

## SelectAlloy 316L-AP

### Description:

**SelectAlloy 316L-AP** is a gas shielded, flux cored, stainless steel electrode designed to weld in all 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-AP** is designed for use with 100% carbon dioxide or a blend of 75-80% argon/balance carbon dioxide. Shielding gas mixtures with more than 75-80% Argon are not recommended.

### Classifications & Approvals:

- E316LT1-1, E316LT1-4 per AWS A5.22 (Also meets E316T1-1, E316T1-4)
- ABS: E316LT1-1, E316LT1-4
- CWB: E316LT1-1, E316LT1-4

### Characteristics:

**SelectAlloy 316L-AP** provides superb performance characteristics in all positions, using either 100% CO<sub>2</sub> or 75-80% Ar/balance CO<sub>2</sub> shielding gas. Flat, well washed beads can be achieved with minimal weaving. Spatter is very low and slag peeling is excellent, minimizing cleanup.

### Applications:

**SelectAlloy 316L-AP** 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:

	<u>CO<sub>2</sub></u>	<u>75% Ar/25% CO<sub>2</sub></u>
Ultimate Tensile Strength (psi)	82,000	85,500
Yield Strength (psi)	59,000	60,500
Percent Elongation	41	41

### Typical Weld Deposit Chemistry:

	<u>CO<sub>2</sub></u>	<u>75% Ar/25% CO<sub>2</sub></u>
Carbon (C)	0.04	0.04
Chromium (Cr)	17.6	17.9
Nickel (Ni)	11.6	11.6
Manganese (Mn)	1.14	1.32
Silicon (Si)	0.64	0.74
Molybdenum (Mo)	2.36	2.30
Ferrite Number (WRC, 1992)	4	4

### Typical Welding Parameters (CO<sub>2</sub>)\*:

<u>Diameter</u>	<u>WFS (ipm)</u>	<u>Amperage</u>	<u>Voltage</u>	<u>CTWD</u>	<u>Dep. Rate (lbs/hr)</u>
.045"	200	120	25	5/8 – 3/4"	4.3
<b>.045"</b>	<b>335</b>	<b>170</b>	<b>27</b>	<b>5/8 – 3/4"</b>	<b>7.1</b>
<b>.045"</b>	<b>440</b>	<b>200</b>	<b>29</b>	<b>5/8 – 3/4"</b>	<b>9.3</b>
.045"	780	290	35	5/8 – 3/4"	17.0
1/16"	150	150	24	3/4 – 1"	5.0
<b>1/16"</b>	<b>235</b>	<b>210</b>	<b>28</b>	<b>3/4 – 1"</b>	<b>7.8</b>
<b>1/16"</b>	<b>345</b>	<b>270</b>	<b>31</b>	<b>3/4 – 1"</b>	<b>11.3</b>
1/16"	500	350	34	3/4 – 1"	17.0

\* Optimum conditions are in **boldface** type. Lower by 1-2 volts when using 75-80% Ar/balance CO<sub>2</sub>.

### Standard Diameters: \*\*

1/16", 0.045"