Technical Data Sheet

AMPCO® 21

Extruded and drawn rounds and rectangular bars

Nominal composition:

Aluminium	(Al)	13.1%
Iron	(Fe)	4.4%
Others		max. 2.5%
Copper	(Cu)	balance

Mechanical and physical properties	Units	Nominal Values		
		Ø ≤ 50.8 mm	Ø 50.8 - 76.2 mm	Rectangular bars
Tensile strength R_m	MPa	758	724	724
Yield strength $Rp_{0.5}$	MPa	420	400	400
Elongation A_5	%	1	1	1
Brinell hardness	HBW 10/3000	286	286	286
Rockwell hardness	HRC	29	29	29
Reduction of area ψ	%	…	…	0.5
Compressive strength R_{mc}	MPa	1227	…	1108
Compressive strength, 0.1 % perm. set	MPa	421	…	343
Proportional limit in compression R_{pc}	MPa	200	…	…
Shear strength R_{cm}	MPa	…	…	413
Modulus of elasticity E	GPa	110	110	110
Charpy a_K	J	2.7	2.7	2.7
Izod a_K	J	2.7	2.7	2.7
Density ρ	g / cm³	7.2		
Coefficient of expansion α	10^{-6} / K	16.2		
Thermal conductivity λ	W / m · K	46		
Electrical conductivity γ	m / Ω · mm²	6		
Electrical conductivity	% I.A.C.S.	10		
Specific heat c_p	J / g · K	0.42		

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

The increase in the Al and Fe content results in a material in which the hard gamma 2 phase (about 400 HB) is present.

By proper metallurgical control this hard constituent is uniformly distributed giving this alloy its ability to resist wear.

APPLICATIONS:

AMPCO® 21 is used for guide port bushings and wear strips replacing hardened steel and for some cams when no impact is involved. However, the largest single use is as die rings, inserts, forming rolls etc. in forming, bending or drawing operations, especially when stainless steel is the material being processed.

This material is also widely used as work support blades for the centerless grinding of steel rods.