Technical Data Sheet

AMPCO® 15

AMPCO® 15 is a wrought aluminum-iron-copper alloy and is known for its remarkable properties. This alloy also has excellent corrosion resistance in seawater and non-oxidizing mineral acids, making it ideal for harsh environments. Its consistent superiority over commercial bronze is due to its unique alloy microstructure, often referred to as the “AMPCO phase”.

Key Features:

- Corrosion resistant
- Good sliding properties
- Mechanical stability up to 315°C
- High ductility
- Nickel free
- Good hot & cold formability
- Machinability rating of 50%
- Forgeability rating of 75%
- Compliant with ASTM B150, ASME SB-150, SAE J463 & AMS 4635

Nominal Composition:

Copper (Cu)	Aluminum (Al)	Iron (Fe)	Others
Balance	9%	3%	max. 0.5%

Applications:

- Used in marine & offshore applications
- Suitable for medium-duty wear & fatigue applications
- Used for cams, bushings, bearings, bearing cages, valve stems & guides, gears & worm wheels
- Applications in aerospace, automotive & other industries

AMPCO® 15 is used in a wide range of industrial applications. Its superior corrosion resistance to seawater and non-oxidizing mineral acids makes it a top choice for marine and offshore applications. Its versatility and exceptional mechanical properties also make it an ideal choice for medium-duty wear and fatigue applications. Whether in marine, aerospace, automotive, or other industries, it provides consistent performance and durability, making it a valuable material for a variety of engineering needs.

Technical Data Sheet

AMPCO® 15

Mechanical Properties (Nominal values)	Extruded			
	Ø ≤ 12.7 mm	Ø 12.8 - 25.4 mm	Ø 25.5 - 50.8 mm	Ø 25.5 - 76.2 mm
Tensile Strength R_m (MPa)	620	605	586	551
Yield Strength $R_{p\,0.5}$ (MPa)	345	305	289	255
Elongation A_5 (%)	15	15	20	30
Brinell Hardness (10/3000)	183	174	170	163
Compressive Strength R_{mc} (MPa)	896			
Modulus of Elasticity E (GPa)	117			
Charpy a_k (J)	32			
Izod a_k (J)	45			
Fatigue (100 million cycles) σ_N (MPa)	207			

Physical Properties:

Density ρ (g/cm³)	Coefficient of Expansion α (10^{-6}/K)	Thermal Conductivity λ (W/m·K)	Electrical Conductivity (% I.A.C.S.)	Specific Heat c_p (J/g·K)
7.64	16.2	54	12	0.38

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