

Atom Arc T

Atom Arc T was developed for welding T-1 steel in all applications. Mechanical properties of the welded joints equal or exceed the properties of the base steel in either the as welded or stress relieved condition, thus giving 100% design joint efficiency. In addition, Atom Arc T electrodes are suitable for many other applications, particularly where high-strength welds with excellent low temperature impact properties are required.

Specifications	
Classifications	ASME SFA 5.5 : E11018M H4R AWS A5.5 : E11018M H4R
Approvals	ABS : AWS A5.5: E11018-M CWB : E7618-M-H4 MIL : MIL-11018-M QPL : 22200/1
Industry	Industrial and General Fabrication Railcars Mobile Equipment Bridge Construction Civil Construction Ship/Barge Building

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 (T-1 steel)

Tensile Properties			
Testing Condition	Yield Strength	Tensile Strength	Elongation
Stress Relieved 1 hour(s) 552 °C (1026 °F)	705 MPa (102 ksi)	770 MPa (112 ksi)	23 %
As Welded	718 MPa (104 ksi)	800 MPa (116 ksi)	21 %

Charpy Testing		
Testing Condition	Testing Temp	Impact Value
Stress Relieved	-20 °C (-4 °F)	68 J (50 ft-lb)
Stress Relieved	-40 °C (-40 °F)	57 J (42 ft-lb)
Stress Relieved	-50 °C (-58 °F)	34 J (25 ft-lb)
As Welded	-20 °C (-4 °F)	75 J (56 ft-lb)
As Welded	-40 °C (-40 °F)	65 J (48 ft-lb)
As Welded	-50 °C (-58 °F)	74 J (55 ft-lb)

Typical Weld Metal Analysis %									
C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.048	1.46	0.28	0.01	0.01	1.83	0.23	0.35	0.010	0.072

Typical Weld Metal Analysis %	
Nb	
0.004	

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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)
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)