

H-ADVANCED WELCO

ER1100 AL99 ALUMINIUM TIG ROD

PRODUCT DATA SHEET

AWS STANDARD: ER1100

Company	H-Advanced Welco
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1. Product Description

ER1100 AL99 Aluminium TIG Rod is a commercially pure aluminium filler metal containing a minimum of 99.0% aluminium. It is designed for gas tungsten arc welding (GTAW/TIG) and offers good corrosion resistance, electrical and thermal conductivity, formability and colour matching after anodising. It is non-heat-treatable and is commonly used for welding 1000-series aluminium and selected compatible aluminium alloys.

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 commercially pure and 1000-series aluminium.
- Suitable base materials include 1060, 1070, 1080, 1100, 1350 and selected 3003 applications.
- Electrical bus bars, conductors and related electrical components.
- Chemical, food-processing and general aluminium fabrication.
- Applications requiring good corrosion resistance and a bright anodised finish.

3. Key Features

- Minimum 99.0% aluminium content.
- Excellent corrosion resistance.
- Good electrical and thermal conductivity.
- Good welding characteristics and formability.
- Bright colour match after anodising.
- Non-heat-treatable filler alloy.

4. Product Range

Product	Diameter	Form	Typical Use
ER1100 AL99 Aluminium TIG Rod	1.6 mm	Straight TIG rod	Light gauge / precision welding
ER1100 AL99 Aluminium TIG Rod	2.4 mm	Straight TIG rod	General fabrication
ER1100 AL99 Aluminium TIG Rod	3.2 mm	Straight TIG rod	Heavier sections / repair work

5. Chemical Composition (AWS A5.10 ER1100)

Element	Composition
Aluminium (Al)	99.0% min
Silicon + Iron (Si + Fe)	0.95% max

Element	Composition
Copper (Cu)	0.05% – 0.20%
Manganese (Mn)	0.05% max
Zinc (Zn)	0.10% max
Other Elements – Each	0.05% max
Other Elements – Total	0.15% max

6. Mechanical & Physical Properties

Typical as-welded / product properties are shown below. Actual values may vary with welding procedure, product form and test conditions.

Property	Typical Value
Yield Strength – As Welded	Approx. 30 MPa
Tensile Strength – As Welded	Approx. 75 MPa
Elongation – As Welded	Approx. 35%
Melting Range	Approx. 643°C – 657°C
Density	Approx. 2.7 g/cm ³

7. Welding Information

Process	GTAW / TIG
Shielding Gas	Argon is commonly used. Argon/helium or helium may be used for thicker sections where additional heat input is required.
Polarity	AC is commonly used for TIG welding aluminium. Welding parameters should be selected to suit the base material, thickness and qualified welding procedure.
Technique	Use clean base material and filler rod. Maintain appropriate heat input and shielding-gas coverage. Aluminium oxide should be removed immediately before welding.
Surface Preparation	Remove oil, grease, moisture and oxide contamination. Use dedicated stainless-steel cleaning tools to minimise 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. Protect the rod surface from oxidation and contamination.

9. Standards & Classification

AWS Standard: ER1100

Classification: AWS A5.10 ER1100. Equivalent designation commonly referenced as Al99 / Al 1100. Where certified chemistry or mechanical properties are required, 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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