Technical Data Sheet

AMPCO® 18.22

AMPCO® 18.22 is a heat-treated copper alloy with outstanding properties and specifications. This high-strength alloy retains exceptional ductility, making it well suited for aerospace applications where both strength and flexibility are critical. Through precise heat treatment and production control, the bronze alloy achieves superior tensile strength, yield strength, and hardness.

Key Features:

- Heat treated
- Increased tensile strength, yield strength & hardness
- Suitable for higher loads
- Good sliding properties
- Corrosion resistant
- Good ductility
- Wear & fatigue resistant
- No nickel contamination & no galling against stainless steel

Nominal Composition:

Copper (Cu)	Aluminum (Al)	Iron (Fe)	Others
Balance	10.5%	3.5%	max. 0.5%

Applications:

- Thrust bearings & bearing liners
- Bushings & inserts
- Piston parts, sliders & guides
- Nuts & spindle nuts
- Applications to withstand high impacts and loads
- Various parts used in aerospace & other industries

AMPCO® 18.22 finds versatile applications in a variety of industries, with a focus on meeting the stringent requirements of the aerospace industry. Its superior properties, such as increased hardness and excellent ductility, make it an ideal material for these applications, ensuring reliable performance under the most demanding conditions. This aluminum bronze alloy is trusted for its ability to withstand significant impacts and loads, making it an invaluable choice in industries where precision, durability, and strength are paramount.

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Mechanical Properties (Nominal values)	Sand Casted	Centrifugally Casted
Tensile Strength R_m (ksi)	105	115
Yield Strength $R_{p\ 0.5}$ (ksi)	55	59
Elongation 2" (%)	8	10
Brinell Hardness (10/3000)	223	228
Rockwell Hardness (HRB)	97	98
Compressive Strength R_{mc} (ksi)	155	155
Compressive Yield Strength $R_{pc0.1}$ (ksi)	-	64
Shear Strength R_{cm} (ksi)	60	62
Modulus of Elasticity E (ksi)	16000	16000
Charpy a_k (ft·lbs)	6	8
Izod a_k (ft·lbs)	10	12
Fatigue (100 million cycles) σ_N (ksi)	36	36

Physical Properties:

Density ρ (lbs/in³)	Coefficient of Expansion α (in/in/°F)	Thermal Conductivity λ (W/m·K)	Electrical Conductivity (% I.A.C.S.)	Specific Heat c_p (BTU/lb·°F)
0.269	$9 \cdot 10^{-6}$	59	13	0.1

Machining Parameters:

Operation	Cutting Speed v_c (m/min)	Feed f (mm/rev)	Depth a (mm)	Tool Specification
Milling – Roughing	110 - 160	0.1 - 0.4	up to 4	K10 - K20
Milling – Finishing	90 - 115	0.05 - 0.1	0.1 - 0.5	K10 - K20
Turning – Roughing	150 - 200	0.1 - 0.2	up to 2	K10 - K20
Turning – Finishing	180 - 250	0.05 - 0.1	0.1 - 0.2	K10 - K20

Scan the QR Code to view our machining recommendations:

Contact us