

DURAMAX NICKEL ALLOY ELECTRODE DMALLOY-A

Classification: ENiCrFe-2 AWS A5.11 / ASME SFA 5.11

Description, Characteristics & Applications:

DURAMAX ALLOY-A ENiCrFe-2 has a nominal composition (wt.-%) of 70 Ni, 15 Cr, 8 Fe, 2 Mn, 2 Nb + Ta, 1.5 Mo. Electrodes of this classification are used for welding nickel-chromium-iron alloys, 9% nickel steel, and a variety of dissimilar metal joints (involving carbon steel, stainless steel, nickel, and nickel-base alloys). The base metals can be wrought or cast (welding grade), or both. The electrodes may be used for applications at temperatures ranging from cryogenic to around 1800°F. However, for temperatures above 1500°F, weld metal produced by DMALLOY-A does not exhibit optimum oxidation resistance and strength. Typical specifications for the nickel-chromium-iron base metal are ASTM B 163, B 166, B 167, and B 168, all of which have a UNS Number of N06600.

DMALLOY-A provides excellent results over a wide range of general fabrication welding requirements, especially those in harsh service environments.

Typical Chemical Composition (%)

C	Mn	Fe	P	S	Si	Cu	Ni	Cr	Nb+Ta	Mo	TOE
0.10 max	1.0-3.5	12.0 max	0.03 max	0.02 max	0.75 max	0.50 max	62.0 min	13.0-17.0	0.5-3.0	0.5-2.5	0.50 max

Deposited Chemical Composition (%) (Typical)

C	Mn	Fe	P	S	Si	Cu	Ni	Cr	Nb+Ta	Mo	TOE
0.034	2.35	8.67	0.01	0.01	0.27	0.026	70.09	16.6	0.76	0.98	<0.50

Typical Mechanical Properties as Welded

Tensile Strength (n/mm ²)	Yield Strength (n/mm ²)	Elongation (%)	Hardness	Ferrite WRC (FN)	CVN Impacts (J)
					@ °C
590	-----	40% Min	-----	-----	-----

Typical Welding Parameters DCEP or AC

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP	70 - 80	65 - 80	20 - 23
1/8"	DCEP	80 - 110	75 - 95	21 - 24
5/32"	DCEP	120 - 160	Not recommended	22 - 25
3/16"	DCEP	170 - 190	Not recommended	23 - 25

NOTE: Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material being welded.

POLARITY: DCEP

DCEP: DC, Electrode Positive (reverse polarity) has the most weld penetration

USE LESS AMPS ON THIN METAL; MORE AMPS ON THICK METALS

If additional information is needed visit us on the web at www.duramaxwelding.com