

SelectAlloy 316L

Description:

SelectAlloy 316L 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 19% Cr, 12.5% Ni, 2.5% Mo and a maximum carbon content of 0.04%. The presence of molybdenum improves resistance to pitting and provides increased creep resistance at elevated temperatures. The low carbon content minimizes carbide precipitation and makes it more resistant to intergranular corrosion. **SelectAlloy 316L** is designed for use with 100% carbon dioxide or a blend of 75-80% argon/balance carbon dioxide. Shielding gas mixes with more than 75-80% Argon are not recommended.

Classifications & Approvals:

- E316LTO-1, E316LTO-4 per AWS A5.22 (Also meets E316TO-1, E316TO-4)
- ABS: E316LTO-1, E316LTO-4
- CWB: E316LTO-1, E316LTO-4

Characteristics:

SelectAlloy 316L produces a finely rippled, even and well washed bead with either CO₂ or argon + 20-25% CO₂ shielding gas. The arc transfer is smooth, with minimal spatter. The slag peels freely, minimizing cleanup time.

Applications:

SelectAlloy 316L finds wide application in the pulp and paper industry, chemical and textile processing equipment, furnace parts and in parts exposed to marine environments. It is used to weld type 316 stainless and other similar alloys, such as ASTM A743 and A744, types CF-8M and CF-3M.

Typical Mechanical Properties (CO₂):

Ultimate Tensile Strength (psi)	82,000
Yield Strength (psi)	64,000
Percent Elongation	39

*Strength levels will be slightly higher w/Ar+20-25% CO₂

Typical Weld Deposit Chemistry (CO₂):

Shielding Gas	C	Cr	Ni	N	Mn	Si	Mo
100CO ₂	0.03	19.20	12.90	0.05	1.02	0.66	2.50

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Typical Welding Parameters:

Diameter	WFS (ipm)	Amperage	Voltage	ESQ	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

* Optimum conditions are in boldface type. Lower by 2 volts when using Ar+20-25% CO₂.

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Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.