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ERCuAl-A1 DATA SHEET

Pinnacle Alloys ERCuAl-A1

AWS CLASS ERCuAl-A1

CODE AND SPECIFICATION DATA:

AWS A5.7 ASME SFA 5.7

DESCRIPTION:

Pinnacle Alloys ERCuAl-A1 is an iron-free, aluminum bronze alloy available in spooled wire and 36" bare-filler metal rod for use with the gas metal-arc and gas tungsten-arc welding processes respectively. Pinnacle Alloys ERCuAl-A1 deposits are used primarily to overlay bearing and wear-resistant surfaces requiring a hardness of approximately 125 BHN and to resist corrosion especially from salt water, metal salts, and many commonly used acids in varying concentrations and temperatures. This alloy is not recommended for joining since the deposit does not have a tendency to be hot short. Pinnacle Alloys ERCuAl-A1 is typically used for tube sheets, pickling hooks, impellers, valve seats, chemical plants, and pulp mills.

DIAMETERS: .030", .035", .045", 1/16", 3/32", 1/8"

TYPICAL CHEMICAL COMPOSITION (Wt% filler metal):

Aluminum (Al)	6.00-8.50
Manganese (Mn)	0.50 max
Silicon (Si)	0.10 max
Copper (Cu) + Silver (Ag)	Balance
Others	0.50 max

TYPICAL MECHANICAL PROPERTIES (nominal all-weld metal values):

Ultimate Tensile Strength (psi)	68,000 psi (469 MPa)
Yield Strength (psi)	28,000 psi (193 MPa)
Percent Elongation in 2"	47%
Reduction of Area	53%
1/4" Deposit	125



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TYPICAL GMAW (MIG) WELDING PARAMETERS (DC Reverse Polarity; Electrode Positive Spray Transfer):

Diameter	WFS (ipm)	Amperage	Volts	Argon (cfh)
.030"	340-450	80-140	25-26	25
.035"	280-400	130-200	26-27	30
.045"	200-300	185-245	27-28	30
1/16"	150-210	250-400	28-30	40

TYPICAL GTAW (TIG) WELDING PARAMETERS (DCSP):

Material	2% Thoriated*	Filler Wire Size	Amperage (DC)	Amperage (AC)	Argon (cfh)	Gas Cup Size
1/16"	1/16"	1/16"	80-120	80-120	15	3/8" – 1/2"
3/32" – 1/8"	3/32"	3/32"	145-205	145-195	15	7/16" – 1/2"
3/16"	1/8"	3/32" – 1/8"	300-350	255-300	20	7/16" – 1/2"
1/2"	3/16"	1/8"	515-640	340-485	25	1/2"

* Electrode negative or ACHF.

NOTE: All parameters are suggested as basic guidelines and will vary depending on joint design, number of passes, and other factors.

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, 550 NW LeJune Road, 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 MSDS sheet may be obtained at www.pinnaclealloys.com.