



## Select 70C-6

### Description:

**SELECT 70C-6** is a carbon steel, composite metal cored electrode for gas- shielded arc welding. This electrode is intended for single and multiple pass welding of carbon and certain low alloy steels, where a minimum tensile strength of 70,000 psi is required in the deposited weld metal. Recommended shielding gases are mixtures of argon/carbon dioxide, with 75-95 percent argon. Dew points should be at least -40 degrees F., and flow rates should be maintained at 35-50 cfh.

### Classification & Approvals:

- E70C-6M per AWS A5.18, SFA 5.18
- ABS 3SA, 3YSA, F/V D (C25); DNV 3 YMS, F/V D (C25); Lloyds 2S, 2YS, F(C25); CWB E491C-6, 6M-H4 (CO<sub>2</sub>/C5)

### Characteristics:

**SELECT 70C-6** has higher manganese and silicon contents than **SELECT 70C-3**, providing more deoxidization and a flatter bead geometry. The extra deoxidizers allow this electrode to be used on higher levels of mill scale than can be tolerated by the E70C-3X class of metal cored product. As with all **SELECT-ARC** products, new manufacturing technology ensures the highest in quality, consistency, and welding performance. The use of **SELECT 70C-6** offers many advantages over ER70S-6 solid wires, such as faster travel speeds and increased productivity, better sidewall fusion on heavy plate, and more porosity-free weldments. Smaller diameter electrodes can be used in all position welding by utilizing short circuit (short arc) or pulse arc transfer.

### Applications:

**SELECT 70C-6** is well suited to applications where higher manganese and silicon levels are essential, such as in the presence of heavy mill scale or mild contaminants, or when improved wetting of the weld bead is desired. This product excels in general purpose welding, but is equally superior in higher demand situations as in heavier sheet metal fabrication, structural work, pipe welding, and welding of hot water heaters.

### Typical Mechanical Properties:

	<u>75Ar/25CO<sub>2</sub></u>	<u>95Ar/5CO<sub>2</sub></u>	<u>90Ar/10CO<sub>2</sub></u>
Ultimate Tensile Strength (psi)	87,200	91,800	91,400
Yield Strength (psi)	78,900	80,700	80,500
Percent Elongation	25	24	24
CVN(ft•lb f) @ -20°F	46	51	48
Typical Brinell Hardness (HBW)	178-192		

### Typical Chemical Composition (wt%):

Shielding Gas	C	Mn	P	S	Si
75Ar/25CO <sub>2</sub>	.06	1.55	.010	.010	.66
95Ar/5CO <sub>2</sub>	.05	1.69	.010	.010	.81
90Ar/10CO <sub>2</sub>	.04	1.67	.011	.010	.83

### Typical Welding Parameters\*:

Diam. (in.)	Optimum			Range			CTWD
	Amperage	WFS	Voltage	Amperage	WFS	Voltage	
.035	200	550	29-30	160-250	350-750	24-35	½"-¾"
.045	255	410	29-30	170-330	200-600	21-30	¾"-1"
.052	300	350	29-30	220-460	220-620	25-35	¾"-1"
1/16	360	300	29-30	240-520	175-500	26-37	¾"-1¼"
5/64	420	240	29-30	240-550	165-350	27-36	¾"-1¼"
3/32	450	155	29-30	350-550	125-250	28-36	1"-1¼"
7/64	475	135	29-30	400-600	110-200	27-34	1"-1¼"
1/8	500	100	28-29	450-625	95-145	26-32	1"-1¼"

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

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

\* Welding parameters are for 75% Ar/25% CO<sub>2</sub>. At higher levels of argon the voltage should be gradually decreased; ½-1 volt for 85% Ar/15% CO<sub>2</sub>, 1-1½ volts for 90% Ar/10% CO<sub>2</sub> and 1-2 volts for 95% Ar/5% CO<sub>2</sub>.

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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. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.