stress corrosion cracking and dezincification in warm, acidic waters should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.	
	% IACS	25	Machinability	60%			
Thermal conductivity	W/(m*K)	113	(CuZn39Pb3 = 100 %)				
			Capacity for being cold worked	good			
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	20.4	Capacity for being hot worked	good			
Density	g/cm <sup>3</sup>	8.44	<b>Joining</b>				
Modulus of elasticity	GPa	110	Resistance welding	fair			
			Inert gas shielded arc welding	poor			
			Hard soldering	fair			
			Soft soldering	excellent			
* Reference values at room temperature 1 GPa = 1 kN/mm <sup>2</sup> 1 MS/m = 1 m/Ω • mm <sup>2</sup>			<b>Surface treatment</b>		<b>Product standards</b>		
			Polishing	mechanical electrolytic	excellent fair	Tube	EN 12449
			Electroplating		excellent		
			<b>Heat treatment</b>				
			Melting range		885 - 910 °C		
			Hot working		720 - 820 °C		
			Soft annealing		450 - 650 °C, 1-3h		
			Thermal stress-relieving		200 - 300 °C, 1-3h		

### 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]	350	500
R <sub>p0.2</sub> [MPa]	130	460
A <sub>10</sub> [%]	50	10
HB	80	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
Z10	CuZn37Pb0.5	CW604N	10	300	0.7	20				
Round tubes										
Drawn sections							2.5	130		
Extruded sections								150		
Sectional tubes								230		
Round and polygonal rods									2	250
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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