

MG-308/308L (MIG)

CONFORMANCES:

AWS A5.9/A5.9M : ER308/308L

ASME SFA-A5.9 : ER308/308L

Characteristics and Applications:

MG-308/308L is a low-carbon austenitic stainless steel wire. It has good mechanical strength and excellent resistance to corrosion. It performs very well in cold temperatures, even down to -196°C. The arc is soft, there is very little spatter, and the weld beads look great. It is easy to use in all welding positions. It is commonly used for the petrochemical industry, pressure vessels, and stainless steel storage tanks. It is suitable for base materials like ASTM A157 Gr. C9, AISI 302, 304, and 304L.

Precautions:

- Polarity: Use DC+ (Direct Current Electrode Positive).**
- Shielding Gas: It is recommended to use a mix of 98% Argon and 2% Oxygen. The purity of the Argon should be above 99.997%.**
- Gas Flow: Keep the gas flow between 20 and 25 L/min.**
- Stick-out Length: The length of the wire extending from the nozzle should be between 15 and 25 mm, depending on the welding current.**
- Wind Protection: Use wind protection screens. Strong wind can blow the gas away, which causes bad welds and holes (porosity) in the metal.**
- Equipment Check: Before you start, always check the welding gun, wire feeder, gas regulator, and heater. Broken or faulty equipment will make the welding quality poor.**
- Clean Surface: Make sure to remove all rust, oil, and dust from the surface of the metal before welding.**

AWS CHEMICAL COMPOSITION (TYPICAL)

	%C	%Mn	%Si	%P	%S	%Ni	%Cr	%Mo	%Cu
AWS A5.9 ER308	≤0.08 max.	1.0-2.5	0.30-0.65	≤0.03 max.	≤0.03 max.	9.0-11.0	19.5-22.0	≤0.75 max	≤0.75 max
AWS A5.9 ER308L	≤0.03 max.	1.0-2.5	0.30-0.65	≤0.03 max.	≤0.03 max.	9.0-11.0	19.5-22.0	≤0.75 max	≤0.75 max
Example value	0.018	1.78	0.47	0.002	0.012	10.48	19.47	0.10	0.11

TYPICAL WELD METAL MECHANICAL PROPERTIES (TYPICAL)

	Yield Strength MPa(Psi)	Tensile Strength MPa(Psi)	Elongation %	Impact value J (ft-lbf) -196°C(-320°F)
98% Ar+2%O2	422 (62,000)	600 (87,000)	42	94 (69)
AWS	-	-	-	-

WELDING PARAMETERS (TYPICAL) : DCEN (DC-)

Wire Diameter (mm)	1.2	
Welding Position	Flat	Horizontal
Current / Voltage	130-225/23-28	75-225/15-23
Stick-out Length (mm)	13-19	10-13
Spray Transfer	98% Ar + 2% O2 Flow Rate (l/min)	16.5
Short-Circuit	90% He - 7-1/2% Ar - 2-1/2% CO2 (l/min)	-
		11.8

WIRE DIAMETER :

Diameter (Inch)	0.030" / 0.035" / 0.040" / 0.045" / 0.062"	Diameter (mm)	0.8 / 0.9 / 1.0 / 1.2 / 1.6
Weight (kg)	15 (Spool), 125 (Drum), 250 (Drum)		

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