



## DESCRIPTION

### Silicon Bronze Alloy Welding Rod

Copper-silicon alloy, with controlled Si content (2.80-3.20%) to prevent welding defects. This rod is developed for welding on Cu-Mn, Cu-Si-Mn, and low-alloy Cu-Zn materials. It is resistant to high temperatures and corrosion. Thanks to its wide melting range and excellent weldability, this alloy reduces post-weld finishing operations. It is suitable for welding copper and oxygen-free Cu-based materials. It is also used for GMAW brazing of galvanized steel and laser brazing. For high thicknesses, preheating to 300°C is recommended.

## SPECIFICATIONS

AWS A5.7	ERCuSi-A	DIN 1733	SG-CuSi3
Shielding	I1	Positions	PA, PB, PC, PD, PE, PF
Current	DC-	Packaging Type	5kg carton tube

## ASME QUALIFICATIONS

F-No (QW432)	32
A-No (QW442)	-

## HARDNESS

90HB

## CHEM. COMP. %

Mn	0.9
Al	0.001
Sn	0.01
P	0.01
Si	2.9
Zn	0.03

## MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength $R_m$ MPa	345	350
Yield strength $R_{p0.2}$ MPa	-	140
Elongation A ( $L_0=5d_0$ ) %	0	40
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

## WELDING PARAMETERS

	1.6 mm	2.4 mm
Ampere	110A - 150A	175A - 250A
Voltage	-	-
Packaging	Ø 1,6÷4,0 mm	Ø 1,6÷4,0 mm
Packaging Type	5kg carton tube	5kg carton tube





### APPLICATION

The silicon bronze 97CuSi offers superior versatility compared to DAIKO CuSn for various industrial applications. It is ideal for overlaying on steels and cast irons, making it perfect for the fabrication of plates for chemical plants, as well as molds, distillers, radiators, rods and wires for electrical components, and tubes used in heat exchangers. Preheating is not required when welding silicon bronze; it is crucial to maintain the interpass temperature below 100 °C. For copper welding, preheating is necessary: approximately 100 °C for materials with a thickness of 6 mm, rising to 400-500 °C for thicknesses of 15 mm.

### ALLOY TYPE

Pure copper deoxidized with 3% silicon.

### MICROSTRUCTURE

Single phase (fcc).

### MATERIALS

General purpose including phosphorus deoxidized copper, silicon bronze, nickel silver, and some brasses.

