

Submerged Arc Welding Flux



GJ-EA1

Copper-Coated Solid Wire

(0.5Mo low-alloy heat-resistant steel)

- ▶ AWS A5.23 EA1
- ▶ EN ISO 14171-A-S2Mo

Product description

GJ-EA1 is a 0.5% molybdenum alloyed solid wire strictly complying with AWS A5.23 EA1. The molybdenum addition improves high-temperature strength and hardenability, making it suitable for welding pressure vessels, piping, and structural components requiring elevated temperature performance.

Key Advantages

- ▶ Elevated Temperature Strength: 0.5% Mo addition provides improved creep resistance for moderate high-temperature service.
- ▶ Excellent Toughness: Controlled low S and P content ensures good impact toughness in both as-welded and stress-relieved conditions.
- ▶ Versatile Application: Compatible with both basic and neutral fluxes for a wide range of low-alloy steel grades.

Application Guide

- ▶ With GJ-101G (Basic Flux): For pressure vessels, boiler components, and high-temperature piping in power generation.
- ▶ With GJ-301 (Neutral Flux): For welding 0.5Mo steels and low-alloy structural steels in general fabrication.
- ▶ For pipe mill applications: Suitable for two-run technique in longitudinal and spiral pipe manufacturing.

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● Main constituents

Elements	C (Carbon)	Mn (Manganese)	Si (Silicon)	Mo (Molybdenum)	S (Sulfur)	P (Phosphorus)	Cu (Copper)
AWS Requirement	0.05 - 0.15	0.65 - 1.00	≤0.20	0.45 - 0.65	≤0.025	≤0.025	≤0.35
Typical Actual Value	0.10	0.85	0.12	0.55	0.008	0.012	0.15

● Typical Mechanical Properties of Deposited Metal

The mechanical properties of EA1 must be evaluated in combination with a specific flux. The following data is based on testing combined with an AWS F7A4 basic agglomerated flux (e.g., SJ101).

Test Item	Yield Strength	Tensile Strength	Elongation	Impact Value@ -20°C
AWS F7A4 Requirement	≥400 MPa	480 - 660 MPa	≥22%	≥27 J
Typical Actual Result	450 MPa	560 MPa	26%	85 J

● Reference Welding Parameters

Wire Diameter	1.6 mm (1/16")	2.5 mm (3/32")	3.2 mm (1/8")	4.0 mm (5/32")	5.0 mm (3/16")
Amperage	250 - 420	350 - 500	400 - 550	470 - 600	550 - 650
Voltage	26 - 30	27 - 30	28 - 31	28 - 32	30 - 34