

boway 19005

Material Designation

Boway designation	boway 19005
UNS	C19005
EN	--
JIS	--
GB(China)	--

Chemical Composition*

Ni	1.5	%
Si	0.3	%
Zn	0.4	%
Cu	Rem	

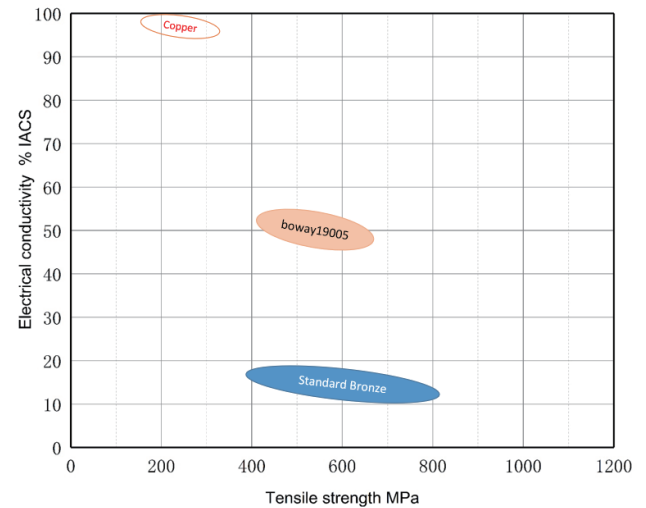
* Nominal composition

Application Target

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

Fabrication Properties

Cold forming	Very good
Machining	Not suitable
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.

Physical Properties*

Density	8.9	g/cm ³
Electrical conductivity @ 20°C	47	% IACS
conductivity @ 20°C	27	MS/m
Thermal conductivity @20°C	250	W/(m·K)
Specific heat capacity	0.377	J/(g·K)
Modulus of elasticity	127	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

boway 19005

Mechanical Properties

Temper	Tensile strength		Yield strength	Hardness*	Elongation
	MPa	ksi	MPa	HV	A50 %
R400	400 - 460	58 - 67	≥ 360	120 - 150	≥ 8
R490	490 - 550	71 - 80	≥ 410	140 - 170	≥ 10
R520	520 - 590	75 - 86	≥ 440	150 - 180	≥ 9
R580	580 - 650	84 - 94	≥ 540	170 - 200	≥ 8

*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
R400	0	0.5	0.5	1
R490	0	0.5	1	1.5
R520	0.5	0.5	1.5	2
R580	1	1	2	2

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

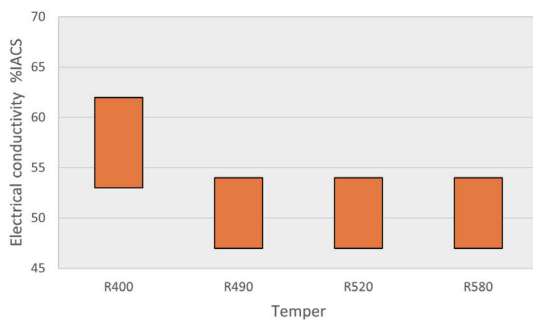
Packaging

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
Electroplated and Hot-dip tinned 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.