

## Technical Data Sheet

**AMPCO<sup>®</sup> 18**

## Extruded and drawn rounds and rectangular bars

**Nominal composition:**

Aluminium	(Al)	10.5%
Iron	(Fe)	3.5%
Others		max. 0.5%
Copper	(Cu)	balance

Mechanical and physical properties	Units	Nominal Values			
		Ø ≤ 12.7 mm	Ø 12.7-25.4 mm	Ø 25.4-76.2 mm	Rectang. bars
Tensile strength R <sub>m</sub>	MPa	745	724	655	689
Yield strength R <sub>p 0.5</sub>	MPa	379	365	338	351
Elongation A <sub>5</sub>	%	12	14	14	14
Brinell hardness	HBW 10/3000	202	192	187	192
Rockwell hardness	HRB	94	92	91	92
Reduction of area ψ	%	12	14	14	12
Compressive strength R <sub>mc</sub>	MPa	1013	1000	979	980
Compressive strength, 0.1 % perm. Set	MPa	...	262	...	...
Proportional limit in compression R <sub>pc</sub>	MPa	248	241	221	234
Shear strength R <sub>cm</sub>	MPa	448	448	428	428
Modulus of elasticity E	GPa	117	117	117	117
Charpy a <sub>k</sub>	J	12	14	14	13
Izod a <sub>k</sub>	J	19	22	22	20
Fatigue (100'000'000 cycles) σ <sub>N</sub>	MPa	248	248	241	248
Density ρ	g / cm <sup>3</sup>	7.45			
Coefficient of expansion α	10 <sup>-6</sup> / K	16.2			
Thermal conductivity λ	W / m · K	63			
Electrical conductivity γ	m / Ω · mm <sup>2</sup>	7			
Electrical conductivity	% I.A.C.S	12			
Specific heat c <sub>p</sub>	J / g · K	0.42			

Assurances given with respect to properties or uses are subject to written approval from AMPCO METAL.

Compact grain structure and high physical properties result from proper phase distribution and hot working of AMPCO<sup>®</sup> 18 during the extrusion process. These qualities enable this alloy to perform successfully in an extremely wide range of difficult applications. It is an excellent bearing material characterized by good resistance to wear and fatigue.

**APPLICATIONS:**

AMPCO<sup>®</sup> 18 rod is produced with a good surface finish to commercial tolerances and can be used economically for volume-production applications.

AMPCO<sup>®</sup> 18 is ideally suited where high strength and hardness combined with wear and fatigue resistance are required. Some of the more common applications of this alloy are bushings, bearings, gears, worm wheels, valve seats and guides, hydraulic valve parts, pump rods, guide pin bushings, gibs and slides, etc.