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Phosphor Bronze C Electrode

◆ INTRODUCTION

Aufhauser Phosphor Bronze C Electrode has a higher tin content than the Phos Bronze-A (EC518), resulting in weld metals of higher hardness, tensile and yield strengths. The weld deposit is ductile, strong and machinable as well as resistant to salt water corrosion. Post-weld heat treatment is desirable for maximum ductility, especially if the weld metal is cold worked. The Phosphor Bronze C provides a good color match to bronze and will work harden.

◆ APPLICATIONS

- Joining base metals of similar composition: copper tin bronzes (Cu-Sn 6-8%) and some brasses (Cu-Zn).
- Repairing wrought bronzes (Cu-Sn) and surfacing on brasses, steels and cast iron.
- Construction and repair weld of equipment for the chemical industry and petrochemical industry
- Naval constructions and installations for sea water desalination, repair works.

◆ CHEMICAL COMPOSITION

| <u>Copper</u> | <u>Zinc</u> | <u>Tin</u> | <u>Manganese</u> | <u>Iron</u> | <u>Silicon</u> | <u>Nickel</u> | <u>Phosphorus</u> | <u>Aluminum</u> | <u>Lead</u> |
|---------------|-------------|------------|------------------|-------------|----------------|---------------|-------------------|-----------------|-------------|
| Remainder | * | 7.0-9.0 | * | 0.25 | * | * | .05-.35 | 0.01 | 0.02 |

Note: Copper contains Silver. All values are maximum percentage, unless shown in range. Total other elements = .50
* these elements must be included in total of other elements.

◆ PHYSICAL and MECHANICAL PROPERTIES

| | |
|-----------------------|--------------------------|
| Machinability: | Excellent |
| Color: | Bronze |
| Current Used: | DC Reverse (electrode +) |
| Position(s): | All Position |
| Tensile Strength: | 65,000 psi, max. |
| Elongation, in 2 in.: | 45-50% |
| Brinell Hardness: | 85-100 |

◆ SPECIFICATIONS MEET or EXCEED

- AWS A5.6 Class ECuSn-C
- ASME SFA 5.6 ECuSn-C
- MIL-E-23765/3 (MIL-CuSn-C)

◆ STANDARD SIZES AND DIAMETERS

| <u>Diameters</u> | <u>Lengths</u> | <u>Amperage</u> |
|------------------|----------------|-----------------|
| 3/32 | 12" | 70-90 |
| 1/8 | 14" | 90-110 |
| 5/32 | 14" | 110-130 |
| 3/16 | 14" | 110-130 |

◆ COMMON BASE METALS

| <u>UNS</u> | <u>DIN</u> |
|------------|------------|
| C 50700 | CuSn2 |
| C 51100 | CuSn4 |
| C 51900 | CuSn6 |
| C 52100 | CuSn8 |
| | CuSn6Zn |
| C52400 | G-CuSn10 |

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.

EC521: Phosphor Bronze C Electrode

www.brazing.com