

Wieland-Z45/Z46

Dezincification-resistant machining brass

Wieland-Z45, a dezincification-resistant machining brass, is particularly suitable for use in warm, acidic waters. Wieland-Z45 passes the dezincification test according to ISO 6509. For the manufacture of hot stamped parts Wieland-Z46 with better hot working properties is recommended. To achieve dezincification resistance a heat treatment may be necessary after forging. Wieland-Z45 and -Z46 fulfill the requirements of DIN 50930, part 6.

Extruded/drawn products

Chemical composition*

Cu	62%
Pb	max. 2.2%
As	max. 0.1%
Zn	balance

* Reference values in % by weight

Material designation

EN	CuZn36Pb2As
	CW602N
UNS	C35330
DIN*	not standardized
BS*	CZ132
NF*	not standardized

* Former national standards

Physical properties*

Electrical conductivity	MS/m	14.7
	% IACS	25
Thermal conductivity	W/(m*K)	114
Thermal expansion coefficient (0-300°C)	10 ⁻⁶ /K	20.3
Density	g/cm ³	8.46
Modulus of elasticity	GPa	105

* Reference values at room temperature

1 GPa = 1 kN/mm²

1 MS/m = 1 m/Ω • mm²

Fabrication properties

Forming

Machinability	80%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	good
Capacity for being hot worked	good

Joining

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

Corrosion resistance

Machining brass is generally quite resistant against organic substances as well as neutral or alkaline compounds.

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

Surface treatment

Polishing	mechanical	good
	electrolytic	poor
Electroplating		excellent

Heat treatment

Melting range	885-910 °C
Hot working	720-830 °C
Soft annealing	450-550 °C, 1-3 h
Thermal stress-relieving	250-350 °C, 1-3 h

Product standards

Rod	EN 12164
	EN 12165
Wire	EN 12166
Section	EN 12167
Hollow rod	EN 12168
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 _m [MPa]	320	470
R _{p0.2} [MPa]	140	430
A ₅ [%]	45	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
Z45/Z46	CuZn36Pb2As	CW602N	8	120	1	10				
Round tubes			8	120	1	10				
Drawn sections							2.5	130		
Extruded sections								130		
Sectional tubes										
Round and polygonal rods									2/8	100
Round wires									2	
Polygonal wires									8	

All values in mm

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

Wieland - Z45/Z46

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