

Technical Data Sheet

AMPCO® 18

Sand Castings

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	MPa	620
Yield strength $R_{p\ 0.5}$	MPa	269
Elongation A_5	%	14
Brinell hardness	HBW 10/3000	179
Rockwell hardness	HRB	89
Reduction of area ψ	%	12
Compressive strength R_{mc}	MPa	938
Proportional limit in compression R_{pc}	MPa	207
Shear strength R_{cm}	MPa	400
Modulus of elasticity E	GPa	110
Charpy a_k	J	13.5
Izod a_k	J	20.3
Fatigue (100'000'000 cycles) σ_N	MPa	221
Density ρ	g / cm ³	7.45
Coefficient of expansion α	10 ⁻⁶ / K	16.2
Thermal conductivity λ	W / m · K	63
Electrical conductivity γ	m / Ω · mm ²	8
Electrical conductivity	% I.A.C.S.	14
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 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® 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® 18 as standard for all applications requiring good sliding properties, wear resistance, fatigue resistance, toughness and/or resistance to deformation under load.

AMPCO® 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® 18 has an excellent corrosion resistance and is used in pickling service for such parts as hooks, crates and spreaders, etc.