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## E7018/E7018-1 DATA SHEET

### Pinnacle Alloys E7018/E7018-1

AWS CLASS E7018-1 H4R

#### CODE AND SPECIFICATION DATA:

AWS A5.1 ASME SFA 5.1, F-4, A-1

#### DESCRIPTION:

Pinnacle Alloys E7018/E7018-1 is a high deposition rate iron powder electrode designed for DC reverse polarity or AC operation in all positions. It provides excellent operator appeal with a quiet arc, minimal spatter, and good restrike capabilities. It offers good slag removal and an easily controlled weld puddle that allows outstanding ease when welding in either the vertical or overhead position. Pinnacle Alloys E7018/E7018-1 is an excellent choice for out-of-position tacking, welding low alloy structural, steel structures, field erections, offshore rigs, and power plants.

#### FEATURES:

- Excellent starts and restarts
- Extra low moisture
- Stable arc
- Low spatter

#### BENEFITS:

- Great for tacking, increases productivity
- Prevents starting porosity
- Easy to control, operates well in all positions
- Easy clean up

**TYPE OF CURRENT:** Direct Current Electrode Positive (DCEP) or AC

**DIAMETERS:** 3/32", 1/8", 5/32", 3/16", 7/32", 1/4"

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

#### RECOMMENDED WELDING TECHNIQUES:

Arc Length - Very short (less than half the diameter of the electrode)  
 Flat - Angle electrode 10-15° from 90°  
 Horizontal - Angle electrode slightly toward top plate  
 Vertical Up - Use weaving technique  
 Vertical Down - Not recommended  
 Overhead - Use slight weaving motion within the puddle

**TYPICAL DIFFUSIBLE HYDROGEN BY GAS CHROMATOGRAPHY:** 2.1 ml/100g  
**AWS Spec:** 4.0 ml/100g



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#### TYPICAL DEPOSIT COMPOSITION:

	Weld Metal Analysis (%)	AWS Spec (max)
Carbon (C)	0.05	0.15
Chromium (Cr)	0.05	0.20
Manganese (Mn)	0.93	1.60
Molybdenum (Mo)	0.01	0.30
Nickel (Ni)	0.04	0.30
Phosphorous (P)	0.012	0.035
Silicon (Si)	0.38	0.75
Sulfur (S)	0.009	0.035
Vanadium (V)	0.01	0.08
Mn + Ni + Cr + Mo + V	1.04	1.75

#### TYPICAL MECHANICAL PROPERTIES:

	As Welded	AWS Spec (min)
Ultimate Tensile Strength	77,000 psi (529 MPa)	70,000 psi
Yield Strength	64,000 psi (441 MPa)	58,000 psi
Percent Elongation in 2"	32%	22%
CVN @ -50°F	86 ft•lb <sub>f</sub> (117 Joules)	20 ft•lb <sub>f</sub> (27 Joules)

#### TYPICAL WELDING PARAMETERS:

Diameter	Type of Power	Amperage	Volts	Deposition Rate (lbs/hr)	Deposition Efficiency %	Amperage Range
3/32"	<b>DCEP or AC</b>	<b>90</b>	<b>22.0</b>	<b>1.8</b>	<b>62.7</b>	70-110
1/8"	<b>DCEP or AC</b>	<b>130</b>	<b>26.5</b>	<b>2.6</b>	<b>73.1</b>	90-160
5/32"	<b>DCEP or AC</b>	<b>170</b>	<b>28.0</b>	<b>3.9</b>	<b>62.5</b>	110-230
3/16"	<b>DCEP or AC</b>	<b>250</b>	<b>28.5</b>	<b>5.2</b>	<b>69.2</b>	190-300
7/32"	<b>DCEP or AC</b>	<b>290</b>	<b>30.0</b>	<b>7.3</b>	<b>69.7</b>	240-340
1/4"	<b>DCEP or AC</b>	<b>350</b>	<b>32.0</b>	<b>8.0</b>	<b>70.6</b>	310-390

**NOTE:** Optimum conditions are in boldface type. For out of position welding, decrease amperage by 15%. These values were calculated using optimum parameters and DCEP polarity. Allowance made for 2" stub loss. 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 CFR 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](http://www.pinnaclealloys.com).