

Nickel Alloys

Alloy: WWNA190  
 Class: ENiCu-7

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

Alloy: ENiCu-7 (Alloy 190)  
 Weld Process: Shielded Metal Arc Welding Process (SMAW)

AWS Chemical Composition Requirements

C = 0.15 max	Cu = Remainder
Mn = 4.0 max	Ni = 62.0 – 69.0
Fe = 2.5 max	Al = 0.75 max
P = 0.02 max	Ti = 1.0 max
S = 0.015 max	Si = 1.5 max
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 = 0.03	Mn = 3.10	Si = 0.90
Fe = 0.95	S = 0.006	P = 0.008
Al = 0.06	Ti = 0.68	Cu = 28.0
Ni = 68.0		

Application

ENiCu-7 (NA190) is used for welding materials of nickel-copper alloys to themselves, such as ASTM B127, B163, B164, and B165. Can be used for overlay of clad steels where nickel-copper surfacing is required. Dissimilar welding applications include joining Nickel 200 and copper-nickel alloys.

Deposited All Weld Metal Properties % (AW)

Tensile Strength	75,000psi
Yield Strength	51,500psi
Elongation	38%

Deposited Charpy-V-Notch Impact Properties %

Not applicable

