C86300

Material Notes: Casting methods recommended for this alloy: Centrifugal, Investment, Plaster, and Sand.

Applications: Extra heavy duty, high strength alloy. Large valve stems, gears, cams, slow-speed heavy-load bearings, screwdown nuts hydraulic cylinder parts.

Classified under: Manganese and leaded manganese bronze alloys. ASTM B22; ASTM B584; formerly ASTM B22-E; ASTM B147-8C

As cast values below are for sand casting. Alloy does not respond to heat treating.

Key Words: High Strength Manganese Bronze, ASTM B22; ASTM B584; ASTM B22-E; ASTM B147-8C

Physical Properties	Metric	English	Comments
Density	7.70 g/cc	0.278 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	225	225	3000 kg
Tensile Strength, Ultimate	820 MPa	119000 psi	
Tensile Strength, Yield	460 MPa	66700 psi	
Elongation at Break	18 %	18 %	In 50 mm
Machinability	8 %	8 %	UNS C36000 (free-cutting brass) = 100%

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000192 ohm-cm @Temperature 20.0 °C	0.0000192 ohm-cm @Temperature 68.0 °F	Calculated from 9% IACS

Thermal Properties	Metric	English	Comments
Melting Point	885 - 920 °C	1630 - 1690 °F	
Liquidus	923 °C	1690 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	3.0 - 7.5 %	3.0 - 7.5 %	
Copper, Cu	60 - 68 %	60 - 68 %	
Iron, Fe	2.0 - 4.0 %	2.0 - 4.0 %	
Lead, Pb	<= 0.20 %	<= 0.20 %	
Manganese, Mn	2.5 - 5.0 %	2.5 - 5.0 %	
Tin, Sn	<= 0.20 %	<= 0.20 %	
Zinc, Zn	25 %	25 %	