

Stainless Steel Welding Flux



GJ-SJ601

Agglomerated Flux

(Fluoride-basic flux for austenitic stainless SAW)

- ▶ GB/T 17854
- ▶ EN ISO 14174 SA FB 2

Product description

GJ-SJ601 is a fluoride-basic agglomerated submerged arc welding flux with a basicity of approximately 1.8, specifically designed for welding austenitic stainless steels. When paired with ultra-low carbon stainless wires, it provides minimal chromium loss, no carbon pick-up, and produces clean, crack-resistant weld deposits with excellent corrosion resistance.

Key Advantages

- ▶ Neutral Metallurgical Behavior: No carbon, silicon, or manganese pick-up; chromium loss is minimal, preserving the corrosion resistance of stainless weld metal.
- ▶ Excellent Slag Release: Produces smooth, flat weld beads with easily removable slag, suitable for both single-pass and multi-pass welding.
- ▶ Low Hydrogen: Low moisture absorption and baking at 300-350°C ensures low diffusible hydrogen for crack-resistant welds in restrained joints.

Application Guide

- ▶ With ER308L/ER309L wire: For submerged arc welding of 304/304L and 309/309L stainless steel in pressure vessels, storage tanks, and chemical equipment.
- ▶ With ER316L wire: For SAW of 316/316L stainless in pharmaceutical, food processing, and marine applications requiring molybdenum-alloyed corrosion resistance.
- ▶ For thick-section welding: Suitable for multi-pass SAW of heavy stainless plate with consistent mechanical properties and corrosion resistance throughout the weld.

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● Main constituents

Elements	SiO ₂ +TiO ₂ (Silica+Titania)	CaO+MgO (Lime+Magnesia)	Al ₂ O ₃ +MnO (Alumina+Manganese)	CaF ₂ (Calcium Fluoride)	S (Sulfur)	P (Phosphorus)
AWS Requirement	5 - 10	6 - 10	30 - 40	40 - 50	≤0.06	≤0.06
Typical Actual Value	7.5	8.0	35.0	45.0	0.015	0.020

● Typical Mechanical Properties of Deposited Metal

Mechanical properties tested as all-weld metal combined with ER308L wire (AWS A5.9). Flux is neutral; properties depend on the paired wire.

Test Item	Yield Strength	Tensile Strength	Elongation	Ferrite Number
GB/T 17854 Requirement	—	—	—	4 - 8 FN
Typical Actual Result	380 MPa	580 MPa	35%	6 FN

● Reference Welding Parameters

Wire Diameter	Wire 2.0 mm	Wire 2.5 mm	Wire 3.2 mm	Wire 4.0 mm
Amperage	300 - 450	350 - 500	400 - 550	450 - 600
Voltage	28 - 32	29 - 33	30 - 34	31 - 35