

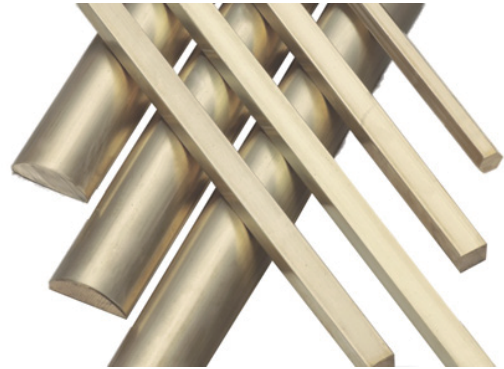
# bedra 63000

## Material Designation

UNS	C63000
EN	CuAl10Ni5Fe4 (CW 307 G)
JIS	/
GB	QA10-4-4

## Chemical Composition

Cu	Balance	%
Al	9.0-11.0	%
Fe	2.0-4.0	%
Ni	4.0-5.5	%
Mn	≤1.5	%
Sn	≤0.2	%
Si	≤0.25	%
Zn	≤0.3	%
Others	≤0.5	%



## Characteristics

This alloy is a copper-aluminum-iron-nickel quaternary alloy, which is strengthened by solid solution of aluminum. It has high strength and wear resistance. At the same time, because aluminum can form a dense aluminium oxide protective layer on the surface of the product, the alloy has good high temperature corrosion resistance and oxidation resistance, and corrosion resistance in the atmosphere, fresh water and seawater as well. It can be welded and has good performance in pressure processing under hot condition.

## Physical Properties

Density <sup>①</sup>	7.58	g/cm <sup>3</sup>
Electrical conductivity <sup>①</sup>	8	%IACS
Thermal conductivity <sup>①</sup>	38	W/( m·K)
Coefficient of thermal expansion <sup>②</sup>	16.2	10 <sup>-6</sup> /K
Modulus of elasticity	117	GPa

Note①: Temperature for testing is 20°C.

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

## Typical Applications

It is used in relatively high-strength screws, nuts, copper sleeves, sealing rings, etc.

## Fabrication Properties

Cold workability	Not recommended
Hot workability	Good
Brazing	Fair
Resistance welding	Good
Hot forging compared with C37700	75%
Machinability compared with C36000	30%

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## Mechanical Properties

Diameter	Temper	Tensile Strength	Yield Strength	Elongation
mm		MPa min.	MPa min.	% min.
$12 \leq \Phi \leq 25$	HR50	690	345	5
$25 < \Phi \leq 50$	HR50	620	310	6
$50 < \Phi \leq 100$	HR50	586	293	10

## Tolerance and Delivery Form

Straight Bar				
Diameter	Tolerance <sup>③</sup>	Ovality	Length	Straightness
mm	mm	mm	mm max.	mm/m max.
$8 \leq \Phi \leq 10$	0.12	0.06	4000	1.0
$10 < \Phi \leq 18$	0.16	0.08	4000	1.0
$18 < \Phi \leq 50$	0.20	0.10	4000	1.0
$50 < \Phi \leq 60$	0.30	0.15	4000	1.0
$60 < \Phi \leq 70$	0.30	0.15	4000	3.0
$70 < \Phi \leq 80$	1.20	0.60	3000	3.0

Note<sup>③</sup>: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus ( $\pm$ ), half the values given.