

Atom Arc 8018-NM

Atom Arc 8018-NM electrodes are used for welding quenched and tempered manganese-molybdenum-nickel steels. This electrode was developed for use in pressure vessels for nuclear reactors where long terms stress relief is required.

Specifications	
Classifications	ASME SFA 5.5 : E8018-NM H4R AWS A5.5 : E8018-NM H4R
Industry	Pressure Vessels Nuclear Offshore Oil

Welding Current	AC, DC+
Diffusible Hydrogen	< 4.0 ml/100g
Alloy Type	Low alloyed (1% Ni - 0.5% Mo)

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	588 MPa (85 ksi)	653 MPa (95 ksi)	27 %
Stress Relieved 16 hour(s) 621 °C (1150 °F)	538 MPa (78 ksi)	607 MPa (88 ksi)	29 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
As Welded	-18 °C (0 °F)	150 J (111 ft-lb)
As Welded	-46 °C (-51 °F)	88 J (65 ft-lb)
Stress Relieved	-18 °C (0 °F)	160 J (118 ft-lb)

Typical Weld Metal Analysis %						
C	Mn	Si	S	P	Ni	Mo
0.043	1.07	0.58	0.014	0.018	0.95	0.47

Deposition Data					
Diameter	Current	Voltage	Deposition Efficiency (%)	Burn-off Time /Electrode	Deposition Rate @ 90% I max
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)