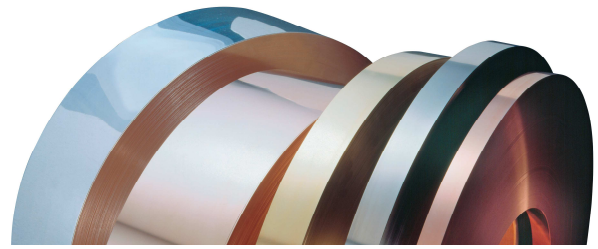


Bronze (Copper-Tin)

BB40



Material Designation	
DIN-EN Symbol	CuSn4
DIN-EN	CW450K
UNS	C51100
JIS	C5111

Nominal Composition (mass content in %)	
Cu	Balance
Sn	4
Zn	< 0.2
Ni	< 0.2
Fe	< 0.1
Pb	< 0.005
P	0.03 - 0.35
Other	< 0.1

About The Alloy

BB40 is a 4 % tin bronze which is distinguished by a very good combination of strength and electrical conductivity. It is used for connectors and current-carrying springs in contacts.

Among the 4 to 8 % tin bronzes BB40 exhibits the highest electrical conductivity. By means of an additional tempering after the cold forming process the bendability can be further improved.

The alloy is registered with the U.S. EPA as Antimicrobial and with respect to Pb and Cd meets the OEKO-TEX Standard 100.

Physical Properties		
Electrical conductivity soft	11.6	MS/m
Thermal conductivity	86	W/(m·K)
Thermal expansion coefficient **	17	10 ⁻⁶ /K
Density	8.9	g/cm ³
Modulus of elasticity	120	GPa = kN/mm ²
* Reference values at room temperature		
** Between 20 and 300 °C		

Typical Applications

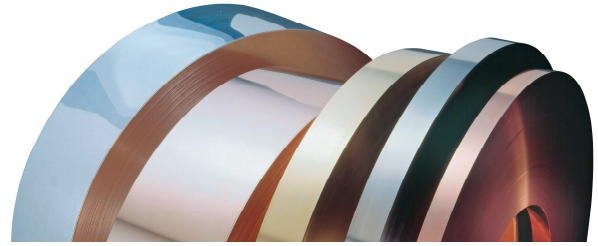
- Connectors for electrical engineering, electronics and automotive technology
- Stamped-bent parts
- Contact springs
- Leaf springs for relays
- Slide bearings
- Slide bars

Mechanical Properties *)

Temper condition		O R 290 H 70	H02 R 390 H 115	H03 R 480 H 150	H04 R 540 H 170	H06 R 610 H 190
Tensile strength in N/mm ²		290 - 390	390 - 490	480 - 570	540 - 630	610 - 690
0.2 % yield Strength in N/mm ²		< 190	320	440	510	570
Elongation A _{LS0} %		> 45	> 20	> 10	> 6	> 3
Vickers hardness HV		70 - 105	115 - 155	150 - 180	170 - 200	190 - 220
Electrical conductivity in % IACS		20	19	19	19	19
Minimum radius of the bending mandrel for 90° bend and strip thickness s, tempered quality						
0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	0 x s	0 x s	0 x s
	parallel	0 x s	0 x s	0 x s	1 x s	2.5 x s
0.25 < s ≤ 0.5 mm	transverse	0 x s	0 x s	0 x s	0 x s	1 x s
	parallel	0 x s	0 x s	1 x s	2 x s	4 x s

*) Reference values

Bronze (Copper-Tin) BB40



Processing Instructions	
Cold forming properties	very good
Machinability	sufficient
Electroplating properties	very good
Hot-dip tinning properties	very good
Soldering	very good
Resistance welding	good
Gas shielded arc welding	good
Laser welding	very good

Available Dimensions
Bright pre-rolled strips 1 to 2.5 mm
Precision strip thickness from 0.05 to 1.2 mm
Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness
Other widths available on request.

Available Versions
Coils with standard outer diameters of 1200 mm
Strips in reel form with coil weight of up to 1500 kg
Multipancake up to 2.5 t
Hot-dip tinned strips
Profiled strips
Electroplated strips (tin, nickel)

Your Local Contact Person	
Europe	Asia
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We reserve the right to make alterations especially where necessitated by technical developments or changes in availability. Please ask for the latest edition of this material data sheet.