



E410NiMo-16 DATA SHEET

Pinnacle Alloys E410NiMo-16

AWS CLASS E410NiMo-16

CODE AND SPECIFICATION DATA:

AWS A5.4 ASME SFA 5.4; UNS W41016

DESCRIPTION:

Pinnacle Alloys E410NiMo-16 has a nominal composition (wt.-%) of 12 Cr, 4.5 Ni, 0.5 Mo. These electrodes are used for welding ASTM CA6NM (CA-6NM) castings or similar materials, as well as light-gauge Type 410, 410S, and 405 base metals. Weld metal deposited by these electrodes is modified to contain less chromium and more nickel than weld metal deposited by E410 electrodes. The objective is to eliminate ferrite in the microstructure, as ferrite has a deleterious effect on the mechanical properties of this alloy. Final postweld heat treatment should not exceed 1150°F. Higher temperatures may result in rehardening due to untampered martensite in the microstructure after cooling to room temperatures.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP) or AC**DIAMETERS:** 3/32", 1/8", 5/32", 3/16"**WELDING POSITIONS:** All positions

3/16" is recommended for use in flat and horizontal positions only

GUIDELINES: Preheat temperature 300°F min. Interpass temperature 500°F max.**TYPICAL DEPOSIT COMPOSITION:**

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.06	0.03
Chromium (Cr)	11.0-12.5	12.1
Copper (Cu)	0.75	0.05
Manganese (Mn)	1.00	0.50
Molybdenum (Mo)	0.4-0.7	0.50
Nickel (Ni)	4.0-5.0	4.70
Phosphorus (P)	0.04	0.03
Silicon (Si)	0.90	0.32
Sulfur (S)	0.03	0.001

NOTE: Single values are maximums.

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**FERRITE NUMBER AND PITTING RESISTANCE EQUIVALENT NUMBER:**

To obtain Ferrite Numbers or PRE_N, please contact SOWESCO technical support at the number below.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	PWHT*
Ultimate Tensile Strength	110,000 psi (760 MPa)	142,000 psi (980 MPa)
Percent Elongation in 2"	15%	18%

*Reflects post-weld heat treatment for 1 hour at 1125°F (±25°F); air cool to ambient.

TYPICAL WELDING PARAMETERS:

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP or AC	70-90	65-80	20-23
1/8"	DCEP or AC	80-120	80-95	21-24
5/32"	DCEP or AC	130-160	100-120	22-25
3/16"	DCEP or AC	160-190	Not recommended	23-26

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.

NOTICE: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for the use in the field. The manufacturer disclaims any warranty of merchantability of fitness for any particular purpose with respect to its products.

CAUTION: Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standards A49.1, "Safety in Welding and Cutting," published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33126: OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys SDS sheets may be obtained on the website below.