

Atom Arc 9018-B91

Atom Arc 9018-B91 is designed to weld martensitic 95% Cr & 1% Mo-V steels known by the designations T91, P91 or Grade 91. These steels are designed to provide improved creep strength, fatigue, oxidation, and corrosion resistance at elevated temperatures. It also provides good weld metal ductility and high charpy values at room temperature. This product is optimized to meet the requirements for Mn + Ni contents < 1.0 wt %.

Specifications

Classifications	ASME SFA 5.5 : E9018-B91H4R AWS A5.5 : E9018-B91H4R
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Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (9% Cr - 1% Mo-V-Nb)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
Stress Relieved 2 hour(s) 760 °C (1400 °F)	593 MPa (86 ksi)	731 MPa (106 ksi)	25 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
Stress Relieved	22 °C (72 °F)	94 J (70 ft-lb)

Deposition Data

Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
2.4 x 356.0 mm (3/32 x 14.0 in.)	70-110 A	23.2 V	69.01 %	60 sec	0.92 kg/h (2.0 lbs/h)
3.2 x 356.0 mm (1/8 x 14.0 in.)	90-160 A	23.9 V	72.23 %	70 sec	1.36 kg/h (3.0 lbs/h)
4.0 x 356.0 mm (5/32 x 14.0 in.)	130-220 A	24.3 V	72.06 %	75 sec	1.89 kg/h (4.2 lbs/h)
4.8 x 356.0 mm (3/16 x 14.0 in.)	200-300 A	24.3 V	71.04 %	74 sec	2.53 kg/h (5.6 lbs/h)