

Stainless Steel Welding Wire



GJ-ER347

Copper-Free Solid Wire

(18Cr-10Ni-Nb stabilized austenitic)

- ▶ AWS A5.9 ER347
- ▶ EN ISO 14343-A-G 19 9 Nb

Product description

GJ-ER347 is an 18% chromium - 10% nickel niobium-stabilized austenitic stainless steel solid wire strictly complying with AWS A5.9 ER347. Niobium (columbium) stabilizes the weld metal against chromium carbide precipitation, providing excellent intergranular corrosion resistance in elevated-temperature service.

Key Advantages

- ▶ Niobium Stabilization: Nb content (8×C min to 1.0%) ties up carbon, preventing chromium carbide precipitation and sensitization.
- ▶ Elevated Temperature Service: Stabilized microstructure provides good strength and corrosion resistance at temperatures up to 800°C.
- ▶ No PWHT Required: Unlike non-stabilized grades, ER347 welds maintain corrosion resistance in the as-welded condition without post-weld heat treatment.

Application Guide

- ▶ With Ar+2%O₂ shielding: For welding 347/321 stainless steel in boiler superheaters, heat exchangers, and high-temperature piping.
- ▶ With 98%Ar+2%CO₂: For welding stabilized stainless in chemical processing, petroleum refining, and power generation equipment.
- ▶ For elevated temperature service: Suitable for components operating at 400-800°C where stabilized chemistry is critical for long-term integrity.

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● Main constituents

Elements	C (Carbon)	Si (Silicon)	Mn (Manganese)	Cr (Chromium)	Ni (Nickel)	Nb (Niobium)	S (Sulfur)	P (Phosphorus)
AWS Requirement	≤0.08	0.30 - 0.65	1.0 - 2.5	19.0 - 21.5	9.0 - 11.0	8×C min - 1.0	≤0.030	≤0.030
Typical Actual Value	0.05	0.45	1.70	20.0	10.0	0.60	0.008	0.015

● Typical Mechanical Properties of Deposited Metal

Mechanical properties tested as all-weld metal with Ar+2%O₂ shielding gas (DC+). AWS A5.9 does not specify minimum mechanical properties for austenitic stainless wires; values shown are industry typical results.

Test Item	Yield Strength	Tensile Strength	Elongation	Ferrite Number
AWS A5.9 Requirement	—	—	—	5 - 10 FN
Typical Actual Result	400 MPa	600 MPa	35%	7 FN

● 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	60 - 150	80 - 200	100 - 280	140 - 350
Voltage	18 - 22	20 - 26	22 - 30	24 - 34