Technical Data Sheet

AMPCO® 45

Extruded and drawn rods

Nominal composition:

Aluminium	(Al)	10.0%
Iron	(Fe)	2.5%
Nickel	(Ni)	5.0%
Manganese	(Mn)	1.0%
Others		max. 0.5%
Copper	(Cu)	balance

Mechanical and physical properties	Units	Nominal Values		
		Ø ≤ 1''	Ø 1'' – 2''	Ø > 2''
Tensile strength R_m	KSI	118	115	112
Yield strength $Rp_{0.5}$	KSI	75	65	61
Elongation in 2"	%	15	18	20
Brinell hardness	BHN 30	228	217	212
Rockwell hardness	HRB	98	96	96
Reduction of area ψ	%	15	20	20
Compressive strength R_{mc}	KSI	150	145	140
Compressive strength, 0.1 % perm. set	KSI	44	…	…
Proportional limit in compression R_{pc}	KSI	40	40	38
Shear strength R_{cm}	KSI	70	69	65
Modulus of elasticity E	KSI	17000	17000	17000
Charpy $_{aK}$	LBS.FT	8	8	8
Izod $_{aK}$	LBS.FT	10	10	10
Fatigue (100'000'000 cycles) σ_N	KSI	38	37	37
Density ρ	LBS / IN³	0.272		
Coefficient of expansion α	IN / IN / °F	$9 \cdot 10^{-6}$		
Thermal conductivity λ	CGS	0.109		
Electrical resistivity γ (1 mm^2 section)	Microhms/ m	200		
Electrical conductivity	% I.A.C.S.	9		
Specific heat c_p	BTU / LB. °F	0.1		

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

For material released per AMS 4640 specification, minimum hardness is not applicable as long as requirements for tensile are met.

AMPCO® 45 is a high strength alloy with mechanical properties beyond the range of commercial nickel-aluminium bronzes. This is due to its special manufacturing process.

APPLICATIONS:

AMPCO® 45 is recommended for heavy-duty high-loaded mechanical and corrosive applications. Typical applications involving abrasive wear, friction, deformation, chemical erosion include:

- aircraft bearings / bushings
- pump and marine shafts and wear rings
- valve spindles and seats
- machine tool parts

The spark-resistance properties make it suitable for safety tools and machine tool components in explosive environments.

Specification: AMS 4640, ASTM B.150