

Copper & Copper Alloy Wire

Alloy: WWNA67
 Class: ERCuNi

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

Alloy: ERCuNi (Alloy 67)

Weld Process: GMAW, GTAW and ASAW and Oxy-Fuel Welding Processes

AWS Chemical Composition Requirements

Cu = Remainder Ni = 29.0 – 32.0
 Mn = 1.0 max P = 0.02
 Fe = 0.40 – 0.75 Pb = 0.02
 Si = 0.25 max Ti = 0.20 – 0.50
 Other = 0.50 max

Deposited All Weld Metal Properties % (AW)

Tensile Strength 54,000psi
 Yield Strength 21,500psi
 Elongation 32%

Deposited Chemical Composition % (Typical)

Ni = 31.0 Mn = 0.75 P = 0.006
 Cu = Balance Si = 0.10 Ti = 0.35
 Fe = 0.55

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ERCuNi (NA67) is used for gas metal and gas tungsten arc welding. Can also be used by oxy-fuel welding of 70/30, 80/20, and 90/10 copper nickel alloys. A barrier layer of nickel alloy 610 is recommended prior to overlaying steel with GMAW weld process.

Recommended Welding Parameters for TIG, MIG, and SAW Welding of Nickel Alloys

<u>Process</u>	<u>Diameter of Wire</u>	<u>Voltage (V)</u>	<u>Amperage (A)</u>	<u>Gas</u>
Tig	.035 inches x 36	12 -15	60 -90	100% Argon
	.045 inches x 36	13 -16	80 - 110	100% Argon
	1/16 inches x 36	14 - 18	90 - 130	100% Argon
	3/32 inches x 36	15 – 20	120 -175	100% Argon
	1/8 inches x 36	15 – 20	150 - 220	100% Argon
MIG	.035 inches	26 – 29	150 – 190	75% Argon + 25% Helium
	.045 inches	28 – 32	180 – 220	75% Argon + 25% Helium
	1/16 inches	29 – 33	200 - 250	75% Argon + 25% Helium
SAW	3/32 inches	28 – 30	275 – 350	Suitable Flux may be used
	1/8 inches	29 – 32	350 – 450	Suitable Flux may be used
	5/32 inches	30 – 33	400 – 550	Suitable Flux may be used

Note: Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, cost, and Operability into consideration.

Note: Both agglomerated and fused fluxes can be used for submerged arc welding.

Note: The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and mechanical properties.

