

## Wieland-Z40 Machining brass

## Extruded/drawn products

**Wieland-Z40** has excellent hot working properties due to its high zinc content and is particularly used for extruded sections with thin wall thicknesses and/or complex geometries.

Chemical composition*		Material designation	
Cu	56%	EN	CuZn43Pb2Al
Pb	2.5%		CW624N
Al	0.2%	UNS	not standardized
Zn	balance	DIN*	CuZn44Pb2-2.0410
		BS*	not standardized
		NF*	not standardized

\* Reference values in % by weight

\* Former national standards

Physical properties*			Fabrication properties		Corrosion resistance	
Electrical conductivity	MS/m	16.4	<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	28	Machinability	80%		
Thermal conductivity	W/(m*K)	126	(CuZn39Pb3 = 100 %)			
			Capacity for being cold worked	poor		
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	21.2	Capacity for being hot worked	excellent		
			<b>Joining</b>			
Density	g/cm <sup>3</sup>	8.4	Resistance welding	fair		
			Inert gas shielded arc welding	poor		
Modulus of elasticity	GPa	97	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>

Surface treatment			Product standards	
Polishing	mechanical	good	Section	EN 12167
	electrolytic	poor		
Electroplating		excellent		
<b>Heat treatment</b>				
Melting range		870-885 °C		
Hot working		630-730 °C		
Soft annealing		430-550 °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 <sub>m</sub> [MPa]	520	not available
R <sub>p0.2</sub> [MPa]	250	not available
A <sub>5</sub> [%]	30	not available
HB	110	not available

## 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
Z40	CuZn43Pb2Al	CW624N								
Round tubes										
Drawn sections										
Extruded sections								130		
Sectional tubes										
Round and polygonal rods										
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 - Z40**

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