

## SelectAlloy 312-C

### Classification:

EC312 per AWS A5.22

### Description:

**SelectAlloy 312-C** is a gas-shielded, metal cored, stainless steel electrode. 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. It is designed for use with argon/1-2% oxygen or argon/1-2% CO<sub>2</sub> shielding gases.

### Characteristics:

**SelectAlloy 312-C** operates with a smooth, spray arc transfer. It produces little or no slag and virtually no spatter, minimizing cleanup. It offers higher deposition rates and more controlled penetration than the equivalent solid electrode. As a result it operates at higher travel speeds and handles poor fit-up.

### Applications:

**SelectAlloy 312-C** is ideally suited for making small butt, lap and fillet welds on thin material at elevated travel speeds. It is used for the welding of dissimilar metals, such as the joining of carbon steels to stainless steels high in nickel.

### Typical Mechanical Properties (98% Ar-2% O<sub>2</sub>):

Ultimate Tensile Strength (psi)	114,000
Yield Strength (psi)	87,200
Percent Elongation	24

### Typical Weld Deposit Chemistry (98% Ar-2% O<sub>2</sub>):

C - .10	Mn - 1.50
Cr - 29.80	Si - .50
Ni - 9.30	N - .05
Ferrite Number (WRC, 1992) - 65	

### Typical Welding Parameters (Ar-2%O<sub>2</sub>)\*:

Diameter	WFS (ipm)	Amperage	Voltage	ESO (in.)	Dep. Rate (lbs/hr)
.035"	350	155	22	1/2-5/8	5.9
<b>.035"</b>	<b>500</b>	<b>205</b>	<b>23</b>	<b>1/2-5/8</b>	<b>8.6</b>
<b>.035"</b>	<b>600</b>	<b>230</b>	<b>25</b>	<b>1/2-5/8</b>	<b>10.2</b>
.035"	700	245	26	1/2-5/8	11.8
.045"	250	180	21	1/2-5/8	7.1
<b>.045"</b>	<b>400</b>	<b>240</b>	<b>23</b>	<b>1/2-5/8</b>	<b>11.3</b>
<b>.045"</b>	<b>500</b>	<b>280</b>	<b>25</b>	<b>1/2-5/8</b>	<b>14.1</b>
.045"	650	300	28	1/2-5/8	18.4
1/16"	150	190	24	3/4-1	7.7
<b>1/16"</b>	<b>250</b>	<b>280</b>	<b>25</b>	<b>3/4-1</b>	<b>12.8</b>
<b>1/16"</b>	<b>350</b>	<b>385</b>	<b>26</b>	<b>3/4-1</b>	<b>17.9</b>
1/16"	450	490	32	3/4-1	23.1

\* Optimum conditions are in **boldface type**.

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.