



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

81W FLUX CORED Welding Wire

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



ALLOY DESCRIPTION AND APPLICATION:

81W 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 weathering steels. This all position wire will provide a good weld deposit color match on such alloy as ASTM A588 & 242 found in the AWS D1.1 code. Weathering steels are normally used in the construction of bridges, highway, shipyards, rail road and many other general industries and buildings.

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

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout
1/16"	130- 340 -480	160- 340 -400	22- 29 -33	1/2-1"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes. **OPTIMUM IN BOLD (FLAT)** for mixed gas lower the voltage by 5-10 %

TYPICAL UNDILUTED WELD METAL (%) AND WELD METAL PROPERTIES;

	AWS Spec.	U.S. ALLOY 81W		AWS Spec	Typical
Carbon	0.12 max	0.05			
Manganese	0.50-1.30	0.92	Tensile Strength (psi)	80-100,000	91,000
Nickel	0.40-0.80	0.72	Yield Strength (psi)	68,000 min.	81,500
Chromium	0.45-0.70	0.58	Elongation in 2"	19% min.	24%
Silicon	0.35-0.80	0.54	Charpy V-notch (-20°F)	20 ft-lbs min	28 ft-lbs
Copper	0.30-0.75	0.56			
Phosphorus	0.03 max.	0.011			
Sulfur	0.03 max.	0.010			

AVAILABLE SIZES: 81W= Spools of .045, .052, 1/16 , 3/32

APPROVALS ; CSA/CWB Certified by CWB to CSA W48

SPECIFICATIONS; ANSI/AWS A5.29
ASME SFA A5.29

E81T1-W2C , E81T1-W2M
E81T1-W2C , E81T1-W2M

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