

H-ADVANCED WELCO

ALUMINIUM BRONZE TIG ROD

PRODUCT DATA SHEET

AWS STANDARD: ERCuAl-A2

Company	H-Advanced Welco
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1. Product Description

ERCuAl-A2 Aluminium Bronze TIG Rod is a copper-aluminium alloy filler metal designed for gas tungsten arc welding (GTAW/TIG). It is commonly used for welding aluminium bronze base metals and for surfacing or joining selected ferrous and non-ferrous alloys where suitable. The alloy provides good strength together with resistance to corrosion, wear and erosion in demanding service environments.

The product is supplied in straight TIG rod lengths and is available in 1.6 mm, 2.4 mm and 3.2 mm diameters.

2. Typical Applications

- Welding and repair of aluminium bronze components.
- Marine and offshore components exposed to seawater and corrosive environments.
- Pumps, valves, propellers, shafts, bearings and similar engineering components.
- Overlay and surfacing applications requiring corrosion and wear resistance.
- Joining selected copper alloys to steel and other compatible base metals, subject to an approved welding procedure.

3. Key Features

- Good corrosion resistance, including marine service applications.
- Good strength and wear resistance.
- Suitable for aluminium bronze fabrication and repair.
- Suitable for GTAW / TIG applications.
- Good resistance to erosion and cavitation in appropriate service conditions.

4. Product Range

Product	Diameter	Form	Typical Use
ERCuAl-A2 Aluminium Bronze TIG Rod	1.6 mm	Straight TIG rod	Light gauge / precision welding
ERCuAl-A2 Aluminium Bronze TIG Rod	2.4 mm	Straight TIG rod	General fabrication
ERCuAl-A2 Aluminium Bronze TIG Rod	3.2 mm	Straight TIG rod	Heavier sections / repair work

5. Chemical Composition

Chemical composition for ERCuAl-A2 Aluminium Bronze TIG Rod:

Element	Composition
Aluminum (Al)	8.5% – 11.0%

Element	Composition
Iron (Fe)	0.50% – 1.50%
Silicon (Si)	0.10% max
Lead (Pb)	0.02% max
Zinc (Zn)	0.02% max
Other Elements Total	0.50% max
Copper (Cu + Ag)	Remainder (approx. 88% – 91%)

6. Mechanical Properties

Nominal all-weld-metal mechanical properties for ERCuAl-A2. Actual deposited weld-metal properties may vary with welding procedure and conditions.

Property	Nominal Value	Metric Equivalent
Yield Strength	35,000 psi	Approx. 241 MPa
Tensile Strength	79,000 psi	Approx. 545 MPa
Elongation	28%	28%

7. Welding Information

Process	GTAW / TIG
Shielding Gas	100% Argon or 100% Helium may be used. Gas selection should suit material thickness, heat input and the qualified welding procedure.
Polarity	DC electrode negative (DCEN) for TIG welding.
Technique	Use clean base material, suitable joint preparation and controlled heat input. Preheating requirements depend on base material, section thickness and joint configuration.
Surface Preparation	Remove oil, grease, oxides, paint and other contaminants before welding. Use appropriate cleaning tools to avoid cross-contamination.

8. Storage & Handling

Store rods in a clean, dry area away from moisture, dirt, oils, chemicals and other contaminants. Keep packaging closed until required for use. Handle rods carefully to prevent bending, surface damage or contamination.

9. Standards & Classification

AWS Standard: ERCuAl-A2

Classification: AWS A5.7 ERCuAl-A2. Where a project requires certified chemistry, mechanical properties or other certification, refer to the Certificate of Conformity / Certificate of Analysis for the supplied batch.

10. Important Notice

The information in this data sheet is intended as general technical guidance. Welding results and deposited mechanical properties depend on base-metal composition, joint design, surface condition, welding parameters, operator technique and service conditions. Users are responsible for establishing and qualifying a suitable welding procedure for their particular application.

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