

Select 100C-K3

Description:

Select 100C-K3 is a low alloy steel, composite metal cored electrode for gas-shielded arc welding. This product is intended for single and multiple pass welding of some carbon and certain low alloy steels, where a minimum tensile strength of 100,000 psi is required in the deposited weld metal. The recommended shielding gas is argon-carbon dioxide mixtures within the range of 75% to 95% argon. A mixture of 98% argon, 2% oxygen may also be employed. Flow rates should be maintained at 35-50 cfh, and dew points should be at least -40° F.

Classification:

- E100C-K3 per AWS A5.28, SFA 5.28.

Characteristics:

Select 100C-K3 is a premium, composite metal cored electrode, exhibiting superb welder appeal and excellent mechanical properties. The arc is normally a pure spray transfer, with virtually no spatter emission. This composite, metal cored process has many advantages over solid wire, such as: faster travel speeds, hence increased productivity; enhanced sidewall fusion, eliminating the dreaded "cold-lap"; and very little tendency for subsurface porosity. Smaller diameter electrodes can be used in all position welding by utilizing pulsed power or short arc transfer. Metal cored wires are also preferred for those flux cored applications where slag removal and clean up is not desirable. As with all Select-Arc products, modern manufacturing techniques, proprietary in nature, ensure the highest levels of quality, consistency, and welding performance.

Applications:

Select 100C-K3 is well suited to joining low alloy, high strength steels, such as HY-80, A710, and A514. These materials are used in shipbuilding, earthmoving equipment, and mining machinery, to name a few applications. This electrode is an ideal choice for those weldments where distortion must be minimized and de-slaging is not desirable.

Typical Mechanical Properties:

	75% Ar/25% CO ₂	95% Ar/ 5% CO ₂
Ultimate Tensile Strength	104,200	106,100
Yield Strength	88,700	93,900
Percent Elongation	27	26
CVN (ft•lb f) @ -60° F	39	22

Typical Deposit Composition

Wt%	C	Mn	Si	P	S	Ni	Mo
75% Ar/25% CO ₂ :	.04	1.54	.65	.009	.008	1.87	.41
95% Ar/5% CO ₂ :	.03	1.60	.72	.010	.010	1.81	.42

Recommended Welding Parameters: Metal Cored – Argon/Carbon Dioxide

Diam. (in.)	Amperage	Optimum		Amperage	Range		ESO
		WFS	Voltage		WFS	Voltage	
.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 "

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

Diam. (in.)	Amperage	WFS	Voltage
.045	140	150	16-17
.052	125	120	17-18

*Welding parameters are for 75% Ar/25% CO₂. At higher levels of argon the voltage should be gradually decreased; ½-1 volt for 85% Ar/15% CO₂, 1-1½ volts for 90% Ar/10% CO₂ and 1-2 volts for 95% Ar/5% CO₂.

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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 for any particular purpose with respect to its products.