

## boway 19210

### Material Designation

Boway Designation	boway 19210
UNS	C19210
EN	CuFe0.1P
JIS	C1921
GB(China)	TFe0.1

### Chemical Composition\*

Fe	0.1	%
P	0.03	%
Cu	Rem.	

\* Nominal composition

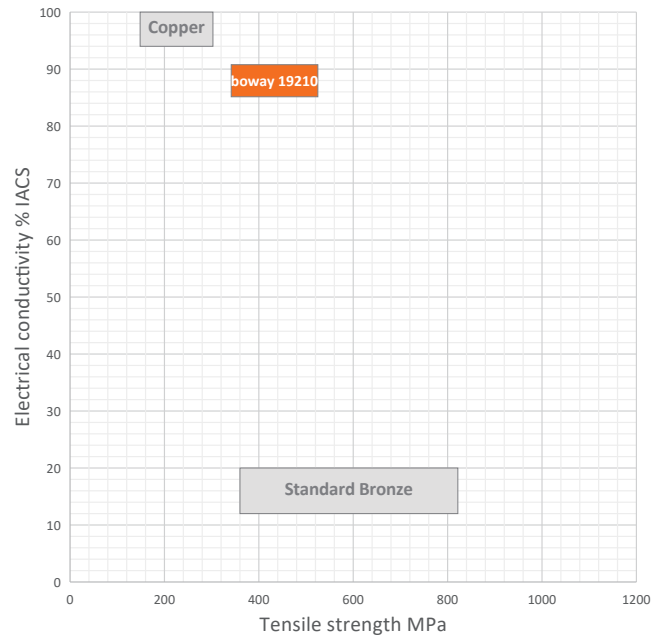
### Application Target

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

Ideal for semiconductor

### Fabrication Properties

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



### Characteristics

Excellent electrical conductivity and thermal conductivity combined with good softening and corrosion resistance. Medium strength and excellent bending formability. No sensitivity to stress corrosion cracking.

### Physical Properties\*

Density	8.9	g/cm <sup>3</sup>
Electrical conductivity@20°C	89	% IACS
Thermal conductivity@20°C	51	MS/m
Specific heat capacity	350	W/(m·K)
Modulus of elasticity	0.385	J/(g·K)
Poisson's ratio	125	GPa
Coefficient of thermal expansion**	0.33	10 <sup>-6</sup> /K

\* Typical values at room temperature for reference

\*\* Average value between 20–300°C

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## Mechanical Properties (Values Underlined Are For Reference Only)

Temper	Tensile strength		Yield strength	Elongation	Hardness
	MPa	ksi	MPa	A50 %	HV
R360(3/4H)	360–425	53–62	≥ 345	≥ 4	<u>115–135</u>
R385(H)	385–455	56–66	≥ 355	≥ 3	<u>120–140</u>
R415(EH)	415–480	60–70	≥ 400	≥ 2	<u>125–145</u>
R440(SH)	440–510	64–74	≥ 425	≥ 1	<u>130–150</u>
Annealed	190–290	27–42	≥ 110	≥ 30	
H01*	300–365	43–53	≥ 135	≥ 20	
H02*	325– 410	47–60	≥ 310	≥ 5	
H03*	355–425	52–62	≥ 345	≥ 4	
H04*	385–455	56–66	≥ 355	≥ 3	
H06*	410–480	60–70	≥ 400	≥ 2	
H08*	440–510	64–74	≥ 425	≥ 1	
H10*	≥ 455	≥ 66	≥ 440	≥ 1	

\*According to ASTM E 152

## 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
R360	0.5	1	1	1.5
R385	1	1	1.5	1.5
R415	1.5	1.5	1.5	2
R440	1.5	2	2	2

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

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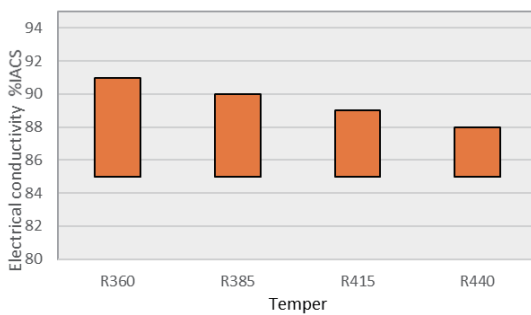
### Packaging

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 0.08–3.0 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.