

## Aluminum Bronze A-3

### ◆ INTRODUCTION

Aufhauser Aluminum Bronze A-3 contains a higher iron content than the C618 (Aluminum Bronze A-2). The higher iron content gives "A-3" greater strength, while maintaining good ductility.

### ◆ APPLICATIONS

- Overlaying pistons and depositing bearing surface applications.
- Joining Aluminum Bronze castings of similar composition.

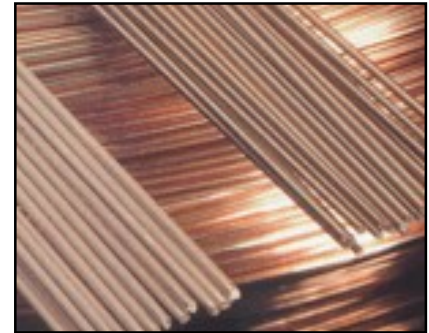
### ◆ CHEMICAL COMPOSITION

<u>Copper</u>	<u>Aluminum</u>	<u>Iron</u>	<u>Lead</u>	<u>Silicon</u>	<u>Zinc</u>
Remainder	10.0-11.5	2.0-4.5	0.02	0.10	0.10

Note: Copper contains Silver. Copper + Named elements = 99.5% min.

### ◆ PHYSICAL and MECHANICAL PROPERTIES

Melting Point:	1900°F (1038°C)
Solidification:	1880°F (1027°C)
Density, at 68°F:	0.269 lb/in <sup>3</sup>
Electrical Conductivity, at 68°F:	12 %IACS
Thermal Conductivity, at 68°F:	34.0 Btu · ft/(hr · ft <sup>2</sup> · °F)
Electrical Resistivity, at 68°F:	86.4 ohms-cmil/ft
Specific Gravity:	7.45
Specific Heat Capacity, at 68°F:	0.09 Btu/lb/°F
Tensile Strength:	65,000 psi, min.
Yield Strength:	40,000 psi
Elongation, in 2 in.:	14%
Brinell Hardness:	140-180



### ◆ SPECIFICATIONS MEET or EXCEED

- AWS A5.7 Class ERCuAl-A3
- UNS C62400

### ◆ STANDARD SIZES AND DIAMETERS

<u>Size</u>	<u>Cast</u> <u>(12" spool)</u>	<u>Helix</u> <u>(12" spool)</u>
3/32 or 1/8 x 36" rod	N/A	N/A
0.035" dia. x 30 lb. spl	15-40"	< 1"
0.045" dia. x 30 lb. spl	15-40"	< 1"
0.062" dia. x 30 lb. Spl	15-40"	< 1"

Copper and its alloys require a relatively high heat input with shortened welding time. Higher preheat temperatures and faster welding rates than for steel are necessary.