Technical Data Sheet
AMPCO® 483
Extruded aluminum-nickel bronze rod

Description

A wrought aluminum-nickel-iron-copper alloy exceeding the minimum requirements of ASTM. The material is recommended for heavier-duty applications involving wear and fatigue.

Uses include: cams, bushings, bearing retainer cages, valve stems and guides, sleeve bearings.

AMPCO® 483 alloy will maintain mechanical properties at temperatures up to 315ºC and has a machinability rating of 20%. The alloy provides excellent corrosion resistance to sea water and non-oxidizing mineral acids. Can be welded with both the gas-shielded and shielded metal-arc processes. Brazing, soldering and oxyfuel gas welding are not recommended.

AMPCO® 483 alloy can be hot worked at temperatures from 705º to 926ºF and annealed between 705º and 880ºF. The alloy has a forgeability rating of 75%.

The consistent superiority of AMPCO® 483 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 81%
Aluminum 9%
Nickel 5%
Iron 3%
Manganese 1.5%

Mechanical Properties* (contd)

Ultimate in Compression (MPa)……758
Proportional Limit (MPa) 117
Impact-Charpy V-notch (J)..... 23-27
Charpy Keyhole (J)..... 13-16
Modulus of Elasticity E (tension), GPa..... 117
Modulus of Rigidity (GPa)..... 44
Poisson's Ratio ..... .320
*based on 25.4 mm dia. test bars

Physical Properties

Density (lbs./in.^{3}) ..... .276
Specific Gravity (kg/dm^3) 7.64
Specific Heat (J/g.K)..... .44
Coefficient of Thermal Expansion(1/°C)..... 16.2 x 10^{-6}
Electrical Conductivity (% IACS) 7
Electrical Resistivity(m/Ω.mm^2 @ 20°C) 4.07
Thermal Conductivity (W/m.K @20ºC) 36
Magnetic Permeability 1.0

Nearest international specifications

ASTM B124, B150
Federal……QQ-C-00465

Mechanical Properties

AMPCO® 483 Extruded-Drawn-Stress Relieved	Tensile Strength Min. KSI (MPa)	Yield Strength Min. KSI (MPa)	Elongation % in 2" min	Hardness Nom. BHN (Rockwell)
over 12.7 to 25.4 mm incl.	95 (655)	50 (345)	18	212 (96B)
over 25.4 to 50.8 mm incl.	95 (655)	48 (331)	18	202 (94B)
over 50.8 to 76.2 mm incl.	95 (655)	48 (331)	18	196 (93B)
ASTM (Temper HR-50) Extruded-Drawn-Stress Relieved				
up to 76.2 mm incl.	90 (620)	50 (345)	15	