

Atom Arc 8018-SR

Atom Arc 8018-SR is an all-position low hydrogen electrode. The moisture resistance and welder appeal is similar to other Atom Arc electrodes. Atom Arc 8018-SR was developed to maintain 80 ksi (552 MPa) after 50 hours stress relieving.

Specifications

Classifications	ASME SFA 5.5 : E8018-GH4R AWS A5.5 : E8018-GH4R
Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (0.9% Ni)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
Stress Relieved 50 hour(s) 621 °C (1150 °F)	470 MPa (68 ksi)	562 MPa (82 ksi)	32 %
Stress Relieved 20 hour(s) 621 °C (1150 °F)	495 MPa (72 ksi)	580 MPa (84 ksi)	30 %
As Welded	593 MPa (86 ksi)	677 MPa (98 ksi)	28 %
Stress Relieved 1 hour(s) 538 °C (1000 °F)	592 MPa (86 ksi)	670 MPa (97 ksi)	28 %
Stress Relieved 2 hour(s) 605 °C (1121 °F)	566 MPa (82 ksi)	651 MPa (94 ksi)	27 %
Stress Relieved 8 hour(s) 621 °C (1150 °F)	490 MPa (71 ksi)	587 MPa (85 ksi)	29 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
Stress Relieved	16 °C (61 °F)	233 J (172 ft-lb)
Stress Relieved	-46 °C (-51 °F)	144 J (107 ft-lb)
Stress Relieved	16 °C (61 °F)	224 J (166 ft-lb)
Stress Relieved	-46 °C (-51 °F)	155 J (115 ft-lb)
As Welded	-40 °C (-40 °F)	104 J (77 ft-lb)
Stress Relieved	-40 °C (-40 °F)	98 J (73 ft-lb)
Stress Relieved	-40 °C (-40 °F)	99 J (73 ft-lb)
Stress Relieved	-46 °C (-51 °F)	98 J (73 ft-lb)
Stress Relieved	16 °C (61 °F)	217 J (161 ft-lb)
Stress Relieved	-46 °C (-51 °F)	146 J (108 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	P	Ni	Cr	Mo	V	Cu	Nb
0.075	1.12	0.34	0.01	0.90	0.10	0.26	0.009	0.114	0.003

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)

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Deposition Data					
Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
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)
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)