AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER70S-3 DATA SHEET

Pinnacle Alloys ER70S-3 / Premier S-3
AWS CLASS ER70S-3
CODE AND SPECIFICATION DATA:
AWS A5.18 ASME SFA 5.18; UNS K11022

DESCRIPTION:
Pinnacle Alloys ER70S-3 is used for single-pass and multipass applications. Typical specifications for these steels are ASTM A 36, A 285-C, A 515-55, and A 516-70, which have UNS Numbers K02600, K02801, K02001, and K02700, respectively.

DIAMETERS: .035", .045", 1/16", 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)	0.06-0.15	0.073
Chromium (Cr)	0.15	0.027
Copper (Cu)	0.50	0.16
Manganese (Mn)	0.9-1.4	1.14
Molybdenum (Mo)	0.15	0.003
Nickel (Ni)	0.15	0.010
Phosphorus (P)	0.025	0.013
Silicon (Si)	0.45-0.75	0.66
Sulfur (S)	0.035	0.009
Vanadium (V)	0.03	0.003

NOTE: Single values are maximums.

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TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	70,000 psi (480 MPa)	83,000 psi (550 MPa)
Yield Strength	58,000 psi (400 MPa)	70,000 psi (480 MPa)
Percent Elongation in 2”	22%	32%
CVN @ 0°F (-20°C)	20 ft•lb_f (27 Joules)	88 ft•lb_f (120 Joules)

TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	1/16”	50-150	9-13	100% Ar
	3/32”	85-250	9-15	
	1/8”	90-280	10-19	
	5/32”	120-320	10-19	
GMAW Spray Transfer	.035”	280-320	27-30	98% Ar/ 2% O_2
	.045”	300-360	27-29	
GMAW Short-Circuit	.035”	140-200	16-20	75% Ar/ Balance CO_2
	.045”	160-280	18-30	

NOTE: 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, 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.