

DMERCUSI-A Premium Silicon Bronze Wire

Classification: *ERCuSi-A* *AWS A5.7 / ASME SFA* *Silicon Bronze*

Characteristics, Application or Usage:

DuraMax ERCUSI-A is a silicon bronze welding alloy for the inert gas welding of copper-silicon, copper zinc, copper to themselves, and also to mild steel. It can be used extensively in the welding of galvanized steel. The silicon content of 2.8 - 4.0%(as per AWS spec.) increases tensile strength, hardness, and work hardening rates. DMERCUSI-A also provides good corrosion resistance and has good weldability. It is hot short and extreme care must be exercised to avoid overheating the joint which tends to cause cracking.

All Weld Chemical Composition (%)

Cu	Zn	Sn	Mn	Fe	Si	Al	Pb	TOE
Remainder	1.0 max	1.0 max	1.5 max	0.50 max	2.8 - 4.0	0.01 max	0.02 max	0.50 max

Typical Weld Metal Mechanical Properties:

Tensile Strength (PSI)	Elongation % in 2 inch	Hardness (Brinell)
50,000	40%	80 - 100 HBW

Sizes Available and Weld Parameters:

Process	Size	Volts	AMPS	Speed/Flow	Shielding Gas / Flux
GTAW (DCEN)	1/16	---0---	70 - 120	40 - 55 CFH	100% Helium or 100% Argon
	3/32	---0---	120 - 160	40 - 55 CFH	100% Helium or 100% Argon
	1/8	---0---	170 - 230	40 - 55 CFH	100% Helium or 100% Argon
GMAW(DCEP)	0.035	20 - 36	100 - 200	45 - 55 CFH	100% Argon or 75% Argon + 25% Helium
	0.045	22 - 28	100 - 200	45 - 55 CFH	100% Argon or 75% Argon + 25% Helium
	1/16	29 - 32	250 - 400	45 - 55 CFH	100% Argon or 75% Argon + 25% Helium
	3/32	32 - 34	350 - 500	45 - 55 CFH	100% Argon or 75% Argon + 25% Helium

Preheat and Interpass Recommendations:

*Preheating copper - base alloys is frequently unnecessary provided section thicknesses are not unusually heavy.

*Preheat and Interpass temperatures will vary depending on section thickness, selected weld process and other variables.