WELDWIRE COMPANY, INC.   Technical Information

Nickel Alloy Wire

Alloy: WWNA82   Conforms to Certification: AWS A5.14
Class: ERNiCr-3   ASME SFA A5.14

Alloy: ERNiCr-3 (Alloy 82)
Weld Process: GMAW, GTAW and ASAW Welding Processes

AWS Chemical Composition Requirements

C = 0.10 max   Cu = 0.50 max
Mn = 2.5 – 3.5   Ni = 67.0 min
Fe = 3.0 max   Co = 0.12 max
P = 0.03 max   Ti = 0.75 max
S = 0.015 max   Cr = 18.0 – 22.0
Si = 0.50 max   Cb/Ta = 2.0 – 3.0
Other = 0.50 max

Deposited All Weld Metal Properties % (AW)

Tensile Strength	85,500psi
Yield Strength	52,500psi
Elongation	38%

Deposited Chemical Composition % (Typical)

C = 0.03   P = 0.003   Ni = 72.9
Mn = 2.85   S = 0.001   Cr = 20.4
Fe = 1.1   Si = 0.22   Cb/Ta = 2.5

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ERNiCr-3 (NA82) is used for welding Inconel alloy 600 and Incoloy 800, overlaying on steel and various dissimilar metal welding applications. Weld processes which can be used include GTAW, GMAW and ASAW.

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

Process	Diameter of Wire	Voltage (V)	Amperage (A)	Gas
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.

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If additional information is needed Contact Weldwire Company, Inc. 800-523-1266