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ERCu DATA SHEET

Pinnacle Alloys ERCu

AWS CLASS ERCu

CODE AND SPECIFICATION DATA:

AWS A5.7 ASME SFA 5.7

DESCRIPTION:

Pinnacle Alloys ERCu is a deoxidized copper alloy developed to provide dense, high quality deposits with relatively high electrical conductivity for use in joining and overlay with the inert-gas processes. Pinnacle Alloys ERCu spooled wire and filler metal rod are used primarily to fabricate deoxidized copper and repair weld copper castings with the gas metal-arc and gas tungsten-arc processes. It may also be used to weld galvanized steel and deoxidized copper to mild steel where high strength joints are not required. Pinnacle Alloys ERCu spooled wire and filler metal rod are used to overlay surfaces to resist corrosion. Pinnacle Alloys ERCu is typically used for billet molds, conductor rolls, heater elements, copper sculptures, steel mill electrode holders, bus bars, and copper connectors.

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

TYPICAL CHEMICAL COMPOSITION (Wt% filler metal):

Manganese (Mn)	0.50 max
Phosphorous (P)	0.15 max
Silicon (Si)	0.50 max
Tin (Sn)	1.00 max
Copper (Cu) + Silver (Ag)	98.0 min
Others	0.50 max

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

Ultimate Tensile Strength (psi)	29,000 psi (200 MPa)
Yield Strength (psi)	8,000 psi (55 MPa)
Percent Elongation in 2"	29%
Reduction of Area	45%
1/4" Deposit	54
Electrical Conductivity, % IACS	40%



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

Diameter	WFS (ipm)	Amperage	Volts	Argon (cfh)
.030"	460-500	130-150	21-23	25
.035"	400-440	145-185	23-25	30
.045"	280-310	195-215	26-28	30
1/16"	150-210	260-280	27-30	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"	70-50	70-150	15	3/8" – 1/2"
3/32" – 1/8"	3/32"	3/32"	150-200	140-230	15	7/16" – 1/2"
3/16" – 1/2"	1/8"	3/32" – 1/8"	230-400	225-320	20	7/16" – 1/2"
1/2" – 1"	3/16"	3-16" – 1/4"	325-500	290-485	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.