

Technical Data Sheet

AMPCO 18 - 23

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)	758 (655)
2) Yield strength $R_{p0.2}$	MPa	365 (317)	386 (317)
3) Elongation A_5	%	14 (10)	16 (10)
4) Brinell hardness	HB 30	202 (179)	207 (179)
5) Rockwell hardness	HRB	94 (89)	95 (89)
6) Reduction of area ψ	%	14	16
7) Proportional limit R_p	MPa	214	214
8) Compressive strength R_{mc}	MPa	1034	1034
9) Compressive strength, 0.1 % perm. set	MPa	----	345
10) Proportional limit in compression R_{pc}	MPa	310	310
11) Shear strength R_{cm}	MPa	400	421
12) Modulus of elasticity E	GPa	110	110
13a) Charpy a_K	J	13.6	16.3
13b) Izod a_K	J	20	24
14) Fatigue (100'000'000 cycles) σ_N	MPa	234	248
15) Density ρ	g / cm^3	7.45	
16) Coefficient of expansion α	$10^{-6} / K$	16.2	
17) Thermal conductivity λ	$W / m \cdot K$	59	
18a) Electrical conductivity γ	$m / \Omega \cdot mm^2$	7.5	
18b) Electrical conductivity I.A.C.S	%	13	
19) 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.

This heat-treated alloy is the ultimate in high-strength bronzes requiring good bearing characteristics and exceptional wear resistance.

It has greater toughness than grade AMPCO 18 - 22 and better physical properties than grades AMPCO 18 or AMPCO 18 - 136. Its exceptional proportional limit gives it a maximum resistance to distortion, enabling the designer to take full advantage of its high physical properties.

APPLICATIONS:

AMPCO 18 - 23 gives a successful performance under heavy loads and impact conditions and makes it a preferred material for heavy-duty worm gears and similar applications.

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