

WELDWIRE COMPANY, INC.

Technical Information

Stainless Steel Bare Wire

Alloy: WW2209
Class: ER2209

Conforms to Certification: AWS A5.9
ASME SFA A5.9

Alloy ER2209 Welding Data

Weld Process: Used for Mig, Tig, and automatic Submerged Arc

AWS Chemical Composition Requirements

C = 0.03 max	Si = 0.90 max
Cr = 21.5 – 23.5	P = 0.03 max
Ni = 7.5 – 9.5	S = 0.03 max
Mo = 2.5 – 3.5	Cu = 0.75 max
Mn = 0.50 – 2.0	N = 0.08 – 0.20

Deposited Chemical Composition % (Typical)

C = 0.016	Mo = 2.91	P = 0.014
Cr = 22.40	Mn = 1.40	S = 0.017
Ni = 8.5	Si = 0.45	N = 0.18

Deposited All Weld Metal Properties

The following data are typical for mig welding with Argon + 2% oxygen and tig welding with Argon as shielding gas. Data on sub-arc is dependent on the type of flux used.

Deposited All Weld Metal Properties % (R.T.)

Yield Strength	80,500psi
Tensile Strength	105,000psi
Elongation	26%

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ER2209 is intended to weld duplex stainless steels. Exhibits high tensile strength and resistance to stress and corrosion cracking. Exhibits a low ferrite.

Recommended Welding Parameters

GMAW “Mig Process”

Wire Diameter	Wire Feed	Amps	Volts	Reversed Polarity	
				Shielding Gas	Gas CFH
<u>Short Arc Welding</u>					
.030	13-26	40-120	16-20	Argon+2% O ₂	25
.035	13-26	60-140	16-22	Argon+2% O ₂	25

Spray Arc Welding

.035	20-39	140-220	24-29	Argon+2% O ₂	38
.045	16-30	160-260	25-30	Argon+2% O ₂	38
1/16	10-16	230-350	27-31	Argon+2% O ₂	38

GTAW “Tig Process”

Wire Diameter	Amps DCRP	Voltage	Gases
.035	60-90	12-15	Argon 100%
.045	80-110	13-16	Argon 100%
1/16	90-130	14-16	Argon 100%
3/32	120-175	15-20	Argon 100%

Note: Parameters for tig welding are dependent upon plate thickness and welding position.

Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, Cost, and Operability into consideration

Submerged Arc Welding

Reverse Polarity is suggested

Wire Diameter	Amps	Volts
3/32	250-450	28-32
1/8	300-500	29-34
5/32	400-600	30-35
3/16	500-700	30-35

Both Agglomerated and fused fluxes can be used for submerged arc welding. **Note:** The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and Mechanical properties.



If additional information is needed Contact Weldwire Company, Inc. 800-523-1266