

Atom Arc 12018-M2

Atom Arc 12018-M2 is a low hydrogen, iron powder all-position electrode specially formulated to meet the more stringent requirements of Military Specification MIL-E-0022200/10 for mechanical properties, low coating moisture and diffusible hydrogen content. Hydrogen coupons analyzed by the gas chromatography method showed an average of 0.026 ml/g of diffusible hydrogen. The average percent by weight of coating moisture is 0.07% when removed from a hermetically sealed can and 0.17% after 9 hours exposure at 80°F (27°C) and 80% relative humidity.

Specifications

Classifications	MIL : 12018M2
Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (1.8% Mn - 3.4% Ni - 0.3% Mo)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	750 MPa	820 MPa	21 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
As Welded	-18 °C	102 J
As Welded	-51 °C	81 J

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.039	1.77	0.27	0.01	0.01	3.43	0.03	0.29	0.010	0.032

Typical Weld Metal Analysis %

Nb
0.004

Deposition Data

Diameter	Current	Voltage	Efficiency (%)	Fusion time per electrode at 90% I max	Deposition Rate
2.4 x 350.0 mm	70-110 A	23.2 V	69.01 %	60 sec	0.92 kg/h
3.2 x 350.0 mm	90-160 A	23.9 V	72.23 %	70 sec	1.36 kg/h
4.0 x 350.0 mm	130-220 A	24.3 V	72.06 %	75 sec	1.89 kg/h