

SelectAlloy 312-AP

Description:

SelectAlloy 312-AP is a gas-shielded, flux cored, stainless steel electrode designed to weld in all positions. It has a nominal weld metal composition of 30% chromium 9% nickel and 0.1% carbon. It produces a two phase weld metal, with substantial ferrite in an austenitic matrix. The high level of ferrite makes the weld metal very resistant to cracking, even when highly diluted. SelectAlloy 312-AP 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.

Classification:

- E312T1-1, E312T1-4 per AWS A5.22

Characteristics:

SelectAlloy 312-AP provides superb performance characteristics in all positions, using either CO₂ or argon +20-25% CO₂ 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 312-AP is used for the welding of dissimilar metals, such as the joining of carbon steels to stainless steels high in nickel.

Typical Mechanical Properties (CO₂)*:

Ultimate Tensile Strength (psi)	114,000
Yield Strength (psi)	90,000
Percent Elongation	25

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

Typical Weld Deposit Chemistry (98% Ar-2% O₂):

<u>C</u>	<u>Mn</u>	<u>Cr</u>	<u>Si</u>	<u>Ni</u>	<u>N</u>
0.10	0.80	29.50	0.70	8.70	0.05
Ferrite Number (WRC, 1992) - 60					

Typical Welding Parameters (Ar-2%O₂)*:

Diameter	WFS (ipm)	Amperage	Voltage	ESO (in.)	Dep. Rate (lbs/hr)
.045"	250	130	24	5/8-3/4"	5.4
.045"	300	160	26	5/8-3/4"	6.3
.045"	425	200	28	5/8-3/4"	9.2
.045"	780	270	34	5/8-3/4"	16.2
1/16"	150	190	25	3/4-1"	5.4
1/16"	195	215	27	3/4-1"	7.0
1/16"	240	250	28	3/4-1"	8.6
1/16"	320	305	29	3/4-1"	11.5

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

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.

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