



## Select 910-B91

### Description:

Select 910-B91 is a low alloy steel electrode for flux cored arc welding with external gas shielding. It is designed for single and multiple pass welding of 9Cr-1Mo steels, in all positions. This electrode contains small additions of niobium, vanadium and nitrogen to improve long term creep properties. The recommended shielding gas is 75-80% Ar, balance CO<sub>2</sub>, with a suggested flow rate of 40-50 cfh, and a minimum dew point of -40° F.

### Classification:

- E91T1-B9M-H4 per AWS A5.29, ASME SFA 5.29
- E91T1-M21PZ-B91-H4 per AWS A5.36, ASME SFA 5.36

### Characteristics:

Select 910-B91 is a premium, all position, flux cored electrode for joining 9Cr-1Mo steels. The arc transfer is smooth and stable, and the deposited weld beads are uniform with good tie-in. It offers increased deposition rates compared to covered and solid electrodes, has greater tolerance for rust and millscale, and eliminates lack of fusion defects associated with solid wire.

### Applications:

Select 910-B91 is used to weld 9Cr-1Mo creep resistant steels, such as A387 Gr 91 plate; A335 P91 and A369-FP91 piping; A199-T91, A200-T91 and A213-T91 tubing; A182-F91 forgings; as well as fittings and castings of similar composition. Typical applications include power plant turbine casings, valves, headers and piping.

### Typical Mechanical properties :

	SR @ 1375°F-2 hrs	SR @ 1375°F-3 hrs
Ultimate Tensile Strength (psi)	104,200	99,800
Yield Strength (psi)	84,200	81,900
Percent Elongation	20	21

### Typical Deposit Composition (wt%):

C	Cr	Mo	Mn	Ni	Si	P	S	Nb	V	Al	N
.10	9.00	1.00	.70	.20	.25	.010	.010	.03	.20	<.01	.04

### Suggested Parameters (75-80%Ar, balance CO<sub>2</sub> Shielding Gas):

Diameter	Position	Optimum			Range	
		Amperage	WFS	Voltage	Amperage	Voltage
.045"	Flat	230	430	27	130-280	21-31
	Overhead	180	290	25	150-260	21-29
	Vertical up	180	290	24	130-240	21-28
.052"	Flat	275	400	27	140-330	21-32
	Overhead	200	245	25	150-290	21-28
	Vertical up	200	245	24	140-270	21-27
1/16"	Flat	330	330	28	150-400	22-34
	Overhead	225	180	25	150-310	22-28
	Vertical up	225	180	24	150-280	22-27

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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.