



ER5356 DATA SHEET

Pinnacle Alloys ER5356

AWS CLASS ER5356

CODE AND SPECIFICATION DATA:

AWS A5.10 ASME SFA 5.10; UNS A95356

DESCRIPTION:

Pinnacle Alloys ER5356 has a nominal composition (wt.-%) of 5 Mg, balance Al. This filler metal is a non-heat-treatable wire used to weld the 5XXX series base metals to themselves and other alloys. It has become the most commonly used of all filler alloys because of its compatibility with most base alloys, its good strength, and its good feedability when used as a GMAW electrode wire. Pinnacle Alloys ER5356 typical applications include boats, ships, bicycles, trucks, pressure vessels, and automotive parts and equipment. This filler metal has one important limitation, which is its unsuitability at service temperatures exceeding 150°F. This is due to the formation of Al₂Mg at elevated temperatures at the grain boundaries, which makes the alloy prone to stress corrosion. This restricts its use when post-weld artificial aging. After anodizing, the color typically appears white.

DIAMETERS: .030", .035", .040", .045", 3/64", 1/16", 3/32", 1/8", 5/32"**WELDING POSITIONS:** All positions**TYPICAL DEPOSIT COMPOSITION:**

	AWS Spec	Weld Metal Analysis (%)
Aluminum (Al)	Balance	Balance
Beryllium (Be)	0.0003	0.0001
Chromium (Cr)	0.05-0.20	0.08
Copper (Cu)	0.10	0.01
Iron (Fe)	0.40	0.12
Magnesium (Mg)	4.50-5.50	4.80
Manganese (Mn)	0.05-0.20	0.15
Silicon (Si)	0.25	0.06
Titanium (Ti)	0.06-0.20	0.077
Zinc (Zn)	0.10	0.004

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NOTE: Single values are maximums.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	Not required	29,000 - 45,000 psi (200-310 MPa)
Yield Strength	Not required	12,000 - 30,000 psi (83-207 MPa)
Percent Elongation in 2"	Not required	10 - 18%
Density	Not required	0.096 lbs/in ³
Melting Range	Not required	1,060 - 1,175°F

TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	WFS (ipm)	Shielding Gas
GTAW	1/16"	60-80	Variable		100% Ar (AC – HF)
	3/32"	125-160			
	1/8"	190-220			
	5/32"	200-300			
GMAW	.030"	60-175	15-24	480-625	100% Ar (DCEP)
	.035"	70-185	15-27	450-750	
	3/64"	125-260	20-29	330-500	
	1/16"	170-300	24-30	250-450	

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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