

## SelectAlloy 307-AP

### Description:

SelectAlloy 307-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, 10% Ni, 4% Mn, 1% Mo and a carbon content of 0.08%. The relatively high manganese content helps reduce the chances of weld metal cracking in dissimilar metal welding. It 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:

- E307T1-1, E307T1-4 per AWS A5.22

### Characteristics:

SelectAlloy 307-AP provides superb performance characteristics in all positions, using either CO<sub>2</sub> or argon + 20-25% 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 307-AP is an excellent choice for joining difficult to weld steels, such as armor plate and hardenable steels, and for dissimilar metal joints, such as austenitic manganese steels to carbon steel forgings and castings.

### Typical Mechanical Properties(CO<sub>2</sub>)\*:

Ultimate Tensile Strength (psi)	90,000
Yield Strength (psi)	59,000
Percent Elongation	39

\*Strength levels will be slightly higher w/Ar+20-25% CO<sub>2</sub>

### Typical Weld Deposit Chemistry(wt%):

Shielding Gas	C	Cr	Ni	Mo	Mn	Si	N
100 CO <sub>2</sub>	0.07	19.40	10.00	1.10	4.20	0.70	0.05
Ferrite Number (WRC, 1992) - 6							

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

Diameter	WFS (ipm)	Amperage	Voltage	ESO (in.)	Dep. Rate(lbs/hr)
.035"	300	110	25	5/8" - 3/4"	3.3
<b>.035"</b>	<b>500</b>	<b>150</b>	<b>26</b>	<b>5/8" - 3/4"</b>	<b>5.4</b>
<b>.035"</b>	<b>600</b>	<b>165</b>	<b>27</b>	<b>5/8" - 3/4"</b>	<b>6.3</b>
.035"	700	175	28	5/8" - 3/4"	7.7
.045"	250	130	24	5/8" - 3/4"	5.4
<b>.045"</b>	<b>300</b>	<b>160</b>	<b>26</b>	<b>5/8" - 3/4"</b>	<b>6.3</b>
<b>.045"</b>	<b>425</b>	<b>200</b>	<b>28</b>	<b>5/8" - 3/4"</b>	<b>9.2</b>
.045"	780	270	34	5/8" - 3/4"	16.2
1/16"	150	170	25	3/4" - 1"	5.4
<b>1/16"</b>	<b>195</b>	<b>215</b>	<b>27</b>	<b>3/4" - 1"</b>	<b>7.0</b>
<b>1/16"</b>	<b>240</b>	<b>250</b>	<b>28</b>	<b>3/4" - 1"</b>	<b>8.6</b>
1/16"	320	305	29	3/4" - 1"	11.5

\* Optimum conditions are in **boldface type**. Reduce by 2 volts when using Ar+20-25% CO<sub>2</sub>.

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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.