Wieland-SE1

CuZn34Sn1FeP | Special brass

Material designation

EN	no EN standard
UNS	no EN standard

Chemical composition*

Cu	63 %
Sn	1 %
Fe	0.5 %
P	0.5 %
Zn	balance

**Reference values in % by weight*

Material properties and typical applications

Wieland-SE1 is a brackish and seawater-resistant special brass with very good corrosion resistance and high mechanical strength. The material was developed for the manufacture of cages in maritime fish farming. Due to the natural property of copper to counteract the growth of microorganisms, the formation of biofouling is reduced in a natural and environmentally friendly way when the material is used in seawater.

As a copper material, SE1 is 100% recyclable even after many years of use.

Physical properties*

Electrical conductivity	MS/m %IACS	14.6 25
Thermal conductivity	W/(m·K)	110.8
Thermal expansion coefficient (0–300 °C)	10^{-6}/K	20.2
Density	g/cm³	8.33
Moduls of elasticity	GPa	110

**Reference values at room temperature*

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 %)	30 %
Capacity for being cold worked	excellent
Capacity for being hot worked	fair

Surface treatment

Polishing mechanical electrolytic	 excellent fair
Electroplating	excellent

Joining

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

Heat treatment

Melting range	890–945 °C
Hot working	700–800 °C
Soft annealing	450–650 °C 1–3 h
Thermal stress relieving	200–300 °C 1–3 h

Corrosion resistance

Special brass generally exhibits excellent corrosion resistance due to alloying additions. Wieland-SE1 is characterised by good resistance to brackish and seawater. Furthermore, Wieland-SE1 is insensitive to dezincification.

Product standards

no EN standard

Trademark

BLUESEA® TECHNOLOGY

Wieland-SE1

CuZn34Sn1FeP | Special brass

Mechanical properties according to EN

Round wires					
Temper	Diameter		Tensile strength R_m	Yield strength $R_{p0.2}$	Elongation %
	mm		MPa	MPa	A100
	from	to	min.	min.	min.
soft	2	5*	> 380	> 140	> 35
1/4 hard	2	5*	> 400	> 200	> 20
1/2 hard	2	5*	> 500	> 400	> 3

Wieland-Werke AG | Graf-Arco-Straße 36 | 89079 Ulm | Germany
info@wieland.com | wieland.com

03.21 | EX.ZMZ.UL/Er (MC.ED.UL)