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 (%)

AWS Spec.	C	Mn	Fe	P	S	Si	Cu	Ni	Cr	Nb + Ta
A5.11	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
Typical	0.034	2.35	8.67	0.01	0.01	0.27	0.026	70.09	16.6	0.76

AWS Spec.	Mo	TOE								
A5.11	0.5 - 2.5	0.50 max								
Typical	0.98	<0.50								

Typical Mechanical Properties as Welded

Tensile Strength (n/mm²)	Yield Strength (n/mm²)	Elongation (%)
590	-----	40% Min

Typical Welding Parameters DCEP

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