

Select 81-A1

Description:

Select 81-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 the flat and horizontal fillet position, of certain C-Mo steels where the addition of ½% of molybdenum is required in the deposited weld metal. Carbon dioxide is the recommended shielding gas. Gas flow rate should be maintained at 35-50 cfh, and the dew point should be -40°F or above.

Classification:

- E80T1-A1C per AWS A5.29, SFA 5.29.

Characteristics:

Select 81-A1 is a premium low alloy steel, flux cored electrode with a rutile based slag system. This promotes a spray like arc transfer with very low spatter and a nice bead profile in flat and horizontal fillet welding. Slag coverage is complete, with moderate volume and easy detachment. There is normally a very fine, rippled pattern in the weld bead. The bead profile exhibits a minimum of convexity. State-of-the-art manufacturing technology ensures the highest levels of quality, consistency, and performance.

Applications:

Select 81-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. 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. There are no minimum CVN toughness values for this electrode classification in AWS A5.29/SFA 5.29, therefore, any specific toughness requirements should be discussed with Select-Arc prior to use of the **Select 81-A1**.

Typical Mechanical Properties:

	<u>SR 1 Hr. at 1150° F</u>
Ultimate Tensile Strength (psi)	90,300
Yield Strength (psi)	79,600
Percent Elongation	24.5

Typical Deposit Composition:

<u>Wt%</u>	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>P</u>	<u>S</u>	<u>Mo</u>
	.05	.65	.45	.010	.010	.58

Recommended Welding Parameters:

<u>Diameter</u>	<u>Optimum</u>			<u>Range</u>	
	<u>Amperage</u>	<u>WFS</u>	<u>Voltage</u>	<u>Amperage</u>	<u>Voltage</u>
1/16"	350	300	29	150-400	22-34
5/64"	390	250	29	280-430	26-33
3/32"	450	210	31	275-550	26-34

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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.