

# Technical Data Sheet

## AMPCO 21

### Continuous Cast and Forgings

#### Nominal composition

Aluminium	(Al)	13.10 %
Iron	(Fe)	4.40 %
Others		2.50 % max.
Copper	(Cu)	balance

Mechanical and physical properties	Units	Continuous Cast	Forgings
1) Tensile strength $R_m$	MPa	703	724
2) Yield strength $R_{p0.2}$	MPa	407	407
3) Elongation $A_5$	%	1	1
4) Brinell hardness	HB 30	285 (241)	295 (269)
5) Rockwell hardness	HRC	29	31 (27)
6) Reduction of area $\psi$	%	0.5	0.5
7) Compressive strength $R_{mc}$	MPa	1227	1335
8) Shear strength $R_{cm}$	MPa	414	448
9) Modulus of elasticity E	GPa	105	105
10a) Charpy $a_K$	J	3	3
10b) Izod $a_K$	J	3	3
11) Density $\rho$	$g / cm^3$	7.2	
12) Coefficient of expansion $\alpha$	$10^{-6} / K$	16.2	
13) Thermal conductivity $\lambda$	$W / m \cdot K$	42	
14a) Electrical conductivity $\gamma$	$m / \Omega \cdot mm^2$	6	
14b) Electrical conductivity I.A.C.S	%	10	
15) Specific heat $c_p$	$J / g \cdot K$	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.

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 centreless grinding of steel rods.

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