



DESCRIPTION

Silicon Bronze alloy soli wire rod

Copper Si alloy, with a controlled Si content (2.80%-3.20) in order to avoid welding defects. It is a wire rod for welding on low-alloyed CuMn, CuSiMn and CuZn materials. High temperature and corrosion resistance. Thanks to its melting range and weldability this alloy reduce the finishing operation after welding. Suitable to weld oxygen-free copper and Cu materials. Used also for galvanized steel GMAW brazing and laser brazing. In case of high thickness, it is recommended to preheat to 300 °C.

SPECIFICATIONS

AWS A5.7	ERCuSi-A	DIN 1733	SG-CuSi3
Shielding	I1, I3	Positions	PA, PB, PC, PD, PE, PF, PG
Current	DC+	Packaging Type	Drums, B300, D200 and D100 spools.

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	-	-
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WELDING PARAMETERS

	1.0 mm	1.2 mm
Ampere	130A - 200A	185A - 245A
Voltage	24V - 28V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.





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.

