

Wieland-K60

CuCr1Zr – CW106C
High copper alloy

Extruded and drawn products



Material designation	
EN	CuCr1Zr – CW106C
UNS	C18150

Chemical composition*	
Cu	balance
Cr	0.5–1.2 %
Zr	0.03–0.2 %

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	≥ 43 ≥ 74
Thermal conductivity	W/(m·K)	> 320
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17.6
Density	g/cm ³	8.92
Modulus of elasticity	GPa	130

* Reference values at room temperature

Corrosion resistance

Pure copper and high-copper alloys generally exhibit good corrosion resistance due to their inert character and are practically insensitive to stress corrosion cracking.

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

Material properties and typical applications

Wieland-K60 is an age hardenable copper alloy combining good electrical and thermal conductivity with high strength. Depending on the application, different tempers (solution annealed, age hardened, cold worked, etc.) can be defined. Wieland-K60 is highly suitable for use in welding technology, e.g. as welding electrode (especially at high temperatures).

Distribution of **Wieland-K60** via our affiliated company Duro Metall GmbH.

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*			
Machinability	s	a	aw
(CuZn39Pb3 = 100 %)	30 %	40 %	50 %
Capacity for being cold worked	excellent	good	good
Capacity for being hot worked			good

* s = solution annealed
a = age hardened
aw = age hardened + cold worked

Joining

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

** high temperatures alter the age hardened condition

Surface treatment

Polishing	
mechanical	good
electrolytic	fair
Electroplating	good

Heat treatment

Melting range	1070–1080 °C
Hot working	850–1020 °C
Soft annealing	600–800 °C 1–3 h
Thermal stress relieving	–
Age hardening	upon request

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Mechanical properties according to EN

Round rods/polygonal rods acc. to EN 12163

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.	A100 %	A11.3 %	A %	HB			
M	all		all		as manufactured – without specified mechanical properties								
R370	> 50	100	> 25	100	370	250	–	–	16	–	–		
H120	> 50	100	> 25	100	–	–	–	–	–	120	160		
R430	> 30	50	10	25	430	350	–	–	10	–	–		
H135	> 30	50	10	25	–	–	–	–	–	135	175		
R470	4	> 30	–	–	470	420	–	6	8	–	–		
H150	4	> 30	–	–	–	–	–	–	–	150	180		

Rectangular rods acc. to EN 12167

Temper	Width across flats		Tensile strength	Yield strength	Elongation			Hardness			
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min.	A100 %	A11.3 %	A %	HB			
M	all		as manufactured – without specified mechanical properties								
R370	30	100	370	250	–	–	16	–	–		
H120	30	100	–	–	–	–	–	120	160		
R430	3	50	430	350	3	6	10	–	–		
H135	3	50	–	–	–	–	–	135	175		
R470	3	30	470	420	2	5	8	–	–		
H150	3	30	–	–	–	–	–	150	180		

Round wires acc. to EN 12166

Temper	Diameter		Tensile strength	Yield strength	Elongation			Hardness			
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min.	A100 %	A11.3 %	A %	HB			
M	all		as manufactured – without specified mechanical properties								
R370	2	10	370	250	8	12	16	–	–		
H125	2	10	–	–	–	–	–	125	170		
R430	2	10	430	350	5	8	10	–	–		
H145	2	10	–	–	–	–	–	145	185		
R470	2	10	470	420	3	6	8	–	–		
H160	2	10	–	–	–	–	–	160	190		

Rods acc. to EN 12165

Temper	Diameter		Tensile strength	Yield strength	Elongation			Hardness			
	mm from	mm to	R _m MPa min.	R _{p0.2} MPa min.	A100 %	A11.3 %	A %	HB			
M	all		as manufactured – without specified mechanical properties								
H070	8	80	–	–	–	–	–	70	150		