

# Technical Data Sheet

## AMPCO 18 - 22

### Sand and Centrifugal Castings

#### Nominal composition:

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

Mechanical and physical properties	Units	Sand Castings	Centrifugals
1) Tensile strength $R_m$	MPa	724 (620)	793 (655)
2) Yield strength $R_{p0.2}$	MPa	379 (345)	407 (345)
3) Elongation $A_5$	%	8	10 (5)
4) Brinell hardness	HB 30	223 (202)	228 (202)
5) Rockwell hardness	HRB	97 (94)	98 (94)
6) Reduction of area $\psi$	%	6	8
7) Compressive strength $R_{mc}$	MPa	1069	1069
8) Compressive strength, 0.1 % perm. set	MPa	----	441
9) Proportional limit in compression $R_{pc}$	MPa	345	338
10) Shear strength $R_{cm}$	MPa	414	427
11) Modulus of elasticity E	GPa	110	110
12a) Charpy $a_K$	J	8	11
12b) Izod $a_K$	J	13.5	16.3
13) Fatigue (100'000'000 cycles) $\sigma_N$	MPa	248	248
14) Density $\rho$	$g / cm^3$	7.45	
15) Coefficient of expansion $\alpha$	$10^{-6} / K$	16.2	
16) Thermal conductivity $\lambda$	$W / m \cdot K$	59	
17a) Electrical conductivity $\gamma$	$m / \Omega \cdot mm^2$	7.5	
17b) Electrical conductivity I.A.C.S	%	13	
18) 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.

By varying the heat treatment and by close control of all operations, the characteristic duplex structure of AMPCO 18 is refined to produce a material having substantially higher ultimate and yield strengths and hardness.

#### APPLICATIONS:

AMPCO 18 - 22 has been developed to meet the exact requirements of the aircraft industry for an alloy having increased physical properties, hardness and sufficient elongation to withstand important impacts and loads. It is recommended for use as bushings, bearings liners, inserts, piston parts, nuts and slides, etc.

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