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

	Electrode Diameter	Amperes*
Shielded Metal-arc (dcep)-Positive (If available)	3/32"	50-110
	1/8"	90-160
	5/32"	130-180
	3/16"	150-225

	Wire Diameter	Voltage	Amperes*
Gas Metal-arc (dcep)-Positive	.035"	20-26	100-200
	.045"	22-28	100-250
	1/16"	29-32	250-400
	3/32"	32-34	350-500

	Filler Diameter	Amperes* (dcen)	Amperes* (achf)
Gas Tungsten-arc	1/16"	70-120	70-150
	3/32"	120-160	140-230
	1/8"	170-230	225-320
	5/32"	220-280	175-300
	3/16"	280-330	200-320

*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

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