

## Select 820-Ni2

### Description:

**Select 820-Ni2** is a low alloy steel, flux cored wire for use with external gas shielding. This electrode is intended for single and multiple pass welding of carbon and certain low alloy steels in all positions. **Select 820-Ni2** can be shielded by either carbon dioxide or 75-80 percent argon – balance carbon dioxide. A suggested rate of gas flow is 35-50 cfh, and a minimum dew point of -40°F should be maintained.

### Classifications:

- E81T1-Ni2C, E81T1-Ni2M per AWS A5.29, SFA 5.29

### Characteristics:

**Select 820-Ni2** is a premium electrode, producing a weld deposit with 2.2-2.5 % nickel and exhibiting outstanding welder appeal. The formulation of this wire is based on the popular **Select 820-Ni1** and it has the same smooth spray arc transfer with minimal spatter. The specially formulated slag constituents provide superb puddle control and the fast freezing characteristics facilitate welding in all positions. Mechanical properties are excellent, particularly the low temperature CVN toughness. Slag removal is very good and the bead profile is smooth, with minimum convexity.

### Applications:

**Select 820-Ni2** is an excellent selection for welding steels which require good Charpy V-notch toughness and tensile strength in the range of 80,000-100,000 psi. Typical steels would include ASTM A572, A575, and A734. This combination of strength and CVN toughness makes **Select 820-Ni2** ideal for applications such as offshore platform construction, shipbuilding, earthmoving and mining machinery, and shipbuilding.

### Typical Mechanical Properties:

	<u>CO<sub>2</sub></u>	<u>75% Ar/25 CO<sub>2</sub></u>
Ultimate Tensile Strength (psi)	89,200	93,200
Yield Strength (psi)	77,000	77,700
Percent Elongation	29	26
CVN (ft·lb f) @-40°F	40	50

### Typical Deposit Composition:

Wt%	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Ni</u>
<u>CO<sub>2</sub></u>	.03	1.10	.45	.010	.008	2.28
<u>75Ar/25CO<sub>2</sub></u>	.03	1.21	.57	.010	.007	2.33

### Recommended Welding Parameters\*:

Diameter	Position	Optimum			Range		
		Amperage	WFS	Voltage	Amperage	Voltage	CTWD
1/16"	Flat	350	300	29	150-400	22-34	1-1 1/4"
	Overhead	225	160	26	150-310	22-28	1"
	Vertical up	225	160	25	150-280	22-27	
.052"	Flat	300	360	28	100-330	19-32	
	Overhead	225	245	26	150-310	21-28	3/4"-1"
	Vertical up	225	245	25	150-280	21-27	
.045"	Flat	250	282	28	100-300	21-32	
	Overhead	200	265	26	150-280	21-29	1/2"-3/4"
	Vertical up	200	265	25	100-230	21-28	

\* With CO<sub>2</sub> shielding gas. For 75Ar/25CO<sub>2</sub>, decrease voltage by 1 to 1.5 volts.

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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. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. Select-Arc disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.