

Nickel Alloy Wire

Weld Process: GMAW, GTAW & SAW

Class: ERNiCr-3

Conforms to Certification: AWS A5.14 ASME SFA 5.14

Alloy: DMNA082 / ERNiCr-3

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 SAW.

AWS Chemical Composition Requirements

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

Deposited Chemical Composition % (Typical)

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

Deposited All Weld Metal Properties % (AW)

Tensile Strength	Yield Strength	Elongation	Charpy-V-Notch Impact Properties
85,500psi	52,500psi	38%	Not applicable

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

Notes

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

For additional information please visit our website at Duramax-weld.com or email info@duramax-weld.com