

boway 19000

Material Designation

Boway Designation	boway 19000
UNS	C19000
EN	CuNi1P
JIS	-
GB(China)	-

Chemical Composition*

Ni	1.1	%
P	0.25	%
Cu	Rem.	

* Nominal composition

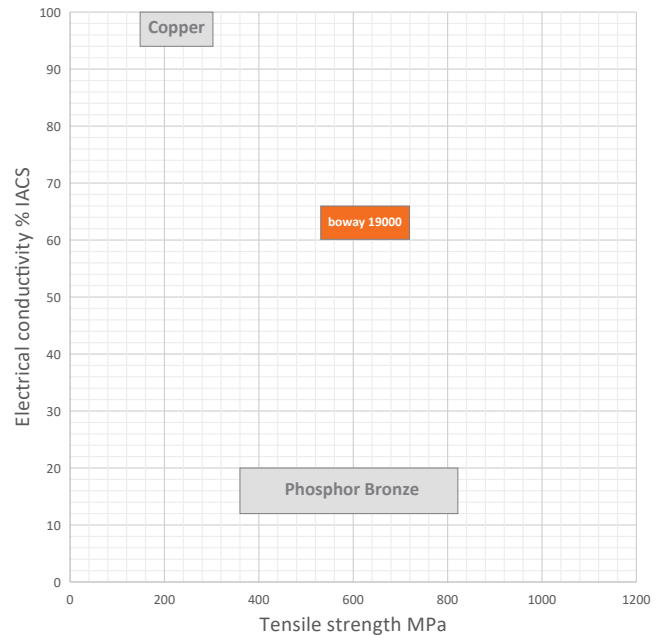
Application Target

Signal connector	Suitable
Power connector	Suitable
Miniaturized connector	Suitable
Switch/Relay	Suitable
Semiconductor	Not recommended

Well suited for USB Type-C, particularly for 5G vapor chamber, relay spring and others.

Fabrication Properties

Cold forming	Good
Machining	Not suitable
Electroplating	Good
Hot dip tinning	Good
Laser welding	Average
Resistance welding	Average
Soft soldering	Good



Characteristics

Superb combination of high conductivity and relatively high strength. Excellent stress relaxation resistance and bending performance. Good corrosion resistance.

Physical Properties*

Density	8.88	g/cm ³
Electrical conductivity@20°C	64	% IACS
conductivity@20°C	37	MS/m
Thermal conductivity@20°C	253	W/(m·K)
Specific heat capacity	0.385	J/(g·K)
Modulus of elasticity	130	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	17.6	10 ⁻⁶ /K

* Typical values at room temperature for reference

** Average value between 20–300°C

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Mechanical Properties

Temper	Tensile strength		Yield strength	Elongation	Hardness*
	MPa	ksi	MPa	A50 %	HV
R350(TB00)	≤ 350	≤ 51	≤ 200	≥ 20	≤ 100
R530(TR04)	530–620	76–90	500–600	≥ 4	180–210
R530(TM00)	530–620	77–90	500–600	≥ 4	165–200
R580(TM02)	580–650	85–95	560–640	≥ 4	175–210
R620(TM04)	620–720	90–105	600–710	≥ 2	180–220

*For reference only

Bendability Bending thickness ≤ 0.5 mm; Bending width: 10 mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R350(TB00)	0	0	-	-
R530(TM00)	0.5	1.0	-	-
R530(TR04)	0.5	1.0	-	-
R580(TM02)	0.5	1.3	-	-
R620(TM04)	1.0	1.7	-	-

90° bend test according to EN ISO7438, 180° bend test according to ASTM B820, shown values might show orange-peel, however no crack.

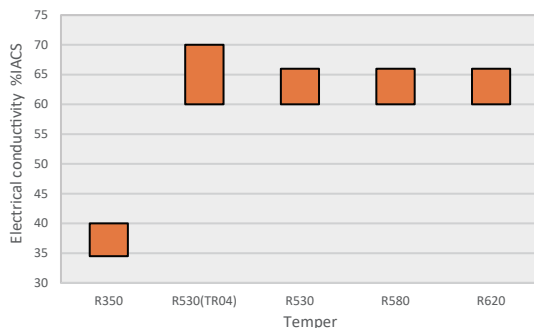
Packaging

Standard coils with outside diameter up to 1300 mm.
 Traverse-wound coils with drum weight up to 500 kg.
 Multiple-coil up to 3 tons.

Dimensions Available

Strip thickness 0.06–2.0 mm, other gauges on request.
 Strip width from 8.5 mm.
 Hot-dip tinned and electroplated strip available.

Electrical Conductivity



Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10.000.000 load cycles under symmetrical alternate load without breaking. It depends on the temper selected and can be estimated typically by 1/3 of tensile strength.

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