

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.

Classifications	AWS A5.5 : E8018-C3 H4R
Approvals	ABS 3Y/AWS A5.5: E8018-C3 QPL-22200/1 MIL-8018-C3 LR 4Y40M(H10) CWB CSA W48 E5518-C3
Industry	Bridge Construction Industrial and General Fabrication Mobile Equipment Petrochemical Pipeline Power Generation Ship/Barge Building

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

Welding Current	AC or DC+
Coating Type	Low-hydrogen iron powder

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	510 MPa (74 ksi)	585 MPa (85 ksi)	30 %
Stress Relieved 8hr 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	-40 °C (-40 °F)	154 J (114 ft-lb)
As Welded	-29 °C (-20 °F)	168 J (124 ft-lb)
Stress Relieved 8hr 621°C (1150°F)	-29 °C (-20 °F)	175 J (129 ft-lb)
Stress Relieved 8hr 621°C (1150°F)	-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

Deposition Data

Diameter	Optimal Amps	Current	Deposition Rate	Deposition Efficiency %
2.4 mm (3/32 in.)	90 A	70-100 A	0.8 kg/h (1.7 lb/h)	66.3 %
3.2 mm (1/8 in.)	120 A	90-160 A	1.2 kg/h (2.6 lb/h)	71.6 %
3.2 mm (1/8 in.)	140 A	90-160 A	1.2 kg/h (2.7 lb/h)	70.9 %
4.0 mm (5/32 in.)	140 A	130-220 A	1.1 kg/h (3.1 lb/h)	75 %
4.0 mm (5/32 in.)	170 A	130-220 A	1.7 kg/h (3.8 lb/h)	73.5 %
4.8 mm (3/16 in.)	200 A	200-300 A	2.2 kg/h (4.9 lb/h)	76.4 %
4.8 mm (3/16 in.)	250 A	200-300 A	2.4 kg/h (5.4 lb/h)	74.6 %