

Select 80C-Ni1

Description:

Select 80C-Ni1 is a low alloy steel, composite metal cored electrode for gas- shielded arc welding of certain low temperature or low alloy steels. This electrode is intended for single or multiple pass welding in horizontal fillets and the flat position. Recommended shielding gas mixtures range from 75-95 percent argon – balance carbon dioxide to 95-98 percent argon – balance oxygen mixtures. Gas flow rates should be 40-50 cfh, with a minimum dew point of -40° F.

Classification:

- E80C-Ni1 per AWS A5.28, SFA 5.28.

Characteristics:

Select 80C-Ni1 has excellent welder appeal, more specifically, a true spray transfer with mixtures as lean as 75-80 percent argon / balance carbon dioxide. This electrode produces virtually no spatter and is low in fume generation. Bead profile is superb, with superior tie-in. As with all metal cored electrodes, there are far fewer problems with lack of fusion, subsurface porosity, and alloy segregation than with solid wires.

Applications:

Select 80C-Ni1 is ideal for fine grained or low alloy steels requiring moderate tensile strength and good subzero CVN toughness, such as ASTM A203, GrE, A302, A575, and A633. These steels are typically used in the fabrication of earthmoving machinery and buckets, offshore equipment, and mining machinery.

Typical Mechanical Properties:

	<u>98% Ar/2% O₂</u>	<u>85% Ar/15% CO₂</u>
Ultimate Tensile Strength (psi)	92,500	87,000
Yield Strength (psi)	79,800	72,100
Percent Elongation	26	25
CVN (ft•lb f) @ -50° F	28	30

Typical Deposit Composition:

<u>Wt%</u>	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Ni</u>
98 Ar/2 O ₂	.03	1.45	.50	.009	.010	.95
85 Ar/15 CO ₂	.05	1.40	.53	.009	.010	.94

Recommended Welding Parameters*:

<u>Diam. (in.)</u>	<u>Optimum</u>			<u>Range</u>			<u>CTWD</u>
	<u>Amperage</u>	<u>WFS</u>	<u>Voltage</u>	<u>Amperage</u>	<u>WFS</u>	<u>Voltage</u>	
.035	200	550	29-30	160-250	350-750	24-35	½"-3/4"
.045	255	410	29-30	180-330	240-600	27-33	½"-1"
.052	300	350	29-30	220-460	220-620	25-35	½"-1"
1/16	360	300	29-30	240-520	175-500	26-37	1"-1¼"
5/64	420	240	29-30	240-550	165-350	27-36	1"-1¼"

* With 75% Ar/25% CO₂. For Ar/O₂ mixes lower voltage by 3 volts.

Typical Short Arc Parameters (for out of position welding):

	<u>Amperage</u>	<u>WFS</u>	<u>Voltage</u>
.035	100	145	15-16
.045	140	150	16-17
.052	125	120	17-18

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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.