

FREE MACHINING BRASS – ALLOY 385

Alloy 385 Free-machining Brass is a copper-zinc-lead alloy having a duplex phase structure with a fine dispersion of lead particles. It is most suitable for high-speed machining, but has limited cold forming properties. Generally supplied cold drawn.

Typical Applications:

Components produced on automatic high speed lathes such as bearings, bushings, bolts, nuts, pins, washers, screws, also hinges and lock bodies, plus architectural and electrical parts and components including switch terminals, trims, frames etc.

Machinability Rating: 100%

Joining Methods:

Soldering: Excellent
 Brazing: Good
 Welding: oxy-acetylene: Fair
 Welding: other: Not recommended

Typical Chemical Composition

Copper	(Cu)	57 – 59%
Lead	(Pb)	2.5 – 3.5%
Zinc	(Zn)	Remainder

Related specifications:

AS 1567	385
ASTM B455 / UNS	C 38500
BS 2874	CZ 121 – Pb3
EN CW614N	CuZn39Pb3
JIS H 3250	3603 / 4

Fabrication Properties:

Hot working: Fair
 Cold working: Limited
 Thread rolling: Fair
 Hot working range: 650°C – 750°C
 Casting range: 1000°C – 1050°C

Melting range: 875°C – 890°C

Heat Treatment:

Annealing: 450°C – 600°C
 Stress relieving: 250°C – 300°C

Typical Mechanical Properties: - Bars & Sections

Condition	0.2 % Proof Stress MPa	Tensile Strength MPa	Elongation %	Hardness HV	Shear Strength MPa
Cold Drawn	150 – 300	400 – 500	20 – 35	110 – 160	250 – 320

Typical mechanical properties for guidance only

Strength is retained up to 200°C, with approx 30% reduction at 300°C.
 Good low temperature mechanical properties.