

Copper and Copper Alloy Bare Wire

Alloy: ERCuAl-A1  
Class: ERCuAl-A1

Conforms to Certification: AWS – A5.7  
ASME SFA A5.7

Aluminum Bronze A1

Alloy ERCuAl-A1

Weld Process: Gas Metal Arc (Mig) – Gas Tungsten Arc (Tig)

AWS Chemical Composition Requirements

Cu = Remainder                      Si = 0.10 max  
Zn = 0.20 max                        Al = 6.0 – 8.5  
Mn = 0.50 max                        Pb = 0.02 max  
Other = 0.50 max

(Nominal) All Weld Metal Properties Requirements

Yield Strength                        28,000psi  
Tensile Strength                      68,000psi  
Elongation                              47%  
Reduction of Area                      53%

Deposited Chemical Composition % (Typical)

Dependent on weld process

Application

ERCuAl-A1 is an iron free aluminum bronze. Recommended for uses as an overlay material for wear resistant surfaces; it is not recommended for joining applications since the deposit does have a tendency to be hot short.

Recommended Welding Parameters

<u>Process</u>	<u>Diameter of Wire</u>	<u>Voltage (V)</u>	<u>Amperage (A)</u>	<u>Gas</u>	
Tig - GTAW (DCEN)	1/16 inches x 36	--- 0 ---	70 - 120	100% Helium or 100% Argon	40 - 55 CFH
	3/32 inches x 36	--- 0 ---	120 - 160	100% Helium or 100% Argon	40 - 55 CFH
	1/8 inches x 36	--- 0 ---	170 - 230	100% Helium or 100% Argon	40 - 55 CFH
MIG - GMAW (DCEP)	.035 inches	20 – 26	100 – 200	100% Argon or 75% Argon, 25% Helium	45 - 55 CFH
	.045 inches	22 – 28	100 – 200	100% Argon or 75% Argon, 25% Helium	45 - 55 CFH
	1/16 inches	29 – 32	250 – 400	100% Argon or 75% Argon, 25% Helium	45 - 55 CFH
	3/32 inches	32 – 34	350 – 500	100% Argon or 75% Argon, 25% Helium	45 - 55 CFH

Preheat / 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.

