

Atom Arc 7018-1

Atom Arc 7018-1 is an all-position, low hydrogen electrode that provides exceptional impact toughness at low service temperatures. Atom Arc 7018-1 provides smooth metal transfer, minimal spatter, and easy slag removal. Atom Arc 7018-1 is used to join a wide variety of carbon and low alloy steels. It is also an excellent choice for welding higher strength steels if undermatching welds are specified.

Specifications	
Classifications	ASME SFA 5.1 : E7018-1H4R AWS A5.1 : E7018-1H4R
Approvals	ABS : 3Y(H5) ABS : E7018-1 (H4R) CWB : E4918-1-H4 DNV-GL : 3 YH5 LR : 3Y, H10
Industry	Mobile Equipment Railcars Industrial and General Fabrication Automotive Civil Construction

Approvals are based on factory location. Please contact ESAB for more information.

Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Carbon Manganese

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	467 MPa (68 ksi)	551 MPa (80 ksi)	30 %
Stress Relieved 8 hour(s) 621 °C (1150 °F)	415 MPa (60 ksi)	510 MPa (74 ksi)	33 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
As Welded	-46 °C (-51 °F)	123 J (91 ft-lb)
Stress Relieved	-46 °C (-51 °F)	224 J (166 ft-lb)

Typical Weld Metal Analysis %				
C	Mn	Si	S	P
0.04	1.30	0.30	0.015	0.014

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)

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Deposition Data

Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
5.6 x 457.0 mm (7/32 x 18.0 in.)	250-350 A	24.9 V	75.80 %	100 sec	3.28 kg/h (7.2 lbs/h)
6.4 x 457.0 mm (1/4 x 18.0 in.)	300-400 A	25.5 V	77.06 %	103 sec	4.22 kg/h (9.3 lbs/h)