SelectAlloy 309L

Description:

SelectAlloy 309L is a gas-shielded, flux cored, stainless steel electrode designed to weld in the flat and horizontal positions. It has a nominal weld metal composition of 24% chromium and 13% nickel with a maximum carbon content of 0.04%. The low carbon minimizes carbide precipitation and makes the weld metal more resistant to intergranular corrosion. **SelectAlloy 309L** can be used with 100% carbon dioxide shielding or a blend of 75-80% argon/balance carbon dioxide. Shielding gas mixtures with more than 75-80% argon are not recommended.

Classifications & Approvals:

- E309LT0-1, E309LT0-4 per AWS A5.22 (Also meets E309T0-1, E309T0-4 per AWS A5.22)
- CWB: E309LT0-1, E309LT0-4

Characteristics:

SelectAlloy 309L produces a finely rippled, even and well washed bead with either CO_2 or Argon + 20-25% CO_2 shielding gas. The arc transfer is smooth, with minimal spatter. The slag peels freely, minimizing cleanup time.

Applications:

SelectAlloy 309L finds application in the welding of refinery and chemical processing equipment, as well as furnace and auto exhaust parts. It is used to weld type 309 stainless steel, to join carbon and low alloy steels to austenitic stainless steels, to weld 304 clad sheets and for first layer cladding of carbon steel.

Typical Mechanical Properties(CO_2)*:

Ultimate Tensile Strength (psi)	88,000
Yield Strength (psi)	69,200
Percent Elongation	32

***Strength levels will be slightly higher w/Ar+20-25% CO_2

Typical Weld Deposit Chemistry(CO_2)*:

Shielding Gas	C	Cr	Ni	Mn	Si	N
100CO_2	0.03	24.60	13.20	1.00	0.67	0.05

Ferrite Number (WRC, 1992) -19

Typical Welding Parameters:

Diameter	WFS (ipm)	Amperage	Voltage	ESO (in.)	Dep. Rate (lbs/hr)
.035"	300	110	24	½"- 5/8"	3.8
.035"	**400**	**135**	**26**	**½"- 5/8"**	**5.1**
.035"	**550**	**160**	**27**	**½"- 5/8"**	**6.8**
.035"	650	175	29	½"- 5/8"	8.2
.045"	200	120	25	5/8"- ¾"	4.3
.045"	**335**	**170**	**27**	**5/8"- ¾"**	**7.1**
.045"	**440**	**200**	**29**	**5/8"- ¾"**	**9.3**
.045"	780	290	35	5/8"- ¾"	17.0
1/16"	150	150	24	¾" -1"	5.0
1/16"	**235**	**210**	**28**	**¾" -1"**	**7.8**
1/16"	**345**	**270**	**31**	**¾" -1"**	**11.3**
1/16"	500	350	34	¾" -1"	17.0
3/32"	**160**	**335**	**29**	**1"-1¼"**	**11.0**
3/32"	**200**	**380**	**30**	**1"-1¼"**	**13.9**

* Optimum conditions are in boldface type. Lower by 2 volts when using Ar+20-25% CO_2.

Rev 0 (3/14/14)