



Quality Management System
in accordance with
ISO 9001
Cert # 05-R0925

E81T1-Ni1M Carbon Steel Flux-Cored Wire

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com



ALLOY DESCRIPTION AND APPLICATION:

81T1-Ni1M is a flux cored wire designed for single or multi pass using Argon /CO₂ shielding gas welding having a smooth spray-type transfer commonly used on low alloy steels. This all position wire normally used in applications which will produce a chemical composition of 1% nickel yielding strengths ranging from 80-100 ksi. E81T1-Ni is used extensively in the fabrication, erection and repair of structural fabrication of higher strength steels having a 70,000-80,000 psi tensile strength. The weld metal analysis of the deposit is similar to E8018-C3 low hydrogen electrodes

TYPICAL FCAW WELDING PROCEDURES; DCEP with (35-45cfh)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout
0.045"	150-575	100-300	24-30	1/2-3/4"
0.052"	95-515	100-350	22-31	1/2-1"
1/16"	100-430	150-410	23-32	1/2-1"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

TYPICAL WELD METAL (%) AND WELD METAL PROPERTIES;

	AWS Spec.	U.S. ALLOY 81T1-Ni1		AWS Spec	Typical
Carbon	0.12 max.	0.05	Tensile Strength (psi)	80-100,000	91,200
Manganese	1.75 max.	1.15	Yield Strength (psi)	68,000 min.	83,000
Nickel	0.80-1.10	1.03	Elongation in 2"	19% min.	22%
Silicon	0.80 max.	0.38	Charpy V-notch (-20°F)	20 ft·lbs min	48 ft·lbs
Sulfur	0.03 max.	0.011			
Phosphorus	0.03 max.	0.014			
Molybdenum	0.35 max.	0.22			

SPECIFICATIONS; AWS A5.20

ASME SFA 5.20

AWS A5.36

ASME SFA 5.36

E81T1-Ni1M

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E81T1-M21A2-Ni1

E81T1-M21A2-Ni1



EAST COAST

825 Groves St
Lowell, NC 28098
Tel (980) 550-2002
Fax (909) 291-4586

GULF COAST

4855 Alpine Drive #100
Stafford, TX 77477
Tel (888) 522-8296
Fax (909) 291-4586

WEST COAST

8885 White Oak, Ste104
Rancho Cucamonga, CA 91730
Tel (888) 522-8296
Fax (909) 291-4586

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Warehouse Distribution Center – Dallas/Fort Worth & Portland, Oregon & Boston, Massachusetts Head Office – Puyallup, Washington

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