Wieland-L13

CuNi10Fe1Mn

Material designation

EN	CuNi10Fe1Mn CW352H
UNS	C70600
EEMUA	UNS 7060X
BS	CN 102

Composition

Cu	Rest
Ni	9,0 – 11,0 %
Fe	1,0 – 2,0 %
Mn	0,5 – 1,0 %
P, Pb	max 0,02 %
S, C, Sn	max 0,05 %
Zn	max 0,5 %

Physical properties

Spec. heat 20°	J/kg K	377
Thermal conductivity	W/(mK)	46
Coefficient of thermal expansion (20–100 °C)	10^{-6}/K	17
Density	g/cm³	8,9
Modul of elasticity	GPa	130
Electrical resistance (20°C annealed)	µOhm cm	19

Material properties and typical applications

Wieland L-13 is a corrosion resistant alloy with good hard soldering and welding properties, good cold formability, high temperature strength and excellent corrosion resistance to sea water in particular.

Applications: Heat exchanger, apparatus construction, Oilcooler, Fresh water maker, Air conditioner, finned tubes, Brake lines

Types of delivery

The BU Extruded Products supplies bars, wire, profiles and tubes. Please get in touch with your contact person regarding available delivery forms, dimensions, and tempers.

Fabrication properties

Forming

machinability	Less suitable (~20 %)
Cold forming	excellent
Warm forming	good

Surface treatment

Polishing	
mechanical	good
electrolyt	good

Joining

WIG welding	excellent
MIG welding	excellent
Hard soldering	excellent
Soft soldering	excellent
Resistance welding	excellent

Heat treatment

Melting point	1130 - 1160°C
Hot working	950 – 1050°C
Soft annealing	680 – 750°C
Thermal stress relieving	400 – 450°C

Corrosion resistance

CuNi10Fe1Mn is resistant to moisture, non-oxidizing acids, to dry gases such as oxygen, chlorine, hydrogen chloride, hydrogen fluoride, sulfur dioxide, carbon dioxide. Furthermore it is resistant to pitting- and stress corrosion cracking, as well as to hot seawater.
Flow rates up to 6 m/s are possible.

Product standards

tube	EN 12451, EN 12449
bars	EN 12163
profile	

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

Reference values at 20°C	annealed R290	R310	R480
Tensile strenght [MPa]	≥ 290	≥ 310	≥ 480
Yield strenght [MPa]	≥ 90	≥ 220	≥ 400
Elongation A5 [%]	≥ 30	≥ 12	≥ 8
Vickers hardness	75 - 105	105 - 150	≥ 150

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