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ISO 9001:2008 REGISTERED
Certificate No.: 50040 & 50415

PREMIER 712 DATA SHEET

Pinnacle Alloys Premier 712 (E71T-12C/12M)
AWS CLASS E71T-1C, E71T-1M, E71T-9C, E71T-9M, E71T-12C, E71T-12M
CODE AND SPECIFICATION DATA:
AWS A5.20 ASME SFA 5.20; UNS W07601, W07609, & W07612

DESCRIPTION:
Pinnacle Alloys Premier 712 (E71T-12C/12M) is a carbon steel electrode designed for single and multipass welding of carbon and certain low alloy steels. These electrodes are designed for use with DCEP power sources. They are characterized by a spray transfer, low spatter loss, flat to slightly convex bead contour, and a moderate volume of slag which completely covers the weld bead. These electrodes have a rutile base slag and have the ability to produce high deposition rates. The "-12" suffix indicates that the classification has been formulated to have good impact toughness and to meet the lower manganese requirements of the A-No. 1 Analysis Group in the ASME *Boiler and Pressure Vessel Code,* Section IX. They, therefore, have an accompanying decrease in tensile strength and hardness. Typical applications include ship building, structural fabrication, general fabrication, offshore structures, and piping. Typical base metal specifications for these steels are ASTM A 516, A 572, and materials with similar composition and strength.

DIAMETERS: .045", .052", 1/16"

WELDING POSITIONS: All positions

TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)	
		100% CO_2	75% Ar/ 25% CO_2
Carbon (C)	0.12	0.04	0.04
Manganese (Mn)	1.60	1.20	1.41
Phosphorus (P)	0.03	0.01	0.01
Silicon (Si)	0.90	0.40	0.50
Sulfur (S)	0.03	0.012	0.014

NOTE: Single values are maximums.

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TYPICAL MECHANICAL PROPERTIES:

100% CO_2 Shielding Gas	AWS Spec (min)	As Welded
Ultimate Tensile Strength	70,000-90,000 psi (490-620 MPa)	79,700 psi (550 MPa)
Yield Strength	58,000 psi (390 MPa)	73,900 psi (510 MPa)
Percent Elongation in 2”	22%	28%
CVN @ -20°F (-30°C)	20 ft•lb_f (27 Joules)	55 ft•lb_f (75 Joules)
CVN @ 0°F (-20°C)	Not required	70 ft•lb_f (95 Joules)

75% Ar/ 25% CO_2 Shielding Gas	AWS Spec (min)	As Welded
Ultimate Tensile Strength	70,000-90,000 psi (490-620 MPa)	87,500 psi (605 MPa)
Yield Strength	58,000 psi (390 MPa)	78,300 psi (540 MPa)
Percent Elongation in 2”	22%	28%
CVN @ -20°F (-30°C)	20 ft•lb_f (27 Joules)	66 ft•lb_f (90 Joules)
CVN @ 0°F (-20°C)	Not required	81 ft•lb_f (110 Joules)

TYPICAL WELDING PARAMETERS:

Diameter	Position	Optimum			Amperage Range	Voltage Range
		Amperage	Voltage	WFS (ipm)		
.045”	Flat	250	28	282	120-300	21-32
	Overhead	200	26	265	150-280	21-29
	Vertical Up	200	25	265	120-230	21-28
.052”	Flat	300	28	360	120-330	19-32
	Overhead	225	26	245	150-310	21-28
	Vertical Up	225	25	245	150-280	21-27
1/16”	Flat	350	29	300	150-400	22-34
	Overhead	225	26	160	150-310	22-28
	Vertical Up	225	25	160	150-280	22-27

NOTE: Parameters reflect CO_2 shielding gas - reduce by 2 volts when using 75-80% Ar/ balance CO_2. 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.

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