

Wieland-M36

CuZn36 | Brass (lead free)

Material designation

EN	CuZn36 CW507L
UNS	C26800/C27000

Chemical composition*

Cu	64 %
Pb	< 0.05 %
Zn	balance

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	15.5
	%ACS	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
Wire	EN 12166
Section	EN 12167
Tube	EN 12449

Material properties and typical applications

Wieland-M36 is a lead-free one-phase brass with excellent cold working properties. It is highly suitable for coining, riveting and crimping.

Types of delivery

The BU Extruded Products 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

Machinability (CuZn39Pb3 = 100 %)	30 %
Capacity for being cold worked	excellent
Capacity for being hot worked	good

Joining

Resistance welding (butt weld)	fair
Inert gas shielded arc welding	fair
Gas welding	fair
Hard soldering	excellent
Soft soldering	excellent

Surface treatment

Polishing	
mechanical	excellent
electrolytic	good
Electroplating	excellent

Heat treatment

Melting range	904–932 °C
Hot working	750–870 °C
Soft annealing	450–650 °C 1–3 h
Thermal stress relieving	200–300 °C 1–3 h

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Mechanical properties according to EN

Round rods/polygonal rods												acc. to EN 12163	
Temper	Diameter		Width across flats		Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness		
	mm		mm		MPa	MPa		A100	A11.3	A	HB		
	from	to	from	to	min.	min.	max.	min.	min.	min.	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	10	4	8	460	330	–	–	6	8	–	–	
H140	4	10	4	8	–	–	–	–	–	–	140	–	

Rectangular rods												acc. to EN 12167	
Temper	Thickness				Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness		
	mm				MPa	MPa		A100	A11.3	A	HB		
	from	to	from	to	min.	min.	max.	min.	min.	min.	min.	max.	
M	all		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	Wall thickness				Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness		
	mm				MPa	MPa		A100			HV	HB	
	max.	min.	max.	min.	min.	max.	min.	min.	max.	min.	max.		
M	20		all		as manufactured – without specified mechanical properties								
R290	20	–	290	–	–	180	50	–	–	–	–	–	
H055	20	–	–	–	–	–	–	–	55	85	50	80	
R360	10	–	360	–	180	–	25	–	–	–	–	–	
H080	10	–	–	–	–	–	–	–	80	115	75	110	
R430	5	–	430	–	300	–	12	–	–	–	–	–	
H110	5	–	–	–	–	–	–	–	110	–	105	–	

Round wires												acc. to EN 12166	
Temper	Diameter				Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness		
	mm				MPa	MPa		A100	A11.3	A	HB		
	from	to	from	to	min.	min.	max.	min.	min.	min.	min.	max.	
M	all		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	–	