



Aluminum Bronze A2

Description

Aluminum Bronze A2 is a very versatile alloy available in coated electrodes or bare wire. It is used for joining aluminum bronze of similar composition, silicon and manganese bronze, high strength copper-zinc alloys, some copper-nickel alloys, ferrous metals and dissimilar metals. Dissimilar applications include aluminum bronze to steel and copper to steel. It is also used for building up or overlaying metal for wear and corrosion resistant surfaces. Aluminum Bronze A2 is most commonly used for marine maintenance and repair welding of ship propellers, pump housings, rigging jacks, piston heads, bearings and many overlay or surfacing applications.

Bare (ERCuAl-A2)

Specifications

AWS A5.7 / ASME SFA 5.7 Class ERCuAl-A2
AWS A5.13 Class ERCuAl-A2

Typical Chemical Composition

Copper *	Balance
Aluminum	8.5 – 11.0
Iron	1.50 max.
Silicon	.10 max.
Others (+ Tin)	0.50 max.

*includes Silver

Typical Mechanical Properties

Tensile Strength, ksi		79 (545 MPa)
Yield Strength, ksi	35 (241 MPa)	
Elongation, in 2 in.	28%	
Reduction of area	28%	
BHN (3000 kg)	¼" deposit	140

Coated (ECuAl-A2)

Specifications

AWS A5.6 / ASME SFA 5.6 Class ECuAl-A2
AWS A5.13 Class ECuAl-A2

Typical Chemical Composition

Copper *	Balance
Aluminum	8.5 – 11.0
Iron	1.50 max.
Silicon	1.50 max.
Others (+ Tin)	0.50 max.

*includes Silver

Typical Mechanical Properties

Tensile Strength, ksi		77 (531 MPa)
Yield Strength, ksi	35 (241 MPa)	
Elongation, in 2 in.	27%	
Reduction of area	27%	
BHN (3000 kg)	¼" deposit	119

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*			
	.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	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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