



# G-TECH 401

SMAW

COPPER ALLOYS

CuAl

## DESCRIPTION

Special basic coated electrode

Electrode for welding Cu-Al alloys such as bronze-aluminum. Excellent for recharging components subject to wear and for corrosion resistant coatings. Applications include tube sheets, pickling hooks, impellers, valves, chemical plants, paper mills, etc with corrosion and wear. It is excellent for cladding components undergoing metal to metal wear and for corrosion resistant surfaces. Excellent weldability with a spatter free arc, self-releasing slag producing a very smooth bead appearance.

## SPECIFICATIONS

|                |                    |                  |         |
|----------------|--------------------|------------------|---------|
| ISO            | -                  | AWS A5.6         | ECuAl-B |
| DIN 1733       | EL-CuAl8           | Werkstoff Number | -       |
| Certifications | -                  | Shielding        | -       |
| Positions      | PA, PB, PC, PD, PF | Current          | DC+     |

## ASME QUALIFICATIONS

|              |    |
|--------------|----|
| F-No (QW432) | 36 |
| A-No (QW442) | -  |

## FERRITE

-

## PREN

-

## HARDNESS

130HB

## CHEM. COMP. %

### DEFAULT

|    |     |
|----|-----|
| Mn | 0.5 |
| Al | 8.1 |
| Fe | 1.2 |

## MECHANICAL PROPERTIES

|                               | MIN | VARIANT |
|-------------------------------|-----|---------|
| Tensile strength $R_m$ MPa    | 450 | 470     |
| Yield strength $R_{p0.2}$ MPa | -   | 190     |
| Elongation A ( $L_0=5d_0$ ) % | 20  | 25      |
| Impact Charpy ISO-V           | -   | -       |
| Impact Charpy ISO-V           | -   | -       |

## WELDING PARAMETERS

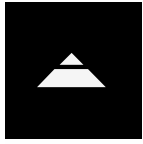
|                | 2.5 mm     | 3.2 mm     | 4 mm        |
|----------------|------------|------------|-------------|
| Ampere         | 55A - 60A  | 80A - 90A  | 100A - 120A |
| Voltage        | -          | -          | -           |
| Packaging      | pcs/kg     | pcs/kg     | pcs/kg      |
| Packaging Type | Carton box | Carton box | Carton box  |

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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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# CuAl

## DESCRIPTION

COPPER ALLOYS

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### APPLICATION

This welding consumable is designed for welding 5-11% aluminum bronzes and various other copper alloys. In the case of brasses, the weld color closely matches, and the inclusion of aluminum in the filler effectively suppresses zinc volatilization during welding. Moreover, it proves versatile for overlaying carbon-manganese steels and cast irons, providing durable bearing surfaces resistant to wear and corrosion. Additionally, it facilitates the joining of these materials to a wide range of copper-based alloys. Applications for this consumable span a variety of industries, including the manufacturing of corrosion-resistant and spark-resistant pumps, castings, machinery parts, and heat exchangers. Its utility extends to offshore, marine, and mining equipment, where its capability to deliver wear and corrosion resistance makes it an excellent choice for demanding operational 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.

**PROPRIETARY:** Alloy D (Hastelloy).

### WELDING & PWHT

Aluminum bronze alloys do not necessitate preheating, and the maximum interpass temperature should be maintained at 200°C. For welding brass, a preheat ranging from 100-300°C is recommended for thicker sections, with lower preheat temperatures applicable to high-zinc brasses. While the wire is suitable for various dissimilar combinations of copper and ferrous alloys, caution is essential to minimize dilution by high chromium alloys like stainless steels. The limited tolerance to chromium pick-up may lead to embrittlement and cracking, particularly when subjected to bend tests. Employing low heat input buttering proves beneficial in such scenarios.

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