



# Manganese Nickel Aluminum Bronze Electrode

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## ◆ INTRODUCTION

Aufhauser EC633 – Manganese Nickel Aluminum Bronze Electrode - is a basic coated manganese bronze electrode (Cu Mn Al Ni Fe) for welding and surfacing of aluminum bronzes and for dissimilar joints between steels and copper alloys. It is also recommended for overlays on cast iron, steels and copper alloys. Excellent welding characteristics, stable arc, low spatters, very easy slag removal. Low anti-friction properties of the deposit makes EC633 an excellent choice for overlaying on sliding guides.

## ◆ APPLICATIONS

- Joining or repairing cast or wrought manganese-nickel-aluminum bronze materials.
- Naval constructions, seawater applications and chemical industry (pumps, propellers, etc).

## ◆ CHEMICAL COMPOSITION

Copper	Zinc	Tin	Manganese	Iron	Silicon	Nickel	Aluminum	Lead
Remainder	*	*	11.0-13.0	2.0-6.0	1.5	1.0-2.5	5.0-7.5	.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

Tensile Strength:	75 ksi (min.)
Elongation, in 4 in.:	15%
Brinell Hardness:	160-200

## ◆ SPECIFICATIONS MEET or EXCEED

- AWS A5.6 Class ECuMnNiAl
- ASME SFA5.6, ECuMnNiAl
- MIL-E-23765/3

## ◆ STANDARD SIZES AND DIAMETERS

Diameters	Lengths	Amperage
3/32	12"	60-80
1/8	14"	80-100
5/32	14"	90-120
3/16	14"	90-130

## ◆ COMMON BASE METALS

UNS	DIN
C62300	CuAl10Fe3Mn2
C63000	CuAl10Ni5Fe4
	G-CuAl10Fe
	CuAl9Mn2
	G-CuAl8Mn

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.

EC633: Manganese Nickel Aluminum Bronze Electrode

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