



# DAIKOWT CuSi3

GTAW

COPPER ALLOYS

CuSi

## 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

|                |                        |                  |          |
|----------------|------------------------|------------------|----------|
| ISO            | -                      | AWS A5.7         | ERCuSi-A |
| DIN 1733       | SG-CuSi3               | Werkstoff Number | -        |
| Certifications | -                      | Shielding        | 11       |
| Positions      | PA, PB, PC, PD, PE, PF | Current          | DC-      |

## ASME QUALIFICATIONS

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

## FERRITE

|         |   |
|---------|---|
| Ferrite | - |
|---------|---|

## PREN

|      |   |
|------|---|
| PREN | - |
|------|---|

## HARDNESS

|          |      |
|----------|------|
| Hardness | 90HB |
|----------|------|

## CHEM. COMP. %

|    | DEFAULT |
|----|---------|
| Al | 0.001   |
| Sn | 0.01    |
| P  | 0.01    |
| Si | 2.9     |
| Zn | 0.03    |

## MECHANICAL PROPERTIES

|   | MIN | VARIANT |
|---|-----|---------|
| Tensile strength R <sub>m</sub> MPa               | 345 | 350     |
| Yield strength R <sub>p0.2</sub> MPa              | -   | 140     |
| Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) % | 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 |

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The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit [www.daikowelding.com](http://www.daikowelding.com).





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### APPLICATION

Silicon bronze 97CuSi stands out for its versatility, offering a wide array of applications beyond those covered by DAIKO CuSn. Its utility spans overlaying steels and cast irons, making it a preferred choice for various needs. Applications range from plates used in chemical plants and molds to stills, calorifiers, rods, and wires for electrical components. The alloy also finds its place in tubes for heat exchangers. Notably, when working with silicon bronze, the convenience of not requiring preheating adds to its appeal. It's recommended to maintain an interpass temperature below 100°C. However, if welding copper, a preheat of around 100°C for 6mm material is essential, rising to approximately 400/500°C for thicker materials of about 15mm.

### 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.

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