

Technical Data Sheet

AMPCO[®] 863

Continuous cast manganese bronze

Description

AMPCO[®] 863 gives high strength and corrosion resistance which makes this alloy ideal for heavy duty construction markets.

It will outperform and outlast ordinary bronzes and should be used also for bearings, worm gears, cams, connector rods, lead screw nuts, etc.

Superior corrosion resistance and high strength lends this alloy to many construction and agricultural equipment applications.

Segmented bushings and sleeve bearings are the main applications of AMPCO[®] 863.

The consistent superiority of AMPCO[®] 863 alloy over commercial bronze is due, in large part, to the unique distribution of alloy microstructure, often referred to as the "AMPCO[®]-Phase." Only AMPCO[®] alloys offer this metallurgical advantage.

Chemistry

Copper 62%, Aluminum 6%, Manganese 3%, Iron 3%, Zinc 26%

Mechanical Properties

Tensile Strength (MPa).....	724
Yield Strength 0.5% elong. (MPa)	365
Elongation (% in 50.8 mm)	18
Hardness BHN (3000 kg)	225
Rockwell Hardness (by conversion) (HRB)	95
Reduction of area (%)	15
Proportional Limit (MPa).....	193
Impact-Charpy (keyhole) (J)	12
Izod (J).....	17
Modulus of Elasticity (tension), (GPa)	110
Fatigue (100'000'000 cycles) (MPa).....	137
Ultimate of compression (MPa)	965
Elastic Limit of compression (MPa)	413

Physical Properties

Density (lbs./in. ³).....	.283
Specific Gravity (kg/dm ³)	7.83
Specific Heat (J/g.K at 20°C, 293°K).....	.376
Coefficient of Thermal Expansion	
(1/°C) (20-300°C)	21.6 x 10 ⁻⁶
Electrical Conductivity (% IACS) at 20°C	10
Electrical Resistivity	
(m/Ω.mm ² @ 20°C)	5.8
Thermal Conductivity	
(W/m.K @20°C).....	41
Magnetic Permeability	1.09

Specification

ASTM.....	B505
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