

Wieland-Z43

CuZn33Pb1AlSiAs
Dezincification resistant
special brass

Extruded and drawn products



Material designation	
EN	CW725R
UNS	no EN standard

Chemical composition*	
Cu	64.4 %
Pb	0.5 %
Al	0.15 %
Si	0.1 %
As	0.06 %
Zn	balance

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	12.8 22.1
Thermal conductivity	W/(m·K)	101
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	20
Density	g/cm ³	8.42

* Reference values at room temperature

Corrosion resistance

Brass is generally quite resistant against organic substances as well as neutral or alkaline compounds. After exposure to temperatures > 600 °C a thermal treatment at 500–550 °C/ 2–3 h is necessary to ensure optimal dezincification resistance.

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

Product standards	
Rod	EN 12164 EN 12165
Section	EN 12167
Hollow rod	EN 12168

Material properties and typical applications

Wieland-Z43 is a dezincification resistant alloy suited for the application in drinking water in Europe. The mechanical properties and the machinability are comparable to CuZn36Pb2As. **Wieland-Z43** can be used for turned or hot-stamped parts. It is dezincification resistant with a maximum depth of 100 µm (test according to ISO 6509). After the hot stamping a thermal treatment must be performed to ensure dezincification resistance.

The material is accepted for products in contact with drinking water as per 4 MS positive list.

Types of delivery

The Extruded and Drawn Products Division supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming		Surface treatment	
Machinability (CuZn39Pb3 = 100 %)	75 %	Polishing	
Capacity for being cold worked	fair	mechanical	good
Capacity for being hot worked	good*	electrolytic	poor
		Electroplating	good
Joining		Heat treatment	
Resistance welding (butt weld)	good*	Melting range	850–950 °C
Inert gas shielded arc welding	poor*	Hot working	650–750 °C
Gas welding	poor*	Soft annealing	450–550 °C 1–3 h
Hard soldering	fair*	Thermal stress relieving	200–300 °C 1–3 h
Soft soldering	good		

* see section „Corrosion resistance“

Trademarks



Further information is provided in the brochure on drinking water.

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Mechanical properties according to EN

Round rods/polygonal rods											acc. to EN 12164	
Temper	Diameter		Width across flats		Tensile strength	Yield strength		Elongation			Hardness	
	mm from	mm to	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min. MPa max.		A100 %	A11.3 %	A %	HB	
											min.	max.
M	all		all		as manufactured – without specified mechanical properties							
R290	6	80	5	60	290	–	200	–	25	30	–	–
H070	6	80	5	60	–	–	–	–	–	–	70	110
R320	6	60	5	50	320	200	–	–	15	20	–	–
H090	6	60	5	50	–	–	–	–	–	–	90	135
R400	4	15	4	13	400	250	–	–	5	8	–	–
H105	4	15	4	13	–	–	–	–	–	–	105	–

Rectangular rods											acc. to EN 12167	
Temper	Thickness		Tensile strength	Yield strength		Elongation			Hardness			
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min. MPa max.		A100 %	A11.3 %	A %	HB			
									min.	max.		
M	all		as manufactured – without specified mechanical properties									
R290	3	20	290	–	200	20	25	30	–	–		
H070	3	20	–	–	–	–	–	–	70	110		
R320	3	20	320	200	–	10	15	20	–	–		
H090	3	20	–	–	–	–	–	–	90	135		
R400	3	10	400	250	–	2	5	8	–	–		
H105	3	10	–	–	–	–	–	–	105	–		

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