

Gas Shielded Welding Wire



GJ-ER70S-3

Copper-Coated Solid Wire

(Carbon steel with Mn-Si deoxidation)

- ▶ AWS A5.18 ER70S-3
- ▶ EN ISO 14341-A-G3Si1

Product description

GJ-ER70S-3 is a carbon steel solid wire with manganese-silicon deoxidation, strictly complying with AWS A5.18 ER70S-3. With moderate Mn and Si content, it provides a good balance of deoxidation, weld pool fluidity, and mechanical properties for general GMAW applications.

Key Advantages

- ▶ **Balanced Deoxidation:** Moderate Mn/Si ratio provides reliable deoxidation with good weld pool fluidity and wetting.
- ▶ **Low Spatter:** Advanced copper coating and precise diameter control ensure stable arc transfer with minimal spatter.
- ▶ **Good Bead Shape:** Produces smooth, uniform weld beads with excellent penetration profile in all positions.

Application Guide

- ▶ **With 100% CO₂:** For general structural steel fabrication, automotive components, and agricultural equipment.
- ▶ **With Ar/CO₂ (80/20) Mixed Gas:** For precision fabrication and sheet metal welding requiring spatter-free results.
- ▶ **For carbon steels up to 500MPa:** Including Q235, Q345, and equivalent structural grades in various industries.

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● Main constituents

Elements	C (Carbon)	Mn (Manganese)	Si (Silicon)	S (Sulfur)	P (Phosphorus)	Cu (Copper)
AWS Requirement	0.06 - 0.15	1.00 - 1.40	0.45 - 0.75	≤0.035	≤0.025	≤0.50
Typical Actual Value	0.09	1.20	0.60	0.013	0.012	0.19

● Typical Mechanical Properties of Deposited Metal

The mechanical properties of ER70S-3 are tested as all-weld metal with 100% CO₂ shielding gas (DC+ polarity).

Test Item	Yield Strength	Tensile Strength	Elongation	Impact Value@ -30°C
AWS A5.18 Requirement	≥400 MPa	≥490 MPa	≥22%	≥27 J
Typical Actual Result	445 MPa	540 MPa	27%	80 J

● Reference Welding Parameters

Wire Diameter	0.8 mm (0.030")	1.0 mm (0.040")	1.2 mm (0.045")	1.6 mm (1/16")
Amperage	50 - 150	60 - 220	80 - 350	120 - 450
Voltage	16 - 22	18 - 26	20 - 30	22 - 34