

## 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

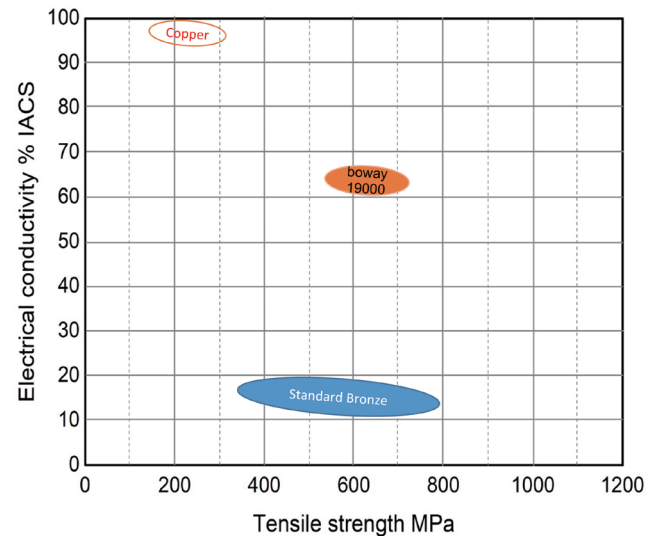
### Application Target

Signal Connector	Suitable
Power Connector	Suitable
Miniaturized Connector	Suitable
Switch/ Relay	Suitable
Semiconductor	Not qualified

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

High conductivity combined with medium strength and good corrosion resistance;  
Excellent stress relaxation resistance and bending performance.

### Physical Properties\*

Density	8.88	g/cm <sup>3</sup>
Electrical conductivity @ 20°C	64	% IACS
	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 <sup>-6</sup> /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	Hardness*	Elongation
	MPa	ksi	MPa	HV	A50 %
R350(TB00)	≤ 350	≤ 51	≤ 200	≤ 100	≥ 20
R530(TM00)	530 - 620	77 - 90	500 - 600	165 - 200	≥ 8
R580(TM02)	580 - 650	85 - 95	560 - 640	175 - 210	≥ 4
R620(TM04)	620 - 720	90 - 105	600 - 710	180 - 220	≥ 2

\*For reference only

### Bendability

Thickness range: ≤ 0.5 mm , bending width: 10 mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R530(TM00)	0.5	1.0	—	—
R580(TM02)	0.5	1.3	—	—
R620(TM04)	1.0	1.7	—	—

90° bend test According to EN ISO 7438, 180° bend test acc. to ASTM B820, shown values might show orange-peel, however no cracks.

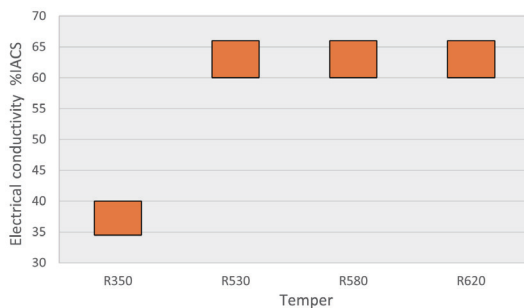
### Packaging

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 0.08 - 2.0 mm, other gauges on request.  
Strip width from 10 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. For solid solution fine grain materials fatigue strength might increase up to 0,5 \* of tensile strength.