



The Standard of Excellence
in Tubular Welding Electrodes

Select 70S-6NC

Description:

Select 70S-6NC is a premium solid, "MIG wire", electrode, with no copper coating, for use in the gas metal arc welding (GMAW) process. This carbon steel electrode is intended to weld steels in the range of 55,000-70,000 psi yield strength, especially those containing medium to high levels of mill scale. Recommended shielding gases are 75-95% argon/balance carbon dioxide, 95-98% argon/balance oxygen, and 100% carbon dioxide. Flow rates should be 30-50 cfh. This product has higher amounts of manganese and silicon than a 70S-3 electrode, making it more tolerant to mill scale and mild contaminants.

Classification:

- ER70S-6 per AWS/ANSI A5.18, ASME SFA 5.18

Characteristics:

Select 70S-6NC is a copper-free electrode, or "MIG wire", with excellent performance in both feedability and weldability. The arc transfer is stable and consistent; feeding is superb both over long conduit distances and at high wire feed speeds. The lack of copper coating provides welding fume virtually free of copper or its oxides. Sound welds are possible when welding on steels with medium to high levels of mill scale due to the increased amounts of manganese and silicon. Wire composition is tightly controlled, ensuring excellent welding performance and mechanical properties from one lot to the next. All position welding may be accomplished using the short circuit (short arc) or pulse arc transfer.

Applications:

Select 70S-6NC is the perfect selection for those instances requiring a copper-free wire. It is well suited to welding steels, both sheet and plate, with a yield strength range of 55,000-70,000 psi, especially those containing medium to high levels of mill scale. This product is a particularly good choice when improved toe wetting, bead profile, and tie-in are required. Typical applications include welding of pipe, structural steel, sheet steel, steel buildings, and pressure vessels.

Typical Wire Composition:

Wt. %	C	Mn	Si	P	S	Cu
CO2	.08	1.54	.88	.009	.010	.04

Typical Mechanical Properties:

UTS(psi)	YS(psi)	% Elong.	CVN(ft•lb)@ -20°F
84,100	68,900	28	45

Welding Parameters:

Typical Spray Arc Parameters (Argon-2% O₂):

Diam.(in.)	Optimum			Amperage	WFS	Voltage	Range
	Amperage	WFS	Voltage				
.035	200	475	26	180-240	400-560	24-27	1/2"-3/4"
.045	300	350	27	260-335	300-500	25-30	1/2"-1"
.052	325	310	28	280-400	270-400	26-32	1/2"-1"
1/16	340	200	28	290-400	175-280	26-37	1/2"-1"

Optimum Short Arc Parameters (Argon-25% CO₂):

	Amperage	WFS	Voltage	ESO
.035	130	245	17	3/8"
.045	160	150	18	3/8"
.052	165	140	18	3/8"

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.

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