

Wieland-Z12 Machining brass

Extruded/drawn products

Wieland-Z12 is a high-copper machining brass exhibiting excellent cold working and good machining properties. It is ideal for producing components which - apart from being machined - are coined, riveted, crimped or flanged.

Chemical composition*		Material designation	
Cu	63%	EN	CuZn35Pb2
Pb	2%		CW601N
Zn	balance	UNS	C34200
		DIN*	CuZn36Pb1.5 2. 0331
		BS*	CZ119
		NF*	CuZn35Pb2

* Reference values in % by weight

* Former national standards

Physical properties*			Fabrication properties		Corrosion resistance	
Electrical conductivity	MS/m	14.7	Forming		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	80%		
Thermal conductivity	W/(m*K)	116	(CuZn39Pb3 = 100 %)			
			Capacity for being cold worked	good		
Thermal expansion coefficient (0-300°C) 10 ⁻⁶ /K		20.4	Capacity for being hot worked			
			good			
Density	g/cm ³	8.46	Joining			
			Resistance welding	fair		
Modulus of elasticity	GPa	105	Inert gas shielded arc welding			
			poor			
			Hard soldering			
			Soft soldering		excellent	

* Reference values at room temperature

1 GPa = 1 kN/mm²

1 MS/m = 1 m/Ω • mm²

Surface treatment			Product standards	
Polishing	mechanical	good	Rod	EN 12164
	electrolytic	fair	Wire	EN 12166
Electroplating		excellent	Section	EN 12167
			Hollow rod	EN 12168
			Tube	EN 12449
Heat treatment				
Melting range		885-910 °C		
Hot working		700-800 °C		
Soft annealing		450-650 °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 (soft/extruded)	to (hard)
R _m [MPa]	320	500
R _{p0.2} [MPa]	110	400
A ₁₀ [%]	50	12
HB	70	150

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
Z12	CuZn35Pb2	CW601N								
Round tubes										
Drawn sections							2.5	85		
Extruded sections								130		
Sectional tubes										
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.

Wieland - Z12

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