

OVERVIEW

MEI-90 (Commercial Bronze) has very good cold forming characteristics with higher strength than pure copper. Good welding and brazing. Good resistance to stress corrosion cracking and dezincification, with a warm bronze appearance ideal for decorative and electrical applications.

CHEMICAL COMPOSITION (wt. %)		ALLOY DESIGNATIONS		COIL / SHEET SPECIFICATIONS	
Element	Composition (%)	Standard	Designation	Specification	Range
Cu	89.00 – 91.00	IS	IS 2768	Thickness (mm)	0.04 – 3.0
Fe	≤0.05	ASTM	C22000	Width (mm)	6.00 – 406
Pb	≤0.02	BS 2870	CZ101	Inner Dia. (mm)	100/150/200/300/400/500
Ni	≤0.10	DIN 17660	2.0230	Coil Wt. (kg/mm)	1.0 – 4.0
Zn	Rem.	EN 1652	CW501L	Sheet Length (m)	0.50 – 4.00
		JIS 3100	C2200		

MECHANICAL PROPERTIES — typical values at 20°C

Temper	HV	Tensile MPa	Elong. %	Grain Size mm
Annealed	55–75	≥245	≥35	0.035–0.060
1/4 Hard	75–95	275–325	≥15	0.015–0.045
1/2 Hard	95–110	325–375	≥7	≤0.015
Hard	110–140	≥350	≥3	≤0.010
Extra Hard	130–145	≥440	—	—
Spring Hard	140–160	≥475	—	—

PHYSICAL PROPERTIES — annealed temper at 20°C

Density (g/cm³)	Elec. Conductivity (% IACS)	Thermal Conductivity (W/m·K)	Modulus of Elasticity (GPa)	Specific Heat (J/kg·K)
8.80	43	184	124	376

FABRICATION PROPERTIES

Fabrication Property	Rating	Fabrication Property	Rating
Capacity for Cold Working	Excellent	Soft Soldering	Excellent
Machinability	Less suitable	Resistance Welding	Good
Electroplating	Excellent	Gas Shielded Arc Welding	Good
Hot Dip Tinning	Excellent	Laser Welding	Fair

CORROSION RESISTANCE

MEI-90 has good resistance to fresh water, natural or alkaline saline solutions, organic compounds and land, sea and industrial atmosphere. Less sensitive to dezincification and stress corrosion cracking. Not resistant to acids, hydrous sulphur compounds or hydrous ammonia in non-stress relieved condition.

TYPICAL APPLICATIONS

- Small arms cartridges, artillery projectile rotating bands, primer caps
- Costume jewelry and ornamental trim
- Components for the electrical industry
- Screw shells, bolts, line clamps, rivets, marine hardware