



E347-16 DATA SHEET

Pinnacle Alloys E310-16

AWS CLASS E347-16

CODE AND SPECIFICATION DATA:

AWS A5.4 ASME SFA 5.4; UNS W34710

DESCRIPTION:

Pinnacle Alloys E347-16 has a nominal composition (wt.-%) of 19.5 Cr, 10 Ni, with Nb or Nb + Ta added as a stabilizer. Either of these additions reduces the possibility of intergranular chromium carbide precipitation and thus increases resistance to intergranular corrosion. These electrodes are usually used for welding chromium-nickel alloys of similar compositions stabilized either with niobium or titanium. Electrodes depositing titanium as a stabilizing element are not commercially available because titanium is not readily transferred across the arc in shielded metal arc welding. Although niobium is the stabilizing element usually specified in Type 347 alloys, it should be recognized that tantalum is also present. Tantalum and niobium are almost equally effective in stabilizing carbon and in providing high-temperature strength. If dilution by the base metal produces a low-ferrite or fully austenitic weld metal deposit, crack sensitivity of the weld metal may increase substantially. Some applications, especially those involving high-temperature service, are adversely affected if the ferrite content is too high. Consequently, a high-ferrite content should not be specified unless tests prove it to be absolutely necessary. Pinnacle Alloys E347-16 is to be utilized where conditions require maximum resistance to corrosion and is recommended where weld metal is subject to temperatures above 700°F, and was specially developed for welding grades of similar chemical composition such as 302, 304, 321, and 347.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP) or AC**DIAMETERS:** 3/32", 1/8", 5/32", 3/16"**WELDING POSITIONS:** All positions

3/16" 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.

SOWESCO, LLC

www.pinnaclealloys.com

9384 Wallisville Road • Houston, Texas 77013 • **1-800-856-9353** • (713) 688-9353 • Fax (713) 688-6985
2602 S. 50th Avenue • Phoenix, Arizona 85043 • **1-866-442-9353** • (602) 442-9353 • Fax (602) 442-9354

**TYPICAL DEPOSIT COMPOSITION:**

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.08	0.04
Chromium (Cr)	18.0-21.0	19.0
Copper (Cu)	0.75	0.09
Manganese (Mn)	0.5-2.5	0.70
Molybdenum (Mo)	0.75	0.14
Nickel (Ni)	9.0-11.0	9.50
Phosphorous (P)	0.04	0.03
Silicon (Si)	1.00	0.45
Sulfur (S)	0.03	0.008
Niobium (Nb) +Tantalum (Ta)	(8 x C) min – 1.0 max	0.40

NOTE: Single values are maximums.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	75,000 psi (520 MPa)	94,000 psi (650 MPa)
Percent Elongation in 2"	30%	42%

TYPICAL WELDING PARAMETERS:

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP or AC	70-90	65-80	20-23
1/8"	DCEP or AC	80-110	75-95	21-24
5/32"	DCEP or AC	120-160	100-120	22-25
3/16"	DCEP or AC	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.

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