



# Technical Data Sheet

## AMPCO<sup>®</sup> 15

AMPCO<sup>®</sup> 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<sup>®</sup> 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.



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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 <sub>m</sub> (MPa)	620	605	586	551
Yield Strength R <sub>p0.5</sub> (MPa)	345	305	289	255
Elongation A <sub>5</sub> (%)	15	15	20	30
Brinell Hardness (10/3000)	183	174	170	163
Compressive Strength R <sub>mc</sub> (MPa)	896			
Modulus of Elasticity E (GPa)	117			
Charpy a <sub>k</sub> (J)	32			
Izod a <sub>k</sub> (J)	45			
Fatigue (100 million cycles) σ <sub>N</sub> (MPa)	207			

### Physical Properties:

Density ρ (g/cm <sup>3</sup> )	Coefficient of Expansion α (10 <sup>-6</sup> /K)	Thermal Conductivity λ (W/m·K)	Electrical Conductivity (% I.A.C.S.)	Specific Heat c <sub>p</sub> (J/g·K)
7.64	16.2	54	12	0.38

### Machining Parameters:

Operation	Cutting Speed v <sub>c</sub> (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:



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