

FLUX CORED STAINLESS STEEL ELECTRODE DM2209

Classification: ER2209 AWS A5.9 / ASME SFA 5.9

Description, Characteristics & Applications:

ER2209 filler metal is intended for welding duplex stainless steels and provides high tensile strength with resistance to stress and corrosion cracking. The deposited weld metal exhibits low ferrite. Used for joining duplex stainless steel base metals where corrosion resistance and strength are required. The alloy is suitable for MIG, TIG, and submerged arc welding processes.

Typical Chemical Composition (%)

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

Deposited Chemical Composition (%)

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

Typical Mechanical Properties as Welded

Tensile Strength	Yield Strength!	Elongation (%)	Hardness	Ferrite WRC (FN)	CVN Impacts (J)
					@ °C
105,000psi	80,500psi	26%	-----	-----	-----

Notes

The following welding data are typical for MIG welding with Argon + 2% oxygen and TIG welding with Argon as shielding gas. Submerged arc results depend on the type of flux used.

Short Arc Welding / Spray Arc Welding

Process	Diameter	Wire Feed	Amps	Volts	Shielding Gas	CFH
SHORT ARC	.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	.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

TIG Welding Parameters

Diameter	Amps DCEN	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; gases are selected by considering quality, cost, and operability.

Submerged Arc Welding Parameters

Wire Diameter	Amps	Voltage
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. The chemical composition of the flux affects the chemistry of the weld metal and, consequently, its corrosion resistance and mechanical properties.