Pinnacle Alloys

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E8018-C2 DATA SHEET

Pinnacle Alloys E8018-C2
AWS CLASS E8018-C2 H4
CODE AND SPECIFICATION DATA:
AWS A5.5 ASME SFA 5.5, F-4, A-10

DESCRIPTION:
Pinnacle Alloys E8018-C2 is excellent for low temperature applications requiring tensile strengths greater than 80,000 psi and for welding 2% to 4% nickel steels. The coating is specially formulated to reduce moisture pick-up, minimizing hydrogen cracking and starting porosity. It is an outstanding choice for conditions of high heat and humidity. Pinnacle Alloys E8018-C2 is an excellent choice for shipbuilding, piping, and gas storage tanks.

FEATURES:
- Good arc characteristics
- Quick and easy slag removal
- Low moisture reabsorption
- Low smoke level
- Low hydrogen, less than 4 ml/100 g
- Low spatter level

BENEFITS:
- Stable, easy to control arc
- Reduces clean-up time
- Prevents starting porosity
- Welder safety and comfort
- Resistant to hydrogen-induced cracking
- Improves weld bead appearance, higher deposition

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

DIAMETERS: 3/32”, 1/8”, 5/32”, 1/4”

RECONDITIONING & STORAGE: If electrode has been exposed to the atmosphere for an extended period of time, place in 250°F oven and slowly increase temperature to 600°F; bake at 600°F for one hour. After opening, store in holding oven (250°F to 300°F) until used to ensure low hydrogen weld deposit.

RECOMMENDED WELDING TECHNIQUES:

General	- Electrode positive, work negative (DCEP)
Arc Length	- Very short arc (less than half the diameter of the electrode)
Flat	- Angle electrode 10°-15° from 90°
Vertical Up	- Use weaving techniques
Vertical Down	- Not recommended
Overhead	- Use slight weaving motion within the puddle

TYPICAL DIFFUSIBLE HYDROGEN BY GAS CHROMATOGRAPHY: 3.0 ml/100g

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TYPICAL DEPOSIT COMPOSITION:

	Weld Metal Analysis (%)	AWS Spec
Carbon (C)	0.04	0.12 max
Manganese (Mn)	0.90	1.25 max
Nickel (Ni)	3.62	3.00-3.75
Phosphorous (P)	0.01	0.03 max
Silicon (Si)	0.42	0.80 max
Sulfur (S)	0.01	0.03 max

TYPICAL MECHANICAL PROPERTIES:

	SR 1 Hr. @ 1125°F	AWS Spec (min)
Ultimate Tensile Strength	94,000 psi (647 MPa)	80,000 psi
Yield Strength	83,000 psi (572 MPa)	67,000 psi
Percent Elongation in 2”	29%	19%
CVN @ -100°F	92 ft•lb$_f$ (125 Joules)	20 ft•lb$_f$ (27 Joules)

TYPICAL WELDING PARAMETERS:

Diameter	Type of Power	Amperage	Deposition Rate (lbs/hr)	Amperage Range
3/32”	**DCEP**	**100**	**2.47**	70-110
1/8”	**DCEP**	**135**	**2.87**	90-160
5/32”	**DCEP**	**170**	**3.84**	130-220
1/4”	**DCEP**	**350**	**8.20**	300-400

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.