

ATOM ARC 8018-C1

Tech Data Sheet

Industry

Mobile Machinery
Process
Bridge Construction
Petrochemical
General Fabrication

Welding Process

SMAW (Stick)

Classifications/Approvals

AWS A5.5; E8018-C1H4R
Certified by CWB to CSA W48
L.R.- 3m,3Ym(H15)
A.B.S.- 3Y
ASME SFA 5.5



Filler Metal Type

Low Alloy

AWS Classifications

AWS A5.5; E8018-C1H4R

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 low temperature applications where toughness of the weld metal at low temperatures is important.

Available Parts				
Part No.	Size	Length	Weight	Package
255163206	3/32	14 in.	10	Hermetically Sealed Can
255163214	3/32	14 in.	50	Hermetically Sealed Can
255161820	1/8	14 in.	10	Hermetically Sealed Can
255161812	1/8	14 in.	50	Hermetically Sealed Can
255165326	5/32	14 in.	10	Hermetically Sealed Can
255165318	5/32	14 in.	50	Hermetically Sealed Can
255163123	3/16	14 in.	10	Hermetically Sealed Can
255163115	3/16	14 in.	50	Hermetically Sealed Can
255167314	7/32	18 in.	50	Hermetically Sealed Can
255161416	1/4	18 in.	50	Hermetically Sealed Can

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Deposition Table				
Diameter	Optimal Amperage	Range Amperage	Deposition Rate	Efficiency
3/32 in	90 A	70 - 100	1.7 lbs./hr.	66.3 %
1/8 in	120 A	90 - 160	2.6 lbs./hr.	71.6 %
1/8 in	140 A	90 - 160	2.7 lbs./hr.	70.9 %
5/32 in	140 A	130 - 220	3.1 lbs./hr.	75 %
5/32 in	170 A	130 - 220	3.8 lbs./hr.	73.5 %
3/16 in	200 A	200 - 300	4.9 lbs./hr.	76.4 %
3/16 in	250 A	200 - 300	5.4 lbs./hr.	74.6 %
7/32 in	250 A	250 - 350	6.5 lbs./hr.	75 %
7/32 in	300 A	250 - 350	7.2 lbs./hr.	74 %
1/4 in	300 A	300 - 400	7.7 lbs./hr.	78 %
1/4 in	350 A	300 - 400	8.7 lbs./hr.	77 %

Typical Mechanical Properties	
As Welded	
Yield Strength	80 ksi (550 MPa)
Tensile Strength	90 ksi (620 MPa)
Elongation in 2"	30 %
Stress Relieved 1 hr. @ 1150°F (621°C)	
Yield Strength	75 ksi (515 MPa)
Tensile Strength	86 ksi (595 MPa)
Reduction in Area	74 %
Elongation in 2"	30 %

Typical Charpy V-Notch Impact Properties	
Testing Temperature -75°F (-59°C)	
As Welded	47 ft.-lbs. (64 J)
Stress Relieved 1 hr. @ 1150°F (621°C)	64 ft.-lbs. (87 J)

Typical Undiluted Weld Metal Analysis	
C	.04 %
Mn	1.1 %
Si	.3 %
P	0.011 %
S	0.009 %
Ni	2.4 %