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ER70S-A1 DATA SHEET

Pinnacle Alloys ER70S-A1

AWS CLASS ER70S-A1

CODE AND SPECIFICATION DATA:

AWS A5.28 ASME SFA 5.28

DESCRIPTION:

Pinnacle Alloys ER70S-A1 is a low alloy copper-coated solid wire with 0.5% Mo content designed for welding low alloy steels with high tensile strength and creep resistant steels. It has good impact strength at low temperatures. Pinnacle Alloys ER70S-A1 is suitable for pipelines and pressure vessels with operating temperatures of about 930°F (500°C).

BASE MATERIALS TO BE WELDED:

- A204 Gr A
- A204 Gr B
- A204 Gr C
- A209 Gr T1
- A217 Gr WC1
- A250 Gr T1
- A335 Gr P1
- A336 Gr F1
- A352 Gr LC1
- A487 Gr 2A
- A487 Gr 2B
- A487 Gr 2C

DIAMETERS: .035", .045", 1/16", 3/32", 1/8", 5/32"

WELDING POSITIONS: All positions

WELDING GUIDELINES: Preheat and interpass temperature 300°F (150°C). PWHT is not required.

TYPICAL DEPOSIT COMPOSITION (Wt %):

Carbon (C)	0.09
Copper (Cu)	0.12
Manganese (Mn)	1.20
Molybdenum (Mo)	0.50
Phosphorous (P)	0.01
Silicon (Si)	0.60
Sulfur (S)	0.01

TYPICAL MECHANICAL PROPERTIES (as welded):

Ultimate Tensile Strength (psi)	89,930 psi (620 MPa)
Yield Strength (psi)	72,520 psi (500 MPa)
Percent Elongation	25%
CVN (ft•lb _i) @ 68°F (20°C)	120 ft•lbs (150 Joules)
CVN (ft•lb _i) @ 32°F (0°C)	100 ft•lbs (130 Joules)
CVN (ft•lb _i) @ -4°F (-20°C)	70 ft•lbs (90 Joules)



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TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	.035"	50-70	10-12	100% Ar
	.045"	70-100	10-12	
	1/16"	100-125	12-15	
	3/32"	125-175	15-20	
	1/8"	175-250	15-20	
	5/32"	175-250	15-20	
GMAW – Spray Transfer	.035"	165-200	28-32	80-85% Ar/ Bal CO ₂ 95-98% Ar/ Bal O ₂
	.045"	180-220	30-34	
	1/16"	230-260	30-34	
GMAW – Short Circuiting Transfer	.035"	100-140	22-25	100% CO ₂ *
	.045"	120-150	23-26	75% Ar/ 25% CO ₂ **

*With 100% CO₂ gas shielding, weld metal undergoes short circuit or globular transfer.

**Only facilitates short circuit or globular transfer.

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.