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E6013 DATA SHEET

Pinnacle Alloys E6013
AWS CLASS E6013
CODE AND SPECIFICATION DATA:
AWS A5.1 ASME SFA 5.1, F-2, A-1

DESCRIPTION:
Pinnacle Alloys E6013 has fast freeze characteristics that make it the perfect choice for welding applications that have poor fit-up conditions. This electrode produces a very stable arc with good weld bead appearance. Pinnacle Alloys E6013 is an excellent choice for sheet metal welding, general purpose fabrication, machine parts, metal buildings, and shaft build-up.

FEATURES:
- Excellent arc stability
- Fast-freeze
- Slag removes easily
- All-position

BENEFITS:
- Welding accuracy and efficiency
- Excellent for poor fit-up
- Quick clean up
- Welds in flat, horizontal, vertical, and overhead positions

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP), AC, or Direct Current Electrode Negative (DCEN)

DIAMETERS: 3/32”, 1/8”, 5/32”, 3/16”

STORAGE & RECONDITIONING: After opening, store at 60°F to 100°F and below 50% relative humidity or in a holding oven at 100°F to 120°F. Reconditioning should be for one hour at 250°F to 300°F.

RECOMMENDED WELDING TECHNIQUES:

Arc Length	- Average length (1/8” to 1/4”)
Flat	- Angle electrodes 10-15° from 90° with higher heat than E6011 electrodes
Vertical Up	- Reduce amperage from flat position
Vertical Down	- Use higher amperage and faster travel, staying ahead of puddle
Overhead	- Use slight whipping motion, multi-pass for build-up

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TYPICAL DEPOSIT COMPOSITION:

	Weld Metal Analysis (%)	AWS Spec (max)
Carbon (C)	0.08	0.20
Chromium (Cr)	0.04	0.20
Manganese (Mn)	0.39	1.20
Molybdenum (Mo)	0.01	0.30
Nickel (Ni)	0.04	0.30
Phosphorous (P)	0.012	Not required
Silicon (Si)	0.25	1.00
Sulfur (S)	0.016	Not required
Vanadium (V)	0.01	0.08

TYPICAL MECHANICAL PROPERTIES:

	As Welded	AWS Spec (min)
Ultimate Tensile Strength	74,000 psi (514 MPa)	60,000 psi (414 MPa)
Yield Strength	67,000 psi (463 MPa)	48,000 psi (331 MPa)
Percent Elongation in 2”	30%	17%
Reduction of Area	25% to 55%	Not required

TYPICAL WELDING PARAMETERS:

Diameter	Type of Power	Amperage	Deposition Rate (lbs/hr)	Deposition Efficiency %	Amperage Range	Volts Range
3/32”	**DCEP, AC, or DCEN**	**70**	**1.35**	**63.7**	40-80	19-24
1/8”	**DCEP, AC, or DCEN**	**100**	**1.85**	**66.1**	70-120	18.5-22.5
5/32”	**DCEP, AC, or DCEN**	**150**	**2.67**	**61.6**	130-160	20-24
3/16”	**DCEP, AC, or DCEN**	**190**	**4.22**	**62.7**	140-220	20-22.5

NOTE: Optimum conditions are in boldface type. For out of position welding, decrease amperage by 15%. Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of steel 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, 550 NW LeJune Road, 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 MSDS sheet may be obtained at www.pinnaclealloys.com.