



81T1-Ni 2 Flux Cored Welding Wire

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

Quality Management System
in accordance with
ISO 9001:2000
Cert # 05-R0925



ALLOY DESCRIPTION AND APPLICATION:

81T1-Ni2 is a flux cored wire designed for single or multi pass using CO₂ or 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 2-2.5 % nickel yielding strengths ranging from 80-100 ksi. Steels commonly welded with this grade would include weathering steels (where color match is not required), shipbuilding, off shore platform rigging and similar grades such as ASTM A734.

TYPICAL FCAW WELDING PROCEDURES; DCEP with 100% CO₂ (35-45cfh)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout
0.045"	150- 410 -575	100- 245 -300	24- 28 -30	1/2-3/4"
0.052"	95- 395 -515	100- 310 -350	22- 28 -31	1/2-1"
1/16"	100- 345 -430	150- 355 -410	23- 29 -32	1/2-1"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes. (**OPTIMUM IN BOLD Based on FLAT**) for mixed gas lower the voltage by 2-5 %

TYPICAL WELD METAL (%) AND WELD METAL PROPERTIES;

	AWS Spec.	U.S. ALLOY 81T1-Ni2		AWS Spec	Typical
Carbon	0.12 max.	0.05			
Manganese	1.50 max.	1.05	Tensile Strength (psi)	80-100,000	84,200
Nickel	1.75-2.75	2.23	Yield Strength (psi)	68,000 min.	73,000
Silicon	0.80 max.	0.28	Elongation in 2"	19% min.	24.9%
Sulfur	0.03 max.	0.010	Charpy V-notch (-40°F)	20 ft-lbs min	52 ft-lbs
Phosphorus	0.03 max.	0.011			

AVAILABLE SIZES: TCF 81T1-Ni2= Spools of .045, 1/16
Other sizes may be available – please inquire

SPECIFICATIONS; ANSI/AWS A5.29 E81T1-Ni2C, E81T1-Ni2M
ASME SFA A5.29 E81T1-Ni2C, E81T1-Ni2M

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