

Aluminum Bronze A-3

◆ INTRODUCTION

Aufhauser C624 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.

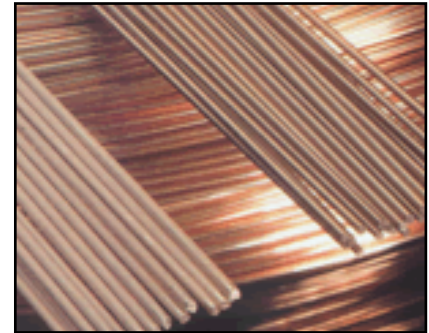
◆ CHEMICAL COMPOSITION

Copper	Aluminum	Iron	Manganese	Silicon	Tin
Remainder	10.0-11.5	2.0-4.5	0.30*	0.25*	0.20*

*Max (Other) 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 ³
Electrical Conductivity, at 68°F	12 %IACS
Thermal Conductivity, at 68°F	34.0 Btu · ft/(hr · ft ² · °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	90,000 psi
Yield Strength	40,000 psi
Elongation, in 2 in.	20%
Brinell Hardness	155 - 175
<i>Hardness will vary depending on weld quality and welder expertise</i>	



◆ SPECIFICATIONS MEET or EXCEED

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

◆ STANDARD SIZES AND DIAMETERS

Size	Cast (12" spool)	Helix (12" spool)
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.