



## Select 80C-D2

### Description:

**Select 80C-D2** is a low alloy steel, composite metal cored electrode for gas-shielded arc welding. This electrode is intended for single and multiple pass welding of certain high strength, low alloy steels where a minimum tensile strength of 90,000 psi is required in the deposited metal. The recommended shielding gas is 75-80% argon-balance carbon dioxide. Using shielding gases higher in argon typically increases the strength of the weld deposit. A minimum dew point of -40°F should be maintained with the shielding gas, along with a minimum flow rate of 40-50 cfh.

### Classification:

- E90C-D2 per AWS A5.28, SFA 5.28.

### Characteristics:

**Select 80C-D2** is a metal cored electrode that can be substituted for ER80S-D2 or ER90S-D2 solid wire. This premium electrode operates in a smooth, spatter-free spray using 75-80% argon-balance carbon dioxide shielding gas. Modern manufacturing technology ensures the best in weldability, feedability, and consistency. In addition to better availability than the corresponding solid wires, **Select 80C-D2** offers many economic and quality advantages, such as less sensitivity to subsurface porosity, the elimination of lack of fusion or "cold lap", and 30-50% faster travel speeds for a given weldment size. This product is available in an assortment of packages to suit most welding needs.

### Applications:

**Select 80C-D2** is ideal for those applications requiring weld metal which matches the mechanical properties of high strength, low alloy pressure vessel steels such as ASTM A302 Grade B, HSLA steels and manganese-molybdenum castings such as ASTM A49, A291, and A735.

### Typical Mechanical Properties:

	<u>75%Ar/25%CO<sub>2</sub></u>	<u>98%Ar/2%O<sub>2</sub></u>
Ultimate Tensile Strength	92,400	98,400
Yield Strength	81,300	86,900
Percent Elongation	26	27
CVN impact (ft•lb f) @ -20° F	42	35

### Typical Deposit Composition:

<u>Wt%</u>	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Mo</u>
	.06	1.45	.54	.010	.010	.49

### Recommended Welding Parameters\*:

<u>Diam. (in.)</u>	<u>Optimum</u>			<u>Range</u>			<u>ESO</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"-¾"
.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	¾"-1¼ "

\*With 75%Ar/25% CO<sub>2</sub>. For Ar/O<sub>2</sub> blends, lower the voltage by 3 Volts.

Rev 1 (04/23/2015)

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.