



Select 810-A1

Description:

Select 810-A1 is a low alloy steel electrode for flux cored arc welding with an external shielding gas. This electrode is intended for single and multiple pass welding, in all positions, of certain C-Mo steels, where the addition of ½% of molybdenum is required in the deposited weld metal. 100% carbon dioxide or argon w/ 20-25% CO₂ shielding gas may be used. Gas flow rate should be maintained at 35-50 cfh, and the dew point should be -40°F or above.

Classifications:

- E81T1-A1C, E81T1-A1M per AWS A5.29, SFA 5.29.

Characteristics:

Select 810-A1 is a premium, all position, flux cored electrode for welding C-Mo steels in certain applications. Arc transfer is smooth and stable, with low spatter. The quick freezing slag facilitates welding in all positions. This electrode provides deep penetrating welds, with no "cold-lap" and excellent tie-in. Weld deposits are sound, with minimal subsurface porosity, due to excellent fluxing action of the slag. Productivity is greatly enhanced, with up to three times the deposition rate of covered electrodes, and twice that of solid wire, in all position weldments.

Applications:

Select 810-A1 is an ideal choice for welding certain C-Mo steels used in the fabrication of boilers and pressure vessels, such as ASTM A161, A204, and A302 Gr. A plate, and A335-P1 pipe. The ½ % Mo in the weld deposit increases the strength of the weld metal at elevated temperatures, and imparts some corrosion resistance. It does, however, reduce notch toughness somewhat. The all position capabilities of the electrode facilitate welding of boilers, pressure vessels, and pipe, for both fabrication and repair.

Typical Mechanical Properties:

	SR 1 Hr. at 1150° F	
	CO ₂	75% Ar/25% CO ₂
Ultimate Tensile Strength	87,500	89,400
Yield Strength	74,300	74,400
Percent Elongation	30	31
CVN (ft lb f) @ 72 F	48	54

Typical Deposit Composition:

Wt%	C	Mn	Si	P	S	Mo
CO ₂	.07	.85	.28	.011	.009	.45
75Ar/25CO ₂	.07	.96	.35	.011	.009	.55

Recommended Welding Parameters:

Diameter	Position	Optimum			Range	
		Amperage	WFS	Voltage	Amperage	Voltage
1/16"	Flat	350	300	29	150-400	22-34
	Overhead	225	160	26	150-310	22-28
	Vertical up	225	160	25	150-280	22-27
.052"	Flat	300	360	28	100-330	19-32
	Overhead	225	245	26	150-310	21-28
	Vertical up	225	245	25	150-280	21-27
.045"	Flat	250	282	28	100-300	21-32
	Overhead	200	265	26	150-280	21-29
	Vertical up	200	265	25	100-230	21-28
.035"	Flat	175	511	26	100-250	21-30
	Overhead	150	490	24	100-175	21-26
	Vertical up	150	490	24	100-175	21-26

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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.