

Wieland-K30

Cu-OF | Oxygen free copper

Material designation

EN	Cu-OF/ CW008A
UNS	C10200

Chemical composition*

Cu	≥ 99.95 %
Oxygen free not deoxidized	

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m %IACS	≥ 58 100
Thermal conductivity	W/(m·K)	> 394
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	17.7
Density	g/cm ³	8.94
Modulus of elasticity	GPa	127

*Reference values at room temperature

Corrosion resistance

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

Product standards

Rod	EN 13601 EN 12165
Wire	EN 13601
Section	EN 13605
Tube	EN 13600

Material properties and typical applications

Wieland-K30 is a very pure, oxygen-free copper with high electrical and thermal conductivity. The material is resistant to heat treatment in reducing atmosphere. (resistant to hydrogen embrittlement according to EN ISO 2626). Therefore, joining operations such as soldering and welding are possible without restriction.

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 %)	20 %
Capacity for being cold worked	excellent
Capacity for being hot worked	fair

Surface treatment

Polishing mechanical	good
electrolytic	excellent
Electroplating	excellent

Joining

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

Heat treatment

Melting range	1,083 °C
Hot working	750–900 °C
Soft annealing	250–500 °C 1–3 h
Thermal stress relieving	150–200 °C 1–3 h

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Mechanical properties according to EN

Rod and wire														acc. to EN 13601					
Temper	Diameter/Distance across flats round, square, rectangular		Thickness square		Width square		Tensile strength R _m	Yield strength R _{p0.2}		Elongation %		Hardness							
	mm		mm		mm		MPa	MPa		A100	A	HB		HV					
	from	to	from	to	from	to	min.	min.	max.	min.	min.	min.	max.	min.	max.				
D	2	160	0.5	40	1	200	cold-drawn without specified mechanical properties												
H035	2	160	0.5	40	1	200	–	–	–	–	–	35	65	35	65				
R200	2	160	1	40	5	200	200	–	120	25	35	–	–	–	–				
H065	2	80	0.5	40	1	200	–	–	–	–	–	65	90	70	95				
R250	2	10	1	10	5	200	250	200	–	8	12	–	–	–	–				
R250	> 10	140	> 10	40	> 10	200	250	180	–	–	15	–	–	–	–				
R230	> 30	80	> 10	40	> 10	200	230	160	–	–	18	–	–	–	–				
H085	2	40	0.5	20	1	120	–	–	–	–	–	85	110	90	115				
H075	> 40	80	> 20	40	> 20	160	–	–	–	–	–	75	100	80	105				
R300	2	20	1	10	5	120	300	260	–	5	8	–	–	–	–				
R280	> 20	60	> 10	20	> 10	160	280	240	–	–	10	–	–	–	–				
R260	> 40	60	> 20	40	> 20	160	260	220	–	–	12	–	–	–	–				
H100	2	10	0.5	5	1	120	–	–	–	–	–	100	–	110	–				
R350	2	10	1	5	5	120	350	320	–	3	5	–	–	–	–				

Profiles												acc. to EN 13605
Temper	Thickness	Width/Height	Tensile strength R_m		Yield strength $R_{p0.2}$		Elongation %		Hardness			
	mm	mm	MPa		MPa		A100	A	HV		HB	
	max.	max.	min.		min.	max.	min.	min.	min.	max.	min.	max.
D	50	180	cold-drawn without specified mechanical properties									
H035	50	180	–		–	–	–	–	35	65	35	70
R200	50	180	200		–	120	25	35	–	–	–	–
H065	10	150	–		–	–	–	–	65	95	70	100
R240	10	150	240		160	–	–	15	–	–	–	–
H080	5	100	–		–	–	–	–	80	115	85	120
R280	5	100	280		240	–	–	8	–	–	–	–

Tubes												acc. to EN 13600
Temper	Wall thickness		Tensile strength R_m		Yield strength $R_{p0.2}$		Elongation %		Hardness			
	mm		MPa		MPa		A		HV		HB	
	from	to	min.	max.	min.	max.	min.		min.	max.	min.	max.
D	–	–	cold-drawn without specified mechanical properties									
H035	–	40	–	–	–	–	–		35	60	35	65
R200	–	40	200	250	–	120	35		–	–	–	–
H065	–	20	–	–	–	–	–		60	90	65	95
R250	–	20	250	300	150	–	15		–	–	–	–
H090	–	10	–	–	–	–	–		85	105	90	110
R290	–	10	290	360	250	–	5		–	–	–	–
H100	–	5	–	–	–	–	–		95	–	100	–
R360	–	5	360	–	320	–	(3)		–	–	–	–