

Technical Data Sheet

AMPCO 18

Extruded and drawn rounds and rectangular bars

Nominal composition:

Aluminium (Al)	10.50 %
Iron (Fe)	3.50 %
Others	0.50 % max.
Copper (Cu)	balance

Mechanical and physical properties	Units	Ø ≤ 12.7 mm	Ø 12.7-25.4 mm	Ø 25.4-76.2 mm	Rectangular bars
1) Tensile strength R _m	MPa	745 (655)	724 (655)	655 (620)	689 (600)
2) Yield strength R _{p0.2}	MPa	379 (310)	365 (310)	338 (294)	351 (310)
3) Elongation A ₅	%	12 (10)	14 (12)	14 (12)	14 (10)
4) Brinell hardness	HB 30	202	192	187	192 (174)
5) Rockwell hardness	HRB	94	92	91	92 (90)
6) Reduction of area ψ	%	12	14	14	12
7) Compressive strength R _{mc}	MPa	1013	1000	979	980
8) Compressive strength, 0.1 % perm. set	MPa	---	262	---	---
9) Proportional limit in compression R _{pc}	MPa	248	241	221	234
10) Shear strength R _{cm}	MPa	448	448	428	428
11) Modulus of elasticity E	GPa	117	117	117	117
12a) Charpy a _K	J	12	14	14	13
12b) Izod a _K	J	19	22	22	20
13) Fatigue (100'000'000 cycles) σ _N	MPa	248	248	241	248
14) Density ρ	g / cm ³	7.45			
15) Coefficient of expansion α	10 ⁻⁶ / K	16.2			
16) Thermal conductivity λ	W / m · K	63			
17a) Electrical conductivity γ	m / Ω · mm ²	7			
17b) Electrical conductivity I.A.C.S	%	12			
18) Specific heat C _p	J / g · K	0.42			

Indicated values are nominals. Minima are given in brackets. Assurances given with respect to properties or uses are subject to written approval from AMPCO.

Compact grain structure and high physical properties result from proper phase distribution and hot working of AMPCO 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 18 rod is produced with a good surface finish to commercial tolerances and can be used economically for volume-production applications.

AMPCO 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.

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