

## Atom Arc 9018-B9

Atom Arc 9018-B9 is designed to weld the modified 9% Cr - 1% Mo steels known by the designations T91, P91 or Grade 91. These steels are designed to provide improved creep strength, toughness, fatigue, and oxidation and corrosion resistance at elevated temperatures.

<b>Classifications</b>	AWS A5.5 : E9018-B9 H4R ASME SFA 5.5
<b>Industry</b>	Petrochemical Pipeline Power Generation

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
Stress Relieved 1hr 746°C (1375°F)	711 MPa (103 ksi)	821 MPa (119 ksi)	19 %
Stress Relieved 2hr 760°C (1400°F)	587 MPa (85 ksi)	724 MPa (105 ksi)	25 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
Stress Relieved 2hr 760°C (1400°F)	21 °C (70 °F)	83 J (61 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Al
0.10	0.80	0.17	0.009	0.008	0.20	8.50	1.00	0.19	<.01

### Typical Weld Metal Analysis %

Cu	N	Nb	X-bar
0.04	0.04	0.04	< 15

### Deposition Data

Diameter	Optimal Amps	Current	Deposition Rate	Deposition Efficiency %
3.2 mm (1/8 in.)	120 A	90-160 A	1.2 kg/h (2.6 lb/h)	71.6 %
3.2 mm (1/8 in.)	140 A	90-160 A	1.2 kg/h (2.7 lb/h)	70.9 %
2.4 mm (3/32 in.)	90 A	70-100 A	0.8 kg/h (1.7 lb/h)	66.3 %
4.0 mm (5/32 in.)	140 A	130-220 A	1.1 kg/h (3.1 lb/h)	75 %
4.0 mm (5/32 in.)	170 A	130-220 A	1.7 kg/h (3.8 lb/h)	73.5 %