

Wieland-M37/M38

CuZn37
Brass (lead free)

Extruded and drawn products



Material designation	
EN	CuZn37 / CW508L
UNS	M37: C27000, C27200 M38: C27200, C27400

Chemical composition*	
Cu	63 %
Pb	< 0.05 %
Zn	balance

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	15.5 26
Thermal conductivity	W/(m·K)	121
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	20.2
Density	g/cm ³	8.44
Modulus of elasticity	GPa	110

* Reference values at room temperature

Corrosion resistance

Brass with medium copper content is generally quite resistant to organic substances and neutral or alkaline compounds.

Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress. Dezincification in warm, acidic waters should also be taken into consideration.

Product standards	
Rod	EN 12163 EN 12165
Wire	EN 12166
Section	EN 12167
Tube	EN 12449

Material properties and typical applications

Wieland-M37/M38, with its low copper content, is a one-phase alloy still having excellent cold working properties. It is, therefore, highly suitable for stamping, riveting, crimping and flanging.

M38 balances the benefits of low material costs and good cold working properties. It is, therefore, the material most frequently used for cold working.

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 %)	30 %	Polishing	
Capacity for being cold worked	excellent	mechanical	excellent
Capacity for being hot worked	good	electrolytic	fair
		Electroplating	excellent
Joining		Heat treatment	
Resistance welding (butt weld)	fair	Melting range	904–920 °C
Inert gas shielded arc welding	fair	Hot working	750–850 °C
Gas welding	fair	Soft annealing	450–650 °C 1–3 h
Hard soldering	excellent	Thermal stress relieving	200–300 °C 1–3 h
Soft soldering	excellent		

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Mechanical properties according to EN

Round rods / polygonal rods acc. to EN 12163

Temper	Diameter		Width across flat		Tensile strength	Yield strength		Elongation at rupture			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	4	80	4	80	290	–	230	–	40	45	–	–
H070	4	80	4	80	–	–	–	–	–	–	70	110
R370	4	40	4	35	370	240	–	–	12	14	–	–
H105	4	40	4	35	–	–	–	–	–	–	105	145
R460	4	8	4	6	460	330	–	–	6	8	–	–
H140	4	8	4	6	–	–	–	–	–	–	140	–

Rectangular rods acc. to EN 12167

Temper	Thickness		Tensile strength	Yield strength		Elongation at rupture			Hardness		
	mm min.	mm max.	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	–	230	30	40	45	–	–	
H050	3	20	–	–	–	–	–	–	50	100	
R370	3	10	370	240	–	10	12	14	–	–	
H085	3	10	–	–	–	–	–	–	85	130	
R460	3	4	460	330	–	4	6	–	–	–	
H105	3	4	–	–	–	–	–	–	105	145	

Tubes acc. to EN 12449

Temper	Wallthickness mm max.	Tensile strength	Yield strength		Elongation at rupture	Hardness				
		R _m MPa min.	R _{p0,2} MPa min. MPa max.		A %	HV min. max.		HB min. max.		
M	20	as manufactured – without specified mechanical properties								
R300	20	300	–	220	45	–	–	–	–	
H060	20	–	–	–	–	60	90	55	85	
R370	10	370	200	–	25	–	–	–	–	
H085	10	–	–	–	–	85	120	80	115	
R440	5	440	320	–	10	–	–	–	–	
H115	5	–	–	–	–	115	–	110	–	

Round wires acc. to EN 12166

Temper	Diameter		Tensile strength	Yield strength		Elongation at rupture			Hardness		
	mm from	mm to	R _m MPa min.	R _{p0,2} MPa min. MPa max.		A100 %	A11.3 %	A %	HV min. max.		
M	all		as manufactured – without specified mechanical properties								
R290	0.5	20	290	–	230	30	40	45	–	–	
H055	1.5	20	–	–	–	–	–	–	55	110	
R370	0.5	20	370	240	–	10	12	14	–	–	
H095	1.5	20	–	–	–	–	–	–	95	140	
R460	0.5	5	460	330	–	4	6	–	–	–	
H115	1.5	5	–	–	–	–	–	–	115	155	
R550	0.5	4	550	450	–	2	5	–	–	–	
H130	1.5	4	–	–	–	–	–	–	130	170	
R700	0.5	4	700	550	–	–	–	–	–	–	
H160	1.5	4	–	–	–	–	–	–	160	–	

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