

Wieland-K55 High-copper alloy

Extruded/drawn products

Wieland-K55 is a high-performance alloy with low contents of nickel and silicon. It is precipitation hardened and exhibits high strength, acceptable electrical conductivity and good bending properties. Moreover, it possesses excellent resistance to stress relaxation at elevated temperatures of up to 200°C.

Chemical composition*

Ni	3%
Si	0.65 %
Mg	0.15 %
Cu	balance

Material designation

Olin Brass	Olin 7025
DIN	not standardized
EN	not standardized
UNS	C 70250

* Reference values in % by weight

* Former national standards

Physical properties*

Electrical conductivity	MS/m	≥ 20
	% IACS	≥ 35
Thermal conductivity	W/(m*K)	190
	Thermal expansion coefficient (0-300°C) 10 ⁻⁶ /K	17.6
Density	g/cm ³	8.82
Modulus of elasticity	GPa	130

* Reference values at room temperature
1 GPa = 1 kN/mm²
1 MS/m = 1 m/Ω • mm²

Fabrication properties

Forming		
Machinability		poor
(CuZn39Pb3 = 100 %)		
Capacity for being cold worked		good
Capacity for being hot worked		not suitable
Joining		
Resistance welding		fair
Inert gas shielded arc welding		excellent
Hard soldering		good
Soft soldering		good

Corrosion resistance

Wieland-K55 has good corrosion resistance in natural atmosphere. It is insensitive to stress corrosion cracking.

Surface treatment

Polishing	mechanical	good
	electrolytic	good
Electroplating		good

Heat treatment

Melting range	1040 - 1085 °C
Hot working	800 - 950 °C
Soft annealing	600 - 700 °C
Thermal stress-relieving	200 - 300 °C

Product standards

Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (soft)	to (hard)
R _m [MPa]	560	950
R _{p0.2} [MPa]	450	800
A ₅ [%]	10	2

Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from	to	from	to
K55	CuNi3SiMg	not stand.								
Round tubes										
Drawn sections										
Extruded sections										
Sectional tubes										
Round and polygonal rods									2	24
Round wires									0.3	4.5
Polygonal wires									2	

All values in mm

Wieland - K55

Wieland

Wieland-Werke AG

89070 Ulm

Germany

Telephone:

+49 (0) 731 944 - 0

Telefax:

+49 (0) 731 944 - 28 79

info@wieland.de

www.wieland.de

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