Aluminum Bronze

AlBz8b (C61000)

Material Designation*

UNS	C61000
EN	CuAl7
JIS	/
GB	QAl7

Chemical Composition

Cu	Balance	%
Al	6.0-8.5	%

Characteristics

It has high strength and elasticity in air, fresh water, sea water and certain acidic conditions. It also has high corrosion resistance and can be hot and cold pressure processed, electric welded and gas welded, but it's not easy to be brazed.

Typical Applications

It's mainly used for springs, fasteners and other elastic elements with certain corrosion resistance requirements.

Physical Properties

Density ①	7.78	g/cm^3
Electrical conductivity ①	15	%IACS
Thermal conductivity ①	69.2	W/(m · K)
Coefficient of thermal expansion ②	17.1	10^{-6} /K
Modulus of elasticity	117	GPa

Note①: Temperature for testing is 20°C.
Note②: Temperature range for testing is 20-300°C.

Fabrication Properties

Cold workability	Good
Hot workability	Good
Brazing	Not Recommended
Machinability Compared with C36000	20%

bedra
intelligent wires

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Mechanical Properties

Diameter	Temper	Tensile Strength	Yield Strength	Elongation
mm		MPa	MPa min.	%
0.1 < Φ ≤ 1.0	H02	540-740	370	--
1.0 < Φ ≤ 2.0	H02	520-720	350	--
2.0 < Φ ≤ 4.0	H02	500-700	330	≥4
4.0 < Φ ≤ 6.0	H02	480-680	310	≥8
6.0 < Φ ≤ 8.5	H02	460-660	290	≥10
0.1 < Φ ≤ 1.0	H04	880-1130	700	--
1.0 < Φ ≤ 2.0	H04	860-1060	680	--
2.0 < Φ ≤ 4.0	H04	830-1030	650	--
4.0 < Φ ≤ 6.0	H04	780-980	600	--
6.0 < Φ ≤ 8.5	H04	690-950	510	--

Tolerance and Delivery Form

Diameter	Tolerance③	Standard coil weights	Coil ID
mm	mm	kg	mm
1.0 < Φ ≤ 1.6	0.03	18-30	260-300
1.6 < Φ ≤ 2.5	0.03	25-40	320-350
2.5 < Φ ≤ 4.0	0.04	30-45	370-400
2.8 < Φ ≤ 6.5	0.04	100-250	400-650
4.0 < Φ ≤ 6.5	0.05	45-60	370-400
6.5 < Φ ≤ 10.0	0.05	200-400	1000-1200
8.0 < Φ ≤ 12.0	0.06	200-400	1200-1400

Note③: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus (±), half the values given.

*Composition	UNS
Conductivity	UNS
Mechanical Properties	For reference only, measured at room temperature, 68°F(20°C).
Fabrication Properties	UNS, Machinability for reference only.
Other Physical Properties	For reference only