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ISO 9001:2015 REGISTERED
Certificate No.: 50040 & 50415

E410T1-1/4 DATA SHEET

Pinnacle Alloys E410T1-1/4

AWS CLASS E410T1-1, E410T1-4

CODE AND SPECIFICATION DATA:

AWS A5.22 ASME SFA 5.22; UNS W41031

DESCRIPTION:

Pinnacle Alloys E410T1-1/4 has a nominal composition (wt.-%) of 12 Cr. This alloy is an air-hardening steel, and therefore, requires preheat and postheat treatments in order to achieve welds of adequate ductility for most engineering purposes. The most common application of electrodes of this classification is for welding alloys of similar composition. They also are used for surfacing of carbon steels to resist corrosion, erosion, or abrasion, such as that occurs in valve seats and other valve parts. Pinnacle Alloys E410T1-1/4 provides good corrosion and oxidation resistance up to 1200°F. It delivers superb performance characteristics in all positions, has little spatter, and easy-to-remove slag. Minimal weaving is required to achieve a flat, well-washed bead.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

DIAMETERS: .045", 1/16"

SHIELDING GAS: 100% CO₂, 75-80% Ar/ balance CO₂, 35-50 cfh

WELDING POSITIONS: All positions
1/16" is recommended for use in flat and horizontal positions only



FERRITE NUMBER AND PITTING RESISTANCE EQUIVALENT NUMBER:

To obtain Ferrite Numbers or PRE_N, please contact SOWESCO technical support at the number below.



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TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.12	0.06
Chromium (Cr)	11.0-13.5	11.82
Copper (Cu)	0.75	0.05
Manganese (Mn)	1.20	0.41
Molybdenum (Mo)	0.75	0.001
Nickel (Ni)	0.6	0.025
Phosphorus (P)	0.04	0.010
Silicon (Si)	1.00	0.51
Sulfur (S)	0.03	0.008

NOTE: Single values are maximums.

TYPICAL MECHANICAL PROPERTIES:

CO ₂ Shielding Gas	AWS Spec (min)	SR – 1 Hr @ 1375°F
Ultimate Tensile Strength	75,000 psi (520 MPa)	96,700 psi (660 MPa)
Yield Strength	Not required	79,000 psi (540 MPa)
Percent Elongation in 2"	20%	20%

75% Ar/25% CO ₂ Shielding Gas	AWS Spec (min)	SR – 1 Hr @ 1375°F
Ultimate Tensile Strength	75,000 psi (520 MPa)	91,900 psi (630 MPa)
Yield Strength	Not required	73,400 psi (510 MPa)
Percent Elongation in 2"	20%	20%

TYPICAL WELDING PARAMETERS:

Diameter	WFS (ipm)	Amperage	Volts	ESO (in.)	Deposition Rate (lbs/hr)
.045"	250	130	24	5/8-3/4"	5.4
	300	160	26	5/8-3/4"	6.3
	425	200	28	5/8-3/4"	9.2
	780	270	34	5/8-3/4"	16.2
1/16"	150	170	25	3/4-1"	5.4
	195	215	27	3/4-1"	7.0
	240	250	28	3/4-1"	8.6
	320	305	29	3/4-1"	11.5

Note: Optimum conditions are in boldface type. Parameters reflect CO₂ shielding gas - reduce by 2 volts when using 75-80% Ar/ balance CO₂. Maintaining a proper welding procedure, including pre-



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heat and interpass temperatures, may be critical depending on the type and thickness of material 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 CFR 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.