

Lead Brass

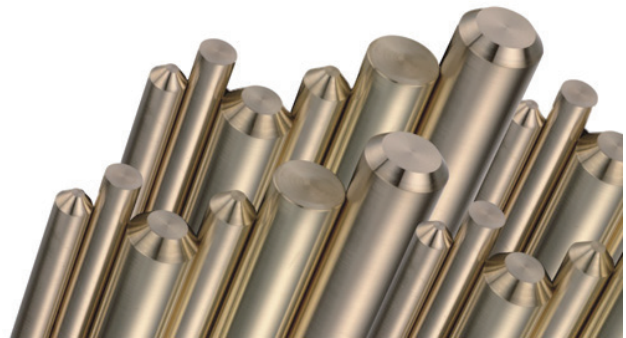
bedra 37710

Material Designation*

UNS	C37710
EN	CuZn39Pb1 (CW 611 N)
JIS	C3771
GB	HPb59-1

Chemical Composition

Cu	59.0-60.0	%
Pb	0.8-1.6	%
Fe	≤0.3	%
Al	≤0.05	%
Ni	≤0.3	%
Sn	≤0.3	%
Others	≤0.2	%
Zn	Balance	%



Characteristics

The alloy has excellent hot working properties, suitable for hot forging, polishing, electroplating and other processing methods.

Typical Applications

It is used in air conditioning refrigeration, sanitary ware, valves and other industries.

Physical Properties

Density ^①	8.4	g/cm ³
Electrical conductivity ^①	27	%IACS
Thermal conductivity ^①	119	W/(m·K)
Coefficient of thermal expansion ^②	20.9	10 ⁻⁶ /K
Modulus of elasticity	103.4	GPa

Note^①: Temperature for testing is 20°C.

Note^②: Temperature range for testing is 20-300°C.

Fabrication Properties

Cold workability	Fair
Hot workability	Good
Brazing	Good
Resistance welding	Not recommended
Hot forging compared with C37700	90%
Machinability compared with C36000	70%

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Mechanical Properties

Diameter	Temper	Tensile Strength		Yield Strength			Elongation	
		mm	MPa min.	MPa min.	A ₁₀₀ % min.	A _{11.3} % min.	A % min.	
6 ≤ Φ < 80	R360		360	300(max.)	--	15	20	
2 ≤ Φ < 40	R410		410	230	8	10	12	
2 ≤ Φ ≤ 14	R500		500	350	3	5	8	

Tolerance and Delivery Form

Diameter	Tolerance ^③	Ovality	Straight Bar		Straightness
			Length	Length	
mm	mm	mm	mm max.	ft max.	mm/m max.
2 ≤ Φ < 3	0.03	0.0075	2500	8.2	1.0
3 ≤ Φ < 6	0.04	0.01	2500	8.2	0.5
6 ≤ Φ < 10	0.06	0.015	4000	13.1	0.5
10 ≤ Φ < 18	0.08	0.02	4000	13.1	0.5
18 ≤ Φ < 25	0.12	0.03	4000	13.1	0.5
25 ≤ Φ < 40	0.20	0.05	4000	13.1	0.5
40 ≤ Φ < 60	0.30	0.075	4000	13.1	0.5
60 ≤ Φ < 80	0.60	0.15	3000	9.8	3.0
80 ≤ Φ < 100	1.60	0.40	2000	6.6	5.0
100 ≤ Φ ≤ 120	2.00	0.50	1500	4.9	6.0

Note^③: 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 BS EN 12164-2016
 Conductivity For reference only
 Mechanical Properties BS EN 12164-2016
 Fabrication Properties For reference only
 Other Physical Properties For reference only

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