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ISO 9001:2008 REGISTERED
Certificate No.: 50040 & 50415

E630-16 DATA SHEET

Pinnacle Alloys E630-16
AWS CLASS E630-16
CODE AND SPECIFICATION DATA:
AWS A5.4 ASME SFA 5.4; UNS W37410

DESCRIPTION:
Pinnacle Alloys E630-16 has a nominal composition (wt.-%) of these electrodes 16.4 Cr, 4.7 Ni, 3.6 Cu. These electrodes are primarily designed for welding 17-4 (ASTM A 564 Type 630), 17-7, and some other precipitation-hardening stainless steels. The weld metal is modified to prevent the formation of ferrite networks in the martensite microstructure, which would have a deleterious effect on mechanical properties. Dependent on the application and weld size, the weld may be used either as-welded; welded and precipitation hardended; or welded, solution treated, and precipitation hardened. The mechanical properties of the alloy are greatly influenced by the heat treatment.

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

TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.05	0.03
Chromium (Cr)	16.00-16.75	16.3
Copper (Cu)	3.25-4.00	3.43
Manganese (Mn)	0.25-0.75	0.62
Molybdenum (Mo)	0.75	0.11
Nickel (Ni)	4.5-5.0	4.80
Phosphorous (P)	0.04	0.02
Silicon (Si)	0.75	0.36
Sulfur (S)	0.03	0.01
Niobium (Nb) +Tantalum (Ta)	0.15-0.30	0.16

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	135,000 psi (930 MPa)	150,000 psi (1,030 MPa)
Yield Strength	Not required	133,800 psi (920 MPa)
Percent Elongation in 2”	7%	10%

*Reflects post-weld heat treatment for 1 hour at 1875°F-1925°F; air cool to ambient; followed by precipitation hardening for 4 hours at 1135°F-1165°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	50-80	40-70	20-23
1/8”	DCEP or AC	85-110	75-100	21-24
5/32”	DCEP or AC	110-150	95-135	22-25
3/16”	DCEP or AC	130-200	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 CRF 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.

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