



DAIKOWM CuAl8



COPPER ALLOYS
CuAl

DESCRIPTION

Copper-aluminum solid wire

Wire rod for copper alloys welding, especially for aluminum bronze alloys. Suitable also for welding of steel and cast iron, porosity free. Pre-heating is recommended when working with large pieces. Suitable for metal-spraying in wear-resistance surface treatment and for welding galvanized steel sheet. Suitable in shipbuilding industry for pumps, propellers and valves when a high sea water corrosion resistance is required as well as in automotive industry in galvanized sheet welding and in construction industry where high mechanical properties are required.

SPECIFICATIONS

EN ISO 24373	S Cu 6100	AWS A5.7	ERCuAl-A1
DIN 1733	SG-CuAl8	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)	36
A-No (QW442)	-

HARDNESS

100HB

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Mn	0.003	Tensile strength R _m MPa	380	450
Ni	0.003	Yield strength R _{p0.2} MPa	-	190
Cr	0.004	Elongation A (L ₀ =5d ₀) %	0	38
Nb	0.003	Impact Charpy ISO-V	-	-
Al	8.2	Impact Charpy ISO-V	-	-
V	0.002			
P	0.001			
Si	0.003			
Fe	0.01			
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.





CuAl

DESCRIPTION

COPPER ALLOYS

CuAl

APPLICATION

Designed for welding aluminum bronzes with an aluminum content between 5% and 11%, as well as other copper alloys. When used on brass, the weld joint color is similar, and the aluminum in the consumable helps minimize zinc volatilization during welding. It can also be used for overlaying on C-Mn steels and cast iron, providing surfaces that resist wear and corrosion or for connecting these materials to most copper-based alloys. Typical applications include ****corrosion-resistant and non-sparking pumps, ship propellers, machinery components, and heat exchangers used in offshore, marine, and mining environments****.

ALLOY TYPE

9% Al bronze for welding similar 5-11% Al alloys.

MICROSTRUCTURE

In the as-welded condition consists of a duplex $\alpha + \beta$ microstructure.

MATERIALS

Aluminum bronze. Beryllium copper: Cu+ 0.5-2%Be. Brass: Cu-Zn. Aluminum brass: e.g. Yorkalbro Cu-22%Zn-2%Al. Manganese bronze: Cu + 20-45%Zn + 1-3%Mn. Silicon bronze: Cu + 1-3.5%Si.

EN W.Nr.: 2.0916 (CuAl5), 2.0920 (CuAl8), 2.0928 (G-CuAl9), 2.0932 (CuAl8Fe3), 2.0936 (CuAl10Fe3Mn2), 2.0940 (CuAl10Fe2-C), 2.0960 (CuAl9Mn2), 2.0962 (G-CuAl8Mn), 2.0966 (CuAl10Ni5Fe4), 2.0970 (CuAl10Ni3Fe2-C), 2.0978 (CuAl11Ni6Fe5), 2.0980 (CuAl11Fe6Ni6-C)

UNS: C61400

WELDING & PWHT

In the case of aluminum bronze alloys, preheating is not necessary. The maximum interpass temperature should not exceed 200 °C. When welding brass, a preheat of 100-300 °C is recommended for thicker sections, while lower temperatures are indicated for high-zinc brass. Although this wire is suitable for various combinations of copper and iron-based alloys, caution is essential to minimize dilution in the presence of high-chromium alloys, such as stainless steels. The limited tolerance to chromium, resulting from mixing, can cause embrittlement and cracking, especially in bend tests. In such cases, applying a low heat input buttering layer is advantageous.

