

Technical Data

AMPCO[®] 642



Aluminum-silicon bronze alloy

Description

A wrought aluminum-silicon-copper alloy used for valve seats and stems, marine hardware, pole line hardware, bushings and bearings, cams, bolts and nuts, valve bodies and similar components.

Ampco 642 alloy has excellent capacity for hot forming, with a hot forgeability rating of 80 and a machinability rating of 60.

Joining, using the brazing and arc welding methods, is only fair. Soldering and oxyacetylene welding are not recommended.

Mechanical Properties

Extruded-Dawn-Stress Relieved (HR-50)	Tensile Strength KSI	Yield Strength Ksi	Elongation % in 2"	Hardness Rockwell
1/2" and under	90	45	9	90B
Over 1/2" to 1"	85	45	12	86B
Over 1" to 2"	80	42	12	86B
Over 2" to 3"	75	35	15	84B
Hot Extruded (M-30)				
Over 3" to 4"	70	30	15	78B
Over 4"	70	25	15	78B

Chemistry

Copper 91%, Aluminum 7%, Silicon 2%

Physical Properties

Density (lbs./cu in).....	.278
Specific Gravity.....	7.69
Coef. of Thermal Expansion (in/in/°F). 10 x 10 ⁻⁶	
Thermal Conductivity (BTU/sq ft/ft/hr/°F @ 68°F).....	26
Electrical Resistivity (Ohms @ 68°F).....	113
Electrical Conductivity (% IACS @ 68°F).....	8
Thermal Capacity (BTU/lb/°F @68°F).....	.09
Modulus of Elasticity (ksi)	16,000
Modulus of Rigidity (ksi)	6,000

For further information, contact:

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Specifications

ASTM	B-150 C64200
Federal	QQ-C-465 CA642
Military	A-15939A Comp.1
AMS	4634 (thru 3")

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