

Technical Data Sheet

AMPCO[®] M4

Extrusions



Nominal composition:

Aluminium	(Al)	10.5%
Iron	(Fe)	4.8%
Nickel	(Ni)	5.0%
Manganese	(Mn)	1.5%
Others		max. 0.5%
Copper	(Cu)	balance

Mechanical and physical properties	Units	Nominal Values	
		Ø ≤ 25.4 mm	Ø 25.4 - 101.6 mm
Tensile strength R_m	MPa	1000	965
Yield strength $R_{p0.5}$	MPa	793	724
Elongation A_5	%	8	8
Brinell hardness	HB 30	286	286
Rockwell hardness	HRC	29	29
Reduction of area ψ	%	13	12
Compressive strength R_{mc}	MPa	1324	1324
Compressive strength, 0.1 % perm. set	MPa	731	689
Shear strength R_{cm}	MPa	538	538
Modulus of elasticity E	GPa	124	124
Charpy a_K	J	7	7
Fatigue (100'000'000 cycles) σ_N	MPa	352	352
Density ρ	g / cm ³	7.45	
Coefficient of expansion α	10 ⁻⁶ / °K	16	
Thermal conductivity λ	W / m · °K	42	
Electrical conductivity γ	m / Ω · mm ²	4.8	
Electrical conductivity	% I.A.C.S.	8.2	
Specific heat c_p	J / g · °K	0.45	

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

The patented process gives AMPCO[®] M4 mechanical properties beyond the range of commercial nickel-aluminium bronzes, comparable to beryllium copper at a lower cost and without the beryllium copper industrial hygiene requirements.

APPLICATIONS:

AMPCO® M4 was initially developed as an aircraft specification alloy for gears in retractable landing assemblies, engine spacer bearings and other similar applications. It is rapidly growing in use where higher mechanical properties at elevated temperatures together with corrosion-resistant properties are required. Typical applications include aircraft landing gear bearings and bushings, bending dies (shoes and mandrels) for the tube bending industry, gear wheels and wear/guide plates, etc..



Specification: AMS 4590 for extrusions

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