



Smoothcor 81T1-W2

Classification: AWS A5.29, ASME SFA 5.29, E81T1-W2C-H8, E81T1-W2M-H8

Description: Smoothcor 81T1-W2 is a gas-shielded, flux cored, low alloy steel electrode for all position welding of weathering steels. This electrode is intended for single and multiple pass welding. Welder appeal is excellent with a spray transfer, thin slag which removes easily and cleanly, and a smooth bead profile. Smoothcor 81T1-W2 alloy additions match those of the “weathering” steels such as ASTM A588. This provides weld metal which matches the corrosion resistance and coloring of the weathering type structural steels. These steels are commonly used in bridge construction and other structural components used in highway construction. Shielding gas: 100% CO₂, 75%-80% Ar/balance CO₂, 40/55 cfh.

Typical Deposit Chemistry: %

	C	Mn	Si	Ni	Cr	Cu
CO ₂	.06	.94	.41	.66	.53	.43
75Ar/25CO ₂	.06	1.05	.49	.72	.57	.46

Typical Mechanical Properties:

	CO ₂	75Ar/25CO ₂
Tensile Strength(psi)	86,500	91,300
Yield Strength (psi)	71,200	78,800
Elongation	25%	24%
CVN (ft•lb f) @ -20°F	31	28

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

Dia.	Position	Operating Range		Optimum			
		Amps	Volts	Amps	WFS (ipm)	Volts	ESO
.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	26	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"

* With CO₂ shielding gas. 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 purpose. with respect to its products.