



Smoothcor[®] 81T1-B2

Classification: AWS A5.29 / ASME SFA 5.29 E81T1-B2C, E81T1-B2M

Description: Smoothcor 81T1-B2 is a 1 ¼% Cr, ½% Mo low alloy steel flux cored wire used for single and multiple pass, all position welding of Cr-Mo steels, including A387 Gr. 11 plate and A335 P11 pipe, that are subjected to high temperature service. It is used in the fabrication of boilers, heat exchangers and pressure vessels. Smoothcor 81T1-B2 has good welder appeal with excellent mechanical properties, low spatter emission, fast freezing slag that is easily removed and resists creep and maintains strength at elevated temperatures. Shielding gas: 100% CO₂ / 75% Ar, 25% CO₂. 40-55 cfh

Typical Deposit Chemistry: %

	C	Mn	P	S	Si	Cr	Mo
CO ₂	.07	.81	.01	.01	.60	1.31	.45
75Ar/25CO ₂	.09	.87	.01	.01	.60	1.32	.49

Typical Mechanical Properties:

	SR 1 hr. @ 1275°F	
	CO ₂	75Ar/25CO ₂
Tensile Strength(psi)	94,200	98,900
Yield Strength (psi)	84,200	85,200
Elongation	20	22

Typical Welding Parameters – Carbon & Low Alloy – Flux Cored -All position-CO₂*- DCEP

Dia.	Position	Operating Range		Optimum			
		Amps	Volts	Amps	WFS (ipm)	Volts	ESO
.035"	Flat	125-250	21-30	200	600	27	3/8"-3/4"
	Overhead	115-220	21-28	175	490	25	3/8"-3/4"
	Vertical Up	120-215	21-28	170	450	25	3/8"-3/4"
.045"	Flat	130-300	21-32	250	450	28	½ - 1"
	Overhead	150-280	21-30	190	305	26	½ - 1"
	Vertical Up	130-260	21-29	190	305	25	½ - 1"
.052"	Flat	140-330	19-32	275	400	28	½ - 1"
	Overhead	150-290	21-28	200	245	26	½ - 1"
	Vertical Up	140-270	21-27	200	245	25	½ - 1"
1/16"	Flat	150-400	22-34	330	330	29	½"-1"
	Overhead	150-310	22-28	225	180	26	½ -1"
	Vertical Up	150-280	22-27	225	180	25	½ - 1"

*For 75Ar/25CO₂ decrease voltage by 1 to 1.5 volts.

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.