DAIKOWM CuSn12

GMAW

COPPER ALLOYS
CuSn

DESCRIPTION

Tin bronze alloy solid wire

This wire rod is used for welding a range of copper base alloys to themselves and to carbon steels or cast irons. The higher tin content increases strength and wear resistance and increases the solidification temperature range during deposition of the weld metal (lower preheating to about 200°C is required). Also suitable for weld overlays on steel component. Not suitable for stainless steels because Cr pick-up cause embrittlement.

SPECIFICATIONS

ISO 24373	S CuSn12P (Cu 5410)	**AWS**	-
DIN 1733	SG-CuSn12	**Werkstoff Number**	-
Certifications	-	**Shielding**	I1, I3
Positions	PA, PB, PC, PD, PE, PF, PG	**Current**	DC+

ASME QUALIFICATIONS

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

FERRITE

-

PREN

-

HARDNESS

120HB

CHEM. COMP. %

	DEFAULT
Al	0.001
Sn	12.5
P	0.2
Zn	0.01
Pb	0.01

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R_m MPa	-	320
Yield strength $R_{p0.2}$ MPa	-	140
Elongation A (L_0=5d_0) %	-	5
Impact Charpy ISO-V	-	-
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WELDING PARAMETERS

	1 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.

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DESCRIPTION

APPLICATION

Used for welding various copper-based alloys to themselves, CMn steels, or cast irons, and for repairing and joining castings, this consumable is also suitable for weld surfacing to provide a bearing surface and/or corrosion-resistant overlay on steel components, shafts, etc. Avoiding stainless steels is recommended due to chromium pick-up causing embrittlement. The tin bronze weld metal can be sluggish due to its wide melting range. Preheating to approximately 200°C can enhance fluidity when dealing with thick sections. To prevent hot cracking, it's advisable to maintain the interpass temperature below 200°C. This consumable is also applicable for welding copper materials if the presence of tin in the weld metal is acceptable, such as in copper and tin bronzes, particularly for joining copper-zinc alloys and steels. For multi-layer welding on steel, pulsed arc welding is advised, and it is also suitable for oven soldering.

ALLOY TYPE

Tin bronze alloy wire for welding similar tin bronze (phosphor bronze) alloys.

MICROSTRUCTURE

A multi phase copper base structure with complex eutectoids.

MATERIALS

Tin bronze up to 10%Sn+0.5%P. Cu + 20-25%Sn. Cu + 40%Zn, manganese bronze.

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