

Wieland-M05

CuZn5
Brass (lead free)

Extruded and drawn products



Material designation	
EN	CuZn5/CW500L
UNS	C21000

Chemical composition*	
Cu	95 %
Pb	< 0.05 %
Zn	balance

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	33.3 57
Thermal conductivity	W/(m·K)	243
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	18,0
Density	g/cm ³	8.86
Modulus of elasticity	GPa	127

* Reference values at room temperature

Corrosion resistance

Brasses with a high copper content are generally resistant to organic substances and neutral or alkaline compounds. They are virtually unsusceptible to stress corrosion cracking.

Product standards	
Tube	EN 12449

Material properties and typical applications

Wieland-M05 has excellent cold working properties due to its very high copper content. This alloy is particularly suitable for stamping, riveting, crimping, flanging, cold extrusion or other cold working operations. Wieland-M05 is also used in the jewellery industry.

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 tempsers.

Fabrication properties

Forming		Surface treatment	
Machinability (CuZn39Pb3 = 100 %)	20 %	Polishing	
Capacity for being cold worked	excellent	mechanical	excellent
Capacity for being hot worked	fair	electrolytic	excellent
		Electroplating	excellent
Joining		Heat treatment	
Resistance welding (butt weld)	good	Melting range	1055–1065 °C
Inert gas shielded arc welding	good	Hot working	750–900 °C
Gas welding	good	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

Tubes											acc. to EN 12449	
Temper	Wall thickness		Tensile strength	Yield strength		Elongation at rupture	Hardness					
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min. max.		A % min.	HV		HB			
							min.	max.	min.	max.		
M	–	20	as manufactured – without specified mechanical properties									
R220	–	20	220	–	130	40	–	–	–	–		
H050	–	20	–	–	–	–	50	75	45	70		
R260	–	10	260	190	–	18	–	–	–	–		
H075	–	10	–	–	–	–	75	105	70	100		
R320	–	5	320	260	–	8	–	–	–	–		
H095	–	5	–	–	–	–	95	125	90	120		
R440	–	3	440	410	–	–	–	–	–	–		
H120	–	3	–	–	–	–	120	–	115	–		