Technical Data Sheet

AMPCO® 21

Forgings

Nominal composition:

Aluminium	(Al)	13.1%
Iron	(Fe)	4.4%
Others		3.5%
Copper	(Cu)	balance

Mechanical and physical properties	Units	Nominal Values
Tensile strength R_m	MPa	724
Yield strength $Rp_{0.5}$	MPa	407
Elongation A_5	%	1
Brinell hardness	HBW 10/3000	286
Rockwell hardness	HRC	30
Reduction of area ψ	%	0.5
Compressive strength R_{mc}	MPa	1335
Shear strength R_{cm}	MPa	448
Modulus of elasticity E	GPa	105
Charpy $_{aK}$	J	3
Izod $_{aK}$	J	3
Density ρ	g / cm³	7.2
Coefficient of expansion α	10^{-6} / K	16.2
Thermal conductivity λ	W / m · K	42
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.
AMPCO® 21 is also widely used as work support blades for the centerless grinding of steel rods.