

boway 19010

Material Designation

Boway designation	boway 19010
UNS	C19010
EN	CuNiSi
JIS	--
GB(China)	--

Chemical Composition*

Ni	1.5	%
Si	0.25	%
Cu	Rem.	

* Nominal composition

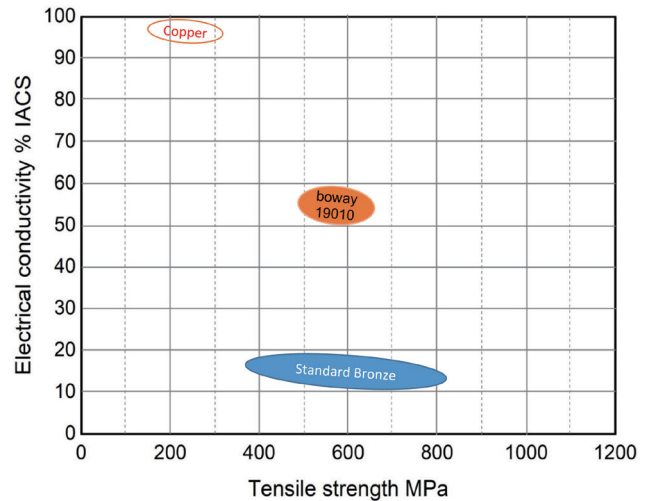
Application Target

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

Ideal for power connectors

Fabrication Properties

Cold forming	Good
Machining	Average
Electroplating	Good
Hot dip tinning	Good
Laser welding	Suitable
Resistance welding	Average
Soft soldering	Good



Characteristics

Medium electrical conductivity and medium strength combined with good stress-relaxation resistance, good corrosion resistance softening resistance and bending performances. For Tin plated strip used 120°C maximum.

Physical Properties*

Density	8.9	g/cm ³
Electrical conductivity @ 20°C	57	% IACS
	33	MS/m
Thermal conductivity @20°C	260	W/(m·K)
Specific heat capacity	0.377	J/(g·K)
Modulus of elasticity	130	GPa
Poisson's ratio	0.33	
Coefficient of thermal expansion**	16.8	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	Hardness*	Elongation
	MPa	ksi	MPa	HV	A50 %
R490(TM04)	490 - 560	71 - 81	≥ 410	145 - 175	≥ 10
R520(TM06)	520 - 590	75 - 86	≥ 460	150 - 180	≥ 8
R580(TM08)	580 - 655	84 - 95	≥ 520	180 - 220	≥ 6

*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
R490(TM04)	0.8	1	1.5	2
R520(TM06)	1	1.5	1.5	2
R580(TM08)	1	1.5	2	3

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

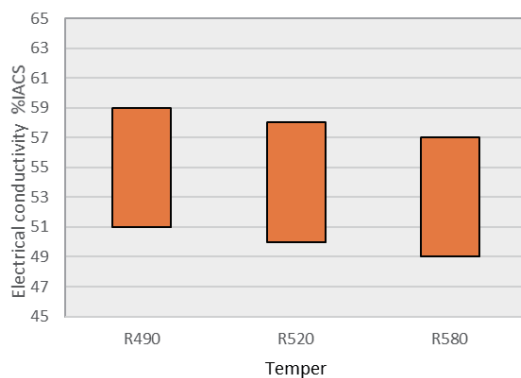
Packaging

Standard coils with outside diameter up to 1200 mm,
Traverse-wound coils with drum weight up to 500 kg.
Multiple-coil up to 3 tons.

Dimensions available

Strip thickness 0.08 - 3.0 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. For solid solution fine grain materials fatigue strength might increase up to 0,5 * of tensile strength.