



Aluminum Bronze A1

(ERCuAl-A1)

Specification

AWS A5.7 / ASME SFA5.7 Class ERCuAl-A1

Description

Aluminum Bronze A1 is an iron free alloy used primarily to overlay bearings and wear-resistant surfaces that require a 125 BHN hardness and to resist corrosion, especially from salt water, metal salts and acids in varying concentrations and temperatures. It is not recommended for joining since the deposit has a tendency to be hot short. Aluminum Bronze A1 applications include, tube sheets, valve seats, pickling hooks, impellers, chemical plants, and pulp mills.

Typical Chemical Composition

Copper *	Balance
Silicon	0.10 max.
Aluminum	6.0 – 8.50
Manganese	0.50 max.
Lead	0.02 max.
Others	0.50 max.

*includes Silver

Typical Mechanical Properties

Tensile Strength, ksi	68 (469 MPa)
Yield Strength, ksi	28 (193 MPa)
Elongation, in 2 in.	47%
Reduction of area	53%
BHN (3000 kg) 1/4" (6.4mm) deposit	125

Recommended Welding Parameters

Shielded Metal-arc (dcep)-Positive (If available)	Electrode Diameter	Amperes*	Gas Tungsten-arc	Filler Diameter	Amperes* (dcen)	Amperes* (achf)
	3/32"	50-110		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
Gas Metal-arc (dcep)-Positive	Wire Diameter	Voltage	Amperes*		3/16"	280-330
	.035"	20-26	100-200	*Use low side of range for iron- or nickel-base alloys; middle of range for bronze alloys; high side for copper.		
	.045"	22-28	100-250			
	1/16"	29-32	250-400			
	3/32"	32-34	350-500			

Gas Selection

GTAW 100% Helium	40-45 cfh	GMAW 100% Argon	45-55 cfh
100% Argon	40-45 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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