

# Technical Data Sheet

## AMPCO<sup>®</sup> 18

### Forgings



#### Nominal composition:

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

Mechanical and physical properties	Units	Nominal Values
Tensile strength $R_m$	KSI	105
Yield strength $R_p$ 0.5	KSI	43
Elongation in 2"	%	15
Brinell hardness	BHN 30	187
Rockwell hardness	HRB	91
Reduction of area $\psi$	%	14
Compressive strength ultimate $R_{mc}$	KSI	144
Proportional limit in compression $R_{pc}$	KSI	33
Shear strength $R_{cm}$	KSI	61
Modulus of elasticity E (tension)	KSI	16700
Charpy $a_K$ keyhole	FT.LBS	24
Izod $a_K$	FT.LBS	22
Fatigue (100'000'000 cycles) $\sigma_N$	KSI	35
Density $\rho$	LBS / IN <sup>3</sup>	0.269
Coefficient of expansion $\alpha$	IN / IN / °F	$9.00 \cdot 10^{-6}$
Thermal conductivity $\lambda$	CGS	0.15
Electrical resistivity $\gamma$ (1mm <sup>2</sup> section)	Microhms/ Meter	125
Electrical conductivity	% I.A.C.S.	14
Specific heat $c_p$	BTU / LB · °F	0.1

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

The exceptional wear and fatigue resistance of this alloy results from a controlled duplex alpha and beta phase. This alloy has high strength combined with good ductility and unusual toughness.

The physical characteristics of this alloy can be varied by heat treatments (AMPCO<sup>®</sup> 18.22, 18.23 and 18.136).

#### APPLICATIONS:

This alloy is well suited for use as gears, worm wheels, bushings and bearings.

The machine tool industry has adopted AMPCO<sup>®</sup> 18 as standard for all applications requiring good sliding properties, wear resistance, fatigue resistance, toughness and/or resistance to deformation under load.

AMPCO<sup>®</sup> 18 is used in steel mill service as screw down nuts, slippers (many of which are "cast to size"), gears, wedges and breaker blocks. AMPCO<sup>®</sup> 18 has an excellent corrosion resistance and is used in pickling service for such parts as hooks, crates and spreaders, etc.

**AMPCO METAL EXCELLENCE IN ENGINEERED ALLOYS**

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