

## boway 18160

### Material Designation

Boway Designation	boway 18160
UNS	C18160
EN	CuCr1Zr
JIS	-
GB(China)	-

### Chemical Composition\*

Cr	0.7	%
Zr	0.1	%
Cu	Rem.	

\* Nominal composition

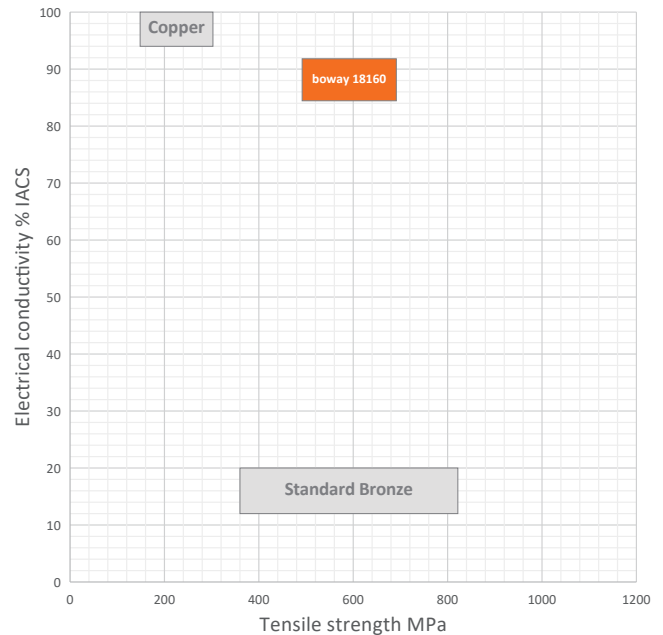
### Application Target

Signal connector	Suitable
Power connector	Very suitable
Miniaturized connector	Suitable
Switch/Relay	Suitable
Semiconductor	Average

Ideal for power connectors

### Fabrication Properties

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



### Characteristics

Highest conductivity combined with medium strength, very good bending properties. Excellent stress relaxation and softening resistance. The alloy for high power contacts.

### Physical Properties\*

Density	8.9	g/cm <sup>3</sup>
Electrical conductivity@20°C	88	% IACS
Thermal conductivity@20°C	51	MS/m
Specific heat capacity	340	W/(m·K)
Modulus of elasticity	0.381	J/(g·K)
Poisson's ratio	135	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

Temper	Tensile strength		Yield strength	Elongation	Hardness*
	MPa	ksi	MPa	A50 %	HV
R480	480–570	70–83	≥ 450	≥ 8	150–190
R540	540–630	79–92	≥ 500	≥ 4	160–200
R600	600–690	87–101	≥ 560	≥ 2	170–200

\*For reference only

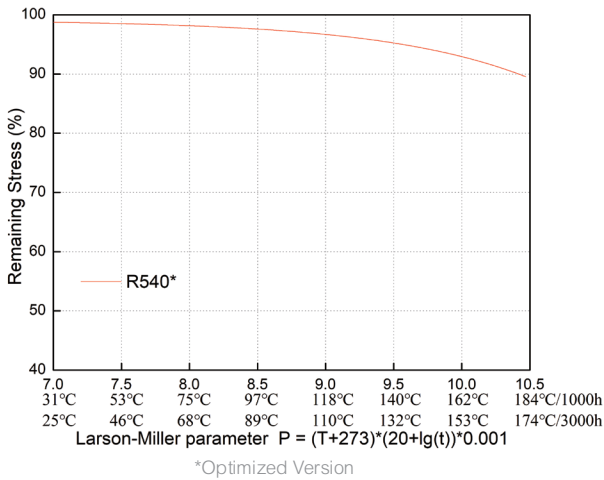
## Bendability Bending thickness ≤ 0.5 mm; Bending width: 10 mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R480	0.5	0.5	1	1
R540	1	1	2	2.5
R600	1.5	2.5	-	-

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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### Thermal Stress Relaxation



P=Larson Miller parameter

T=temperature( °C)

t=time(h)

Example: P=10 is equivalent to 162 °C/1000h

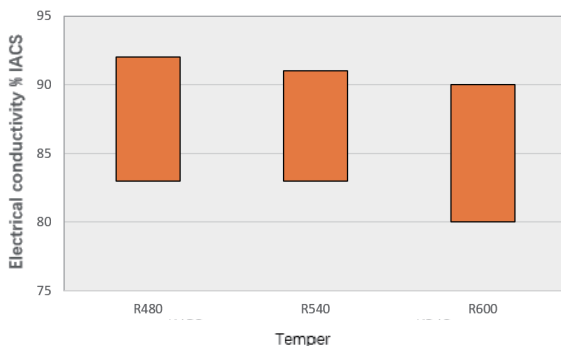
### Packaging

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.  
 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.

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