

Nickel Alloys

Alloy: WWNA117  
 Class: ENiCrCoMo-1  
 Alloy 117

Conforms to Certification: AWS A5.11  
 ASME SFA A5.11

Alloy: ENiCrCoMo-1 (Alloy 117)  
 Weld Process: Shielded Metal Arc Weld Process (SMAW)

AWS Chemical Composition Requirements

C = 0.05 – 0.15	Cu = 0.50 max
Mn = 0.30 – 2.5	Ni = Remainder
Fe = 5.0 max	Co = 9.0 – 15.0
P = 0.03 max	Cr = 21.0 – 26.0
S = 0.015 max	Cb/Ta = 1.0 max
Si = 0.75 max	Mo = 8.0 – 10.0
Other = 0.50 max	

Recommended Weld Parameters

Diameter of Wire	Voltage (V)	Amperage (A)	
		Flat	Vertical and Overhead
3/32 inches (2.4mm)	24 – 28	70 – 85	65 – 75
1/8 inches (3.2mm)	26 – 30	85 – 110	80 – 90
5/32 inches (4.0)	28 – 32	110 – 140	100 – 120
3/16 inches (4.8)	28 – 32	120 – 160	110 – 130

Deposited Chemical Composition % (Typical)

C = 0.06	Mn = 0.46	Si = 0.36
Fe = 1.52	S = 0.005	P = 0.011
Cr = 21.7	Mo = 8.70	Co = 12.0
Ni = Balance		

Application

ENiCrCoMo-1 (NA117) electrode is used for welding of nickel-chromium-cobalt-molybdenum alloys. It can be used for overlay cladding when similar alloy is required.

Weld Metal provides optimum strength above 1500°F up to 2100°F.

Deposited All Weld Metal Properties % (AW)

Tensile Strength	110,000psi
Yield Strength	87,500psi
Elongation	27%

Deposited Charpy-V-Notch Impact Properties %

Not applicable

