

# TOUGHMET 3 AT ASTM B 929 C72900 AMS 4596

WROUGHT ROD, HOLLOW & PLATE



James Coppell Lee

**Toughmet3 AT:** Is a wrought spinodally hardened copper alloy.

High Strength, Anti-Galling Properties, Low Magnetic Susceptibility, Excellent Machinability

Corrosion Resistance, Superior Bearing Properties. Strength and Lubricity.

The tough alloy for tough environments, providing more up-time, greater reliability with better design flexibility.

**AUTOMOTIVE, MINING, OIL & GAS, OFF SHORE DRILLING, AEROSPACE.**

Toughmet will out- perform other copper alloys and steel:

- Under high loads at low or high speed.
- Lubricated, intermitted lubrication or lubrication starved.
- At temperatures ranging from 205 C to 260 C.
- Mated with a variety of materials.

CHEMICAL COMPOSITION		
Copper	Nickel	Tin
REM	15%	8%

ToughMet® 3 AT (Wrought and Spinodally Hardened)					
Temper	Outside Diameter (in.)	Yield Strength (0.2% ksi)	Tensile Strength (ksi)	Elongation (%)	Hardness (Rockwell)
T3AT90	Under 4"	90	110	15	HRC 22
	4" +	90	110	12	HRC 22
T3AT110	Under 4"	110	125	10	HRC 30
	4" +	110	125	6	HRC 30
T3AT120	Under 4"	120	135	7	HRC 32
	4" +	120	135	4	HRC 32

TYPICAL MECHANICAL PROPERTIES - COMPARISON												
Material	UNS Number	Chemical Composition %	Yield Strength		Tensile Strength		Elongation (%)	Hardness	Modulus of Elasticity		Fatigue Strength (10 Cycles)	
			(ksi)	(MPa)	(ksi)	(MPa)			(10 <sup>3</sup> ksi)	(10 <sup>3</sup> MPa)	(ksi)	(MPa)
ToughMet® 3	C72900	15 Ni, 8 Sn, Balance Cu	110	758	125	862	10	HRC 30	18.5	128	40	275
Manganese Bronze	C86300	22-28 Zn, 2-4 Fe, 5-8 Al, 2.5-5 Mn, 1 Ni, 60-66 Cu	60	415	110	760	12	HRB 90	14.2	98	25	170
Aluminium Bronze	C95400	3-5 Fe, 10-11.5 Al, 1.5 Ni, .5 Mn, 83 Min Cu	30	205	75	515	12	HRB 81	15.5	105	28	195
Leaded Tin Bronze	C93200	6.3-7.5 Sn, 6-8 Pb, 1-4 Zn, 81-85 Cu	14	95	30	205	10	HRB 27	14.5	100	10	70