

Atom Arc 8018

Atom Arc 8018 electrodes deposit 1% Ni weld metal. They are used primarily to weld high-tensile steels in the 70-80 ksi (483-552 MPa) tensile strength range, especially where notch toughness at temperatures as low as -40°F (-40°C) is required.

Specifications	
Classifications	ASME SFA 5.5 : E8018-C3H4R AWS A5.5 : E8018-C3H4R ASME SFA 5.1
Approvals	ABS : 4Y(H5) ABS : E8018-C3 (H4R) CWB : E5518-C3-H4 LR : 4Y40 H10 MIL : MIL-8018-C3
Industry	Pipeline Bridge Construction Power Generation Ship/Barge Building Mobile Equipment Petrochemical Industrial and General Fabrication

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

Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (1% Ni)

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	510 MPa (74 ksi)	600 MPa (87 ksi)	28 %
Stress Relieved 8 hour(s) 621 °C (1150 °F)	485 MPa (70 ksi)	560 MPa (81 ksi)	30 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
As Welded	-29 °C (-20 °F)	168 J (124 ft-lb)
As Welded	-40 °C (-40 °F)	114 J (84 ft-lb)
Stress Relieved	-29 °C (-20 °F)	175 J (130 ft-lb)
Stress Relieved	-40 °C (-40 °F)	156 J (115 ft-lb)

Typical Weld Metal Analysis %									
C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.045	1.08	0.31	0.01	0.01	0.91	0.06	0.12	0.009	0.139

Typical Weld Metal Analysis %	
Nb	
0.003	

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Deposition Data					
Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
0.0 x 457.0 mm	250-350 A	24.9 V	75.80 %	100 sec	3.28 kg/h (7.2 lbs/h)
0.0 x 457.0 mm	300-400 A	25.5 V	77.06 %	103 sec	4.22 kg/h (9.3 lbs/h)
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)