

boway 42500

Material Designation

Boway designation	boway 42500
USN	C42500
EN	CuSn3Zn9
JIS	—
GB(China)	Hsn88-2

Chemical Composition*

Cu	88	%
Sn	3	%
Zn	Rem.	

* Nominal composition

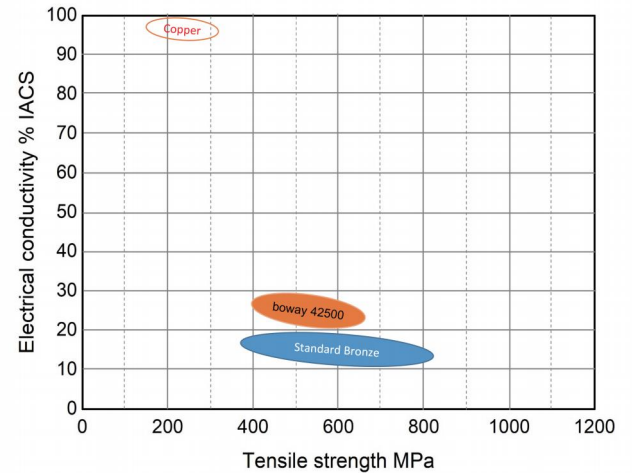
Application Target

Signal Connector	Very suitable
Power Connector	Suitable
Miniaturized Connector	Not recommend
Switch / Relay:	Suitable
Semiconductor:	Not recommend

Ideal for automotive, industrial connectors, spring.

Fabrication Properties

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



Characteristics

Medium conductivity, comparable strength with bronze, excellent fatigue performance and good wear resistance. Resistant to atmospheric and seawater corrosion, insensitive to stress corrosion cracking.

Physical Properties*

Density	8.75	g/cm ³
Electrical conductivity @ 20°C	28	% IACS
conductivity @ 20°C	16	MS/m
Thermal conductivity @20°C	120	W/(m·K)
Specific heat capacity	0.38	J/(g·K)
Modulus of elasticity	115	GPa
Poisson's ratio	0.34	
Coefficient of thermal expansion**	18.4	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			
R395(1/2H)	395-485	57-70	355-465	110-150	≥18
R430(3/4H)	430-510	62-73	400-490	130-170	≥12
R485(H)	485-565	70-81	455-545	160-180	≥9
R525(EH)	525-605	76-87	495-585	170-190	≥7
R580(SH)	580-650	84-94	550-630	180-200	≥3
R635(ESH)	≥635	≥92	≥600	≥200	—

*For reference only

Bendability Bending Thickness: ≤0.5 mm , bending width: 10mm

Temper	90° R/T		180° R/T	
	Good Way	Bad Way	Good Way	Bad Way
R395(1/2H)	0	0	0	0
R430(3/4H)	0	0	0	0
R485(H)	0	0.5	0.5	1
R525(EH)	0.5	1	1	1.5
R580(SH)	1.5	2.5	2	3
R635(ESH)	—	—	—	—

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

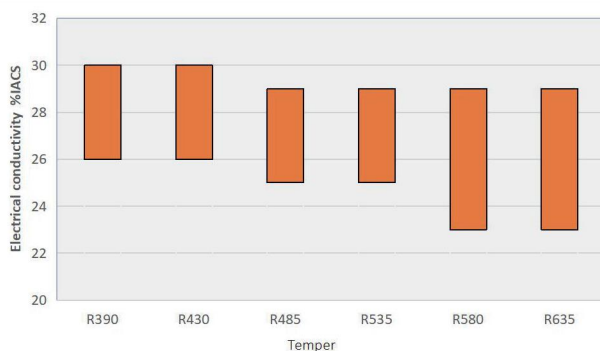
Packaging

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 0.1 - 2mm, 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.