



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

ENiCu-7 DATA SHEET

Pinnacle Alloys ENiCu-7 (190)

AWS CLASS ENiCu-7

CODE AND SPECIFICATION DATA:

AWS A5.11 ASME SFA 5.11; UNS W84190

DESCRIPTION:

Pinnacle Alloys ENiCu-7 has a nominal composition (wt.-%) of 66 Ni, 30 Cu, 3 Mn, 1 Fe. Electrodes of this classification are used for welding nickel-copper alloys to themselves and to steel, for welding the clad side of joints in steel clad with a nickel-copper alloy, and for surfacing steel with nickel-copper alloy weld metal. Typical specifications for the nickel-copper base metal are ASTM B 127, B 163, B 164, and B 165, all of which have a UNS Number N04400. The weld metal is suitable for service both in the as-welded condition and after an appropriate post weld heat treatment. Qualification tests should be conducted beforehand to make certain the necessary properties can be obtained after the particular heat treatment is employed. Pinnacle Alloys ENiCu-7 is well suited for welding in salt, seawater, and reducing acid environments.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

DIAMETERS: 3/32", 1/8", 5/32", 3/16"

WELDING POSITIONS: All positions
5/32" & 3/16" recommended for use in flat & horizontal positions only



TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Aluminum (Al)	0.75	0.09
Carbon (C)	0.15	0.03
Copper (Cu)	Balance	Balance
Iron (Fe)	2.50	0.48
Manganese (Mn)	4.00	3.70
Nickel (Ni)	62.0-69.0	65.6
Phosphorus (P)	0.02	0.01
Silicon (Si)	1.50	0.80
Sulfur (S)	0.015	0.004
Titanium (Ti)	1.00	0.60

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)	78,000 psi (540 MPa)
Percent Elongation in 2"	30%	45%

TYPICAL WELDING PARAMETERS:

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP	70-90	65-80	20-23
1/8"	DCEP	80-110	75-95	21-24
5/32"	DCEP	120-160	Not recommended	22-25
3/16"	DCEP	170-190	Not recommended	23-26

NOTE: Maintaining a proper welding procedure, including pre-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.