



WASHINGTON ALLOY'S Quality
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Cert # 05-R0925

81T1-B2 Flux Cored Welding Wire

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American Welding Society
Sustaining Company Member



ALLOY DESCRIPTION AND APPLICATION:

81T1-B2 is a flux cored wire designed for single or multi pass using CO₂ or Argon /CO₂ shielding gas welding having a smooth arc with minimum spatter. This all position wire normally used in applications with chemical composition of 1.25% Cr 0.5% Mo used in high pressure steam, oil refining, and other Cr-Mo high service temperature and creep resistance requirements. Some Cr-Mo steels found for matching properties ; A182&A336 grades F11/ F11A/ F-12, A199 & A200 T11, A213 T11/T12, A335 P11/P12, A369 FP11/ FP12, A426 CP11/CP12, A387 Gr11/Gr 12 (L grade filler used for thin wall and where lower hardness are a primary concern)

Preheat, interpass and postweld heat treatments may be required.

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

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout
0.035"	450- 580 -675	100- 215 -260	21- 26 -28	3/8-3/4"
0.045"	150- 410 -575	100- 245 -300	24- 28 -30	1/2-3/4"
0.052"	295- 400 -515	210- 310 -350	26- 28 -32	1/2-1"
1/16"	260- 345 -430	225- 355 -410	27- 29 -33	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 (PWHT);

	AWS Spec.	U.S. ALLOY 81T1-B2		AWS Spec	Typical
Carbon	0.05-0.12	0.04			
Manganese	1.25 max.	1.08	Tensile Strength (psi)	80-100,000	87,000
Chromium	1.00-1.50	1.25	Yield Strength (psi)	68,000 min.	77,000
Silicon	0.80 max.	0.44	Elongation in 2"	19% min.	29 %
Molybdenum	0.40-0.65	0.53	(Tensile Strength may exceed the 100 ksi limit Sulfur		
	0.03 max.	0.011	when using 75/25 mixed gas)		
Phosphorus	0.03 max.	0.014			

AVAILABLE SIZES: TCF 81T1-B2= Spools of .035, .045, 1/16

Other sizes may be available – please inquire

SPECIFICATIONS;

ANSI/AWS A5.29

ASME SFA A5.29

E81T1-B2C, E81T1-B2M

E81T1-B2C, E81T1-B2M



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