

Gas Shielded Welding Wire



GJ-ER80S-D2

Copper-Coated Solid Wire

(1.75Mn-0.5Mo low-alloy steel)

- ▶ AWS A5.28 ER80S-D2
- ▶ EN ISO 14341-A-G5Si1

Product description

GJ-ER80S-D2 is a high-manganese, 0.5% molybdenum low-alloy solid wire strictly complying with AWS A5.28 ER80S-D2. The Mn-Mo combination provides excellent strength and toughness, suitable for welding high-strength structural steels, pressure vessels, and heavy machinery components.

Key Advantages

- ▶ High Strength & Toughness: 1.75Mn-0.5Mo composition delivers 550MPa tensile strength with excellent low-temperature impact properties.
- ▶ Excellent Crack Resistance: Optimized alloy content provides good resistance to cold cracking in high-restraint joints.
- ▶ PWHT Compatible: Maintains stable mechanical properties after standard post-weld heat treatment cycles.

Application Guide

- ▶ With 100% CO₂: For welding high-strength structural steels, pressure vessels, and heavy engineering components.
- ▶ With Ar/CO₂ (80/20) Mixed Gas: For high-quality welds on quenched and tempered steels requiring minimal spatter.
- ▶ For low-alloy steels: Including Q420, Q460, 15Mo3, and equivalent grades in construction and pressure equipment.

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● Main constituents

Elements	C (Carbon)	Mn (Manganese)	Si (Silicon)	Mo (Molybdenum)	S (Sulfur)	P (Phosphorus)	Cu (Copper)
AWS Requirement	0.07 - 0.12	1.60 - 2.10	0.50 - 0.80	0.40 - 0.60	≤0.025	≤0.025	≤0.50
Typical Actual Value	0.09	1.80	0.65	0.50	0.010	0.012	0.15

● Typical Mechanical Properties of Deposited Metal

The mechanical properties of ER80S-D2 are tested as all-weld metal with 100% CO₂ shielding gas (DC+ polarity), in the as-welded condition.

Test Item	Yield Strength	Tensile Strength	Elongation	Impact Value@ -30°C
AWS A5.28 Requirement	≥470 MPa	≥550 MPa	≥17%	≥27 J
Typical Actual Result	530 MPa	600 MPa	22%	110 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