

# Technical Data Sheet

## AMPCO<sup>®</sup> M4

### Forged plates

Chemistry may vary as necessary to reach properties.

Mechanical and physical properties	Units	Nominal Values	
		Thickn. 152.4 mm	Thickn. 152.4 – 254 mm
Tensile strength $R_m$	MPa	780	750
Yield strength $R_{p0.5}$	MPa	460	420
Elongation $A_5$	%	4	3
Brinell hardness	HBW 10/3000	260	250
Rockwell hardness	HRC	26	25
Reduction of area $\psi$	%	4	3
Compressive strength $R_{mc}$	MPa	1200	1100
Compressive strength, 0.1 % perm. set	MPa	720	680
Shear strength $R_{cm}$	MPa	530	520
Modulus of elasticity E	GPa	120	110
Charpy $a_K$	J	5	4
Fatigue (100'000'000 cycles) $\sigma_N$	MPa	250	240
Density $\rho$	g / cm <sup>3</sup>	7.45	
Coefficient of expansion $\alpha$	10 <sup>-6</sup> / K	16	
Thermal conductivity $\lambda$	W / m · K	42	
Electrical conductivity $\gamma$	m / $\Omega \cdot$ mm <sup>2</sup>	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<sup>®</sup> 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<sup>®</sup> 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, cores and cavities in plastic injection molds and so on...