

Atom Arc 8018-C1

Atom Arc 8018-C1 electrodes deposit weld metal which contains nominal 2.33% Ni. Their principal use is in the welding of nickel-bearing steels for applications where toughness of the weld metal at low temperatures is important.

Specifications	
Classifications	ASME SFA 5.5 : E8018-C1H4R AWS A5.5 : E8018-C1H4R
Approvals	ABS : 3Y(H5) CWB : E5518-C1-H4 LR : 3m,3Ym(H15)
Industry	Mobile Equipment Bridge Construction 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 (2.3% Ni)

Tensile Properties			
Testing Condition	Yield Strength	Tensile Strength	Elongation
Stress Relieved 1 hour(s) 605 °C (1121 °F)	522 MPa (76 ksi)	629 MPa (91 ksi)	30 %
As Welded	562 MPa (82 ksi)	657 MPa (95 ksi)	27 %
Stress Relieved 1 hour(s) 621 °C (1150 °F)	515 MPa (75 ksi)	595 MPa (86 ksi)	30 %

Charpy Testing		
Testing Condition	Testing Temp	Impact Value
Stress Relieved	-60 °C (-76 °F)	134 J (99 ft-lb)
As Welded	-60 °C (-76 °F)	94 J (70 ft-lb)
Stress Relieved	-59 °C (-74 °F)	87 J (64 ft-lb)

Typical Weld Metal Analysis %									
C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.047	1.13	0.33	0.01	0.01	2.41	0.06	0.02	0.009	0.122

Typical Weld Metal Analysis %	
Nb	
0.003	

Deposition Data					
Diameter	Amps	Volts	Efficiency (Per)	Fusion time per electrode at 90Per I max	Deposition rate at 90Per
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)

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Deposition Data

Diameter	Amps	Volts	Efficiency (Per)	Fusion time per electrode at 90Per I max	Deposition rate at 90Per
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)
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)