



Deoxidized Copper (ERCu)

Specifications

AWS A5.7 / ASME SFA 5.7 Class ERCu

Description

Deoxidized Copper provides dense, high quality deposits with relatively high electrical conductivity for use in joining and overlay with inert gas processes. Deoxidized Copper is used to fabricate deoxidized copper, repair weld copper castings, to weld galvanized steel and deoxidized copper to mild steel where high strength joints are not required. Applications include, billet molds, conductor rolls, heater elements, copper sculptures, bus bars, copper connectors, and steel mill electrode holders.

Typical Chemical Composition

Copper*	98.0 min.
Silicon	0.50 max.
Manganese	0.50 max.
Phosphorus	0.15 max.
Tin	1.0 max.
Silicon	0.10 max.
Lead	0.02 max.
Others	0.50 max.

*includes Silver

Typical Mechanical Properties

Tensile Strength, ksi	29 (200 MPa)
Yield Strength, ksi	8 (55 MPa)
Elongation, in 2 in.	29%
Reduction of area	45%
BHN (3000 kg) 1/4" deposit	54
Electrical Conductivity IACS	40%

Recommended Welding Parameters

Shielded Metal-arc (dcep)-Positive (If available)	Electrode Diameter	Amperes*	Gas	Filler Diameter	Amperes* (dcen)	Amperes* (achf)
	3/32"	50-110	Tungsten-arc	1/16"	70-120	70-150
	1/8"	90-160		3/32"	120-160	140-230
	5/32"	130-180		1/8"	170-230	225-320
	3/16"	150-225		5/32"	220-280	175-300
				3/16"	280-330	200-320
Gas Metal-arc (dcep)-Positive	Wire Diameter	Voltage	Amperes*			
	.035"	20-26	100-200			
	.045"	22-28	100-250			
	1/16"	29-32	250-400			
	3/32"	32-34	350-500			

*Use low side of range for iron- or nickel-base alloys; middle of range for bronze alloys; high side for copper.

Gas Selection

GTAW 100% Helium 40-45 cfh
100% Argon 40-45 cfh

GMAW 100% Argon 45-55 cfh
75/25 Ar/He 45-55 cfh

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 use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

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